A CRITICAL INVESTIGATION OF SELECTED CAPE AND TRANSKEI ENVIRONMENT STUDY PROGRAMMES IN JUNIOR PRIMARY SCHOOLS

THESIS

Submitted in Partial Fulfilment of the Requirements for the Degree of

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by

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DECLARATION

I, **Nobuzwe Nopasika Vinjwa** sincerely and solemnly declare that the copy of the half-thesis submitted by me in November 1992 is original. It is in no way the work of someone else. The product is the result of my efforts through the professional guidance of the supervisor whose name and signature appear below.

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DEDICATION

To my parents, Lexie and Rose
for their unending support

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Secondly, and despite their respective contributions, the persons named above cannot, in any way, be held responsible for any errors that may be found in this half-thesis. I am solely responsible for errors in this work.

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ABSTRACT

The introduction of Environment Study (ES) into the Junior Primary (JP) phase of the school was to facilitate the young learners' development of a sense of place, time and social identity.

ES is important in the JP phase because it introduces pupils to the world around them and the environmental issues that affect their lives. ES in the JP phase can also provide pupils with the basic knowledge for survival in a changing world. ES in the JP phase is primarily designed to aid the pupils' development of a sense of identity. As with geography, it is concerned with space, place and time; and these are the criteria that should be taken into consideration in developing the child's sense of identity.

Implementation of ES is largely influenced by the expertise and experience of the teachers, which will, in turn, influence their interpretation of the ES syllabus. The goals of ES require teachers to be able to use a variety of teaching strategies and to develop and use a variety of teaching resources.

This study investigates existing ES programmes in a number of selected schools in the Cape, DET and Transkei in order to establish the extent to which pupils' developing sense of time, place and social identity are taken into consideration.

Observations and interviews were conducted to assess the current ES syllabi for the Cape, DET and Transkei schools in relation to Catling's (1987) criteria; and to evaluate existing ES programmes in the six selected schools in the Grahamstown, Umtata and Mqanduli districts to ascertain the extent to which they met Catling's criteria.

The results reveal that in all the Education Departments' syllabi, pupils' needs to developing a sense of time, place and social identity, as suggested by Catling's (1987) criteria, were considered only to a limited extent. Even in the syllabi where these were developed, it was by mere coincidence. Secondly, the programmes in the different schools observed did not meet Catling's criteria sufficiently, because the teachers were ignorant of Catling's criteria.

Conclusions are drawn and recommendations made for teachers' awareness of Catling's criteria to be promoted, so that teachers can apply these in their teaching of ES; and for both Cape and Transkei ES programmes in the JP phase to be revised.

GLOSSARY OF ABBREVIATIONS USED IN THE STUDY

CED	Cape Education Department
DET	Department of Education and Training
ES	Environmental Study
HODs	Heads of Departments
JP	Junior Primary
TED	Transkei Education Department

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

The case for Environment Study (ES) in South African Junior Primary (JP) schools is today more compelling than ever. The present study takes cognisance both of the increase in environmental awareness worldwide and of the fact that political developments in this country have produced a climate in which far-reaching educational change is now being seriously debated. But even within this context of imminent and necessary change, this study must take as its point of departure the existing educational system in South Africa.

Under the present educational dispensation, secondary schooling is not compulsory, and many pupils - especially those from an economically disadvantaged background - do not proceed further than primary school; some even drop out after the JP (Sub A - Std I) phase. For such pupils, a firm educational foundation at the JP level is a necessity, and this is where ES has a vital rôle to play. In a perhaps uniquely effective way, ES introduces pupils to the world around them and the environmental issues that affect their lives.

It is widely acknowledged that the early stages of formal schooling provide the foundation for a sound education. JP education can provide pupils with the basic knowledge for survival in a changing world (Betela, 1982). In planning the JP phase, carefully chosen early learning experiences may facilitate the pupils' progress towards more advanced stages of intellectual growth and development (Hildebrand, 1976).

The JP pupils' needs and interests are of paramount importance. "The school curriculum should be relevant to the needs of learner, society and the economy" (Buckland, Christie and Hofmeyr, 1991:4). In looking at the needs of the pupils in terms of their sense of identity with and within their world, the following key questions have to be addressed:

1 Who am I?; in terms of other people, for example, family and friends.

2 Where am I? The need to identify and relate to one's environment, to develop one's sense of place and sense of space (spatial perception).

3 Where do I come from? This is essentially associated with the sense of time.

Spatial theory teaches that time and space cannot be separated. Therefore, the pupils' sense of place is closely related to the sense of time, because places are constantly changing and pupils should be able to adapt to the changing world. Identity is linked with time, place and space.

Simon Catling, in making a case for geography for the young learner, has argued that geography as a subject plays an essential rôle in the pupil's developing a sense of identity, because geography is essentially concerned with space, place and time. Therefore, in identifying criteria for the planning of a geography curriculum, he was identifying factors affecting the development of the pupil's sense of identity. Catling's (1987) criteria provide useful guidelines in evaluating ES programmes, since these programmes are essentially designed to develop the child's sense of identity.

ES is most relevant in this regard because it:

(i) offers a way of structuring reality for the pupils, but is essentially founded on the pupils' own experience and natural curiosity;

(ii) is built upon the stimulus of pupils' interests in the world around them, which is exploratory and investigative in nature;

(iii) is concerned with helping pupils focus on their own, as well as on the feelings of others, their responses, values and attitudes concerning their environment and society; and

(iv) encourages the pupils to recognize the nature of and variety in the world around them, to appreciate involvement in the world at large, near and far, past, present and future, and on micro, meso and macro scales.

ES is perceived as the foundation for the development of awareness, knowledge and understanding of the environment; positive and balanced attitudes towards it; and skills which may enable pupils to participate in determining the quality of the environment (Gough, 1987).

1.2 STATEMENT OF THE PROBLEM

The importance of ES to the developing child necessitates an analysis of the way in which this subject is dealt with at all levels. However, for the purposes of this study the focus will be on Transkei primary education.

Betela (1982) argues that the system of primary school education in Transkei, inherited from missionary and Bantu education, needs to be revised because it seems to be inappropriate for meeting the social, economic and cultural needs of Transkeians. If education at the JP and the primary level is to contribute to the development of the country, its curricula and syllabi should be seen to be relevant to the country's needs.

In spite of the importance of ES, it appears as if the Transkei Education Department (TED) has done very little to develop this subject in Transkei schools. For example, some Transkeian teachers use the 1979 Cape syllabus for JP ES; others use the Healdtown Health and Physical Education Instructional pamphlets (Kelly and Floweday, 1977).

This indicates that some JP school teachers confuse ES with health education. This is not very surprising if one considers that despite the fact that ES has been in the Transkei JP school syllabus for many years, it was only introduced into the Junior Primary School Teachers' Diploma curriculum by the TED in 1990 (General Guidelines for Affiliated Colleges of Education, 1990-1992:8).

This study therefore seeks not only to highlight this problem, but also to look towards the future by suggesting how it may be solved.

1.3 OBJECTIVES OF THE STUDY

In the South African context research located in the JP classroom is virtually non-existent and to the best of the researcher's knowledge, no investigation has been made regarding the implementation of ES at this level. This study, therefore, must be seen as a pilot study for further research which seeks to understand and to illuminate the relationship between classroom practise and education theory at the Junior Primary phase.

The primary objective of this study is to evaluate existing ES programmes in a number of selected schools to establish the extent to which the needs of the pupils' developing sense of time, place and social identity are taken into consideration. To this end, the following was undertaken:

Firstly, a critical analysis of the current ES syllabi for the Cape Education Department (CED), the Department of Education and Training (DET) and the TED in relation to Catling's (1987) criteria.

Secondly, the evaluation of existing ES programmes in a sample of selected schools in the Grahamstown, Umtata and Mqanduli districts to ascertain the extent to which they meet Catling's (1987) criteria.

1.4 THE SIGNIFICANCE OF THE STUDY

It is hoped that this study will lead to suggestions for improving the quality and scope of the existing Transkei ES syllabus. It is also hoped that some guidelines will emerge which might assist JP teachers to improve their teaching strategies and methods and to operate more competently and with greater confidence than hitherto.

This study might also assist the curriculum planners in the TED in evaluating the work done in the JP schools in ES.

1.5 RESEARCH LOCATION

This research was undertaken in six schools, three of which are in the TED, two in the CED, and one in the Department of Education and Training (DET). The three schools in the CED and DET are in the Grahamstown district. Two of these are private schools, while the third is a rural school under DET. The researcher wanted to select CED schools only, but unfortunately all the Black schools in Grahamstown are under DET.

In Transkei, of the three selected schools, one is a private school in the Umtata district, while the other two are government schools in the Mqanduli district. One of these is in an urban area, the other in a rural area.

I.6 ORGANISATION OF THE STUDY

Chapter two comprises a review of the available literature related to this study. Chapter three describes the research sample characteristics, data-collecting instruments and their administration, and the data-analysis techniques used in the study. In chapter four, data collected through interview schedules is analysed. In chapter five, data collected through observation schedules is presented and analysed. Chapter six summarises the study and then presents conclusions and recommendations on the basis of the results offered, analysed and discussed in chapters four and five.

CHAPTER TWO

2 ES IN THE JP PHASE: THEOTERICAL CONSIDERATIONS

2.I INTRODUCTION

This study requires an analysis of the educational and learning theories underpinning the aims, objectives, content and teaching strategies of ES. This chapter therefore will consider the following aspects:

I The rationale which led to the introduction of ES into the JP phase of South African education.

2 An analysis of developmental and learning theories relevant to the JP child.

3 An analysis of Catling's (I987) criteria in relation to current learning theories and in relation to the aims and objectives of ES in South Africa.

4 An analysis of teaching strategies appropriate to the aims of ES; and

5 Analysis of the teaching resources which are appropriate to the JP pupil.

2.2 THE RATIONALE LEADING TO THE INTRODUCTION OF ES INTO THE JP PHASE IN SOUTH AFRICA

British primary education has emphasized a pupil-centred approach since the introduction of the Report of the Central Advisory Council for Education (I967), the well-known Plowden Report. At the heart of this approach is the notion that pupils must be given the freedom to unfold their natural personalities. The curriculum should, therefore, consider the needs and interests of pupils. This approach emphasizes the need for pupils to participate in the learning experience (Woods and Barrow, I979). Associated with the pupil-centred approach is the notion of an integrated day and an integrated approach to knowledge. The Plowden Report (I967) recommended that the curriculum should be divided into broad general divisions for young pupils since learning in the young pupil (7-I0 years) does not naturally fit into narrow subject categories. Therefore, the younger the pupils, the more

undifferentiated their curriculum should be. This report further indicated that an effective way to integrate the curriculum is to relate it to the boundless curiosity pupils have about the world around them.

The influence of the above approach is apparent in the rationale given by Duggard (1977) in Kelly and Floweday (1977), and van Niekerk (1977) for the introduction of ES into South African schools, and in an analysis of their aims. The first reason given for incorporating health education, history, geography and nature study into the single subject ES was to provide an holistic approach in the teaching of young pupils.

In analysing the aims of ES as proposed by Duggard (1977) in Kelly and Floweday (1977); and van Niekerk (1977), the following is noted:

1 ES was to be a vehicle through which the young learners would be introduced to their environment.

2 The authors emphasized that pupils' introduction to the environment ought to include the study of the natural and the human environment and ES should aim at promoting pupils' interest in and curiosity about their world.

3 ES was also to be used to develop skills, attitudes and values regarding the environment which would lay the foundation for further development.

4 A further factor emphasized was the need to begin with the pupils' own experiences, moving from the known to the unknown.

The pupil-centred approach of the 1960s and later, was influenced by development and learning theories which are examined below.

2.3 DEVELOPMENT AND LEARNING THEORIES RELEVANT TO THE JP PUPIL

Current understanding of the development of pupils' cognitive, affective and psycho-motor domains owes much to the work of Piaget. Other theorists who have helped shape our understanding of school pupils at the JP level are Bruner, Skemp and Dienes. The most important features of development theory relevant to the JP pupil are as follows:

1 The JP (7-10 years) school pupil, according to Piaget, operates on a concrete operational stage which is characterized by the pupil's growing application of logic to physical situations, real or imaginary. As pupils explore their physical environment, they acquire more sophisticated forms of thinking (Liebeck, 1987).

2 Pupils at this stage are highly active. They develop new gross motor and fine motor skills (Biehler and Snowman, 1982).

3 Pupils at this stage like conformity. They feel the need to belong, to feel accepted, to feel that they are part of a social setting larger than themselves. This social development is influenced by pupils' families and their relationships outside the family, for example, in their peer groups (Craig, 1989).

Developmental theorists have looked at the development of pupils according to the pupils' chronological age. In Transkei, the majority of pupils in the JP phase fall within the age range of 6-10 years, but there are instances - particularly in rural schools - where some pupils are older or younger than the majority of their peers. This may create problems for the teacher who designs the ES programme to suit the chronological age of the pupils.

To ensure that meaningful learning experiences are provided for pupils, the planning and selection of curriculum content needs to be related to an understanding of the learning theory appropriate to the cognitive development of the pupils for whom the programme is designed. Piaget, Skemp, Bruner and Dienes have provided valuable guidelines on how pupils acquire knowledge.

A key element of Piaget's learning theory proposes that while learning takes place in relation to the relevant stage of cognitive development, it is also achieved through interaction with the environment. "Thinking and learning involve taking the environment apart, physically and mentally, and reconstructing it" (Liebeck, 1987:237). Piaget postulated three basic learning processes: the formation of mental concepts; adaptation through accommodation and assimilation of these concepts in the light of experience; and relating concepts to form structures. He further claimed that adaptation is an essential ingredient of learning.

Bruner challenged Piaget's assertion that learning is completely subordinate to biological development. He claimed that any idea or body of knowledge can

be presented in a form simple enough for any particular learner to recognise and understand.

Piaget's three basic learning processes, however, are similar to Skemp's proposal that pupils have to reconstruct the environment using their intellect and that they have to set themselves motivating goals (Liebeck, 1987).

Dienes considered learning as a process of intricate play. He described two types of play: primary and secondary. Primary play is the activity with materials aimed at gratifying immediate desires or instincts, while secondary play is the activity performed with awareness aimed at an end which is beyond the immediate gratification of desires. For example, a baby trying to grasp a rattle is engaged in primary play. The end is the pure satisfaction of grasping it. When the pupil later uses the skill - he has learnt to grasp the rattle in order to make a noise - he might be said to be indulging in secondary play (Liebeck, 1987).

Secondary play involves abstraction, symbolization or generalization. 'Abstraction is a process of extracting what is common to a number of different situations. Symbolization, on the other hand, is the use of symbols, either spoken or written, to represent ideas which have been assembled by the process of abstracting. Generalization is the process of extending an idea to include new situations' (Liebeck, 1987:244).

Bruner concurs with both Piaget and Dienes, that the means of building concepts lie in the following three modes of representing the world: the enactive mode which corresponds to physical experience, the iconic mode which is related to pictures; and the symbolic mode which is related to spoken language and written symbols (Liebeck, 1987).

The most important aspect emphasized by these learning theorists is that learning should be based on pupils' experiences. Exercises given to pupils should be simplified into topics with which the pupils are familiar and which they can verbalize with the help of the teacher.

The emphasis of these theories of learning on pupils' experience can also be seen in the learning models which emphasize that pupils should develop for themselves ways of exploring and viewing the world around them (Harlen and Osborne, 1985).

When considering how young pupils learn, the theorists examined all stress the fact that pupils' ideas and experiences are the most important aspects to be considered in relation to their acquisition of knowledge. Current learning theories maintain that the acquisition of knowledge does not depend on the teacher as a transmitter of knowledge, but that the teacher's rôle is to aid pupils in making sense of their ideas and experiences (Bodner, 1986). Therefore, teachers should shift from teaching by imposition to teaching by negotiation if they wish to incorporate pupils' pre-conceptions into the learning experience. This will exercise a two-way flow of information between teachers and their pupils. In summary, the learning theories considered above all emphasize a learner-centred approach and stress the following:

1 The pupils' need to belong, to feel accepted and to be part of a social setting, shows that the social development of the pupils should be given priority.

2 Pupils at the JP phase operate in the concrete operational stage, and thus need opportunities to actively explore their physical environment and solve problems through manipulation of concrete objects.

3 The use of the pupils' immediate environment before moving on to other neighbouring environments is important when using pupils' experiences in concept-formation.

4 Any subject, for example ES, taught in the JP phase, should help in the development of the pupils physically, emotionally and intellectually, but above all else they should focus on the pupils' developing sense of identity.

When comparing current learning theories with the rationale given for the introduction of ES in the JP phase, it would appear that ES emphasizes an integrated and learner-centred approach.

2.4 CATLING'S CRITERIA IN RELATION TO CURRENT LEARNING THEORIES AND THE AIMS OF ES

Catling's (1987) reply to the then Secretary of State, Sir Keith Joseph's request for a justification for the inclusion of geography in the British school

curriculum, reflects and encapsulates current thinking about the rôle of geography in the young learner's development. Although Catling's criteria for the planning and development of curricula for the primary phase centred on geography, an analysis of his criteria reveals its applicability more generally to those school subjects which are concerned with the pupil's developing sense of identity. Thus, Catling's criteria, analysed below, may be applied to a subject such as ES to serve as the basis upon which ES programmes are developed and evaluated.

Catling (1987:19) focused on pupils' experiences and their personal social needs in the development of a curriculum which is designed to meet the needs of the pupils' developing cognitive map. The major elements of his criteria relevant to our purposes may be summarised as follows:

1 The pupils need to develop a sense of place and time. Thus, the content should start with the pupils' world, that is, the pupils' immediate environment, and move to other environments, for example, the pupils' neighbourhood. These programmes should build upon and extend pupils' interactions with places, through first-hand experience and through secondary sources. Therefore, the content should become a tool which allows the pupil to make sense of his world. The content should value, examine and enhance pupils' territorial understanding and help to build an appreciation of territorial relationships in the wider world. Finally, the content of programmes, such as ES, should examine people's experience of place, so that pupils are able to consider what it would be like to be a person living in another place, thus encouraging their ability to imagine places (Catling, 1987).

2 The need for pupils to develop socially. Thus, the content of ES in the JP phase should provide pupils with an awareness of, and empathy for, the diversity of the world around them. The content should broaden and deepen their cross-cultural and international understanding.

Programmes such as ES should furthermore make pupils aware of themselves as people who have rights and responsibilities, including the responsibility to respect the rights and responsibilities of others. An essential aspect of the pupils' social development is helping them towards understanding and clarifying their attitudes.

Therefore, ES is a legitimate vehicle for the development of social values. Emphasizing values, such as quality of life and the need for conservation, can contribute to the development of the pupils' evolving value system by providing a concrete and appropriate setting which allows for the discussion of moral issues (Nicol, 1977).

The application of Catling's criteria to the evaluation of ES programmes falls within the following five domains:

1 The way in which ES aids pupils' spatial perception.

2 The extent to which pupils' utilization of space is made effective.

3 The extent to which pupils are taught to enjoy and value their environment.

4 The degree of skill development which is promoted by the programme.

5 The way in which pupils are initiated into change and how to cope with it.

2.5 AIMS AND OBJECTIVES OF ES IN RELATION TO BOTH LEARNING THEORIES AND CATLING'S CRITERIA.

An analysis of the aims of ES as presented by the 1979 Cape Education Department syllabus reveals the following similarities with Catling's criteria and current learning theories:

1 In advocating the need to give pupils a clearer idea of themselves as individuals, as people with needs and desires, with lives to be lived happily and usefully, ES may be related to a perceived need expressed by both learning theorists and Catling for the child to develop a social identity.

2 ES emphasizes, as does Catling and learning theorists, a need for pupils to develop a sense of place. This, it is suggested, should be done by encouraging pupils to learn about their own environment and community and to explore other communities and environments.

3 By emphasizing the need for pupils to observe, to discover and to experiment, the ES syllabus highlights the need for skill development as an integral part of the pupils' acquisition of knowledge. Thus, by encouraging pupils to observe and to discuss and to solve problems, ES is in accord with current learning theories which see the pupil as an active participant in the learning experience.

An analysis of the content suggested for ES, however, reveals that very little emphasis is placed on pupils' understanding of places beyond their own local environment, despite the suggestion in the aims of the syllabus that pupils should move beyond their local environment.

Despite this discrepancy between the aims and the content of existing syllabi in general, ES as envisaged for South African schools is closely related to current learning theories which acknowledge the pupils' need to develop a sense of identity and to develop skills which will allow them to survive in a rapidly changing world. Aims, however, can only be achieved through the use of teaching strategies that are relevant and appropriate for the younger learner.

2.6 TEACHING STRATEGIES APPROPRIATE FOR TEACHING ES

According to Gunn (1980), teaching strategies relevant to ES are simulations and inquiry techniques. However, other commonly used techniques such as group teaching, group work, theme-teaching and topic work seem equally appropriate to the teaching of ES. Implicit in these teaching strategies is the desire to develop a variety of skills.

1 Simulations and games

'Educational simulations are systems representing essential aspects of reality in order to organise information to pose problems or to stimulate interest' (Gunn, 1980:21). Three types of simulations are considered below. These are:

(i) Board games with dice, where elements of reality to be taught are incorporated into the positions on the board.

(ii) Rôle-play exercises, where pupils play rôles and debate issues and try to come up with some compromise solution. This copies real situations.

(iii) Competitions are also games and simulations which normally test knowledge and skills (Hurry, 1989).

Simulations and games aim to: develop participation in group activity; establish social skills in talking, negotiating, persuading and working with other pupils; develop literacy and numeracy through incidental work required; encourage the practice and development of decision-making in a rational and considered manner; and combine thoughts and feelings about situations and problems (Walford, 1981).

The advantages of simulations and games are that they are able to develop: empathy with people of other places and cultures; the understanding of working processes and systems; and the realisation of the interdisciplinary nature of most 'real life' situations (Walford, 1981). Pupils can also develop skills, like oracy, through simulations and games.

On the other hand, the following disadvantages of simulations and games should be borne in mind: that they are time-consuming and time-demanding; that many games are expensive; and that there are operational problems where pupils, teachers and parents are not familiar with the use of simulations and games (Walford, 1981).

2 Inquiry techniques

The five main phases of inquiry are:

(a) defining a problem - the teacher should present problems and adjust them to the world of the pupils.

(b) hypothesising - an educated guess that provides some possible answers. The teacher should assist pupils to generate hypotheses.

(c) testing hypotheses - possible answers should be tested against documentary evidence.

(d) generalising - some hypotheses can be discarded, others can be reconstructed.

(e) testing the conclusion - check whether conclusions apply to wider areas (Gunn, 1989).

The advantages of inquiry techniques include the following:

(i) pupils find out things for themselves rather than having to be told everything;

(ii) pupils learn to think for themselves;

(iii) the pupil can acquire the general skill of drawing conclusions and solving problems in a simple way (Woods and Barrow, 1979).

This technique also has the disadvantage of being time-consuming, in that some pupils take a lot of time to solve a problem because it depends on the pupil's ability to lead to a conclusion. Furthermore, there are some areas of study that do not lend themselves to the inquiry technique. The teacher should choose areas of study carefully and must know whether the technique is appropriate or not for the area. For example, the mere fact that the pupils discover something for themselves is not necessarily valuable (Woods and Barrow, 1979).

3 Group teaching

It is possible to handle all the subjects in the curriculum with pupils working either in groups or on their own. All members of the class take part in a teacher-conducted class lesson. Thereafter, they disperse for group work, with one group under the supervision of the teacher and others working on assignments (Lawrence, 1971).

Members of the class are divided into groups according to their ability in particular subjects and one group at a time is taught and/or supervised by the teacher. The aims of this method are to train pupils to work independently and occupy themselves when not directly supervised; to encourage self-respect, self-confidence, self-control and self-discipline in every pupil; to ensure self-paced productivity; to learn consideration for others with whom they have to spend time in a confined space; and to give pupils opportunities to learn from one another by discussing their observations, discoveries and difficulties among themselves and with the teacher (Lawrence, 1971).

Mayo (1991) points out some instances in which teacher incompetence or lack of facilities may cause the method to be ineffectually applied, and these are:

1 Poor classroom organisation.

2 Lack of apparatus which often leads pupils to boredom and disruptiveness.

3 Poor instructions and explanations.

4 Lack of supervision.

5 Increased noise level caused by the use of tape recorders.

6 Inadequate preparation and poor record keeping.

7 Group rivalry where the teacher has to watch out for unkind comparisons.

8 Sense of inferiority and lack of harmony with each group.

4 Group work

This method is different from group teaching - it is a small group discussion. Its purpose is to provide an opportunity for every pupil to speak and to share his or her ideas with others, as well as to benefit from the interchange and interaction (Jones, 1988). The aims of group work are to help pupils to make sense of information and solve problems for themselves, and to offset the didactic approach where only teachers and a few capable or confident pupils make any verbal contribution (Jones, 1988).

According to Hardy (1980) and Anning and Brown (1984), the advantages of group work are to allow pupils to learn to listen; to offer explanations; and to negotiate with each other. These skills are vital for establishing good relationships in a family, in work, in the neighbourhood or in society generally. These discussions promote communication, with the teacher helping pupils to use their knowledge in solving problems. The time spent in discussion improves the general level of social confidence and reacts favourably upon other aspects of learning. This method keeps learning alive for both the teacher and the pupil.

5 Theme-teaching

Dowton (1983) argues that the thematic approach to teaching and learning provides a framework for inter-disciplinary study, through which the pupil experiences a diversity of techniques and practices, catering to the development of the individual pupil as well as providing for the class as a whole.

In addition, Dalton (1985) has stated that the thematic approach links thinking skills and talking activities to form an integral part of current classroom activities, especially when theme units include those that are familiar as well as some more unusual ones that invite further exploration. These units are intended to broaden the approach to discussion, thinking skills and themes.

If the unit involves practical activities which aim to challenge all pupils in the primary school, the needs of pupils with special abilities have to be taken into account and every unit should include some activities which are appropriate for use with pupils both in the classroom and in special groups (Dalton, 1985).

The advantages of theme teaching are that it serves:

1 To enable the teacher to make more effective use of available resources.

2 To maintain a high level of interest and output.

3 To facilitate the application of basic skills to practical situations.

4 To encourage critical and constructive thinking.

5 To develop research and problem-solving skills.

6 To foster co-operation, initiative and responsibility in members of the class.

7 To develop creativity and diversity of thought (Dowton, 1983).

Theme teaching, if overused, will lead to boredom on the part of the pupils. Secondly, it results in more work for teachers because it needs careful

planning and thorough knowledge of the topic concerned (Scott, 1991). However, theme teaching remains the most appropriate and important strategy for integrating subjects in JP schools.

6 Topic work

According to Flint (1988) topic work is the vehicle by which pupils are introduced to the key ideas, skills and attitudes of the subject. Topic work occupies approximately 75% of pupils' time in some schools.

Tann (1988) defines topic work as an approach to learning which draws upon pupils' concerns and which actively involves them in planning, executing, presenting and evaluating a negotiated experience. Control is a shared responsibility in topic work. It is a way of teaching and learning. Primary teachers believe that topic work is an appropriate way for young pupils to learn, unhindered by traditional subjects (Pountney, 1990).

Topic work is popular in schools because it provides for a cohesive, interdisciplinary approach; it captures pupils' interests and leads to motivation; provides work at the appropriate level for individual pupils; allows for pupil choice and initiative in tasks; encourages pupils to observe, question and think; and allows for more versatile approaches to materials and teaching methods (Flint, 1988).

Aims of topic work as detailed by the Schools' Council Project are: to provide work to cater for individual pupils' abilities; to promote knowledge and appreciation of the environment; to give opportunities for the practice of basic skills; to follow a variety of themes; to foster an interdisciplinary approach to learning; and to encourage pupil curiosity, interest, enjoyment and pleasure in learning (Flint, 1988).

However, the following criticisms of topic work have been made:

1 Topic work fails to deliver significant elements of the curriculum in a coherent way.

2 Planning may be subjective or arbitrary and will not reflect pupils' thinking.

3 Knowledge may be rendered in a way that does not relate to pupils' thinking.

4 Application of certain skills may have no real meaning for pupils.

5 Problem-solving by the pupils and the teacher has pre-determining solutions for the problem in order to ensure precise learning outcomes (Saunders, 1990).

Topic work can also be done as project work, where the pupils have to use the library to obtain information for any given topic. Project work can be a class project, done by all pupils at the same time in the classroom or library, using textbooks, atlases or other books. Projects can also be done individually. A central theme can be divided into smaller topics and pupils can be assigned topics according to their abilities. Projects can also be done to promote group work. Groups can be instructed to collect information which they can share with the class (Jordaan and Alberts, 1990).

The above teaching strategies are considered to be the most appropriate for use in JP schools in the teaching of ES. Teaching strategies have to be used in conjunction with teaching resources. Teaching resources chosen should be appropriate to the level of development of the pupils; they should be easily understood by the pupils and be easily manipulated so that pupils can also use them in individual and independent projects. The right resources also assist teachers to put their knowledge of learning theories, teaching strategies and skills into practice. It therefore seems appropriate to turn now to the question of resources that are relevant to the JP pupil.

2.7 RESOURCES RELEVANT TO THE JP PUPIL

1 The chalkboard

The chalkboard is still the best and most convenient teaching aid that is available to the teacher. On it the teacher can build up a scheme of main points during the lesson. Appropriate sketches, graphs, maps and graphic representations required to explain the learning content may be drawn on the chalkboard. Names of places and foreign words can be written on the

chalkboard. The writing surface can be used for displaying pictures and photographic material (Hurry, 1989; and Jordaan and Alberts, 1990).

A limitation of the chalkboard is that it takes time to write on it, thus the teacher's back is turned to the pupils and communication with them is disrupted. Secondly, if the scheme is erased it has to be written on the board again whenever it is needed (Jordaan and Alberts, 1990).

2 Pictures and slides

The teacher can collect a considerable number of pictures, sketches and photographs to use as illustrations during lessons. There are unlimited sources for this, for example, periodicals, supplements to newspapers and magazines, old calendars, advertisements and brochures. Pictures can also be bought commercially (Hurry, 1989; and Jordaan and Alberts, 1990). Information offices and embassies are also willing to provide information.

The pictures, sketches and photographs collected must be large enough for all pupils, including those at the back of the classroom, to be able to see the details. If small pictures are used then the class can be organised into groups (Hurry, 1989; and Jordaan and Alberts, 1990).

Each picture can be used in a variety of ways. The teacher must teach the pupils to be able to read and interpret pictures. The teacher should analyse the details being shown and answer appropriate questions. The way in which the pictures are used will depend on the section of work being studied (Hurry, 1989; and Jordaan adn Alberts, 1990).

3. Models

Pupils and teachers can make interesting scale models for use in class. Models could be made of animals - sheep and cattle, or any other animals (Jordaan and Alberts, 1990).

Geography and ES are three-dimensional subjects. The pupils are learning about their environment and this environment has depth, length and breadth. A model is often the only really satisfactory way of teaching a topic. Teachers

should concentrate on models that show only basic principles. Models should be constructed out of durable materials so that they can be used repeatedly (Hurry, 1989).

There are many types of models, for example, plaster of paris models can be used to portray hilly regions. The sand tray and paper models can be used for the home region; papier-maché models can be used for landscape features; polystyrene models are useful for explaining how atlas colours are used to show height and cardboard cut-out models are useful for teaching height representation on maps. Lastly, there is the glass model, for contours of saddle-backed hills or synoptic weather map pressure lines (Hurry, 1989).

4 Collections and samples

Samples of agricultural products, ores, industrial products, etc., can be collected and used as aids during appropriate lessons (Jordaan and Alberts, 1990). Teachers should keep as many objects of interest as possible to show to their classes. For example, rock samples are far more interesting than a mere description. Animal bones, types of seeds, leaves, food labels and bottles containing different types of soil, are examples of objects of interest (Hurry, 1989).

Pupils should also be encouraged to contribute to the collections. There should be three tables in the classroom to act as display areas. One table could be used for displaying objects of relevance to work currently being studied. The second table could be a general interest table and the third could be the nature table to be used for displaying history items, for example, rocks, seeds, leaves, birds' nests, etc. (Hurry, 1989).

When a pupil contributes to any collection, the attention of the class should be drawn to it. A brief explanation for younger pupils could be written on a piece of paper, for example, 'Bill brought us a piece of granite. A hard rock found in the hills near the school'. Older pupils should be encouraged to write their own comments (Hurry, 1989).

5 Radio and television

These can be used to encourage the pupils to be active and interested; to make them aware of their own environment and the wider world; to create empathy not only with the person who lives far away but also with the person just around the corner, and to help develop simple skills, such as map reading or observation and recording or finding, conveying and analysing information (Wright, 1981).

6 Books

Few pupils are able to absorb and understand all they see or hear for the first time. Books, properly used, allow pupils to learn at their own speed. They provide a valuable source of 'follow up' material that may be linked with periods of discussion and other audio-visual aids (Harris, 1981:83).

7 Use of museums

Museums are very useful because they bring a lesson to life. Museums bring realism nearer with their specialised resources. Each museum has its own particular range of exhibits and ways of presenting them to pupils (Baines, 1981).

8 Outdoor learning

Outdoor learning is one of the educational activities that have the potential to influence attitudes and values. Used properly, it can help pupils develop environmental attitudes that will contribute to the long-term well-being of the environment and the long-term health of people. It should help pupils to develop an aesthetic appreciation of both natural and man-made forms within the environment; develop responsible attitudes to environmental issues; develop a value system and personal code of conduct that reflects this attitude; and to make independent, wide-ranging and objective judgements about environmental issues and the people involved with them (Hurry, 1989; and Jordaan and Alberts, 1990).

The JP pupil in the outdoors

The world is a logical place for the individual pupil and everything has to have a reason. JP pupils are able to sort and classify by characteristics. They are able to recognise that the character of an object remains the same even if its appearance changes. However, their reasoning is still limited to hands-on situations in which they can see, touch and recognise their surroundings. Problems should be simple and have a logical structure. Emphasis should be on studying anything that interests the pupils, with no particular specialisation in any one subject. The holistic approach should be adopted (Opie, 1989).

Outdoor work can be very useful in ES, as suggested earlier in the discussion of the development of the sense of place and time. Outdoor work should start in the immediate environment of the pupils, for example, in the school playground or school yard, and move further afield.

All of the resources discussed above are very appropriate in the teaching of ES in JP schools.

2.8 SUMMARY

Teachers should not just give information to pupils. An education system that is relevant to the needs of pupils should also encourage the development of attitudes and values that will benefit both the individuals and society at large. That is why the emphasis of the above discussion is on teaching strategies and resources that are learner-centred and not teacher-centred.

It should also be borne in mind that the world is changing rapidly and there is much to learn and too little time to learn it. Education needed for today's pupils needs to be lifelong to competently adapt to a changing world. Teachers should help pupils adapt and become lifelong learners. They should avoid teaching too many disconnected facts, principles and rules and should emphasize teaching pupils ways to become self-directed, competent learners and critical thinkers. Teachers should develop thinking skills and reasoning. They should provide pupils with interesting problems and materials to increase curiosity.

The classroom is the most important stage on which the JP pupils perform. It is at school that pupils test their intellectual, physical, social and emotional competencies to find out if they can equal the standards set by their parents, teachers and society as a whole. It is at school that pupils develop confidence in their abilities to perform, master the world and develop social relationships. The school plays a critical rôle in the healthy development of the pupils. It should offer intellectual excitement and encourage pupils to think independently (Craig, 1989).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The purpose of this study is to analyse and to evaluate the existing ES programmes in a selection of DET, Cape and Transkei Education Department schools in relation to the educational needs of the JP pupil. In order to achieve this goal, the procedures set out below were followed:

1 Semi-structured interviews with practising DET, Cape and Transkei teachers were conducted to ascertain the teachers' perceptions of, and attitudes to, the ES syllabus in relation to their pupils' needs.

2 An analysis of the current ES syllabi in the DET, Cape and Transkei Education Department schools was undertaken by applying Catling's criteria to the syllabus aims and content.

3 Existing ES programmes were evaluated by means of a purposive sample of six schools. Three of the schools chosen were in the Umtata and Mqanduli districts in Transkei, while the other three were in the Grahamstown district in the Cape Province. The programme evaluation was based on non-participant observation of classroom activities and of the schools' ES programmes. Observation schedules for classroom observation were drawn up and applied using Catling's criteria.

4 Both the interview results and observation schedules were analysed qualitatively by discussing and comparing various views and activities.

Before considering the methodology used in this study, it is necessary to analyse the concepts 'perception' and 'attitude'. This is deemed necessary since the teaching of ES depends largely on the individual teacher's interpretation of the guidelines provided by the syllabus. This interpretation, in turn, depends on the perception and the attitude of the individual teacher.

3.2 CONCEPTUAL ANALYSIS OF PERCEPTIONS AND ATTITUDES

The term 'perception' has been defined in various ways. Two of the most commonly recurring definitions are the following:

1 "Perception is the meaning people attach to the information received through their senses, which is constructed partly from objective reality, and partly from the way people organise information" (Woolfolk and McCune-Nicolich, 1984:197).

2 "Perception is the way in which individual human beings or groups of human beings view the world around them" (Cole, 1973:239).

Thus it would appear that both individuals and groups of people have their own points of view in respect of time, place, events, other people and other countries.

It is also important to note that what one directly experiences or perceives means much more than information gathered secondhand.

In ES, teachers are primarily concerned with the world of pupils and pupils' experiences. ES, therefore, seeks to aid children to develop social identities through development of their sense of time and place.

Gestalt theory is based on the belief that people tend to organise their perceptions into patterns or relationships in order to make sense of the world. The basic principle of Gestalt psychology called 'Pragnanz' states that patterns are recognised by re-organising stimuli so that they become simpler, more complete and more regular than they actually are. The role of teachers in ES is, therefore, to help pupils to use their individual experiences and knowledge in order to understand and to make sense of the world around them (Woolfolk and McCune-Nicolich, 1984).

Before teachers are able to provide the sort of guidance pupils require in order to make sense of their world, it is necessary for teachers to clarify their own perceptions and to understand their pupils' perceptions. Unfortunately, when interpreting a syllabus such as that of ES, teachers frequently tend to use their own frame of reference rather than attempting to understand that of their pupils.

Teachers' expertise and experience will, furthermore, influence their interpretation and implementation of a syllabus such as ES. For example, ES teachers who are familiar with theme-teaching perceive ES as an integration of all subjects that can be taught easily through one theme, while others perceive ES as health education because of the topics covered in the ES syllabus. There are also those teachers who perceive ES as a subject dealing with nature, and as a result they tend to concentrate on the natural environment and neglect the social environment.

However, teachers ought not to be forced to perceive ES in the same way, as their perceptions of ES should not only be shaped by their own experiences but also by the needs of their particular pupils. Yet in spite of the flexibility that is necessary in ES, teachers should understand the general goal of ES, which is to develop the pupil's sense of identity.

Slater (1982:91) defines 'attitudes' as packages of beliefs which influence people's decision-making and behaviour.

As with perceptions, attitudes are unique to each individual because people do not receive the same sensory inputs in the same manner or order. Woolfolk and McCune-Nicolich (1984) state that attitudes are learned both through positive and negative experiences and through modelling. The assertion is that positive attitudes are generated through successful performances.

Two things that influence people's attitudes are 'knowing what' and 'knowing how'. 'Knowing what' has to do with verbal information which includes the content of the subject, for example, facts, names, descriptions, dates and characteristics. An ES teacher will have a positive attitude if she knows what to teach, that is, if she knows the content of ES (Woolfolk and McCune-Nicolich, 1984).

'Knowing how' is an intellectual skill that makes it possible to use symbolic and verbal forms of communication. Through symbols the teacher can interact with his pupils and with the environment indirectly, using mental manipulations and calculations to solve problems (Woolfolk and McCune-Nicolich, 1984).

In the current situation in Transkei, teachers generally know what to teach if they follow the current departmental syllabi. The real problem which affects teachers' attitudes to ES would appear to be a lack of 'knowing how'.

Since individual experiences vary both in terms of circumstances and teaching expertise, attitudes therefore reflect the learned behaviour of an individual who has been shaped by positive and negative experiences.

In seeking to identify teachers' perceptions of and attitudes to ES, this study will analyse not only how teachers perceive ES but also what teachers' perceptions are of their pupils' needs.

3.3 RESEARCH PROCEDURES

This study was completed in two phases.

1 The first phase involved a series of interviews conducted in the six selected schools.

2 The second phase evaluated ES in these schools through classroom observation and an evaluation of the schools' ES programmes where these differed from the formal syllabi.

A common problem in research of this nature is the difficulty of establishing validity and reliability. "Validity refers to the extent to which a measure actually measures what it is supposed to measure", while "reliability involves the extent to which a measure is consistent and the degree of consistency should occur upon repeated application" (Dane, 1990:261-262). In the course of the discussion which follows, attempts to resolve this problem, as far as possible, will be considered.

3.3.1 Phase I : The Interviews

Interviews are traditionally an instrument used to gather data in conducting surveys.

Surveys gather data at a particular time with the intention of describing the nature of the existing conditions, identifying standards against which existing

conditions can be compared, or determining the relationships that exist between specific events (Cohen and Manion, 1989).

Surveys involve one or more of the following data-gathering techniques:

> structured or semi-structured interviews; self-completion or postal questionnaires; standardised tests of attainment or performance and attitude scales (Cohen and Manion, 1989:87).

For the purpose of this small-scale survey, semi-structured interviews were employed.

A survey, such as was employed by this study, although small, enables the researcher to gather a broad range of data while concentrating on a specific problem relevant to the needs of the study (Cohen and Manion, 1989).

Interviews were chosen rather than questionnaires or other data-collecting instruments for the reasons discussed below.

According to Cohen and Manion (1989) a research interview is a two-person conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information. The interviewer focuses on content specified by the research objectives of systematic description, prediction or explanation. It also involves the gathering of data through verbal interaction between individuals.

In terms of design, interviews may either be structured, semi-structured or unstructured. In structured interviews set questions are asked and the answers are recorded on a standardized schedule. The main advantage of a structured interview is its uniformity of measurement which leads to greater reliability. The main disadvantage is that the interviewer has no freedom to do anything except nod and make 'neutral noises' (Burroughs, 1971:103).

In semi-structured interviews the researcher poses predetermined questions but has considerable flexibility concerning follow-up questions. The main advantage of semi-structured interviews is that they are less formal; the interviewer is free to modify the sequence of questions, change wording, explain questions or add to the questions; the interviewer can also probe for more specific answers to clear up any misunderstanding (Cohen and Manion,

1989). The main disadvantage of this method is its flexibility, because not every respondent is asked the same questions, thus reducing validity (Dane, 1990).

In unstructured interviews, the researcher encourages the respondent to discuss a topic but provides little or no guidance and very few direct questions. The main disadvantage of these interviews is that responses are idiosyncratic and make it impossible to analyse data obtained. The main advantage is that the respondent is given freedom and the interviewer can probe in order to elaborate on particular responses (Dane, 1990).

All interview methods are generally expensive, time-consuming and involve small samples. Research, however, shows that interviews have high reliability, but their validity is lower than that of a questionnaire (Dane, 1990:129).

In spite of the limitations of interviews, their flexibility and the opportunities they provide for gathering in-depth data, led the researcher to choose this method.

Furthermore, the semi-structured interview format was chosen as it met the needs of this particular study, where a degree of structuring was needed to maintain reliability and validity. The structuring, administration and evaluation of interviews will be considered later in this chapter.

3.3.2 Phase 2 : The evaluation of the ES programmes

This phase was initiated by analysing current ES syllabi used in the DET, Cape and Transkei Education Departments by applying an adaptation of Catling's criteria for the planning of the geography curriculum for the JP and Senior Primary phases, as discussed in chapter two.

3.3.2.1 Classroom observation

The ES programmes in the selected schools were evaluated through classroom observation, which may be seen either within the context of action research or in terms of a case study. This study did not involve the development and testing of new teaching material, but was simply concerned

with evaluating the existing syllabi. Furthermore, the observation was concerned with the evaluation of a particular unit of work within the schools' ES programmes. This study is, therefore, more closely aligned to a case study approach than to action research.

3.3.2.2 The case study

A case study typically observes the characteristics of an individual unit, for example, a child, a clique, a class, a school, or a community (Cohen and Manion, 1989:124).

The purpose of the case study is to probe deeply and to intensively analyse the multifarious phenomena that constitute the life cycle of a unit with a view to establishing generalisations about the wider population to which that unit belongs (Cohen and Manion, 1989). This predictive capacity, together with the factors set out below, led the researcher to choose a case study approach as the one most suited to meet the needs of the study.

Advantages of case studies

1 Data collected by means of a case study are based on reality, because the researcher is investigating a real situation under actual conditions.

2 Case studies allow generalisations either about or from an instance to a class. They pay attention to the subtlety and complexity of the case in its own right.

3 Case studies recognise the intricate nature and embeddedness of social truths.

4 The product of case studies may form a resource of descriptive material that can enable subsequent re-interpretation.

5 The results of case studies encourage active application, since their insights may be directly interpreted and put to use.

6 Data collected from case studies are often more accessible to the public than other kinds of research report.

7 Case studies may contribute towards the fair distribution of opportunities for decision-making and of knowledge itself. They allow the readers to judge the implications of a study for themselves (Bromley, 1986; Cohen and Manion, 1989; and Edwards, 1990).

The most commonly used procedure for conducting systematic observation in classrooms is that of live observation by the researcher (Croll, 1986).

Croll (1986:1) defined 'observation' as a process whereby observation is done through a systematic set of rules devised for recording and classifying events.

The advantages of live observation include the following factors:

1 The observer is generally unobtrusive in the classroom.

2 Such observation capitalizes on the flexibility of the individual observer.

3 Observers, furthermore, can easily switch attention between different individuals or different events.

4 A single observer can adapt rapidly to respond to what is going on (Croll, 1986).

This type of observation does, however, have some disadvantages which include the following:

1 the nature of the observation is limited by the requirements that it must be possible for an observer to observe and record simultaneously, thus limiting the complexity of observation (Croll, 1986);

2 observation is a slow process which can only deal with a small and non-random sample;

3 it is expensive of skills and time, as the individual observer often cannot spend much time, nor is able to travel long distances, which the topic may often demand (Burroughs, 1971).

Observation in this study focused on teaching strategies used by various teachers which were then assessed in terms of Catling's (1987) criteria for the curriculum content selected for geography and ES in primary schools.

The researcher was a non-participant observer who sat at the back of the classroom recording verbal exchanges between teacher and pupils by means of a structured observation schedule (Cohen and Manion, 1989). Observation was conducted in six classes, that is, two Sub A classes, two Sub B classes and two Standard I classes in the six selected schools in DET, Cape and Transkei.

The study proper was preceded by a pilot study, an acknowledged means to reduce errors and to increase the realiability of a study.

3.4 THE PILOT STUDY

A pilot study was undertaken in Transkei and Grahamstown in two schools. One school was a government school and the other was a private school. Six teachers were used, three from Transkei and three from Grahamstown, to test the feasibility of the study, including the adequacy of interviews and observation schedules as research procedures. Thereafter, the necessary corrections were made to produce the final functional research instruments.

3.5 RESEARCH SAMPLE CHARACTERISTICS

According to Cohen and Manion (1989), a sample is the population upon which the survey focuses attention. Such a sample enables one to collect information from a smaller group or subset of the population in such a way that the knowledge gained is representative of the total population under study. The researcher used probability sampling, which is a sample in which the probability of selection of each respondent is known (Cates, 1985:59). This sampling method enables the researcher to choose a sample which should resemble the defined population closely. Probability sampling generally increases the confidence of the researcher, because the sample is typical of the defined population (Cates, 1985). In non-probability sampling, which is any procedure in which elements have unequal chances of being included, it is usually impossible to determine the appropriate sampling distribution which is required for estimating the sampling error (Dane, 1990).

Probability sampling may utilize techniques such as simple random, stratified random, cluster sampling, systematic and stage sampling (Cohen and Manion, 1989). The researcher used cluster sampling, which involves randomly selecting hierarchical groups from a sampling frame. Cluster sampling was chosen because the researcher wanted to select a specific number of schools in order to conduct interviews and observations (Cohen and Manion, 1989; Dane, 1990).

Cluster sampling was chosen because the advantages outweigh the disadvantages. The advantages are that cluster sampling is less expensive than other methods, requires less time to draw a sample from a population and avoids administrative difficulties; while the disadvantage is that one cannot be confident that the sample is representative or typical of the defined population (Cates, 1985; Dane, 1990).

The sample used in this study consisted of six schools. In Transkei, three schools were selected, one private school in Umtata district and two government schools in Mqanduli district: one in an urban area and the other one in a rural area. It was felt that this would be the most representative sample possible under the circumstances. The other three schools selected for the study were located in the Grahamstown district. These schools were selected purely on the basis of convenience. However, an attempt was made to make them representative of the population by choosing two urban schools and a rural school. Private schools were chosen because of the understanding that they have a particularly interesting programme of ES. A government school was also chosen for comparison purposes.

There were 32 teachers teaching ES in the JP phase in the six selected schools. Fifty per cent of these teachers, that is, 16 teachers, were selected for interviews and classroom observation. This was done to ensure that the number of the chosen teachers was representative of all the teachers in the six selected schools. These were teachers teaching from Sub A to Standard 1.

3.6 THE DESIGN AND ADMINISTRATION OF THE RESEARCH INSTRUMENTS

The interview schedule was divided into ten questions. These questions were based on the programme used for ES; organisation and administration of ES;

resources used in ES; needs of ES teachers; short-term and long-term aims of ES; needs of pupils; whether or not the pupils' needs were fulfilled by the programme; problems of ES teachers; and the knowledge gained by pupils from ES programmes (Appendix 3.A).

The teacher observation schedules were divided into five sections. Section A was a general section asking general questions. The second section dealt with questions on the development of sense of place, time and social identity. The third section dealt with resources used, the fourth section dealt with the skills developed and the last section dealt with teacher and pupil input (Appendix 3.B).

The teacher observation summary was divided into two sections. Section A was a general section relating to general questions on the class observed; number of pupils; name of school; location of school; type of school; time when the lesson was observed; time span of the lesson; topic observed; and the statement of the aims of the lesson. Section B dealt with Catling's criteria in relation to the effectiveness of teaching strategies used; the extent to which the pupils' sense of place, time and social identity were developed; and the extent to which skills, such as social, language, numeracy, cognitive, aesthetic and practical skills, were developed (Appendix 3.C).

Interviews and observations were conducted in March, April, May and June 1992. The researcher conducted these interviews in person during working hours. The Transkei Department of Education was consulted to obtain the necessary permission (Appendix 3.D). In private schools, the headmasters were contacted by telephone to obtain permission to conduct interviews and observations in the selected schools from Sub A to Standard I. The same procedure was followed for the DET schools.

References to different sections were recorded according to the time schedule by the researcher while observing lessons in ES (Burroughs, 1971). After the teacher observation schedules were completed, the teacher observation summary was completed by the researcher. These were quantified using the Likert scale whereby a cross (X) in the appropriate rating column indicated the choice corresponding with the researcher's feelings.

For example, the following ratings were used:

1	=	Very Weak	or	Strongly Disagree
2	=	Weak	or	Disagree
3	=	Satisfactory	or	Uncertain
4	=	Good	or	Agree
5	=	Very Good	or	Strongly Agree

In Section A the ratings were:

Yes	=	5
No	=	1

These ratings were used to assign a code number to the responses. The primary task of this coding was to make the data more manageable (Cohen and Manion, 1989).

3.7 VALIDITY AND RELIABILITY OF THE INSTRUMENTS

The researcher was continuously aware of the problems of validity and reliability in terms of the research instruments used. The discussion below considers attempts made to reduce these problems where possible.

The interview and observation schedules were scrutinised by colleagues and by the supervisor in order to identify and eliminate errors and to check their accuracy and uniformity.

Construct validity was applied to both instruments by evaluating the extent to which comparisons and contrasts were affected by the instrument. Furthermore, the use of Catling's criteria provided a standardized measure against which to evaluate the programmes (Dane, 1990).

Reliability was tested by the test-retest technique (Cohen and Manion, 1989). This technique involves presenting the same measure to the same people at two different times and then comparing the results. The test-retest method was feasible since the survey included only six schools. Furthermore, five respondents were interviewed and observed twice within an interval of two weeks to check the consistency of their responses and classroom activities.

A further method of increasing the reliability and validity of the study was the use of 'Triangulation'. Triangulation involves the use of two or more methods

of data collection in studying aspects of human behaviour. Triangulation may also be achieved through the use of more than one observer. In this study methodological triangulation was used. This form of triangulation is designed either to employ the same method on different occasions or to use different methods on the same object of study (Cohen and Manion, 1989). In this study the latter applies.

According to Cohen and Manion (1989) triangulation has the following advantages:

1 The use of different methods of data collection increases confidence in the reliability and validity of the data, as exclusive reliance on one method may distort the researcher's picture of the particular reality under investigation.

2 Triangulation techniques provide flexibility which increases reliability, since many data-collecting methods are made possible.

3 Triangulation utilizes either normative or interpretive techniques, or it draws on methods from both these approaches and combines them.

3.8 DATA ANALYSIS

A qualitative rather than a quantitative approach was adopted as the purpose of the survey was to explore perceptions of teachers and to analyse and evaluate the use of Catling's (1987) criteria in various ES programmes. This factor is allied to the fact that the number of interviewed teachers was too small to be representative of more than the schools selected or to permit generalisations using statistical procedures. Hence, the data for the interviews were analysed by comparing teachers' perceptions of ES with particular regard to:

1 Their understanding of the concept of ES.

2 The aims and objectives of ES.

3 The rôle and value of ES.

4 Organisation and administration of ES.

5 Teaching of ES with special reference to teaching strategies, resources and problems encountered by teachers in the teaching of ES.

This comparison of teachers' perceptions was based on the number of teachers who had the same or different opinions.

The observation schedules were analysed by applying an adapted version of Catling's (1987) criteria to the lessons taught in the six observed classes. Comparisons were then made in terms of the following criteria:

1. **Spatial perception**

This criterion considered the extent to which the programme aids the development of the pupil's spatial perception awareness and understanding; the extent to which the pupil's developing cognitive map is being catered for; and how it affects the pupil's territorial understanding and curiosity about other places (Catling, 1987).

2 **Use of the environment**

The second criterion considered the extent to which the pupil is being taught to be an effective user of his space; the extent to which the pupil is being educated about his environment; and the extent to which the programme explains the nature of the place and the main features of the place (Catling, 1987).

3 **Appreciation of the environment**

The third criterion considered the extent to which pupils are taught to appreciate what they have and to look after what they have; and the extent to which pupils are taught to enjoy and value their environment (Catling, 1987).

4. **Critical evaluation of the environment**

The fourth criterion considered the extent to which pupils are taught to be critical about their environment; the extent to which there are opportunities for pupils to evaluate their environment; and the extent to which ES programmes incorporate critical thinking skills (Catling, 1987). This criterion

reflects Brunerian and Constructivist thinking in that even very young pupils are perceived to be able to use thinking skills, provided that the tasks set are related to their level of development.

5 Children as developers of their place

The fifth criterion considered the extent to which the ES programme develops in pupils an understanding of how each individual interacts with the environment and has an impact on the environment; and the extent to which pupils know that they have the power to do certain things to bring about change (Catling, 1987).

3.9 LIMITATIONS OF THE STUDY

One limitation recognised was the narrowness of the study. This was unavoidable both in terms of the requirements of the half-thesis and because of constraints imposed on the study by time and costs.

The choice of private schools in the Cape also constituted a limitation, because they were both in the Grahamstown district and had an influence on each other; as a result there were similarities rather than differences in their approaches and the content taught in ES.

Perhaps a more serious limitation of the study is the lack of an indepth investigation into the socio-economic and cultural backgrounds of the pupils. This dimension would have provided greater relevance to the existing study. The scope of this thesis, however, prevented an investigation of this nature. So too, an analysis of the teachers' experiences and expertise would have further enhanced the study. This again, was beyond the parameters of the research. All that was possible in this respect, is the brief description of each school in chapter four.

3.10 SUMMARY

This study is primarily based on the analysis of teachers' interpretation of existing ES syllabi and on analysis of their perceptions of their pupils' needs. The small-scale survey which was undertaken to ascertain teachers' perceptions of ES and to establish their understanding of their pupils' needs

provided a valuable backdrop against which to evaluate methods and procedures used in the classroom.

The classroom observation was such that the data obtained in the six selected schools could be cross-referenced and checked against the interview results and Catling's criteria. An analysis of data obtained via the methodology discussed above will be presented in chapters four and five.

CHAPTER FOUR

PHASE 1 : INTERVIEW RESULTS

4.1 INTRODUCTION

Semi-structured interviews with sixteen teachers from the six selected schools were undertaken to identify teachers' perceptions of ES with particular regard to their understanding of:

1 the concept of ES;

2 the aims and objectives of ES;

3 the rôle and value of ES;

4 the organisation and administration of ES;

5 the teaching of ES with special reference to teaching strategies, resources and problems encountered by teachers.

This chapter presents the results of the interviews and analyses the implications of teachers' perceptions of ES for the effective implementation of the subject.

Before considering the results of the interviews, a brief description of each school will be given to contextualise the teachers' responses and the classroom observation in chapter five.

4.2 BACKGROUND OF THE SCHOOLS

School A is a private school in Grahamstown. It was founded by the Methodist Church and is controlled by its own council. This school provides a co-educational and non-racial envirionment. This school also aims to provide individual pupils with opportunities to develop spiritually, academically,

socially, culturally and physically; and to create an awareness of society and the responsibility of citizenship.

Although this school is non-racial, there are few Black pupils, consequently the cultural ethos is western-liberal. This is a very expensive urban school which can only be attended by pupils from affluent backgrounds. All the teachers who teach in this school are Whites.

School B is also a private preparatory school in Grahamstown, founded by the Anglican Church. This school also provides a co-educational and non-racial environment. This school is designed to promote a stable, caring learning environment for the pupils. There are also relatively few Black pupils at the school and the teachers are Whites. This is an urban boarding school which, like school A, is also very expensive.

School C is a private school in Umtata, Transkei. It is an independent, co-educational school which is open to all races. It is governed by a Board of Trustees and a school committee which works closely with the principal in the day-to-day running of the school. The school offers a sound academic environment and provides stimulating extra-mural activities.

The school is an urban day school. Most of the teachers are Coloureds, Ghananians and Blacks. Very few are Whites. Although this school is open to all races, most of its pupils are Blacks and Coloureds. Pupils come from affluent and middle-class families in Umtata.

School D is an urban government school in the Mqanduli district in the Transkei. It was founded in 1991 as the Transkei Education Department's first English medium school. Parents perceive English as the key to new advancement opportunities for their children and their area. The school has been given the freedom to develop an experience-based curriculum which enhances the childrens' interests in an understanding of local affairs.

There are two White teachers at the school and three Black teachers. All of the pupils in the school are Blacks. Since the school is a government school, the tuition is cheap and even pupils from poor economic backgrounds can afford to attend it. The classes are still held in temporary buildings because of the shortage of funds for building classrooms.

School E is a Junior Secondary school in the Mqanduli district. This is a rural co-educational government school. The school begins from Sub A through to Standard 7 and has only seven teachers, all of whom are Black. Sub A and Sub B are combined into one class, together with Standard I and Standard 2 because of the shortage of teachers.

Pupils in the school come from very poor socio-economic backgrounds and as a result most of them cannot even afford to buy the school uniform.

Until recently, Sub Standards A and B were taught outside because of the classroom shortages. There was a block of two temporary classrooms and the school had to borrow huts from the surrounding residential area. Classes were, resultantly, scattered all over the village. The principal has now negotiated with the Transkei Appropriate Technology Unit projects, and has received a block of five permanent classrooms.

School F is a rural government school in Grahamstown. This primary school (Sub A to Standard 3) was founded by the Methodist missionaries and was later taken over by the government in 1955. It is now controlled by the Department of Education and Training (DET). The school has made a vital contribution in the development of the Grahamstown community. It provides literacy and basic academic training to adults at night, in addition to the normal full school day. The school has new buildings that were officially opened in 1988. It is a beautiful school with twenty-six modern classrooms and twenty-six Black female teachers.

Pupils in this school come from a very poor socio-economic background. They live in the deprived townships of Grahamstown where there is a high unemployment rate.

4.3 THE COMPOSITION OF THE INTERVIEW SAMPLE

The interview sample consisted of sixteen, out of a possible thirty-two, teachers. The sample was composed as set out in Table 4.1

All the respondents were females and of the sixteen teachers all but two had more than five years of teaching experience.

TABLE 4.1

COMPOSITION OF INTERVIEW SAMPLE

		Region	Location	No of schools	No of teachers
PRIVATE SCHOOLS					
A	Umtata	Transkei	Urban	1	3
B	Grahamstown	Cape	Urban	2	5
GOVERNMENT SCHOOLS					
A	Mqanduli	Transkei	Urban and rural	2	4
B	Grahamstown (DET)	Cape	Rural	1	4

4.4 ANALYSIS OF INTERVIEWS

The interviews are presented and analysed in relation to the grouping of the questions on the interview schedule (Appendix 3.A).

4.4.1 Teachers' understanding of the concept ES.

Each teacher was asked to define what she understood by the term ES. The results are shown in Table 4.2.

The results revealed that all sixteen teachers identified ES as a composite subject variously incorporating subjects such as health education, religious education, geography, history and general science. There was, however, no common agreement as to how ES had been structured in terms of subject integration.

TABLE 4.2
DEFINITION OF ES

(n = 16)	Urban Private Schools			Government Schools			
				Urban	Rural		
	Gtn.	Gtn.	Umtata	Mqanduli	Mqanduli	Gtn.	
	A	B	C	D	E	F	Total
1 ES is the integration of subjects through themes	3	2					5
2 ES is the correlation of other subjects through topic work			3				3
3 ES is an approach used to integrate maths and English oral				2			2
4 ES is the incorporation of all subjects, for example, health, geography and history					2	4	6

There was no general agreement as to how ES should be approached. Eight teachers in the private schools perceived ES as an integration of subjects across the curriculum. Of these eight teachers, five stated that ES could be approached through theme teaching, while the other three asserted that ES could be approached through topic work. In the urban government school, two teachers perceived ES as having a limited integration with subjects such as English and mathematics, while in the rural government schools, six teachers saw ES as the incorporation of health education, geography and history. Two rural teachers in Transkei interpreted ES as health education.

The responses of the teachers interviewed and the analysis of the three syllabi used in these schools revealed that there was no common definition for ES. ES was defined by the various syllabi as follows:

1 According to the Cape Education Department syllabus, ES provides the foundation for history and all the sciences in later education.

2 In the DET syllabus, ES is incorporated as a single subject, whose content forms an initial, elementary study of the subjects geography, history and nature study.

3 In the Transkei private school, ES is seen as a branch of school activity that has to do with the child's development: physically, emotionally and socially (Appendix 4.A, 4.B and 4.C).

The only commonality in terms of definitions existed between the Cape Education Department and DET syllabi, with regard to the incorporation of history. It was, however, noteworthy that the responses of teachers interviewed did not reflect the definition of ES presented in the particular syllabus with which they worked.

An analysis of teachers' perceptions of the aims of ES in relation to the various syllabi aims provided a clearer picture of how teachers conceptualised ES.

4.4.2 Aims and objectives of ES

The interviews revealed that teachers perceived ES as being primarily a means to make pupils aware of their environment and to stimulate an interest and appreciation for the environment. It was, however, apparent from the results (Table 4.3) that teachers either tended to concentrate on the natural environment or emphasized the pupils' immediate environment, rather than interpreting the notion of an environment in the holistic manner advocated by Catling (1987) and the aims of the ES syllabi.

A detailed analysis of the responses revealed the following:

1 Ten teachers identified ES as a means to teach pupils about their immediate environment. Of the ten teachers, five taught in the private schools in Grahamstown and Umtata, while the other five are based in the urban government school in Mqanduli, Transkei and the rural government school in Grahamstown. The teaching of the immediate environment was, however, interpreted differently by the individual teachers as revealed by Table 4.3.

2 Eleven teachers interpreted the environment somewhat more broadly and included aspects related to the wider environment with a particular emphasis on nature and knowledge about nature. Of these teachers, six in the private schools stressed that ES is a means to promote interest, appreciation, love and care for nature. The five teachers in the government schools emphasized an awareness of and care for the environment.

TABLE 4.3

AIMS AND OBJECTIVES OF ES

(n = 16)	Urban Private Schools			Government Schools			
				Urban	Rural		
	Gtn.	Gtn.	Umtata	Mqanduli	Mqanduli	Gtn.	
	A	B	C	D	E	F	Total
1 To teach pupils about their immediate environment	2	1	2	1		4	10
2 To stimulate pupils' interest and appreciation, love and care for nature	2	2	2	1	2	2	11
3 To make pupils participate actively and develop socially within the class groups	1		1	1			3

3 Three teachers from the Transkei private school, a Grahamstown private school and a Transkei urban government school, furthermore identified ES as a means to encourage pupil participation and social development within the class groups.

An analysis of the aims of ES in the three syllabi used by the various schools revealed the following common purposes:

1 To arouse interest, love and the desire to know more about the pupil's own locality, his country, nature as a whole and about his own and other people.

2 To develop in the pupil an attitude of appreciation for the way of life of people in his own locality and elsewhere in the country.

3 To teach pupils to be aware of man's dependence on nature and the interdependence of man and man.

A comparison of the above aims with Catling's criteria revealed a close similarity in that ES emphasized the need to foster pupils' awareness, understanding, appreciation, and concern, for the environment through

studies related to both the pupil's immediate environment and the wider environment.

Once again, it was noted that the teachers interviewed did not interpret the purpose of ES according to the aims of the syllabi with which they worked. It would, therefore, appear from this analysis that the content of the syllabi was more closely followed and referred to than were the aims and objectives in the preamble of these syllabi.

In looking at the teachers' perceptions of the purpose of ES, the researcher felt that none of the respondents consciously, systematically and purposively developed their programmes in relation to the specific children's particular needs.

The interviews and the classroom observations, furthermore, revealed that teachers had not reflected in any real depth on the aims of ES either in relation to those prescribed by the syllabi or in terms of their pupils' specific needs.

4.4.3 The rôle and value of ES

Table 4.4 reveals that all the teachers interviewed perceived the most important rôle of ES as being a means to develop skills. All sixteen teachers interviewed emphasized cognitive skills which included writing, drawing, reading, counting, talking, observation and reasoning, but the eight teachers in government schools also emphasized the development of communication skills. One-third of the teachers emphasized that through ES pupils were able to learn to love nature and to live in harmony with their environment.

Other values perceived by teachers included environmental consciousness, where five teachers indicated that pupils who were taught environmental consciousness did not litter anywhere and they usually picked up papers. Of these five teachers, three taught in the private schools in Grahamstown and Transkei, while the other two taught in the rural government school in Grahamstown.

When comparing the teachers' perceptions of the rôle and value of ES with Catling's criteria it was interesting to note that teachers instinctively saw ES as a means for pupils to identify with places and to live in harmony with their immediate environment. This was seen by Catling as an essential aspect of a subject such as ES.

TABLE 4.4
ROLE AND VALUE OF ES

(n = 16)	Urban Private Schools			Government Schools			
				Urban	Rural		
	Gtn.	Gtn.	Umtata	Mqanduli	Mqanduli	Gtn.	
	A	B	C	D	E	F	Total
1 Develop skills, like writing, talking, observation and reasoning	3	2	3	2	2	4	16
2 Love nature and live in harmony with the environment			2	1		2	5
3 Children are taught environmental consciousness, e.g. collect papers, do not litter, etc.		2	1			2	5

Teachers, however, did not appear to understand the rôle played by pupils' curiosity in developing their sense of place, as only one teacher from the Transkei rural government school identified this aim.

As a result of this, teachers therefore appeared not to know how to capitalize on this aspect of pupils' development in their interpretation of ES.

Catling emphasized the need to build upon pupils' understanding of how places work; this aspect was interpreted by both teachers in the private and government schools as being environmental consciousness, which they perceived to be developed through observation and interaction with the environment.

Catling, furthermore, identified the need for pupils to develop skills, such as observation, graphicacy, oracy, literacy, numeracy, problem solving and communication in order for them to understand the environment. Teachers were also conscious of the relationship between knowledge and skill development in relation to ES.

It was, however, necessary to see whether teachers were able to relate their perceptions to the actual teaching of the subject, particularly in view of the

rather superficial examples provided by the teachers. Therefore, this aspect will be further explored in the analysis of the classroom observations.

4.4.4 The organisation and administration of ES

The interviews revealed that three schools had a specific syllabus for ES which they followed, whereas the other three schools did not have any specific syllabus guides for ES. Secondly, three schools had specific times set for ES, whereas the other three did not have any specific times set for ES.

TABLE 4.5
USE OF SYLLABUS GUIDES

(n = 16)	Urban Private Schools			Government Schools			
				Urban	Rural		
	Gtn.	Gtn.	Umtata	Mqanduli	Mqanduli	Gtn.	
	A	B	C	D	E	F	Total
1 No specific syllabus guide for ES	2	1		2			5
2 Specific guides used for ES and followed strictly			3		2	4	9
3 Government syllabus used to get ideas, not followed strictly	1	1					2
4 Teach current things happening in the environment:							
4.1 events to be celebrated	1						1
4.2 days marked in the calendar	2						2
4.3 historical events	3						3
4.4 childrens' interests and feelings determine the theme to be taught	3	2					5

Table 4.5 reveals the following in relation to the use of syllabus guides:

1 The private schools in Grahamstown did not follow any syllabus guide.

2 The Transkei urban government school did not have any specific guide for ES; instead, ES is integrated into mathematics and language (Appendix 4.D).

3 In schools where specific syllabi were used, these were rigidly adhered to. For example, the Transkei rural government school followed the Cape Education syllabus for ES (Appendix 4.A); the Grahamstown rural government school followed the DET syllabus for ES (Appendix 4.B); and the Transkei private school had its own syllabus guide (Appendix 4.C).

An analysis of the organisation and administration of ES through the use of syllabus guides revealed the following:

I The schools that had syllabus guides had definite routes to follow.

2 Schools that did not have syllabus guides had no definite route to follow and this could cause problems for new, inexperienced teachers. This could also be a problem for Heads of Departments (HODs), who had to supervise teachers with no common text from which to teach and to prepare lessons for ES.

3 Teachers from the Grahamstown private schools did not have syllabus guides and stated that they organized their programmes in the following manner:

(i) Three teachers from one private school indicated that emphasis was placed on events in the community and in the local environment.

(ii) Three teachers from the two Grahamstown private schools stated that childrens' interests and feelings determine the theme to be taught.

TABLE 4.6
TIMETABLE FOR TEACHING ES

(n = 16)	Urban Private Schools			Government Schools			
	Gtn.	Gtn.	Umtata	Urban Mqanduli	Rural Mqanduli	Gtn.	
	A	B	C	D	E	F	Total
1 No specific time set for ES	3	2		2			7
2 Specific time set for ES -							
5x15 mins/week			2				2
6x20 mins/week					1		1
7x30 mins/week					1		1
3x30 min/week						4	4
3x35 mins/week			1				1

Table 4.6 revealed the following in relation to the specific time set for teaching ES:

1 Seven teachers stated that they did not have any specific time set for teaching ES, but they also stated that they spent most of their time teaching ES through themes.

2 Nine teachers stated that they had a specific time set for teaching ES, and as a result they followed set timetables. Although all nine teachers followed timetables, the number of periods per week and the time set for each period varied from school to school and from class to class in other schools (Appendix 4.E, 4.F and 4.G).

The way in which a school organises and administers a subject such as ES will influence not only how it is implemented and interpreted, but will influence the extent to which the accepted aims (chapter two) are achieved.

4.4.5 The teaching of ES

As has been noted in chapter two, the teaching of ES can only be effective if the teaching strategies and resources used are appropriate to the level of development of the pupils taught. The following section is subdivided into three subheadings dealing with the teaching strategies, teaching resources used and problems encountered by teachers in the teaching of ES.

4.4.5.I Teaching strategies

TABLE 4.7
TEACHING STRATEGIES USED IN ES

(n = 16)	Urban Private Schools			Government Schools			
	Gtn.	Gtn.	Umtata	Urban Mqanduli	Rural Mqanduli	Gtn.	
	A	B	C	D	E	F	Total
1 Topic work	1		1	2	2	4	10
2 Theme teaching	3	2		2			7
3 Group work	1		1	2	1	2	7
4 Class discussion	2	1	1		1	2	7
5 Group teaching	1	1	1	2	1		6
6 Class teaching			1	2	1	2	6
7 Outdoor work				2	1	2	5
8 Project work	2	1	1				4
9 Experiments	2	1					3
10 Worksheets	2	1					3
11 Oral work	2						2
12 Childrens' news			1				1

The interview results in Table 4.7 reveal that a variety of teaching strategies were used by teachers interviewed. There was, however, not a single teaching strategy used by all the teachers in the study.

The most popular teaching strategy that was used by all the schools, except one private school in Grahamstown, was topic work. Group work was also used by all the schools, except for one private school in Grahamstown, while group teaching was used by all the schools, except for the rural government school in Grahamstown. The same applied for class discussion, which was used by all the schools except the urban government school in Transkei.

The most popular teaching strategy in the Grahamstown private schools was theme-teaching. This was confirmed by the fact that all five teachers who taught in these private schools followed this approach. There was also one government school that used this teaching strategy.

In the Grahamstown private schools, there was some uniformity in the teaching strategies used. For example, project work, group teaching, class discussion, experiments and worksheets. The latter two were teaching strategies that were used by the private schools in Grahamstown only.

The similarity in teaching strategies used in all the private schools occurred in group teaching, class discussion and project work. The latter was the only teaching strategy used by private schools only.

In the Transkei private school there was no teaching strategy tnat was commonly used. This is shown in Table 4.7, where only one teacher appears under each teaching strategy used.

There was a degree of uniformity in the teaching strategies used in the Transkei urban government school. This is evident in Table 4.7 where the two teachers stated that they used theme-teaching, topic work, group teaching, class teaching, group work and outdoor work.

Similarities in the teaching strategies used in the government schools in Transkei and Grahamstown occurred as regards topic work, class teaching, group work and outdoor work. The latter was the teaching strategy used by government schools only.

The only similarity which occurred in the Transkei government schools' teaching strategies was in the use of group teaching. The other similarity in the teaching strategies used by the Transkei rural government school and the Grahamstown rural government school occurred in their use of class discussion.

Topic work, group teaching, class teaching, group work and class discussion appeared to be the most popular teaching strategies. It must, however, be noted that teaching strategies not only differed from school to school, but also differed within the same school.

The teaching strategies indicated by the teachers interviewed are the most appropriate for the pupils in the JP phase as was shown earlier in chapter two. Classroom observations were also undertaken to ascertain the extent to which these teaching strategies were actually implemented.

Most of the teachers used topic work as their teaching strategy, because they followed the topics that were given in the syllabus. Very few teachers used theme-teaching, because most of them are not even aware of this approach. This was confirmed by nine of the teachers from the selected schools during the interviews. Teacher-tell is used more in the government schools owing to the large numbers of pupils the teachers have to teach. Strategies such as project work, experiments, worksheets and children's news, are used in the private schools because of the lack of resources and facilities in the government schools.. Generally, strategies used by the teachers were not related to the pupils' needs, but depended upon the awareness of teachers and their knowledge of the strategy and the availability of resources.

4.4.5.2 Teaching resources

Table 4.8 reveals the following with regard to the resources teachers claimed to use for ES:

> Private schools used more teaching resources for teaching ES than the government schools.
>
> In private schools there was no single resource that was used by all eight teachers when teaching ES, whereas in the government schools, all eight teachers participating in the study stated that they used reference books and charts as their main teaching resources.
>
> The teaching resource that was used most by both the private schools and the government schools were charts. Charts were used by all the schools except for one private school in Grahamstown, while reference books were also used by all the schools, except for one private school in Grahamstown. The same applied to models, which were used by all

the schools, except for one private school in Umtata. All the government schools used models, reference books and charts.

Teaching resources that were used by the private schools were outdoor work, samples and magazines, while newspapers were used by one Grahamstown private school and the Transkei private school.

There was only one similarity in the teaching resources used by the Transkei schools and that was in the use they made of real objects (Table 4.8).

TABLE 4.8
TEACHING RESOURCES USED

(n = 16)	Urban Private Schools			Government Schools			
				Urban	Rural		
	Gtn.	Gtn.	Umtata	Mqanduli	Mqanduli	Gtn.	
	A	B	C	D	E	F	Total
1 Charts		2	2	2	2	4	12
2 Reference books	2		1	2	2	4	11
3 Models	1	1		2	2	2	8
4 Pictures	3	1			1	2	7
5 Real objects			2	2	2		6
6 Outdoor work	3	1	1				5
7 Textbooks						4	4
8 Chalkboard	1	1			2		4
9 Maps		2			2		4
10 Museum	1					2	3
11 Samples	1	1	1				3
12 Magazines	1	1	1				3
13 Diagrams		1			1		2
14 Library	1	1					2
15 Newspapers	1		1				2
16 Toys	1						1
17 Television	1						1
18 Pamphlets	1						1
19 Photographs		1					1
20 Nature cards		1					1

Although museums provide programmes for JP, only two schools in Grahamstown used them as resources. It was also noted that although government schools used few teaching resources, there were similarities between the teaching resources they used and the ones used in the private schools. The teaching resources used by all the schools are appropriate to the level of development of JP pupils, as was discussed earlier in chapter two.

Classroom observation was done to see the extent to which these resources were used in the actual teaching of ES.

4.4.5.3 Problems encountered by ES teachers

This study cannot omit the problems that teachers encounter in their teaching of ES, as these have an effect on the effective teaching of ES.

Table 4.9 reveals the following results:

Private schools identified fewer problems than the government schools. The only teacher interviewed in the private schools who had experienced some problems, taught in the Transkei private school.

The problems that were common to the Transkei private school and the government schools were the need for more reference books and the shortage of funds for fieldwork.

The problem that was common to the government schools only was the high teacher-pupil ratio.

A problem that was common to both rural government schools was the shortage of teaching aids.

The problems that affected only the teacher in the Transkei private school were the need for more workbooks, restriction in areas of fieldwork by the headmaster and the need for textbooks based on the ES syllabus.

There were other problems that affected the Transkei rural government school only and these were:

- Shortage of teachers. This was confirmed by the two teachers who taught in this school. As a result one teacher taught Sub A and Sub B

with 189 pupils in one class; and the other taught 60 Standard 1 and Standard 2 pupils combined in one class.

2 Shortage of classrooms. The teacher teaching Sub A and Sub B together not only had to contend with an impossibly large number of pupils, but had to teach them outside as there was no classroom.

Problems experienced by teachers in the Grahamstown rural government school only were:

TABLE 4.9
PROBLEMS ENCOUNTERED BY ES TEACHERS

(n = 16)	Urban Private Schools			Government Schools			
				Urban	Rural		
	Gtn.	Gtn.	Umtata	Mqanduli	Mqanduli	Gtn.	
	A	B	C	D	E	F	Total
1 Shortage of funds for fieldwork			1	2	2	4	9
2 More reference books needed			1	2	1	2	6
3 High teacher-pupil ratio				2	1	2	5
4 Shortage of teaching aids					1	2	3
5 Shortage of teachers					2		2
6 Need for in-service training						2	2
7 ES not taken for examinations						2	2
8 More workbooks needed			1				1
9 Restrictions in areas of fieldwork			1				1
10 Need for textbooks based on syllabus			1				1
11 Shortage of class-rooms					1		1

1 The need for in-service training. This was indicated by two teachers from this school who stated that in-service training could help teachers to improve their teaching strategies.

2 The problem that ES is not taken for examinations. This was also highlighted by two teachers who stated that ES is not taken seriously in this DET school because it is not taught for examination purposes. As a result, teachers taught mathematics and English only.

4.5 SUMMARY

Interviews revealed that there was a general problem experienced by teachers in defining the concept of ES. There was no uniformity in the organisation and administration of ES. There was also no uniformity in the aims of ES. There were a variety of teaching strategies and teaching resources used for teaching ES. These teaching strategies and teaching resources varied from school to school and even within the same school. Teachers did not identify any common rôles and values of ES. This diversity in the way teachers perceive ES and in the organisation of ES would make it very difficult to achieve the aims and objectives of ES as spelled out by Catling (1988) in chapter two, above.

CHAPTER FIVE

PHASE 2 : RESULTS OF THE ANALYSIS OF ES PROGRAMMES AND CLASSROOM OBSERVATIONS

5.1 INTRODUCTION

The researcher observed ES lessons in the six selected schools in the Grahamstown, Umtata and Mqanduli districts as a non-participant observer and was guided in her observation by the use of an observation schedule (Appendix 3.B). At the end of each lesson, the teaching strategies employed by the teachers in relation to Catling's (1987) criteria were reflected in an observation summary (Appendix 3.C).

Three classes from Sub A to Standard 1 were observed in the three selected schools in the Grahamstown district. The other three classes from Sub A to Standard 1 were observed in the Mqanduli and Umtata districts at the three schools selected in Transkei (Table 5.1).

TABLE 5.1
COMPOSITION OF THE OBSERVATION SAMPLE

(n = 16)	Urban Private Schools (Gtn.)		Urban Private Schools (Umtata)	Government Schools (Urban Mqanduli)	Government Schools (Rural Mqanduli)	Government Schools (Rural Gtn.)	
	A	B	C	D	E	F	Total
1 Classes observed	Sub B	Sub A	Sub A	Sub B	Std 1	Std 1	6 classes
2 Number of teachers observed	1	1	1	1	1	1	6 teachers
3 Number of lessons observed	3	3	3	7	3	3	22 lessons

This chapter will present an analysis of:

1 the selected schools' ES programmes;

2 the observed lessons in the six selected schools;

3 the classroom observations in relation to Catling's criteria as adapted for this study.

5.2 AN ANALYSIS OF THE SELECTED SCHOOLS' ES PROGRAMMES

In analysing the participating schools' ES programmes, the researcher looked at whether the programmes had the potential to enable pupils to become more effective perceivers, users, appreciators, evaluators and developers of place (Catling, 1987). Thus, the analysis of the ES programmes was done in terms of the programmes' potential to develop pupils':

1 spatial perception;

2 effective use of the environment;

3 appreciation of the environment;

4 critical evaluation of the environment;

5 understanding of how they can play a rôle in the development of their environment.

Of the six schools observed, four had a definite year's programme, while the other two did not have any specific programme.

Catling (1987) emphasized the need for pre-planning since the key elements to be taught should be identified beforehand, noting that should this not be done, non-essential concepts are likely to be included, thus resulting 'in a clutter' of information (Catling, 1987:18). Planning at these two schools was done on an ad hoc basis. It was, therefore, difficult for the researcher to analyse and evaluate these programmes.

The remaining four schools based their year's programme for ES on the particular syllabi with which they were working (Appendices 4.A, 4.B, 4.C and 4.D).

Of the four schools under discussion, three followed prescribed departmental syllabi for ES, while the fourth school had designed its own ES programme

(Appendix 4.D) which adapted the existing Cape syllabus for ES to integrate with mathematics and English oral.

Therefore, the analysis which follows is based on the evaluation of the Cape ES syllabus (Appendix 4.A), the DET ES syllabus (Appendix 4.B), the Transkei private school ES syllabus which is adapted from the Cape Education ES syllabus (Appendix 4.C), and the urban rural government school ES programme which adapted the existing Cape syllabus to integrate with mathematics and English oral (Appendix 4.D).

5.2.1 Spatial Perception

Spatial perception is a process of heightening the quality of awareness and judgement in pupils when investigating their own environment (Hall, 1976:134). The concepts of time, space and perception are interrelated in this respect. Concepts of time and space are infinite, continuous and homogeneous.

Pupils should be educated to be spatially literate, to be able to orientate themselves by reading their landscape. Their education should help them to make spatial decisions, such as where to engage in particular activities and what routes to take for a particular journey. An informed concern about the quality of the environments and conditions which influence the quality of life in different places, combined with an appreciation of the processes which influence these, should help to prepare pupils to make their proper contributions as responsible members of the community and as adult members of society (Bennetts, 1986).

The development of spatial perception in the programmes analysed is catered for by themes and topics, such as 'People's needs', 'school', 'classroom' and 'home'. The knowledge is systematized, starting with the local environment and moving towards the study of other places. For example, a theme such as 'homes', could start with the building materials used in the building of the pupils' homes and then gradually consider different types of houses. Themes such as these encourage pupils to be imaginative and to develop their cognitive maps using a familiar environment first. The use of pictures and other visual material encourages pupils to imagine types of homes other than their own. The development of these themes also provides the opportunity for pupils to observe, think and express themselves, and encourages the development of pupils' natural curiosity.

Spatial perception can be further developed by teaching pupils about people and places, both in their local environment and in other environments.

The time component of space was not evident from the programmes studied. However, one of the schools observed, while not having a formal programme, included the sense of time by examining interesting historical events.

The content of the programmes studied gave very little information about how spatial perception could be developed in terms of activities done.

5.2.2 Use of the environment

All four programmes emphasize the use of the environment as a resource. This was implemented in an urban government school by integrating ES with mathematics and English oral. For example, pupils at this school were encouraged to be observant when coming to school. They were asked to calculate the shortest route to school in terms of the time taken. The teacher also included features in the home and school upon which to base lessons in addition, subtraction and multiplication.

The programmes studied incorporate observation of the facilities in the pupils' community, as well as enabling them to acquire knowledge about people concerned with these functions. The pupils can be taught to be effective users of their environment by asking visitors from their communities to come and address pupils on certain issues. Through these activities, pupils are able to learn that there are human resources in their environment. In this way, pupils could have non-threatening contact with policemen, firemen, postmen, doctors, dentists, traffic officers and many other professionals.

By starting with familiar themes, such as 'home' or 'classroom', the pupils can be further sensitized to the use of the environment with which they are familiar. The programmes' inclusion of topics such as the need for tidiness, orderliness or cleanliness, encourages pupils to develop positive attitudes towards their environment.

Physical processes in the environment are catered for to a limited extent through themes such as 'seasons', 'sun' and 'water'. These themes bring to the pupils' attention the natural processes at work in the environment.

While the programmes studied revealed an awareness of the importance of the environment as a resource, discussions with the teachers and the classroom observations revealed that this aspect could be developed considerably.

5.2.3 Appreciation of the environment

The programmes provide opportunities for pupils to develop an appreciation of the environment in the following ways:

1 By encouraging them to appreciate what they have and to care for their environments properly.

2 By providing opportunities to value the beauty of nature.

3 By encouraging the use of the environment to grow food; and

4 By providing opportunities to understand natural ecological processes.

Thus, pupils can be taught to enjoy and value their environment by keeping things in their proper places, making fishponds, growing lawns, flowers and trees. Under the theme 'food', they can be taught about growing vegetables; to develop healthy habits, such as thrift and proper care of the environment.

When the pupils are taught about 'the seasons', they can observe changes in the weather and the effects of these changes on the natural environment.

The programmes studied provide opportunities for pupils to be involved in and to contribute towards the environment. A general weakness of the programmes studied, however, is the apparent lack of emphasis on the development of skills which are essential if pupils are to acquire an appreciation of their environment. Thus, while the syllabi aims indicate the need to develop skills such as oracy, literacy, graphicacy and numeracy, there is a dichotomy between the aims and the actual suggested content. It was noted in discussions with the teachers and in the course of observations, that teachers made little use, in particular, of outdoor work or of resources in the community, such as museums, which help to foster many of the desired skills.

5.2.4 Critical evaluation of the environment

A common aim in all the programmes is the emphasis on the need for pupils, in making sense of their world, to examine their environment critically. This aim is designed to aid even young pupils in their perceptions of what is acceptable behaviour in their environment.

It was noted in the programmes observed that while pupils may be taught that littering, for example, is wrong, the programmes do not encourage pupils to explore why it is wrong. The emphasis is, therefore, on the teacher telling the pupils about correct behaviour, but not on the pupils' search for reasons.

Discussions with the teachers confirmed this weakness as, when discussing those topics which teach expected behaviour, pupils were just told to respect their own property, that of friends, that of the school; to be helpful and friendly towards playmates and teachers; to say 'please', and 'thank you'; but were not given any grounds to question these. They were only told that these are the norms and values of the society and are to be obeyed and observed. No debate was encouraged regarding these social responses.

5.2.5 Children as developers of their place

The four programmes studied provide opportunities for pupils to develop an understanding of the power they have to improve and change their environment. Thus, pupils are encouraged to help their parents in their homes. They are also encouraged to keep their classroom clean and in one particular programme they are given an opportunity to have their own vegetable garden. This development of pupils is done only to a limited and very elementary extent.

Although the ES programmes meet Catling's (1987) criteria to a certain extent, they have the following weaknesses:

1 The inadequate development of spatial perception caused by the emphasis on local environment only.

2 The evident lack of development of the time component of space.

3 The need for the effective use of the environment to be developed considerably.

4 The lack of emphasis on the development of skills which are essential for pupils to acquire an appreciation of their environment.

5 The lack of opportunities for pupils to be critical evaluators of their environment.

6 The limited opportunities for pupils to be developers of their environment.

7 The discrepancy that exists in the holistic interpretation of the environment between the aims of the syllabi studied and the suggested topics in the content which tend to focus only on the natural environment.

Perhaps the most problematic aspect of the syllabi and programmes studied is their failure to provide adequate guidelines which will aid the teachers in their implementation of ES.

5.3 Classroom observation results

Table 5.2 indicates the number of lessons observed, the topics observed and the period of observation.

TABLE 5.2

TOPICS OBSERVED AND THE PERIOD OF OBSERVATION

SCHOOL	NO. OF LESSONS	TOPICS	PERIOD OF OBSERVATION
A	3	1 Dick King's ride to Grahamstown	1 week
		2 Phonics from 'horse' - or aw aü	
		3 Horses	

SCHOOL	NO. OF LESSONS	TOPICS	PERIOD OF OBSERVATION
B	3	1 Theme - Butterfly 2 Life cycle of a butterfly 3 Reading using butterfly theme	1 week
C	3	1 The season - Autumn 2 Mathematics lesson through the season - Autumn - the number 5 3 Reading using the season Autumn	1 week
D	7	(a) English oral - bulding 1 making building blocks 2 Practical lesson - how to make blocks 3 Making a door frame 4 Making a window frame (b) Mathematics 1 Teaching maths through the theme 'building' - making blocks at school 2 Problem-solving using the school & classroom environments 3 Problem-solving using the environment as above	1 week
E	3	1 'Homes' 2 Cleanliness of the home outside 3 Cleanliness of the home inside	1 week
F	3	1 Rain 2 Water 3 Winter	1 week

At school A, the lessons being observed were concerned with the theme 'Dick King's ride to Grahamstown', where English grammar and a story about horses and their uses were taught. At school B, the theme 'Butterfly' was taught and mathematics and English oral were also taught through the theme. At school C, the theme 'Autumn' was taught. Mathematics and English reading were also taught using this theme. At school D the lessons observed were both in mathematics and English oral using environment study as an approach and a topic. The theme that was taught was 'Building', where the children used building blocks to count and solve mathematics problems. The classroom and the school were also used as a resource for applying mathematics. In the English oral lessons, children started with an oral composition on how to make blocks. They made blocks, a door frame and a window frame. In school E, the theme that was observed was on 'Homes' and their cleanliness both inside and outside. Lastly, in school F, three different topics were taught in one week and these were rain, water and winter.

In schools A, B and D theme-teaching was done, while in schools C, E and F teachers were doing topic work and there was no integration of other subjects in the topics taught; they were purely ES lessons. School F dealt with two topics in one week rather than concentrating on either 'Winter' or 'Water'. It would have been more effective to concentrate on one theme as the presentation tended to be somewhat superficial.

In school A the topic taught was appropriate, because in the Grahamstown community, Dick King's ride was going to be commemmorated and since this school does not have any specific ES syllabus that it follows, it looks at the events to be celebrated in the community. The approach that was used was theme-teaching, where all the subjects were integrated.

In school B the topic that was taught was based on teaching pupils environmental awareness by teaching how to care for insects, such as butterflies. This theme was not particularly appropriate because it was Winter and the butterflies can only be found in Spring. Pupils could not observe anything from the natural environment, but had to deal with pictures. The approach that was used was teacher-centred because the teacher told the pupils most of the things about the butterflies.

In school C the topic that was taught was most appropriate for observing the changes in the environment in different seasons. The topic was approached as a theme that integrated ES, mathematics and English reading. A learner-centred

approach was used, with pupils having to collect objects associated with the Autumn theme from the natural environment. The pupils were actively involved as the theme progressed and generated much of the information used from their previous knowledge and experiences.

At school D, the topic that was taught was appropriate, because the policy of this school is to develop an experience-based curriculum which enhances the pupils' interest in, and understanding of, local affairs. These pupils had to use their experiences in the making of building blocks and the making of the door and the window frames. They were using the theme-teaching for intergrating mathematics and English oral through the 'building' theme. The approach used was learner-centred because pupils had to use their experiences and knowledge. This theme concentrated on developing practical skills.

In school E, the topic that was taught was chosen because this school was following the Cape ES syllabus rigidly. The content was not entirely appropriate to the needs of the pupils and they were taught everything that appeared in the syllabus, even if it was not relevant to their lives. As pupils who live in the rural areas, there was no need for the teacher to talk about lawns and lawnmowers for cleaning the home outside. The teacher tried to use a learner-centred approach, because most of the information came from the pupils and they were involved in telling stories of how they help to clean their homes inside and outside. They also developed graphicacy skills by drawing diagrams of their and other pupils' homes.

School F attempted to cover too much ground in the time allocated. The teacher had chosen the topics because they were included in the syllabus. Fewer topics would have been taught more comprehensively. The teacher tried to involve pupils by asking them questions throughout the lesson. They were also involved in taking a walk around the school to observe the changes in the environment in Winter.

5.3.1 Content of ES lessons observed.

TABLE 5.3
A SUMMARY OF THE CONTENT OF ES LESSONS ACCORDING TO THE OBSERVATION SCHEDULES

(n = 22)	Urban Private Schools						Government Schools						Total	Average
	A Grahamstown		B Grahamstown		C Umtata		D Mqanduli Urban		E Mqanduli Rural		F Grahamstown Rural			
reference to:	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.		
1 Place	40	13	35	12	10	3	238	34	54	18	72	24	449	20.4
2 Environmental components	45	15	54	18	19	6	122	17	65	22	74	25	379	17.2
3 Childrns interaction with place	43	14	41	14	10	2	106	15	53	18	75	25	328	14.9
4 Values	39	13	51	17	9	3	88	13	47	16	91	20	325	14.7
5 Attitudes	40	13	52	17	7	2	84	12	49	16	68	23	300	13.6
6 Children's feelings & emotions	40	13	52	17	6	2	84	12	47	16	65	22	297	13.5
7 Time	36	12	33	11	11	4	45	6			57	19	182	8.2
8 Community	29	10			1	0.3	79	11	29	10	27	9	165	7.2
9 Interaction of children with people	27	9	5	2	3	1	86	12	39	13			160	7.2
10 People	28	9	8	3	9	3	67	10	35	12			147	6.6

Table 5.3 reveals that reference to place was the most developed component throughout all the schools observed in the ES lessons.

Reference to environmental components was the second most frequently referred to component in the ES lessons observed.

Place, environmental components, pupils' interactions with place, values, attitudes and pupils' feelings and emotions were given attention by all the teachers observed. This means that all the observed teachers tried to develop a sense of place; however, social identity was developed only to a limited extent because reference to the community, interaction of pupils with people and people were the least referred to components. The rural government school in

Grahamstown made no reference to people and their interaction with pupils throughout the lessons observed. One of the private schools in Grahamstown made no reference to the community, while the private school in Umtata referred to the community once.

The development of a sense of time was not given the attention it deserved, especially in the Transkei schools, where its reference scores were very low. In the Transkei rural government school no reference was made to time, in spite of the fact that the observed lessons presented opportunities to introduce the notion of time in a number of respects. This problem has also been seen in the programmes followed by these schools where the time component of space was not evident, despite the emphasis placed on history as part of the integrated course of the programme analysed.

The observed lessons revealed that although the content taught in ES attempted to address the development of place, time and social identity as proposed by Catling's (1987) criteria, this was done only to a limited extent.

In spite of the limitations observed, attempts to develop a sense of place, time and social identity are highlighted by the following examples of lessons observed.

In school A, the development of place, time and social development was done by showing pupils the route that was followed by Dick King from Durban to Grahamstown. The time component was developed by telling the pupils when Dick King made his ride. Social development was enhanced by involving pupils in the commemmoration day. They had to be part of all the celebrations in order to see that they are part of the community.

In school B, the development of place was enhanced by the teacher telling the pupils that butterflies usually migrate to warmer places in the winter. The development of the sense of time was also promoted by the observation of the cold Winter months and the warm Summer months when the butterflies would come back. The time component was developed by teaching the pupils about the life cycle of a butterfly. They were taught the time taken for the development of the life of a butterfly from an egg to a pupae. Social development was also developed by teaching pupils to care for the insects, not to kill butterflies, to appreciate their beauty and to know that butterflies have a right to live just as they do.

In school C, the sense of place was developed by involving pupils in the observation of their school grounds during the autumn season. Pupils could see that their environment is affected by the change of season. Time awareness was also developed because the changes in season have to do with the months of the year. Social development was taken into consideration when pupils discussed the effects of Autumn on the environment and on the people and animals.

In school D, the sense of place was developed when the pupils used their experiences and their knowledge in the 'building' theme. They made blocks, door frames and window frames, the way these are done in their communities. The time component was also developed because they had to answer questions on when people build houses and why. They had to consider the time they took in making blocks, frames for the door and the window. Social development was enhanced because they could see the relationship between what they did at school and what is done at home.

In school E, the sense of place was enhanced by pupils telling the teacher what they usually do in their homes when they clean them, both inside and outside. In some homes people whitewash the walls, others paint them. They could see a variety from place to place. The time component was not enhanced at all, whereas it could be developed by asking pupils when they help their parents with cleaning, for example, after school, during the week-ends, during the holidays and towards Christmas. Social development was promoted by the teacher's emphasising that they should help their parents whenever they can and that they should respect their parents and other elders in their communities.

In school F, a sense of place was developed by the teacher talking about rain and its importance for providing their place with water. She also taught pupils about Winter and its effects. The time component was also dealt with, where pupils could talk about when their place usually gets rain and the changes in seasons from Summer to Winter. Talking about the effects of rain on the people and their crops; scarcity of water for people and their land; water conservation and the effects of the winter season on people and the weather, helped develop pupils socially.

5.3.2 Teaching resources used in the observed lessons

Table 5.4 reveals the teaching resources that were used in the teaching of ES as follows:

TABLE 5.4
TEACHING RESOURCES USED IN THE OBSERVED LESSONS

(n = 22)	Urban Private Schools						Government Schools						Total	Aver.
	A Grahamstown		B		C Umtata		D Mqanduli Urban		E		F Grahamstown Rural			
	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.		
1 Children	49	16	67	22	13	4	109	16	42	14	86	29	366	16.6
2 Teacher	51	17	60	20	13	4	108	15	42	14	73	24	347	15.8
3 Pictures	45	15	33	11	14	5			19	6	60	20	171	7.8
4 Real objects					4	1	108	15			38	13	150	6.8
5 Charts	27	9	19	6	3	1	10	1	8	3	65	22	132	6
6 School							83	12	16	5			99	4.5
7 Chalk-board	18	6	25	8			7	1	16	5	17	6	83	3.8
8 Simula-tions			18	6	3	1	44	6					62	2.8
9 Books	33	11	17	6	3	1							52	2.4
10 Class-room					11	4							48	2.2
11 Boards for children							48	7					48	2.2
12 Flash-cards	25	8			10	3					10	3	45	2
13 Games	10	3			16	5	8	1					34	1.5
14 Diagrams											6	2	6	0.3

I Children, teachers and charts were the commonly used teaching resources throughout the six observed classes.

2 Pictures and chalkboards were used by all, but one school, throughout the observed classes. The former was not used by the rural government school in Transkei, while the latter was not used by the private school in Umtata.

3 Only the private schools made use of library facilities. It must be noted that the government schools neither had library facilities in their schools, nor did they have easy access to libraries.

4 Simulations and games were not used extensively although they are seen as an appropriate teaching resource for JP pupils (chapter two).

5 The schools and the classrooms were the most readily available teaching resources in most of the schools observed.

6 Although 'real' objects were identified by the teachers in the interviews as the most effective and appropriate teaching resources for the JP pupils, only three schools made use of resources such as these.

Although the teachers in the private schools indicated in the interviews that they used more teaching resources than the government schools, this was not entirely borne out in the lessons observed.

The following examples highlight the teaching resources that were emphasized during the ES lessons observed.

In school A, the teaching resources that were available included books, pictures, charts, flashcards, games, chalkboard, teacher and pupils. The teacher, however, was the primary resource throughout the lessons. The theme was based on an historical event using an approach that depended mostly on story-telling. The children were also given opportunities to share their experiences. Flashcards were used for new words and difficult words, together with simple short sentences. The teacher used the literature she had collected by reading some stories to the pupils and by showing them pictures of horses from one of the books.

In school B, the teaching resources that were available included books, pictures, simulations, charts, children, the teacher and the chalkboard. Teacher-tell

dominated as an approach in this school as the teacher told the pupils about butterflies and their life-cycle. Pupil involvement throughout the lesson involved answering questions. The chalkboard was also used to write new words, such as butterfly, pupae, metamorphosis, etc. The teacher read the life-cycle of a butterfly to the pupils from a book. She showed the pupils pictures and charts of a butterfly and they had to do a simulation about the life-cycle of a butterfly.

In school C, the available resources included books, pictures, charts, the teacher, the children, the classroom, real objects, games and flashcards.

Games and pictures were the most frequently used resources in the Autumn theme. The teacher involved pupils in a game about Autumn. The pupils had to tell the teacher some news about the season 'Autumn'. Language skills were developed by correcting the pupils as they told their news. Real objects, such as dry tree leaves, were used for pasting on charts and for counting in a mathematics lesson.

In school D, the resources included teacher, children, school, real objects, charts, classroom and simulations. The pupils were actively involved in the lessons as they were engaged in practical work. They were given opportunities to manipulate concrete objects in problem-solving. They were also developing a sense of industry by making bricks and door and window frames.

In intergrating this theme into mathematics, pupils also used individual boards to solve the problems and had to show the class what they had done on their boards.

Real objects were amongst the most used resources in this school, because in making building blocks, pupils had to use soil, sand, water and spades, while in making door and window frames, they had to use planks, nails and a hammer. The chalkboard was also used for writing problems to be solved by pupils.

School E made use of resources such as pictures, charts, diagrams, the teacher, pupils, school and the chalkboard.

The pupils' experiences were used as a resource by asking them questions about cleaning their homes and most of the information had to come from them. They were also shown examples of clean homes from pictures and charts. In addition, they had to draw diagrams of their homes and the homes of their friends. The

teacher asked the pupils questions throughout the lesson in order to lead the discussion. The chalkboard was used to record some important points raised by the pupils and for the chalkboard summary. Pictures were also used for evaluation and the conclusion of the lessons.

In school F, the resources that were used were pictures, charts, teacher, pupils, chalkboard and real objects. Pupils' experiences were explored throughout the lessons observed. The teacher had to provide some information on conservation and the chalkboard was used for difficult terms and the summary. The teacher also showed pictures relating to the water cycle. Pupils used real objects, because they had to observe outside the classroom for the 'winter' lesson.

5.3.3 Skills developed in the observed ES lessons

TABLE 5.5
SKILLS DEVELOPED IN THE OBSERVED ES LESSONS

(n = 22)	Urban Private Schools				Government Schools				Total	Aver.
	A Grahamstown		B Grahamstown		C Umtata		D Mqanduli Urban		E Rural		F Grahamstown			
	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.		
1 Practical skills	63	21	52	17	22	7	199	28	58	19	74	25	468	21.3
2 Language skills	64	21	57	19	26	9	138	20	56	19	73	24	414	18.8
3 Social skills	37	12	57	17	16	5	141	20	63	21	64	21	373	16.9
4 Aesthetic skills	37	12	49	16	14	5	124	18	51	17	90	30	365	16.5
5 Cognitive skills	52	17	45	15	14	5	117	17	37	12	76	25	341	15.5
6 Scientific & math. skills	41	14	49	16	9	3	127	18	23	8			249	11.3

Table 5.5 reveals the skills that were developed in the observed ES classes as follows:

1 Practical, language, social, aesthetic and cognitive skills were emphasized in all the six ES classes observed.

2 Scientific and mathematical skills were the least developed, on average, in the six observed schools; while the rural government school in Grahamstown did not develop these skills at all.

3 In general, most attention was paid to the development of practical skills in the six observed classes, such as discussions, observations, etc.

4 Language skills, such as reading, writing, listening and talking, were also given considerable attention.

The examples below give an insight into the teacher's interpretation of skill development and the manner in which the various skills were applied.

In school A, pupils were given pictures with four horses and they had to add the horses and give the total; they also had to count the total number of legs of the horses in the picture. Pupils had to learn new sounds with the **or** sound, and had to suggest words using these sounds. They also observed Dick King's commemmoration, which was held in Grahamstown on the 4th June 1992. Language skills were included through learning new words, for example, foal, mare and stallion. Pupils also had to sketch horses and do simulations of the sounds of horses.

In school B, the skills that were identified by the teacher for development in the lesson included language, practical, social, aesthetic and mathematical and cognitive skills.

The activities that were done to develop these skills were the use of a story of 'six' in the butterfly theme for mathematical skills. Pupils also had to draw butterflies from butterfly one to butterfly six for practical skills. Language skills were developed by introducing pupils to new words, for example, caterpillar, cocoon and pupae.

Social and aesthetic skills were developed by teaching pupils to respect nature and the beauty of the colours of a butterfly.

In school C, pupils had to come to school with some of the natural objects that have been affected by the Autumn. Aesthetic skills were developed by the observation of the natural environment, especially the leaves of trees that were brown and falling off. Pupils were involved in practical games, which required them to close their eyes and imagine things. Observation and recognition of the natural environment was also developed. Language was emphasized as the most important skill needed by the pupils in order to express themselves.

In school D, the skills that were identified by the teacher for inclusion in the lessons were: practical, language and social, aesthetic and mathematical, and cognitive skills.

The activities that helped in the development of the above skills were the making of building blocks, door and window frames; and problem-solving on individual boards. Pupils also had to participate in the decision-making. They had to decide on the size of the door and window frame and on the material to be used. They actually manipulated real objects to solve practical problems. They communicated with one another and with the teacher. When one pupil did the practical work, others had to observe. This exercise developed pupils socially, because they learnt to share and to interact with one another. They also learnt to communicate.

In school E, the teacher identified the development of social, practical and language, aesthetic, cognitive and scientific, and mathematical skills for inclusion in the lesson

The activities used to develop these skills involved pupils in doing practical things, such as drawing their homes; encouraged pupils to talk about their homes, enhancing curiosity about each others' homes; developing a concern for the cleanliness of their homes. Numeracy was promoted by counting the patterns of the huts, talking about shapes and the patterns of the houses. Cognitive skills were also promoted through observation of pictures of homes and recognition of the objects that the pupils saw. They had to interpret pictures and diagrams. Aesthetic skills were developed by observing and talking about the patterns of huts and houses and the colours of these houses.

Practical skills were further developed by asking pupils to draw and discuss sketches of their homes.

In school F, many problem-solving skills were not developed at all in the three lessons observed. The skills that were included were aesthetic, practical, cognitive, language and social skills. At this school the teacher attempted to develop the above skills throughout the lessons observed. For example, practical skills involved the observation of real objects and discussions about rain and water. Aesthetic skills were developed by the appreciation of the importance of water in pupils' daily lives and their daily experiences. Language skills were also developed through discussion by the pupils as the lessons progressed.

While emphasis was placed on the development of skills that are appropriate to the JP pupil in the lessons observed, more attention needed to be given to the development of problem-solving, numeracy and graphicacy skills.

5.3.4 Pupil-participation in the ES lessons observed

Table 5.6 shows the classroom activities that required pupil participation. These activities required pupils to:

1 answer questions;

2 apply their knowledge and the knowledge gained through the lesson as a form of lesson evaluation;

3 observe and relate to either the pictures, diagrams, real objects or any other teaching resources used through identification or discussion;

4 solve problems;

5 recall facts.

TABLE 5.6
PUPIL-PARTICIPATION OBSERVED IN ES LESSONS

(n = 22)	Urban Private Schools						Government Schools						Total	Aver.
	A Grahamstown		B		C Umtata		D Mqanduli Urban		E Rural		F Grahamstown			
	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.	Ttl.	Av.	Ttl.	Av	Ttl.	Av.		
1 Question answered	97	32	101	34	52	17	287	41	129	43	152	51	818	37.2
2 Application	52	17	59	20	19	6	179	26	62	21	90	30	461	20.9
3 Direct observation	55	18	54	18	22	7	141	20	24	8	97	32	393	17.9
4 Problem solving	47	16	56	19	17	6	124	18	38	13	80	27	362	16.5
5 Clarification of instruments used	44	15	29	10	18	6	139	20	26	9	65	22	321	14.6
6 Interpretation	47	16	47	16	16	5	99	14	23	8	80	27	312	14.2
7 Recall of facts			22	7	5	2	8	1					35	1.6

The lessons observed all involved the pupils to a greater or lesser extent. It was noteworthy that the recall of facts was not overemphasized. Most of the teachers tended to use pupil-centred strategies and attempted to actively involve their pupils by asking them questions.

The examples from the observed lessons further highlight pupil involvement.

In school A, questions that required pupils to solve problems were asked throughout the lessons. Pupils were also required to observe and interpret the resources used. At the end of all the lessons, pupils had to answer questions as a form of conclusion. Pupils also had to apply the knowledge gained from Dick King's ride to different situations involving horses. As a result, pupils expressed concern about the cruelty of people to horses.

In school B, the teacher involved pupils in some exercises that required the recall of facts. The questions asked throughout the lessons required pupils to apply their knowledge. They had to observe pictures and charts and interpret what they saw in these resources. Pupils had to use these for drawing their own diagrams in their workbooks and colouring in different colours for different butterflies. Questions requiring the recall of facts were only asked as an introduction and questions were based on the previous lessons.

In school C, some of the questions that were asked by the teacher led to the recall of facts, but these were very few. Most of the questions asked required problem-solving, more direct-observation and application than interpretation. The pupils participated actively by observing the real objects directly, interpreting resources used and applying the knowledge gained throughout the lessons.

In school D, very few questions asked required the recall of facts, as revealed in Tabel 5.6. Most of the questions asked required direct observation when the other pupils made blocks and frames, and the application of the experiences and knowledge gained from the homes to solve problems in mathematics and English oral. Pupils were also required to write a composition on how to make building blocks, applying the knowledge gained through block making. Teacher input contributed to the development of the pupils' inquiring minds.

In school E, questions asked by the teacher led to problem-solving throughout the three lessons observed. Most of the questions asked by the teacher required application, for example, pupils had to tell the class how they helped in cleaning their homes and they also had to draw their homes. Application of the pupils' knowledge about their homes was needed throughout the lessons observed. They had to directly observe and interpret the pictures and charts.

In school F, there were no questions nor teacher-input requiring the recall of facts. Problem-solving was required throughout the lessons observed. Pupils were also required to do direct observation from the pictures and charts throughout the three lessons observed. After observing, they had to interpret and apply the knowledge gained to other situations that were different from the original one, to promote efficiency of the skill acquired.

5.4 CATLING'S CRITERIA APPLIED TO THE CLASSROOM OBSERVATION

An analysis of observed lessons was also done by using the same five categories that were applied to the analysis of the ES programmes.

5.4.I Spatial perception

In the course of the observation, spatial perception tended to be neglected, although frequent reference was made to place, and it was felt that teachers had a poor understanding of the concept, and were therefore unable to utilize opportunities which presented themselves to enhance this aspect of the pupils' development. The only themes which consciously involved spatial perception were those relating to 'homes' and 'Dick King's ride'. In the former, pupils were encouraged to draw a plan of their homes and to draw the homes of others. In the latter, pupils were given maps to trace the route followed by Dick King to Grahamstown. Here too, the concept of spatial perception can be seen to be narrowly interpreted.

5.4.2 Use of the environment

Throughout the six classes observed, the environment was frequently referred to or used in the teaching of ES. Teachers attempted to make children effective users of their environment by incorporating themes such as 'butterflies', 'Autumn' and 'homes'.

The most effective lessons in this respect were those that encouraged pupils to collect items from the environment, thus leading to the building of model houses. In the lesson on 'building', pupils collected sand, soil, water and actually made building blocks. They also made door frames and window frames with old planks and nails. They were practically involved in the building of a model house. Subsequently, most of the information came from the students, because they were all familiar with the building process in their homes and in their communities. In the 'homes' discussion in the rural government school in Transkei, pupils actually led the discussion, sharing ideas about their own homes and how to clean them both inside and outside. In contrast, in the rural government school in Grahamstown, the teacher led the discussion in the lessons on rain and water. Pupils answered questions using local references. For the lesson on 'winter', pupils had to do some observations in the school grounds

and the day was so cold that they could not miss the point made about low temperatures in winter.

From the observations and results above, it is clear that teachers attempted to use the environment as a resource in their teaching of ES as they tried to develop pupils' understanding of their environment. This category is, however, related to Catling's (1987) criteria only to a limited extent, because the main features and processes at work in the environment, their current state, their development and changes taking place, were only dealt with superficially. For the most part, the lessons observed provided pupils with local knowledge only.

5.4.3 Appreciation of the environment

Pupils were taught to appreciate and look after what they have. For example, in teaching them about 'rain' and 'water', they were taught about conservation and the effective use of this natural resource.

Pupils who were taught about 'homes', were taught how to appreciate and look after their homes. In another lesson, pupils were taught how to use their local environment in building a house. In this way, they were taught how to use what they have and to appreciate what they have.

Pupils were also taught how to appreciate the environment throught the observation of butterflies, trees and plants during the autumn season and to observe the natural environment during the winter season. All these topics served to enhance their appreciation of the environment.

In all six schools, teachers tried to develop skills that are important for pupils' appreciation of the environment. These skills included the development of social, language, numeracy, cognitive, aesthetic and practical skills.

While three of the six observed classes included work done outside the classroom, it was felt that teachers did not make sufficient use of the opportunities afforded by the themes to utilize the outdoors.

5.4.4 Critical evalution of the environment

Only one out of the six schools taught pupils to question their environment. For

example, in a lesson using Dick King's ride to Grahamstown to increase environmental awareness, pupils criticized Dick King for riding a horse for such a long distance and they felt that Dick King deserved some form of punishment from the SPCA, because he was cruel to that horse.

Pupils in the same school suggested reasons for not killing snakes, insects and other animals. They talked of every creature or organism having the right to live and they also emphasized that man has to live in harmony with the environment, be it natural or man-made. This showed that they have an understanding of what is right and what is wrong in relation to the environment.

These pupils also knew why they have to keep their classroom, the school, the hostel and the school grounds clean; and they did not litter anywhere. This shows that they were given time to think about their environment and to develop healthy habits through their ES programmes.

5.4.5 Children as developers of their place

'Building' and 'homes' were the only two themes observed in the six schools that encouraged pupils to apply their knowledge. Having made building blocks, door and window frames, pupils knew that they could help build houses. As already stated, they provided most of the information in the 'home' lesson from their knowledge of their own homes. They knew that their homes had to be kept clean, and that they had the ability and the responsibility to help their parents in maintaining their homes.

5.5 SUMMARY

The analysis of programmes and observation schedules used in ES revealed that spatial perception was developed only to a limited extent. The development of the sense of time was largely neglected. The environment was only used to a limited extent as a resource, while the appreciation of the environment was, furthermore, limited in its application. Critical evaluation of the environment was only developed in one school. This means that this aspect needs serious attention. There was also a lack of empowerment of pupils as developers of their place, as this was done in terms of the pupils' classrooms and school grounds only. Thus, the ES programmes and the ES lessons observed met Catling's criteria only to a limited extent.

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Finally, there is general consensus among authors such as Catling (1987) and Duggard (1977) in Kelly and Floweday (1977), that in order to develop the child's identity and sense of place, a subject such as ES must begin with the pupil's own experiences and move from the known to the unknown.

The literature consulted emphasizes that if the aims of ES are to be achieved, teachers need to have a clear conceptual understanding of ES and the aims of ES, both in terms of the general subject aims and with regard to the aims of ES in relation to their pupils' needs.

Furthermore, in implementing ES, teachers need to use a variety of teaching strategies and resources. Among the most effective teaching strategies are simulations and games, enquiry techniques, group teaching, group work, theme-teaching and topic work; while the important teaching resources needed are the chalkboard, pictures and slides, models, collections and samples, radio and television, books, museums and outdoor learning.

Teachers' expertise and experience influence their interpretation and implementation of the ES syllabus. It is, therefore, suggested that before teachers are able to provide the sort of guidance pupils require in order to make sense of their world, they need to clarify their own perceptions. In so doing, teachers are better equipped to understand their pupils' perceptions. The teachers' perceptions of ES should not only be shaped by their own experiences but by the needs of their particular pupils.

This study reveals that teachers' perception of the concept of ES varied from school to school and even within the individual schools. The perceptions that teachers have of the rôle and value of ES did not reflect the aims and objectives proposed by the various syllabi analysed. While it is recognised that teachers need to be flexible in their approach to ES, if they are to meet the needs of their pupils, the implementation of ES did not indicate that the programmes designed for the various schools were specifically tailored to suit the pupils' needs. There was therefore little uniformity in the organization and administration of ES even within the same school, which was a reflection of a lack of consultation amongst teachers in the various schools studied. Teaching strategies and resources used differed from teacher to teacher and were a reflection of the individual teachers' expertise and the prevailing situation at the school, rather than a conscious attempt to develop strategies best suited to the pupils' needs.

Although there was a relationship between aims given in the syllabi and Catling's criteria, there was a divergence between the aims and the content of the syllabi. This was revealed by analysis of teaching content, which indicated that very little emphasis was placed on the pupils' understanding of places beyond their own local environment, despite the suggestion in the aims of the syllabus that pupils should move beyond their local environment.

The observation schedules revealed the following:

1 Spatial perception was developed to a limited extent in the classes observed. But even in the lesson that tried to develop this aspect, no specific attempt consciously made to do so.

2 The environment was incorporated into lessons as a resource in a fragmented way which indicated little systematic structuring.

3 Appreciation of the environment was not developed as broadly and deeply as suggested by Catling's (1987) criteria.

4 Critical evaluation of the environment was not given enough attention as pupils were not given opportunities to evaluate what they were taught.

5 Lessons observed provided limited opportunities for pupils to be developers of their environment.

The problems highlighted by this study in terms of the understanding and implementation of ES can be ascribed to a number of factors. A central issue which is common to all teachers involved in this study is the lack of a sound theoretical framework which the teachers are able to draw from to base their implementation of ES. This is largely the result of the poorly developed syllabuses, which provide few if any guidelines for the teachers and of the lack of in-service training in this subject area, not to mention problems related to initial teacher training. A second factor which was common across the spectrum of schools in the study was the lack of consultation among the teachers. This reflects not only a lack of understanding of how ES needs to be adapted to the particular needs of the pupils, but is also an indication of a lack of understanding about the management of a subject such as ES.

The above factors are magnified and exacerbated in the Transkei schools by the deplorable lack of adequate facilities and the serious overcrowding of classes. Allied to the problems which teachers experience in the Transkei is the fact that the ES syllabi have not been specifically designed for the Transkei schools and therefore appear somewhat remote and inaccessible to the teachers.

6.3 LIMITATIONS OF THE STUDY

The research constraints pertaining to this study included those of time, availability of funds, and the structure of the half-thesis. As a result of these, the study was limited in terms of the sample population and the amount of time which could be spent in classroom observation. This study must, therefore, be perceived as a pilot study which warrants further application to the wider South African community.

A further limitation which influenced the results was that of the teachers' attitudes when being interviewed and when being observed by a stranger in their classrooms. These factors led to a degree of artificiality and detracted somewhat from the reliability of the data obtained.

The problem related to the indepth studies of the pupils' socio-economic backgrounds was one which the researcher was conscious of throughout the study and it is felt that this detracted somewhat from the analysis of the programme implementation, particularly in relation to the classroom observations.

In the light of these limitations, it is felt that further research is needed which will cover both a longer period of time in the classroom and include a greater number of teachers. To this end, teachers need to be encouraged to act as researchers in their own classrooms in order to provide the necessary data base which will allow for greater insight into the implementation of ES.

6.4 RECOMMENDATIONS

In making recommendations which aim at improving an existing situation, such as the implementation and the development of ES in formal schooling, care must be taken to consider both what is desirable and what is necessary.

In the South African context, consideration must also be given to recommendations that are practical and feasible, given the current economic and socio-political situation. The recommendations presented below, therefore, look at ways of improving ES in the short, medium and long-term.

In looking at what is desirable and necessary for the development and improvement of ES in Transkei, the following are important:

Firstly, the teacher-pupil ratio should be reduced to improve the effectiveness of ES teaching, especially in the rural government schools.

Secondly, more teachers should be employed so that at least each class level has its own teacher.

Lastly, at least temporary school buildings should be erected, so that no pupils are taught outside as was the case in a rural government school in Transkei.

Since these desiderata cannot be addressed immediately, the immediate needs for the development of ES are the following:

All government schools should be given freedom to manipulate the existing Cape syllabus and choose topics that are relevant to their own pupils, so that they do not slavishly follow the Cape syllabus to their own disadvantage.

Secondly, there should be development of teachers' guides or teachers' manuals based on the relevant ES programme that will help teachers in the development of the child's social identity, sense of place and sense of time.

Lastly, a series of workshops should be held at regular intervals to help the teachers in creating resources that would be necessary in their teaching of ES. These could be held at district level.

The medium-term needs for the development and improvement of ES are:

1 The formation of ES associations so that teachers can share their expertise with their colleagues.

2 In-service training in ES, so that the teachers' attitudes are challenged and their confidence increased. These training programmes should

include the development of materials, teaching resources and teaching strategies for teachers.

3 Training of the teachers to use the school environment and the immediate local environments as a resource in teaching ES, especially in areas where financial resources are lacking.

4 Supervision, both internal and external, to ensure that the periods and time allocated for ES teaching are used effectively.

The long-term needs for the improvement of ES in Transkei, in particular, have to do with the revision of the syllabus and reference books. These are:

I The development of ES textbooks that will give teachers firmer teaching guidelines.

2 The promotion of teachers' awareness of Catling's (I987) criteria, so that they can apply these in their teaching of ES.

3 ES programmes should have some method of empowering pupils to do things that are of value to their community and to their environments.

4 ES programmes should examine pupils' attitudes to and about places.

5 ES programmes should foster a multi-cultural and international understanding in pupils through the study of the local, national and global environments.

6 The content of ES has to broaden and deepen observation skills through emphasis on, and development of, outdoor work.

7 Content should incorporate the development of critical thinking and teach pupils to be critical evaluators of their environment.

Every ES lesson should be a critical thinking lesson in order to enrich pupils and to develop their enquiring minds.

8 ES content should nurture sensitivity in pupils through developing genuine concern for their environment, since this should urgently become a part of social development.

6.5 CONCLUSION

This study set out to evaluate existing ES programmes in a number of selected schools to establish the extent to which the needs of the pupils' developing sense of time, place and social identity are taken into consideration. To this end, the following was undertaken:

Firstly, the current ES syllabi for the Cape, DET and Transkei schools were analysed critically in relation to Catling's (1987) criteria.

The results revealed that in all Education Department syllabi, the pupils' needs in respect of developing a sense of time, place and social identity as suggested by Catlings (1987) criteria, were considered only to a limited extent; and that even in the programmes where these were attended to, it was more by coincidence than design.

Secondly, the evaluation of existing ES programmes was undertaken in six selected schools in the Grahamstown, Umtata and Mqanduli districts to ascertain the extent to which they met Catling's criteria.

These results also revealed that programmes in different schools observed met Catling's criteria only to a limited extent, because the teachers were ignorant of the conceptual paradigm which informs Catling's criteria. These results justify the recommendation that teachers' awareness of Catling's criteria be promoted, so that they can apply these in their teaching of ES.

Finally, the study led to the conclusion that both the Cape and the Transkei ES programmes in JP schools need serious attention, especially with regard to conceptual integrity and the co-ordination of stated aims, syllabus content and recommended teaching strategies.

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APPENDIX 3.A

INTERVIEW SCHEDULES FOR SUB A - STD 1 TEACHERS ON ENVIRONMENT STUDY PROGRAMMES

1 What do the programmes in Environment Study consist of in each class?

- Do you have different programmes for different classes?
- Do you use any syllabus guide?
- If yes, which syllabus do you use?
- What is the content that you teach in Environment Study?

2 How is Environment Study organized in your school?

- Number of periods per week
- Duration of each period
- How is Environmental Study organized in the school day?
- What approaches and teaching strategies do you use?

3 What references do you use in Environment Study?

- Reference books
- Maps, charts, models, etc.
- Other resources

4 What are your other needs for teaching Environmental Study?

- What are your problems in the teaching of Environmental Study?

5 What are the aims of your programme? (short term)

6 What are the educational rôles fulfilled by your programme? (long term)

7 Does your programme meet the needs of the children that you teach?

8 What are the needs that are fulfilled by your programme?

9 Do you have any problems with the children's needs?

10 What sort of knowledge are the children gaining from your programme?

- What skills are the children learning?
- What sort of values are the children learning from your programme?
- What sort of attitudes are they gaining?
- Are the children developed socially by your programme?
- If yes, what social development do they achieve from your programme?

APPENDIX 3B

TEACHER OBSERVATION SCHEDULE

ENVIRONMENT STUDY TEACHER OBSERVATION SCHEDULE

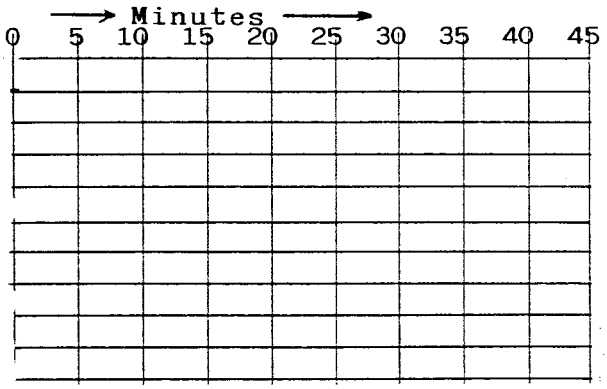
SECTION A : GENERAL

1. Class. 2 No. of pupils. 3. Name of school.
4. Location of school — Rural ☐ Urban ☐
5. Type of school — Government ☐ Private ☐
6. Time — Morning ☐ Midday ☐ After lunch ☐
7. Time span of the lesson — ☐ 10 minutes 20 minutes ☐ ☐ 30 minutes 40 minutes ☐ ☐ Any other
8. Topic for the day
9. Lesson aims

SECTION B

DEVELOPMENT OF SENSE OF PLACE, TIME AND SOCIAL DEVELOPMENT

Reference made to:

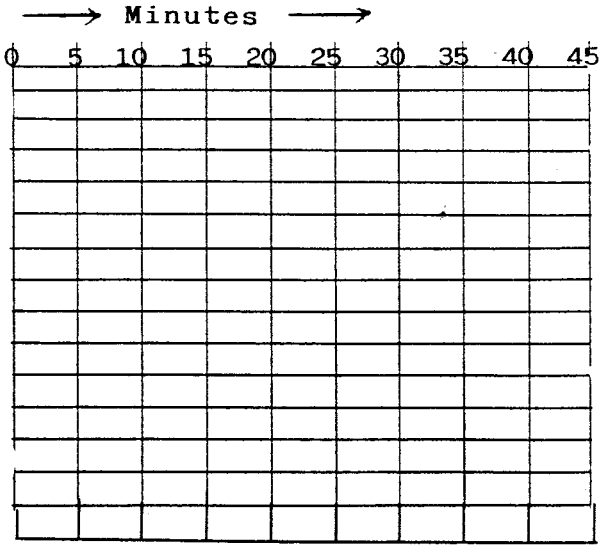


1. Place
2. Child's interaction with place
3. Time
4. People
5. Interaction of children with people
6. Environmental components
7. Community
8. Childrens' feelings and emotions
9. Attitudes
10. Values

SECTION C

RESOURCES USED

Extent to which resources are used:

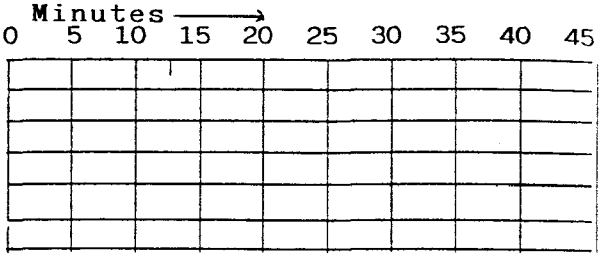


1. Books or printed material
2. Pictures
3. Overhead projector
4. Video
5. Games
6. Simulations
7. Maps
8. Charts
9. Diagrams
10. Other media
11. Teacher
12. Children
13. Classroom
14. School
15. Real objects

SECTION D

DEVELOPMENT OF SKILLS

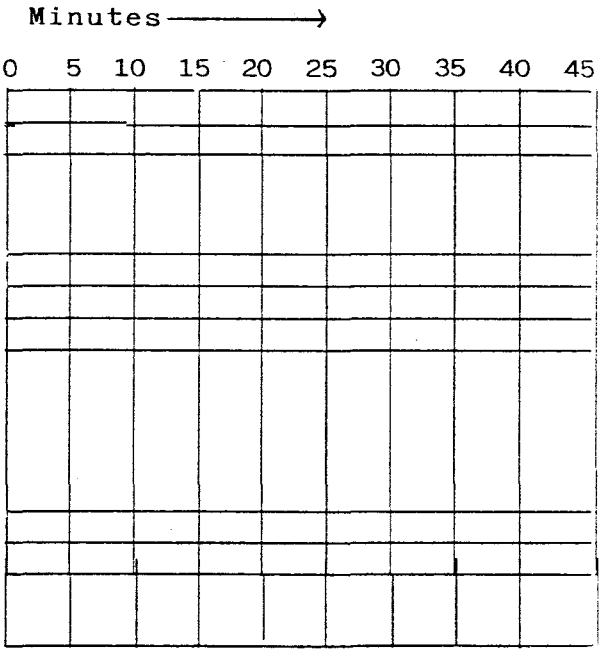
Extent to which skills are developed



1. Social skills
2. Language and study skills
3. Scientific and Mathematical skills
4. Intellectual skills
5. Aesthetic skills
6. Practical skills

SECTION E

1. TEACHER INPUT



1.1 Questions leading to:
recall of facts
problem solving

1.2 Questions requiring participation of pupils:
direct observation
interpretation
application

2. PUPIL INPUT

2.1 Information sought for:

clarification of instruments used
other clarification

2.2 Questions answered

APPENDIX 3C

TEACHER OBSERVATION SUMMARY

ENVIRONMENT STUDY OBSERVATION SUMMARY

INSTRUCTIONS

1. Feelings will be indicated concerning each of the items below by putting a cross [X] in the appropriate rating in the column next to each item.

   The ratings to be used are:

   1 = Very Weak or strongly disagree
   2 = Weak or disagree
   3 = Satisfactory or Uncertain (not sure)
   4 = Good or Agree
   5 = Excellent or Strongly Agree

   in all sections, except in Section A.

2. On the right hand side of the ratings column are spaces to record any additional information which the researcher feels deserves mention concerning each item.

A. GENERAL

1. CLASS :
2. NO OF PUPILS :
3. NAME OF SCHOOL :
4. LOCATION OF SCHOOL : [1] Rural [2] Urban
5. TYPE OF SCHOOL : [1] Government School
   [2] Private School
6. TIME : [1] Morning
   [2] Midday
   [3] After Lunch
7. TIME SPAN OF THE LESSON : [1] 10 Minutes
   [2] 20 Minutes
   [3] 30 Minutes
   [4] 40 Minutes
   [5] Any other
8. TOPIC FOR THE DAY :

RATINGS

9. Did the time span take into account?
   9.1 Aims of the lesson
   9.2 Age of children
   9.3 Complexity of the activity

10. How were the aims stated?

11. How were the aims achieved?

_____ _____ _____ _____

_____ _____ _____ _____

B. Classroom observation using Catling's criteria

12. Effectiveness of teaching strategis used:-

12.1	Group Teaching	1	2	3	4	5
12.2	Theme Teaching	1	2	3	4	5
12.3	Topic Teaching	1	2	3	4	5
12.4	Group Work	1	2	3	4	5
12.5	Any other	1	2	3	4	5
13.	Extent to which children's experiences were explored	1	2	3	4	5
14.	Extent to which the children were the source of inspiration for the topic/theme	1	2	3	4	5
15.	Extent to which the topic was extended	1	2	3	4	5
16.	Extent to which concepts were investigated	1	2	3	4	5
17.	Extent to which children's experiences and interactions were used	1	2	3	4	5
18.	Extent to which children's curiosity was promoted	1	2	3	4	5
19.	Extent to which children's imagination was used	1	2	3	4	5
20.	Activities used/done by children which illustrated use of imagination					
20.1	Discussion	1	2	3	4	5
20.2	Group Work	1	2	3	4	5
20.3	Note taking	1	2	3	4	5
20.4	Listening	1	2	3	4	5
20.5	Any other	1	2	3	4	5

21.	Extent to which the lesson promoted sound knowledge of local, national and global environments	1 2 3 4 5
22.	Extent to which the following teaching and learning aids were used	
22.1	Day-to-day news /Radio	1 2 3 4 5
22.2	Local Press	1 2 3 4 5
22.3	Television	1 2 3 4 5
22.4	Books	1 2 3 4 5
22.5	Any other	1 2 3 4 5
23.	Was there any work done outside the classroom?	YES NO
24.	Type of work that was done outside	
25.	Extent to which different abilities of children were considered	1 2 3 4 5
26.	Extent to which the following skills were developed:-	
26.1	Social Skills:- Curiosity	1 2 3 4 5
	Concern	1 2 3 4 5
	Confidence	1 2 3 4 5
	Communication	1 2 3 4 5
	Questioning	1 2 3 4 5
26.2	Language & study skills:-	
	Reading	1 2 3 4 5
	Writing	1 2 3 4 5
	Listening	1 2 3 4 5
	Talking	1 2 3 4 5
26.3	Scientific & Mathematical:-	
	Counting	1 2 3 4 5
	Measurement	1 2 3 4 5
	Sampling	1 2 3 4 5
	Shape & pattern	1 2 3 4 5
	Graphs	1 2 3 4 5
	Grouping	1 2 3 4 5
	Any other	1 2 3 4 5

26.4 Intellectual skills:-

	1	2	3	4	5	
Observation	1	2	3	4	5	
Recognition	1	2	3	4	5	
Recording	1	2	3	4	5	
Classification	1	2	3	4	5	
Analysis	1	2	3	4	5	
Interpretation	1	2	3	4	5	

26.5 Aesthetic skills:-

	1	2	3	4	5	
Shape	1	2	3	4	5	
Form	1	2	3	4	5	
Pattern	1	2	3	4	5	
Quality of environment	1	2	3	4	5	
Texture	1	2	3	4	5	
Colour	1	2	3	4	5	

26.6 Practical skills:-

(a) Use of Equipment:-

	1	2	3	4	5	
Sampling	1	2	3	4	5	
Recording	1	2	3	4	5	
Surveying	1	2	3	4	5	
Orienteering	1	2	3	4	5	
Calculators	1	2	3	4	5	
Computers	1	2	3	4	5	
Any other	1	2	3	4	5	

(b) Techniques:-

Sketching	1	2	3	4	5	
Mapping	1	2	3	4	5	
Sampling	1	2	3	4	5	
Graphs	1	2	3	4	5	
Models	1	2	3	4	5	
Diagrams	1	2	3	4	5	
Questionnaires	1	2	3	4	5	
Interviewing	1	2	3	4	5	
Discussion	1	2	3	4	5	
Simulation/Role Play	1	2	3	4	5	
Survey	1	2	3	4	5	
Photo Interpretation	1	2	3	4	5	
Any other	1	2	3	4	5	

APPENDIX 3D

No. 6/6/11

URULUMENTE WASETRANSKEI

TRANSKEIAN GOVERNMENT

Imicimbi Yembalelwano Mayisingiswe Kusibakhulu

All communications to be addressed to the Secretary

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ISEBE LEMFUNDO
DEPARTMENT OF EDUCATION

UMTATA.

19

The Dean
Faculty of Education
Rhodes University
P.O. Box 94
GRAHAMSTOWN
6140

Dear Sir/Madam

APPLICATION FOR AUTHORITY TO CONDUCT RESEARCH : MISS NOBUZWE VINJWA

I have pleasure in informing you that your application on behalf of Miss Vinjwa to grant her permission to collect data from Transkei Schools for research purposes on "THE ANALYSIS AND EVALUATION OF ENVIRONMENTAL STUDY PROGRAMS IN THE JUNIOR PRIMARY PHASE" has been approved, provided at the end of the project, a copy of the dissertation will be produced for the Transkei National Library.

Yours faithfully

DIRECTOR-GENERAL FOR EDUCATION

CAPE EDUCATION DEPARTMENT

THE PRIMARY SCHOOL COURSE

SYLLABUS

FOR

ENVIRONMENT STUDY

1979

3

THE PRIMARY SCHOOL COURSE: SYLLABUS FOR ENVIRONMENT STUDY

The attention of principals and teachers is invited to the fact that the subject Health Education in the Junior Primary Phase, is incorporated with Environment Study. The time allocation for Health Education which is ½ hour per week in Sub-standards A and B, and Standard 1, will henceforth be added to Environment Study.

The following syllabus in the Primary Course will be introduced as from 1 January 1981.

THE PRIMARY SCHOOL COURSE: SYLLABUS FOR ENVIRONMENT STUDY

SUB-STANDARDS A AND B AND STANDARD 1

1. INTRODUCTION

1.1 Environment Study in the Junior Primary standards provides the foundation for History and all the sciences in later education. Its purpose is to awaken in the child an awareness and wonder of the world in which he lives and to promote a responsible attitude towards personal hygiene and community health. Any experience in his daily life may be used as a starting point for investigation. The successful teaching of Environment Study is dependant on the teacher's imaginative use of resources within the environment and her response to interests and activities that arise from the children themselves.
The syllabus provides guide lines on which the scheme of work should be based but it sets no limits and should be adapted to suit the conditions prevailing in the area in which the school is situated. "Environment" in this instance refers to the neighbourhood of the school and will therefore differ widely from one locality to another.

1.2 Topics investigated during the Environment Study period should be used as a central theme to be correlated with as many other subjects as possible.

1.3 Bearing in mind that the application of the syllabus is dependant on prevailing conditions within the environment, it is impossible to dictate which aspects of the syllabus will be taught in each of the Junior Primary standards. It is therefore essential that the course be carefully planned by the Junior Primary teachers, under the supervision of the principal or a senior teacher, to ensure a comprehensive development of the topics and to prevent the possibility of unnecessary repitition.

1.4 Environment Study provides an excellent opportunity to introduce the pupils to the art of reading for information. There are many simple and attractive reference books available which should be used for this purpose.

2. AIMS

The purpose of Environment Study as a school subject is, in so far as his/her age and stage of development allow,

2.1 to make the pupil aware of the splendour, beauty and order of God's creation;

2.2 to give the pupil a clearer idea of himself as an individual, as a person with needs and desires, with a life to be lived happily and usefully;

2.3 to arouse in the pupil an interest in and a love of the subject, and to awaken in him a desire to know more about his own locality, his country, nature as a whole and about his own and other people;

2.4 to develop in the pupil an attitude of appreciation of the way of life of people in his own locality and elsewhere in the country;

2.5 to allow the pupil time to observe, to discover and to experiment;

2.6 to preserve and to stimulate the pupil's own natural curiosity and wonder;

2.7 to teach the pupil to be aware of man's dependence on Nature and the interdependence of man, fauna and flora, and

2.8 to guide the pupil to discover interesting facts by his own efforts and to teach him to pursue the following steps in his investigation:

observe.
discuss.
make notes.
draw conclusions.

Subject Matter	Suggestions to Teachers
3. SYLLABUS (Although the subject matter has not been allocated to each of the standards in the Junior Primary phase, schools are free to do so if they so prefer.)	Throughout the syllabus, the teacher should try to inculcate in the pupil an interest and a concerned awareness of the environment rather than the memorisation of facts.

4

Subject Matter		Suggestions to Teachers	
3.1	***Incidental—Daily news and current affairs***		
3.1.1	**Daily news and the compilation of a news sheet or individual diaries.**	3.1.1	The daily news in an integral part of the Environment Study lesson and topics introduced by the pupils can often be used for further discussion and study. To be effective, the Environment Study period should be early in the school day and should be taken by the class teacher herself.
3.1.2	**Visitors to the school.**	3.1.2	(*a*) For example visits by the Inspector of Education, subject inspector/inspectresses, school doctor and other medical personnel, etc. It is necessary that pupils should be informed in regard to the purpose of the visits of these officials. (*b*) Visits to the school by the following types of person can be arranged advantageously if they are invited to speak to the pupils about the nature of their work: a member of the S.A. Police, a fireman, a traffic officer, a postman, a member of a society for the prevention of cruelty to animals, etc.
3.1.3	**Daily attention paid to elementary thrift, e.g. proper care of clothing, books, pencils, water, electricity, etc.**	3.1.3	Refer to paragraphs 3.8.4 and 3.9.4.
3.1.4	**The Nature Table.**	3.1.4	*The Nature Table* The Nature Table should be an exciting centre of interest and research but unless it is changed regularly (every two or three weeks) it will degenerate into a dusty, uninteresting collection. (Any specimen to be kept for future use should be stored in the school museum or in the resource centre.) Many different topics can be used to:— stimulate an awareness of nature, promote simple research work and observation, increase general knowledge and vocabulary, encourage reading for knowledge, and, above all, provide the material for discussion and writing. (Pupils should be encouraged to write and illustrate their own notes.) See the Addendum for: What is needed for the Nature Table. Some ideas for topics and how to present them. Bibliography.
3.1.5	**Special occasions:—**		
3.1.5.1	**Family festivals.**		
3.1.5.2	**Religious and public holidays.**	3.1.5.2	E.g. Van Riebeeck Day Republic Day Settlers Day—countries of origin; immigration Kruger Day Day of the Covenant Good Friday and Easter Sunday Ascension Day Christmas Day Festivals of other groups within the community

Subject Matter		Suggestions to Teachers	
3.1.6	**Fund-raising in aid of deserving causes:—**		
3.1.6.1	**Deserving causes.**		
3.1.6.2	**Class and school bazaars.**		
3.1.7	**Local development.**	3.1.7	*New developments:* E.g. with regard to the building of roads, provision of facilities, new houses and shops under construction, etc.
3.1.8	Agricultural shows and other exhibitions.		
3.2	*The pupil and self-care*		
3.2.1	Personal hygiene:		
3.2.1.1	Daily inspection of nails, handkerchiefs and personal neatness and the inculcation of good personal habits.		
3.2.2	Deportment:		
3.2.2.1	Good habits regarding stance, sitting and writing positions.		
3.2.3	Food:		
3.2.3.1	Different kinds of food necessary for a healthy body.	3.2.3.1	The following aspects should receive attention: The lunch packet taken to school daily. Unhealthy types of food and beverages. The necessity for the hygienic handling of food. The dangers of food poisoning. The dangers of polluted water.
3.2.4	Sleep.		
3.2.5	*Care of* -		
3.2.5.1	the eyes;		
3.2.5.2	the ears;		
3.2.5.3	the nose;		
3.2.5.4	the teeth;		
3.2.5.5	the hair;		
3.2.5.6	the skin, and	3.2.5.6	The importance of the following: Regular bathing. Face-cloths and towels should not be shared. Care of scratches, blisters and insect bites. Dangers of too much sunbathing.
3.2.5.7	clothing.		
3.2.6	Preventing of the spread of infection.	3.2.6	Refer also to paragraphs 3.2.3.1 and 3.3.1.7. The following should also be dealt with - - (*a*) The dangers of communal face-cloths, towels, tooth brushes, comb, etc. (*b*) The dangers of sharing food and of sucking pencils and fingers.

Subject Matter	Suggestions to Teachers
	(*c*) The spreading of infection by sneezing and coughing, and of visiting sick friends suffering from a contagious disease. (*d*) Infection spread by flies, etc. (*e*) The necessity to cover sores, etc. (*f*) The necessity for immunisation against contagious diseases.
3.3 *Homes*	
3.3.1 The pupil's own home:	
3.3.1.1 Address and telephone number.	
3.3.1.2 The composition of the family.	
3.3.1.3 Shortest and safest route to school.	
3.3.1.4 Different types of homes.	3.3.1.4 Ordinary dwellings, single and double-storey houses, flats, pre-fabricated houses, or any other unusual type of housing in the vicinity.
3.3.1.5 Building materials required for building a house and for other buildings; what they look like and where they come from. The work of the various artisans involved.	
3.3.1.6 **Personal Relationships in the Home:**	3.3.1.6 Courtesy, thoughtfulness, friendliness, helpfulness and unselfishness towards: Parents, brothers, sisters and grandparents and others Servants Neighbours Visitors
3.3.1.6.1 Social Responses. Please, thank you, greetings, etc.	
3.3.1.7 Cleanliness in the home.	3.3.1.7 Cleanliness of utensils used for eating or preparing food. Washing of fruit and vegetables before eating. Combating of dangerous insects, e.g. flies, fleas, mosquitoes, etc. Clean habits in the bathroom. Keeping own bedroom tidy.
3.3.1.8 Safety precautions in the home:	3.3.1.8 Correct handling of dangerous objects, e.g. scissors, knives, etc. Dangerous objects not to be played with, e.g. old refrigerators, lawn mowers, aerosol cans, matches, insecticides, medicines, etc. Children should also know where their parents are employed, the name of the family doctor and the Emergency telephone number. They should also be enlightened as to simple anti-burglary precautions.
3.3.2 **Homes of other population groups. (Where applicable.)**	
3.4 *The classroom and the school*	
3.4.1 The School:	
3.4.1.1 Name and Address.	

Subject Matter		Suggestions to Teachers	
3.4.1.2	Historical significance of the name.		
3.4.1.3	Situation of the school.		
3.4.1.4	The building and playground.		
3.4.2	Duties: The Principal; members of staff; the secretary; caretaker and cleaners.		
3.4.3	School Rules:		
3.4.3.1	Reasons for rules, discipline, neatness, good behaviour. Badge and motto. School uniform. Loyalty.		
3.4.4	Personal relationships.	3.4.4	Co-operation with others in work and play. Obedience. Respect for property. Courtesy, thoughtfulness, helpfulness towards school mates, staff and cleaners. How to win graciously and lose well.
3.4.5	Care and cleanliness of the school.	3.4.5	Clean habits regarding lavatories, wash-basins, dust-bins, waste-paper baskets, finger marks on walls, etc. Tidiness and care of apparatus, school desks and furniture.
3.4.6	Safety at school.	3.4.6	Safety rules regarding passages, playground, handling of apparatus, etc. Walking tours of the neighbourhood taking note of the most important features of the immediate surroundings.
3.4.7	Emergency planning:		
3.4.7.1	Rapid evacuation of school buildings in case of need.		
3.5	*The School Locality*		
3.5.1	Features of the school neighbourhood.		
3.5.2	Walking tours of the neighbourhood.	3.5.2	Street names in the immediate vicinity of the school. Road safety rules are dealt with in relation to excursions. Streets are not playgrounds.
3.5.3	Public amenities.	3.5.3	These amenities will vary from one neighbourhood to another. E.g. Public parks, play grounds, public telephones, etc. It is possible that some of the following facilities are available in the neighbourhood of some schools: a post office — a hospital a police station — a chemist a railway station — a cafe a grocery store — a bioscope a butcher shop — a dairy a fire brigade station — a hotel a supermarket — a garage local industries — etc.

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	Subject Matter		Suggestions to Teachers
3.5.4	The available facilities, e.g. shops, post office, police station, railway station, etc.	3.5.4	The Post Office (This is given as an example to illustrate how other facilities can be dealt with.) Write a note to a friend in the class (Language Period.) Address the envelope (Writing Period.) Visit the Post Office to buy a stamp. Post the letter. Other amenities offered by the Post Office: Banking Telegrams Parcel Post Pensions, etc. Telephone service The work of the Postman. Make a class stamp collection. Paint a picture "Me, buying a stamp" (Art Lesson), etc.
3.5.5	Trades, occupations and professions with regard to 3.5.3 and 3.5.4. (These to be included in themes relating to the work venue.)		
3.5.6	Dangers:		
3.5.6.1	Dangerous places.	3.5.6.1	Pupils should be made aware of the dangers of playing in unsuitable areas existing in the local environment, e.g. dams, rubbish dumps, construction works, etc.
3.5.6.2	Road safety.		
3.5.6.3	Dangers of accepting lifts, sweets, cooldrinks, money, etc. from strangers.		
3.6	*Our National Heritage*		
3.6.1	National symbols, holidays and festivals.		
3.6.2	National heroes and biographical studies.	3.6.2	In addition to heroes selected from the past, reference should also be made to people who have made a big contribution to public welfare during the 20th century.
3.6.3	Different racial groups, languages and relationships.		
3.7	*Local Amenities* E.g. Water, electricity, telephone, transport, parks, etc.	3.7	The teacher should attempt to arouse the pupils' curiosity about facilities we take for granted, e.g. Water Electricity Telephone Transport, etc. By means of excursions and themes the amenity should be traced back to its origin. The theme should then progress to include elementary scientific experiments to illustrate characteristics and properties of the topic, e.g. *Water* Water flows from our taps. Where does it come from? Children are lead to discover:

Subject Matter		Suggestions to Teachers	
			How taps work. Different kinds of pipes. Water mains. Stop cocks. Water meters. Means of storing water: dams, tanks, etc. Visit a filtration plant or dam. Water in nature: rain, hail, snow, ice, springs, rivers, vleis, sea, underground water, etc. Uses of water: cleansing, drinking, plant growth, decorative fountains, etc.
3.8	*Flora*		
3.8.1	Walking tours of the neighbourhood should be conducted at various seasons to cultivate an awareness of the flora in the neighbourhood.		
3.8.2	The names and characteristics of the various plants, flowers and trees.	3.8.2	The names and characteristics of the various plants and trees should be studied from direct observation. The effects of seasonal changes on trees and flowers, seed dispersal, adaptation to climatic conditions, etc. should be observed.
3.8.3	Agricultural products of the district.		
3.8.4	The nature table for the observation of growing things.		
3.8.5	Dangerous plants within the environment:		
3.8.5.1	The dangers of eating unknown berries, leaves, fruits, etc.		
3.9	*Fauna*		
3.9.1	Pets.	3.9.1	Ideally, pupils should be allowed to keep a pet in the Nature Corner, and through observation and caring for this pet, cultivate a concerned interest in other animals.
3.9.2	Farm animals, tame animals, wild animals.	3.9.2	Pets and tame animals, farm animals and, if possible, the wild animals of the zoo could be observed. The Characteristics of grass and flesh eating animals, their adaptation to seasonal changes and to climatic conditions, the products obtained from animals (wool, leather, dairy produce, etc.) could be discussed.
3.9.3	Birds (wild and tame).	3.9.3	Usefulness to man, adaptation to seasonal changes, bird calls, etc. Observation of a live bird or chicken.
3.9.4	A vivarium on the nature table.		
3.9.5	Types of farming conducted in the area in which the school is situated.		
3.10	*The seasons and weather conditions*		
3.10.1	The weather:		

Subject Matter		Suggestions to Teachers	
3.10.1.1	Observation of daily and seasonal changes.	3.10.1.1	Pupils should be made aware of the time cycle: the succession of days, weeks, months and season. The calendar. Also refer to the work dealt with in Mathematics. Pupils should be lead to observe daily and seasonal changes in the weather and to record on a weather chart.
3.10.2	The effect of seasonal changes on people, vegetation, animals and birds, and farming.		
3.11	*Conservation*		
3.11.1	Although the need for conservation could be dealt with under most of the other sub-headings, it is necessary for teachers to impress on the minds of pupils that our heritage (both in nature and cultural) must be conserved.	3.11.1	Class gardens: To promote the need for conservation the pupil should be awakened to the wonder and miracle of growth (especially flat dwellers). The pupil should be afforded the opportunity of working with the soil and understand the need for water, sunlight and the effect of insects on plant life. Gardens should take the form of small outdoor laboratories rather than ornamental displays. A wide variety of plants should be grown, e.g. Plants that grow from seeds, bulbs, tubers and slip. Plants that creep and climb. Plants we eat. Plants grown for the sake of the leaves or roots or flowers. Indigenous plants: Pupils should learn the meaning of the word "indigenous" and should observe some of the indigenous plants of the area. Prohibition of the picking of wild flowers. Dangers and causes of veld fires.
3.11.2	Pollution and the combating thereof.	3.11.2	The need to appreciate, conserve and care for the flora of our country should always be stressed. Litter—who causes it—how to prevent it. Pupils could be made aware of pollution that occurs in the neighbourhood, e.g. illegal dumping, litter at busstops, industrial smoke, polluted steams, etc. Pupils could undertake a project to clear a small area of litter.
3.12	Elementary Science and simple experiments.	3.12	Interest Tables Elementary science can be very successfully introduced in the Junior Primary phase. By means of simple experiments pupils can be helped to understand the world in which they live and to appreciate the qualities and functions of everyday commodities, e.g. water Experiments: What floats? What sinks? What dissolves? What does not?

Subject Matter	Suggestions to Teachers
	Evaporation Condensation Syphoning Filtration, etc. Books such as J. D. Harlan's "Science experiences for the childhood years" will provide many ideas to stimulate the pupils' natural curiosity and give examples of simple experiments and "finding out" projects.

ADDENDUM

What is needed?

1. A low table placed against a wall or the back of a cupboard on which is fixed the backdrop and the caption o the theme.
2. A vivarium (for "crawlies") and a variety of boxes, bottles, jars, etc. for specimens.
3. A magnifying glass (or, if the school can afford it, a microscope) and a viewer.
4. Simple reference books for further reading and research.
5. Labels and the pupils' own notes.

What topics are used?

1. Any item of pupil's news, any specimen brought to school by a pupil, anything of local or current interest.
2. Collections made by the pupils, e.g. semi-precious stones, stamps, shells, etc.
3. Themes such as:

Colours, e.g. orange.

Method: Arouse the pupils' interest and ask them to collect anything orange for the Nature Table, e.g. flowers, berries, leaves, vegetables, fruit, insects, butterflies, wool, yarn, plastic, material, paper, etc.

The articles brought will provide talking points for two or three weeks. The pupils are taught the names of flowers and leaves; they discuss the life cycle of butterfly, etc., are told about the materials used and the manufacture of plastics, yarns, wool, etc.

They are encouraged to read, draw and write about the articles they have observed and studied.

When the interest wanes, a book for the Reading Corner may be made of some of the drawings and recordings and the Nature Table cleared for the next project.

Any colour can be treated in the same way; even black, brown and white make exciting Nature Table displays.

Other suggestions:

1. Another theme could be "Under the Ground". The teacher could use this theme to increase the pupils' general knowledge about things outside their experience. The nature table could have:
   Flowers that grow from bulbs, corms or rhizomes.
   Vegetables such as onion, potato, carrot, turnip, radish, parsnip, artichoke, horse radish.
   Nuts—ground nuts.
   Interest could then be extended to:
   Worms and moles.
   Coal, precious stones and their mining.
   Underground water and the way in which it is utilised.
2. Above the Ground/In the Air could be about flying things; bees, butterflies, moths, etc., birds; aeroplanes and helicopters which would give the boys the opportunity to collect pictures of aircraft and study books on the history of aviation, etc.
3. Hard and Soft.
4. Covers in Nature.
5. Prickly plants.
6. How seeds are spread.
7. How do we travel? (Transport on land, water and in the air).

8. Found on the beach.
9. What a plant needs to grow.
10. Nature in . . . (using the months of the year).
11. The seasons (one for each term).
12. Life cycles (silkworms, tadpoles, butterflies).
13. How does it work? (tap, electricity, etc.).
14. Where does it come from? (wool, honey, rubber, cork, sugar, etc.).
15. We use what they make (trees-wood and paper) oysters (pearls) sugar cane (sugar), etc.

Bibliography

The Education Library has some excellent books both for teachers' and for pupils' use, e.g.

The First Look at Series by Franklin Watts

Nature Study Books for Enjoyment—Published by Angus & Robertson

Nature's Way—Published by Deutsch

Exploring the Natural World with Young Children by K. E. Hill

Black's Children's Encyclopaedia

Science experiences for the early childhood years by J. D. Harlan—Published by Columbus, Merrill.

Lees en ontdek. Kaapstad: Die Kinderpers van Suid-Afrika.
Hoe saad groei deur H. J. Jordaan

Die wêreld van . . . Kaapstad: H.A.U.M.
Seediere deur J. Holbrook

'n H.A.U.M. Junior Natuurwetenskapboek. Kaapstad: H.A.U.M.

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APPENDIX 4.B

REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF EDUCATION AND TRAINING

SYLLABUS

FOR

ENVIRONMENT STUDY

STANDARD 1

1983

G.P.-S.

DEPARTMENT OF EDUCATION AND TRAINING

SYLLABUS

FOR

ENVIRONMENT STUDY

STANDARD I

1983

G.P.-S.

STANDARD I

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 with 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 responsibility 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 particularly drawn 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 II 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 seasons

The seasons with reference to changes in the weather (hot, cold, mild, wet, dry, misty); length of days; plants in the garden, the trees, fruit and vegetables on the table; the flowers in the home: weather observation.

Note: This section is placed first not because of importance, but because it should be treated incidentally throughout the year and not in full formal lessons. The teacher herself must be observant and draw the attention of her pupils to the above-mentioned changes as they become apparent, e.g. a misty morning, a thunderstorm, the blossoming of fruit trees and different flowers, the ripening of fruit, etc.

Note: Sections 2 to 6 deal with the theme: Our Needs as People. We all have certain basic needs, e.g. shelter, water, food. All people experience these needs but children do not consciously think of them. This is therefore an excellent starting point for getting pupils to observe, think, and to express themselves. The teacher will guide her class by questioning and discussion, thus consciously systematising their knowledge, and she will at the same time deal with the rules of safety in connection with these basic matters.

2. Shelter

(a) The home of the pupil

(i) Different types of houses, rectangular and rondavel; materials used and where obtained (locally and elsewhere), e.g. wattle, clay, thatch, timber, brick, cement, roofing iron, etc.

(ii) Some of the things we have in our homes, e.g.. furniture, utensils and clothing.

(iii) Safety rules (correlate with Health Education): Pupils must know their names, surnames and addresses; avoidance of dangers in the home, e.g. keeping things in their proper places; danger of polished floors; jamming fingers in doors; care in using knives and razor blades; cutting away from body; danger of running with open knife, nib or other sharp instrument; medicines to be kept out of reach; danger of drinking from medicine bottles; harmful habits at home and at school; throwing stones, shooting with catapults and peashooters; leaving bottles and peels lying around; nails or planks jutting out in exposed places; carelessness in climbing trees and over walls and fences.

(b) The story and development of homes (brief treatment)

Caves, rough shelters, tree-dwellings, tents, huts, modern dwellings, etc.

(c) Homes of other creatures

Holes (snakes), stones (scorpions, crabs and fish), nests (ants and birds), etc. Treat mainly those in the environment, proceeding from the simplest to the more complex, e.g. weaver bird's nest.

3. Water

(a) How obtained and stored in the home and environment.
Sources: rain (rivers, dams, tanks), springs, boreholes and wells; modern town water supplies; how Bushmen obtained and stored water.

(b) Safety rules with regard to cleanliness of source, storage and use; the boiling of unsafe water; danger of swimming in rivers or unfamiliar places.

4. Food

(a) Foods found in our homes, e.g. meat, eggs, milk, bread, porridge, fruit, vegetables, sugar. The "life histories" of some of these foods - how they are produced or grown, reaped and further treated e.g. at the mill, in factories, or in the home. Vegetables, fruit, etc., which are actually grown at the homes of the pupils: their leaves, flowers, seeds, roots, general appearance and the way they grow.

(b) Collecting, sorting and pasting of wrappers and labels from containers, on charts or in albums.

(c) Healthy and unhealthy diet. (Correlate with Health Education)

(d) Safety rules in the kitchen; danger of tinned foods when tin is left open; danger of eating, tasting, sucking and drinking unknown things.

5. Heat

(a) The story of fire: lightning, preserving live coals or fire, primitive ways of lighting fires, modern safety matches.

(b) What we use in our homes to get heat, e.g. wood, coal, paraffin, etc.

(c) Safety rules in connection with fire. Never sleep with an open fire in the room; take care when lighting a paraffin stove; dangers of burning grass; playing with matches. Avoid hilltops and trees during lightning storms.

6. Light

(a) Kinds of light used in our homes: candles, paraffin or petrol lamps, electric light, etc. The necessity of having good light in our homes.

(b) Safety measures that should be observed with the kinds of light used. Danger of electricity: danger of touching electric wires or connections, or of climbing poles.

7. Living in the home

(a) My people at home - the responsibility of each member of the family towards the others.

(b) How I can help my father and mother at home. The pupils should actually tell what they have done to help their parents in their own homes. Stories of the manner in which boys and girls in our own and other countries and of earlier times help or have helped their parents.

(c) Thrift, including proper care of our possessions.

8. Creatures associated with our homes

(a) Domestic animals and birds, e.g. dogs, cats, cows, fowls, ducks; how they help us. Stories of how some of them were domesticated.

(b) Other creatures which the pupils actually find in and around their homes - general observation and discussion. Differentiate between harmful creatures (e.g. mice, rats, snakes, snails, flies, cockroaches) and man's friends e.g. birds (swallow, wagtail, etc.), bees, earthworms; toads and chameleons (both of which feed on insect pests).

(c) Kindness to animals and creatures: how we should love and care for our domestic animals; humane methods of treatment.

(d) Safety rules with regard to animal dips and insecticides.

D. EVALUATION

Maximum marks 50.
Minimum pass mark 25.

APPENDIX 4B

REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF EDUCATION AND TRAINING

SYLLABUS

FOR

ENVIRONMENT STUDY

STANDARD 2

1983

G.P.-S.

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.

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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, enconomic, 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 trafic 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 bicyle 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 black= board 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.

APPENDIX 4.C

FIRST TERM SUB A

AIMS: The purpose of Environment Study as a branch of school activity is to have the child in so far as age and stage of development allow, a clearer idea of:

himself as an individual, as a person with needs and desires, with a life to live happily and efficiently.

himself as a member of various groups with which he is associated, his home, his school, his church, his town or village, his country each serving him and each having some claim to his loyalty and co-operation.

how his own and other people earn a living of the value which the work they do has for the commjnity, and of the need for man to work if he is to lead a useful, contented life

the locality in which he and his friends live, in which his home, his school, his church and other places to which he may be sent are situated

other forms of life which makes his world, namely the pets in his home, the plants in his garden and in the veld, the trees in the neighbourhood, the animals which supply him with food and clothing, the insects, the birds, the reptiles which he encounters of what these mean to him and of his responsibility towards them

the direct bearing on his health; interests and activities of such geographical factors as the climatic conditions, the nature of the country in which he lives, the mineral and agricultural resources of his environment and the seasonal changes experienced year by year

INCIDENTAL: DAILY NEWS AND CURRENT AFFAIRS

Things brought to school by the children, e.g. shells & insects
The proper care of clothing, books, pencils, water, electricity etc.
Care of the classroom and school grounds

SCHOOL: CLASSROOM AND ITS SITE

Adjustments to own classroom
Adjustments to other classrooms
Adjustments to Principals office and staff room
Adjustments to janitors quarters
Sportsfield and playground
School entrances and exits

PERSONAL RELATIONSHIPS

Family: Making the child aware of himself as a member of a family

Parents:	Father, head of the house, breadwinner Mother, Love and care
Children:	Sisters and brothers, duties to one another, joy and companionship
Relatives:	Living in the same house

Discuss various occupations of parents

PUPILS HOME AND LOCALITY

Know your home address and telephone no.
Neighbours
Friends and other families
Respect, helpful, friend

NATURAL PHENOMENA

The Seasonal changes and man's adaptation to these changes.

SOCIAL RESPONSES

Please, thank you, no thank you
Greetings: goodnight, good evening, good morning, goodbye

PETS

Pupils should be encouraged to keep a pet
Explain why proper care should be taken of it

SECOND TERM

DAILY NEWS AND COMPILATION OF NEWS SHEET

Discussion of objects brought to school by pupils e.g. shells, feathers, interesting books, toys etc

Birthdays

THE SCHOOL

It's site

Other Classrooms in the school

The Principals office

PERSONAL RELATIONSHIPS

Explanation of the special function of the Principal, teachers and janitor.

Living happily together at work and at play

Observing school rules

Introduction to good citizenship

Flag recognition and composition of National flag

ROOMS IN THE HOME

Different kinds of rooms furniture and care of it

Flower plants and other forms of indoor decoration

NATURAL PHENOMENA

THE SUN

Rises in the East. Sets in the West beautiful colours at sunrise and sunset

Sun gives light and warmth. Day and night.

Dangers of excessive exposure to sun

Help in plant growth

NATIONAL FESTIVALS

Public holidays as they occur

Visitors to the School Could be any of the following:

Policeman

Fireman

Postman

Doctor

Dentist

Traffic Officer

Who causes it

How to prevent it

Illegal dumping

Pupils could undertake to clean a small area of litter in the vicinity.

THIRD TERM

DAILY NEWS

Compilation of News Sheets
Things brought to school by children, e.g. shells, pips, etc.
Birthdays
Fundraising in aid of observing courses
Class and school bazaars and other functions
Proper care of clothing, books, pencils, water, electricity, etc.

CLASSROOM, SCHOOL AND ITS SITE

PERSONAL RELATIONSHIPS

The special function of the Principal
Teachers, janitor and secretary
Obedience to teachers
Observing School rules
Respect for own property, for that of friends and that of the school
Courtesy, helpfulness and friendliness towards playmates, teachers and janitors

PLANT LIFE AND THE SCHOOL PLAYGROUND

Care of and respect for lawns, flowers, shrubs, trees and fishponds
Learning of names of a few well known flowers, trees and shrubs

THE PUPILS LOCALITY AND HIS HOME

The Home

Childs contribution to tidiness and orderliness in the home, e.g. dusting, use of dustbin, etc.

Combating flies and mosquitoes. Neatness in the garden and yard

Amenities: Lights, water, cooking facilities, sanitation

Meals: Table manners

Life history of Milk and Bread

Local Development

New developments with regard to building of roads/factories, new houses and shops under construction

DAILY NEWS

Things brought to school by children e.g. shells, flowers, insects

SAFETY FIRST RULES

Walking and running

Dangerous games

Throwing stones

Fighting

Climbing trees and poles

ROAD SAFETY

The scholar patrol

Preventing accidents on the road - story

Road courtesy towards others on the road

Road sighns

PUPILS LOCALITY AND HIS HOME

Respect for one's own garden

Learning names of well known flowers

Helping towards attractiveness of the garden

FESTIVALS CELEBRATED BY FAMILY

Birthdays

Religious holidays

Public holidays

CARING FOR LIVING THINGS

Tending to pot plants

Window boxes

NATURAL PHENOMENA

The Wind

Direction as observed during various seasons e.g. bent trees, weather Cock et.

PUBLIC AMENITIES

Parks, swimming pools, public telephones, post office, Police Station Railway Stations, Hospitals, Chemists, Garages etc

Discuss the services they render to us

AIMS

a. To make a pupil aware of the splendour, beauty and order of God's creation.

b. To arouse in the pupil an interest in and a love of the subject, and to awaken in him a desire to know more about his own locality, his country, nature as a whole and about people.

c. To preserve and to stimulate the pupils own natural curiosity and wonder.

d. To guide the pupil to discover interesting facts by his own efforts and to teach him to persue the following steps in his investigation, observe, discuss, make notes and draw conclusions.

1. THE CLASSROOM, THE SCHOOL AND ITS SITE

a. THE BUILDING

Adjustment to own classroom, other classrooms, cloakrooms, administrative offices of the principal and the secretary, hall, library, art-room, kitchen, caretaker's quarters bicycle sheds, sportsfields and playground.

b. PERSONAL RELATIONSHIPS

Explanation of the special functions of the principal, teachers, secretary and caretaker. Living happily together - work and play, obedience to teachers, observing school rules. Respect for own property, for that of friends and the school. Helpfulness, courtesy and friendliness towards playmates, teachers and caretaker.

c. SAFETY FIRST RULES

At School: Safety first in the playground, with particular attention to school rules: walking and running. Dangerous games and places. Throwing stones and other objects. Quarreling of fighting on the playground, with particular attention on the way home. Riding bicycles on the playground. The danger of climbing trees, poles and buildings.

d. ROAD SAFETY

The scholar patrol: Preventing accidents on the road. Simple instruction, through the medium of stories, with regard to road safety and courtesy towards others on the road. Road signs, wearing safety belts.

e. PLANT LIFE AND THE SCHOOL PLAYGROUND

Care and respect for lawns, flowers, trees and shrubs.

f. INTRODUCTION TO SCHOOL PRIDE

Colours, uniform, badge, motto, song, pride, loyality.

ENVIRONMENT STUDY.

A INCIDENTAL.

1. Things brought ot school by pupils - noted in daily news.
2. Proper care of clothing - special reference to school uniforms.
3. Class and school bazaar - cake sales
4. Birthdays of pupils - recorded on chart
5. Fund raising in aid of deserving causes.
6. Discussion on collections by pupils.
7. Schools Sports day at Tills Crescent.
8. Proper care of library books.

B THE SCHOOL

1. Safety rules at school.
2. Fighting and quarrelling on playgrounds.
3. Care and respect for school grounds and gardens.
4. Pride in school colours and banner.
5. Dangers of throwing stones and balls.
6. Behaviour in school entrances and exits.
7. Description of playground - tarmac, grass, trees.
8. Road safety - Scholar patrols prevent accidents.
9. Recognition of Republican flag.
10. Recognition of road signs to and from schools - pedestrians and motorists.

C THE FAMILY - PUPIL'S LOCALITY (ENVIRONMENT)

1. Domestic staff - good relations - courtesy and justice.
2. Respect helpers who call at home.
3. Well known shops and businesses in the vacinity.
4. Living rooms - furniture and care.
5. Childs contribution to tidiness and orderliness at home.
6. Safety at home - matches, electrical appliances.
7. Indoor decorations - potted plants and others.
8. Combating flies and mosquitoes.
9. Amenities at home - telephone, electricity, radio

D NATURAL PHENOMENA - NATURE BOOK

1. What is rain?
2. Plant life in school grounds.
3. Recongnition of current seasons.
4. Learn names and shapes of well known flowers.
5. The garden - do not destroy flowers.
6. Care and protection of wild life.

7. Thunderstorms - drizzling, mist.
8. Length of day and night, temperature.
9. Attention drawn to Winter nights - early setting of sun.

E THEME: Winter

THIRD TERM

ENVIRONMENT STUDY

A INCIDENTAL

1. Road safety rule in the street.
2. Thrift: do not be wasteful.
3. Do not be rowdy in the street.
4. Note things brought by children - shells, plants. etc.
5. Grandpa's Sixth birthday.
6. Farm animals - discussion.
7. School function - music festivals, concerts, eisteddfod.
8. Courtesy - manners maketh man.

B THE SCHOOL

1. Care of pencils, donot bite or break.
2. School rules and road safety.
3. Wild running on playground forbidden - limited space.
4. Learn names and characteristics of well-known shrubs on the grounds.
5. How we should address the janitors.
6. Helpfulness to school mates.
7. Dangers of climbing telephone poles in and around school.
8. Kindness towards janitors.

C PUPILS LOCALITY

1. Helpers who call at home - refuse remover, vegetable vendour.
2. Safety first in the home.- the medicine chest.
3. Keeping the garden neat and trim.
4. Cooking utensils - facilities in the home.
5. Kindness and respect to neighbours.
6. Manners at table - grace before meals
7. Life history of bread and milk.
8. The story of good sportmanship.
9. Dangers of climbing roofs.

D NATURE

1. Careful not to damage parks and gardens.
2. Types of rainfall.
3. Time - shadows made by the sun.
4. The force and strength of wind.
5. The frost and the dew.
6. Trees in winter.- describe them.
7. The garden snail.
8. The story of the butterfly.
9. Discuss the various shapes and shells.
10. The story of the silkworm.

E THEME: Spring

FOURTH TERM

ENVIRONMENT STUDY

A INCIDENTAL

1. Proper care of clothes - school uniforms.
2. Keeping tadpoles in glass jars.
3. Discuss any objects by pupils brought to class.
4. The story of pearls (oyster shells).
5. A discussion on our kitchen.
6. Discussion on the street pupils live on.
7. The convenience of the telephone.
8. Parking the car in the garage.

B THE SCHOOL

1. The National Anthem - respect.
2. Loyalty to school colours.
3. Take pride in neatness of school uniforms.
4. Respect for shrubs and plants on school grounds.
5. Do our best to keep public places clean - buses especially.
6. Road courtesy to others on the way to school.

C PUBLIC LOCALITY

1. Helping at home.
2. Dangers of accepting lifts from strangers.
3. Celebrating religious holidays.
4. Life history of Jam and Butter.
5. Dangers of drinking strange liquids.
6. Lighting in our homes - electricity, lamps, candles.
7. Kindness and justice meeted out to servants.
8. Visiting our new neighbours.

D NATURE

1. The current season.
2. Keeping records of the weather.
3. Dispersal of seeds.
4. The common ant in autumn.
5. The rock pool - Umhlanga Rocks.
6. Root vegetables.
7. The story of sharks.
8. Draw attention to beautiful sunset - over hills or horizon.
9. Festivals celebrated by family.

E THEME: SUMMER

1. Observe this season. Discussions - weather conditions.

2. Incidental Work. Daily news and current affairs.

3. Visitors to the school. Inspectors, Inspectresses, school nurse, parents, traffic officers etc.

4. Daily attention paid to elementary thrift, e.g. proper care of clothing, pencils, books, water, electricity, other peoples property etc.

5. Nature Table.
   a) Pupils plant and observe growth of beans, carrots, sweet potatoes, onions etc.

   b) Pupils contribute to the nature table. Nature table should have:

   c) Something growing -
      Something alive -
      Shells - etc.

   d) Various themes are displayed on nature table e.g. items made from wood - trees.

6. Sleep -

7. Care of eyes:
   a) Do not look into the sun or any bright light.

   b) Keep your work shaded from the direct rays of the sun.

   c) Read and write only in good light.

   d) Keep your book about a ruler's length away from your eyes.

   e) If your eyes itch or burn, do not rub them.

8. Cleanliness:
   a) Cleanliness in the home - Do not scribble on the walls.

   b) Cleanliness of utensils used for eating and preparing food.

   c) Washing of fruit and vegetables before eating.

   d) Combating of dangerous insects in the home, e.g. fleas, mosquitoes, cochroaches, flies etc.

   e) Cleanliness in the classroom.

   f) Cleanliness on the school playground.

   g) Cleanliness in our towns and cities.

ENVIRONMENT STUDY SECOND TERM

1. Observe this season - discussions weather conditions.

2. Homes.
   a) The pupils own home.
   b) Address and telephone number.
   c) The composition of the family.
   d) Shortest and safest route to school.

3. Duties. School Rules.
   a) Reasons for rulers, discipline, neatness and good behaviour.
   b) The principle, teachers and secretary.
   c) Class leaders, duties.
   d) Priviledges, duties of pupils.
   e) Decoration and care of classrooms.
   f) Caretakers and cleaners.
   g) School locality.
   h) School uniform.
   i) Loyality.

4. Road Safety:
   a) Safety at school - playground, handling of apparatus etc.
   b) Road Safety rules are dealth with in relation to excursions.
   c) Dangers of accepting lifts, sweets, cooldrinks, money etc. from strangers.

5. Care of ears.

6. Care of Hair.

7. Pets:
   a) Cleanliness of pets e.g. cats, dogs.
   b) Proper care of these animals.
   c) Birds.

1. Observe this season - discussions - weather conditions.

2. Flora:
   a) Names of various types of trees e.g. pine, gum, willow trees etc. Fruit trees e.g. peach, apple, fig trees etc.

   b) Shape and size of leaves. Colour of leaves, branches etc.

   c) Structure of bark and reedlie roots, stem leaves etc.

   d) The effect of seasonal changes of trees and flowers.

   e) Seed Dispersal.

   f) Adaptation to climatic conditions must be observed.

3. Good Eating Habits:
   a) Eat plenty of fresh fruit and vegetables.

   b) Drink plenty of water.

4. Deportment:
   a) Good habits regarding sitting, walking and writing positions.

5. Care of Teeth:
   a) Brush your teeth after each meal etc.

6. Care of skin:
   a) Do not sit in direct sun.

7. Personal Hygience:
   a) Daily inspection of nails, tissues and personal neatness.

8. Public Amenities:
   These amenities will very from one neighbourhood to another. e.g. Public parks, playgrounds, public telephones.

A Post Office.
A Police Station.
A Railway Station.
A Grocery Store.
A Butchery Shop.
A Fire Brigade Station.
A Supermarket.
A Hospital.
A Chemist.
A Cafè - Tea Room.
A Bioscope or Cinema.
A Dairy.
A Hotel
A Garage etc.

1. Observe this season - discussions - weather conditions.

2. The Weather:
   a) Observation of daily and seasoned changes.

   b) Names of the days and months - Use of calender and weather chart.

3. Conservation:
   a) The wonder and beauty of nature in our land.

   b) Home Gardens.

   c) Parks.

   d) Dangers and causes of veld fires.

   e) Prohibition of the picking of wild flowers.

   f) Plants we eat.

   g) Plants that creep.

   h) Plants grown for the sake of leaves or flowers.

   i) Care of classroom garden.

4. Elementary Science and simple experiments:
   a) Interest Table.

   b) Experiments.

   c) What floats? What sinks?

   d) What dissolves? What does not dissolve?

   e) Evaporation.

   f) Condensation.

   g) Syhoning.

   h) Filtration.

5. Care of the Nose.

6. Fund Raising in aid of deserving causes.

7. Our National Heritage:
   a) National Symbols, holidays and festivals e.g. Independence Day, 26 October, Good Friday, Ascencion Day, Christmas Day etc.

APPENDIX 4.D

Integrating Mathematics and other subjects

Pupils must not get the impression that Mathematics is a separate/isolated subject. Problems, work cards, activities and assignments should demonstrate the use and application of mathematics even at this early stage. The following topics in the syllabus for Environment Study could possibly be integrated with Mathematics:

- thrift
  - examples for activities and work cards
- fund-raising
  - activities, assignments and work cards
- shortest route to school
  - assignments such as determining the shortest route to the tuck shop
  - by how much is one route shorter than another
- building materials in the home
  - realistic counting activities, e.g. how many window panes in a specific room
  - measuring exercises, e.g. measuring the length of the class room
- emergency planning
  - measuring exercises e.g. determining the shortest route for the evacuation of the class room
  - measuring of time e.g. determining the quickest route for the evacuation of the class room
- facilities in the community
  - shops, mainly for realistic word problems
  - post office, for realistic word problems
  - bank, for realistic word problems
  - railway station for realistic word problems regarding time, reading of railway timetables, etc.
- agricultural products in the district
  - for realistic word problems
- the weather
  - completing tables of the weather in a specific week/month

Variation in presentations

Pupil activities, mat work and assignments are important facets of the teaching of Junior Primary Mathematics. The active participation, involvement and interest of all pupils is essential to create an effective learning atmosphere. Teachers must guard against activities which become stereotyped and should try to create an effective study atmosphere. The teacher must supply a wide range of activities and vary them when groups either work on the mat or continue with other assignments.

Variation of presentation will be enhanced by integration of other subjects with the mathematics curriculum.

Methods to vary mat work include the following:

- word problems on specific themes that are dealt with in other subjects
- assignments for individual pupils or groups of two or more pupils
- differentiating the problems given to any group
- allowing pupils to explain the methods of computation, and explaining how other pupils did a computation (mainly with explanations on computational methods)
- working in groups to solve problems

Methods to vary other group work include:

- completing sum cards
- executing assignments of measurement
- maths games and competitions
- utilising the pocket calculator to check answers in games, competitions, etc.
- pupils working alone or in groups
- project work
- utilising the casette tape recorder and distribution box for exercises with groups

APPENDIX 4.E

TIME-TABLE

School C

SUB A

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
7.30 - 7.45	Assembly	Scripture	Scripture	Scripture	Scripture
7.45 - 7.55	Assembly	News	News	News	News
7.55 - 8.10	Oral	Oral	Oral	Oral	Oral
8.10 - 8.25	Phonics	Phonics	Phonics	Phonics	Phonics
8.25 - 9.10	Maths	Maths	Maths	Maths	Maths
9.10 - 9.25	Health	Health	Health	Health	Health
9.25 - 9.45	Writing	Writing	Writing	Writing	Writing
9.45 - 10.00	Reading	Reading	Reading	Reading	Reading
10.00 - 10.30	B	R	E	A	K
10.30 - 11.05	Reading	Reading	Reading	Reading	Reading
11.05 - 11.20	Env. Study	Recitation	Env. Study	Recitation	Env. Study
11.20 - 11.50	Music	P.T.	Music	P.T.	Art
11.50 - 12.05	News	Env. Study	Rel. Song	Env. Study	Art
12.05 - 12.15	Story	Story	Story	Story	Art
12.15 - 12.20	Tidy up	Tidy up	Tidy up	Tidy up	Tidy up

TIME-TABLE

SUB B

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
7.45 - 8.00	Assembly	Scripture	Scripture	Scripture	Scripture
8.00 - 8.10	Assembly	News	News	News	News
8.10 - 8.25	Phonics	Phonics	Phonics	Phonics	Phonics
8.25 - 8.40	Env. Study	Env. Study	Env. Study	Env. Study	Env. Study
8.40 - 9.20	Maths	Maths	Maths	Maths	Maths
9.20 - 9.35	Oral	Oral	Oral	Oral	Oral
9.35 - 9.55	Writing	Writing	Writing	Writing	Writing
9.55 - 10.25	B	R	E	A	K
10.25 - 10.40	Health	Mondeling	Health	Mondeling	Mondeling
10.40 - 11.20	Reading	Reading	Reading	Reading	Reading
11.20 - 11.35	Recitation	Physical Ed.	Resitasie	Physical Ed.	Recitation
11.35 - 11.50	Music	Physical Ed.	Music	Physical Ed.	Art
11.50 - 12.10	Written Work	Music	Written Work	Music	Art
12.10 - 12.20	Story	Story	Story	Story	Art

TIME - TABLE

STANDARD 1

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
7.30 - 8.00	Assembly Phonics	Scripture	Scripture	Phonics/Spelling	Scripture
8.00 - 8.15	Oral	Oral	Oral	Oral	Oral
8.15 - 9.15	Maths	Maths	Maths	Maths	Maths
9.15 - 9.35	Composition	Language	Composition	Language	Language
9.35 - 10.00	Writing	Writing	Writing	Writing	Spelling
10.00 - 10.30	B	R	E	A	K
10.30 - 10.50	Reading	Reading	Reading	Reading	Spel/Klanke
10.50 - 11.10	Lees	Lees	Lees	Lees	Lees
11.10 - 11.35	Mondeling	Mondeling	Mondeling	Mondeling	Mondeling
11.35 - 12.10	Health	Env. Study	Klanke	Env. Study	Env. Study
12.10 - 12.30	B	R	E	A	K
12.30 - 1.00	Sinne	Health	Health	P.T.	Art
1.00 - 1.30	Voordrag	Poetry	Music	P.T.	Art
1.30 - 2.00	Voordrag	Klanke/Spel	Music	P.T.	Art

APPENDIX 4.F

SCHOOL E - SUB A AND SUB B TIMETABLE

PERIODS	1	2	3	4	5	6	7	8	9	10	11	12	13	14
TIME	8h 20 8h 30	8h 30 9h 10	9h 10 9h 30	9h 30 9h 50	9h 50 10h 10	10h 10 10h 20	10h 20 10h 40	10h 40 11h 00	11h 00 11h 20	11h 20 12h 00	12h 00 12h 20	12h 20 12h 40	12h 40 13h 00	13h 00 13h 20
DURATION	10	40	20	20	20	10	20	20	20	40	20	20	20	20
MONDAY	DEVOTION AND ASSEMBLY	EDUCATION RELIGIOUS	MATHEMATICS	Eng. Oral	Env. Study	BREAK SHORT	Xhosa Rec.	English Rec.	Xhosa Reading	INTERVAL	Writing	Drawing	Music	Music
TUESDAY				Env. Study	Drawing		Xhosa Reading	English Oral	Physical Training		Xhosa Reading	Xhosa Spelling	Writing	Writing
WEDNESDAY				Eng. Oral	Env. Study		English Rec.	English Reading	Writing		Xhosa Spelling	Env. Study	English Oral	English Oral
THURSDAY				Env. Study	Xhosa Reading		Xhosa Reading	English Oral	Drawing		Xhosa Oral	Drawing	Clay Model	Drawing
FRIDAY				Xhosa Oral	Env. Study		English Oral	English Rec.	Xhosa Spelling		English Oral	English Rec.	Writing	Writing

SCHOOL E : STD 1 AND STD 2 TIMETABLE

TIME From: / To:	7.40 8.00	8.00 8.30	8.30 9.00	9.00 9.30	9.30 10.00	10.00 10.30	10.30 11.00	11.00 11.30	11.30 12.00	12.00 12.30	12.30 1.00	1.00 1.30	1.30 2.00
MONDAY		Maths	Maths	Eng. Read.	Xhosa Oral	Env. Study	Eng. Oral	Maths		Xhosa Read.	Writing	Drawing	Xhosa
TUESDAY		R.E.	Maths.	Eng. Rec.	Eng.	Writing	Writing	Env. Study		Env. Study	Xhosa Read.	Eng. Oral	Xhosa
WEDNESDAY		Maths	Eng. Gram.	Xhosa Gram.	Maths	Xhosa Read.	R.E.	R.E.		Writing	Drawing	Env. Study	Writing
THURSDAY		Maths	Env. Study	Env. Study	Eng. Gram.	Xhosa Comp.	Xhosa Read.	Writing		Eng. Read.	Xhosa Gram.	R.E.	Drawing
FRIDAY		R.E.	Maths	Eng. Comp.	Xhosa Gram.	Xhosa Rec.	Eng. Oral	Env. Study		R.E.	Xhosa Comp.	Drawing	Writing

APPENDIX 4.G

ONDERWYSER SE ROOSTER
TEACHER'S TIME-TABLE

SCHOOL F : STD 1 AND STD 2

Periode Period	Maandag Monday	Dinsdag Tuesday	Woensdag Wednesday	Donderdag Thursday	Vrydag Friday
7.50 - 8.00	ASSEMBLY AND DEVOTIONS				
8.00 - 8.30	MATHS	MATHS	MATHS	MATHS	MATHS
8.30 - 9.00	AFR.LEES	AFRIK. MOND. OPSTEL	ENG. READING	ENG. ORAL COMP	PHYSICAL EDUCATION
9.00 - 9.30	PHYS.ED.	AFR. SKRYF OPSTEL	XHOSA READ.	ENG. WRITTEN COMP.	PHYSICAL EDUCATION
9.30 - 9.35	SHORT BREAK				
9.35 - 10.05	MATHS	ENG. READ.	MATHS	XHOSA READ.	XHOSA WRITTEN LANGUAGES
10.05 - 10.35	XHOSA ORAL COMP	AFR.MOND.	ENG. ORAL. LANGAUGE	AFR.MOND. TAAL	XHOSA WRITTEN LANGUAGE
10.35 - 11.05	XHOSA WRITTEN LANG.	AFR.RES.	ENG. WRITTEN LANG.	AFR.SKRYF TAAL SKRYF	ENVIR. STUDY
11.05 - 11.10 11.10 - 11.35	LUNCH LONG		LUNCH BREAK		
11.35 - 12.05	R.E.	R.E.	R.E.	R.E.	R.E.
12.05 - 12.35	XHOSA REC.	HEALTH ED.	TRANSCRIP.	HEALTH ED.	HEALTH ED.
12.35 - 1.05	ART & CRAFTS	GARDENING	MUSIC	ENV. STUDY	TRANSCRIP.
1.05 - 1.35	ARTS & CRAFTS	GARDENING	MUSIC	ENV. STUDY	ENG.REC.

APPENDIX 5.A

SUMMARY OF OBSERVATION SCHEDULES RESULTS

SCHOOL A RESULTS OF NON-PARTICIPANT
TEACHER'S EVALUATION

TABLE 5.3.1

DEVELOPMENT OF SENSE OF PLACE, TIME AND SOCIAL DEVELOPMENT

	LESSONS				
OBSERVATIONS	1	2	3	Total	Average
1 Place	15	12	13	40	13
2 Child's interaction with place	18	12	13	43	14
3 Time	3	10	13	36	12
4 People	12		16	28	9
5 Interaction of children with people	13		14	27	9
6 Environmental Components	19	12	14	45	15
7 Community	14		15	29	10
8 Children's feeling & emotions	14	14	15	43	14
9 Attitudes	17	9	14	40	13
10 Values	13	11	15	39	13

TABLE 5.3.2

RESOURCES USED WHEN TEACHING ES

	LESSONS				
OBSERVATIONS	1	2	3	Total	Average
1 Books	12		21	33	11
2 Pictures	16	8	21	45	15
3 Charts	14	13		27	9
4 Flashcards	16		9	25	8
5 Teacher	19	13	19	51	17
6 Children	14	20	15	49	16
7 Games		10		10	3
8 Chalkboard		18		18	6

TABLE 5.3.3

SKILLS DEVELOPED THROUGH ES LESSONS

	LESSONS				
OBSERVATIONS	1	2	3	Total	Average
1 Social	16	11	10	37	12
2 Language & study	23	25	16	64	21
3 Scientific & mathematical	13	12	16	41	14
4 Intellectual	15	19	18	52	17
5 Aesthetic	12	13	12	37	12
6 Practical	20	21	22	63	21

TABLE 5.3.4

TEACHER INPUT REQUIRING STUDENTS' PARTICIPATION

	LESSONS				
OBSERVATIONS	1	2	3	Total	Average
1 Recall of facts	-	-	-	-	-
2 Problem solving	17	19	11	47	16
3 Direct observation	19	16	20	55	18
4 Interpretation	17	17	13	47	16
5 Application	18	21	13	52	17

TABLE 5.3.5

PUPIL INPUT IN THE LESSONS

	LESSONS				
OBSERVATIONS	1	2	3	Total	Average
1 Clarification of instruments used	15	14	15	44	15
2 Questions answered	35	34	28	97	32

SCHOOL B RESULTS OF NON-PARTICIPANT TEACHER'S EVALUATION

TABLE 5.4.1

DEVELOPMENT OF SENSE OF PLACE, TIME AND SOCIAL DEVELOPMENT

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Place	12	10	13	35	12
2 Child's interaction with place	15	11	15	41	14
3 Time	15	11	7	33	11
4 People		8		8	3
5 Interaction of children with people		5		5	2
6 Environmental components	20	18	16	54	18
7 Community					
8 Children's feelings & emotions	14	21	17	52	17
9 Attitudes	19	19	14	52	17
10 Values	15	21	15	51	17

TABLE 5.4.2

RESOURCES USED WHEN TEACHING ES

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Books	5	12		17	6
2 Pictures	17	16		33	11
3 Simulations	18			18	6
4 Charts	19			19	6
5 Teacher	21	22	17	60	20
6 Children	24	20	23	67	22
7 Chalkboard			25	25	8

TABLE 5.4.3

SKILLS DEVELOPED THROUGH ES LESSONS

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Social	17	16	19	52	17
2 Language & study	15	20	22	57	19
3 Scientific & mathematical	21	13	15	49	16
4 Intellectual	14	16	15	45	15
5 Aesthetic	14	19	16	49	16
6 Practical	7	21	24	52	17

TABLE 5.4.4

TEACHER INPUT REQUIRING STUDENTS' PARTICIPATION

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Recall of facts		22		22	7
2 Problem solving	18	18	20	56	19
3 Direct observation	12	20	22	54	18
4 Interpretation	14	17	16	47	16
5 Application	16	21	22	59	20

TABLE 5.4.5

PUPIL INPUT IN THE LESSONS

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Clarification of instruments used	14	15		29	10
2 Questions answered	30	41	30	101	34

SCHOOL C RESULTS OF NON-PARTICIPANT TEACHER'S EVALUATION

TABLE 5.5.1

DEVELOPMENT OF SENSE OF PLACE, TIME AND SOCIAL DEVELOPMENT

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Place	2		8	10	3
2 Child's interaction with place	2	1	7	10	3
3 Time	3	2	6	11	4
4 People	2		7	9	3
5 Interaction of children with people	1		2	3	1
6 Environmental components	3	6	10	19	6
7 Community	1			1	0.3
8 Children's feelings & emotions	2		4	6	2
9 Attitudes			7	7	2
10 Values	2		7	9	3

TABLE 5.5.2

RESOURCES USED WHEN TEACHING ES

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Books	1	2		3	1
2 Pictures	5	9		14	5
3 Flashcards			10	10	3
4 Charts	2	1		3	1
5 Teacher	3	4	6	13	4
6 Children	3	4	6	13	4
7 Games		2	14	16	5
8 Classroom	1	4	6	11	4
9 Real objects	1	3		4	1

TABLE 5.5.3

SKILLS DEVELOPED THROUGH ES LESSONS

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Social	4	4	8	16	5
2 Language & study	4	9	13	26	9
3 Scientific & mathematical		5	4	9	3
4 Intellectual	1	7	6	14	5
5 Aesthetic	4	2	8	14	5
6 Practical	4	6	12	22	7

TABLE 5.5.4

TEACHER INPUT REQUIRING STUDENTS' PARTICIPATION

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Recall of facts	4	1		5	2
2 Problem solving	4	7	6	17	6
3 Direct observation	6	8	8	22	7
4 Interpretation	3	5	8	16	5
5 Application	3	6	10	19	6

TABLE 5.5.5

PUPIL INPUT IN THE LESSONS

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Clarification of instruments used	2	6	10	18	6
2 Questions answered	10	18	24	52	17

SCHOOL D RESULTS OF NON-PARTICIPANT TEACHER'S EVALUATION

	ENGLISH ORAL						MATHEMATICS					COMBINED	
	LESSONS						LESSONS					SUM.	AVERAGE
	1	2	3	4	TOTAL	AVERAGE	1	2	3	TOTAL	AVERAGE		
1 Place	20	8	27	23	78	20	2	21	18	41	14	238	34
2 Child's interaction with place	17	12	21	20	70	18	3	17	16	36	12	106	15
3 Time	16	9	3	5	33	8	3		9	12	4	45	6
4 People	16	8	16	13	53	13	3		11	14	5	67	10
5 Interaction of children with people	18	11	19	19	67	17	7		12	19	6	86	12
6 Environmental components	18	10	24	20	72	18	8	24	18	50	17	122	17
7 Community	19	10	10	21	60	15	3		16	19	6	79	11
8 Children's feeling & emotions	18	6	16	17	57	14	4	18	5	27	9	84	12
9 Attitudes	15	6	17	17	55	14	6	20	4	30	10	85	12
10 Values	15	9	17	18	59	15	6	19	4	29	10	88	13

TABLE 5.6.1 DEVELOPMENT OF SENSE OF PLACE, TIME AND SOCIAL DEVELOPMENT THROUGH ENGLISH ORAL AND MATHEMATICS LESSONS

	ENGLISH ORAL						MATHEMATICS					COMBINED	
	LESSONS						LESSONS					SUM.	AVERAGE
	1	2	3	4	TOTAL	AVERAGE	1	2	3	TOTAL	AVERAGE		
1 Teacher	18	10	28	28	84	21	5	19		24	8	108	15
2 Children	14	11	25	18	68	17	10	31		41	14	109	16
3 School	25		12	21	58	15	5	20		25	6	83	12
4 Real objects	26		47	35	108	27						108	15
5 Classroom		10			10	3	5	22		27	9	37	5
6 Charts		10			10	3						10	1
7 Simulations			32		32	8	12			12	4	44	6
8 Games							8			8	3	8	1
9 Boards for children								26	22	48	16	48	7
10 Chalkboard									17	17	6	17	2

TABLE 5.6.2 RESOURCES USED WHEN TEACHING ENGLISH ORAL AND MATHEMATICS LESSONS

	ENGLISH ORAL						MATHEMATICS					COMBINED	
	LESSONS						LESSONS					SUM.	AVERAGE
	1	2	3	4	TOTAL	AVERAGE	1	2	3	TOTAL	AVERAGE		
1 Social	24	11	33	22	90	23	8	22	21	51	17	**141**	**20**
2 Language and study	19	12	30	22	83	21	13		24	18	55	138	20
3 Scientific and mathematical	16		22	23	61	15	15	32	19	66	22	127	18
4 Intellectual	18	8	14	22	62	16	8	33	14	55	18	117	17
5 Aesthetic	22	10	16	24	72	18	11	28	13	52	17	124	18
6 Practical	29	13	42	31	115	29	11	50	23	84	28	199	28

TABLE 5.6.3. SKILLS DEVELOPED THROUGH ENGLISH ORAL AND MATHEMATICS LESSONS

	ENGLISH ORAL						MATHEMATICS					COMBINED	
	LESSONS						LESSONS					SUM.	AVERAGE
	1	2	3	4	TOTAL	AVERAGE	1	2	3	TOTAL	AVERAGE		
1 Recall of facts		8			8	2						8	1
2 Problem solving		9	27	20	56	14	12	31	25	68	23	124	18
3 Direct observation	23	9	30	20	82	21	12	36	11	59	20	141	20
4 Interpretation		11	6	15	32	8	11	31	25	67	22	99	14
5 Application	27	14	33	24	98	25	11	39	31	81	27	179	26

TABLE 5.6.4 TEACHER INPUT REQUIRING STUDENTS' PARTICIPATION

	ENGLISH ORAL						MATHEMATICS					COMBINED	
	LESSONS						LESSONS					SUM.	AVERAGE
	1	2	3	4	TOTAL	AVERAGE	1	2	3	TOTAL	AVERAGE		
1 Clarification of instruments used	25	12	25	21	83	21	13	26	17	56	19	139	20
2 Questions answered	36	27	62	43	168	42	16	67	36	119	40	287	41

TABLE 6.5.6 PUPIL INPUT IN THE LESSONS

SCHOOL E RESULTS OF NON-PARTICIPANT TEACHER'S EVALUATION

TABLE 5.7.1

DEVELOPMENT OF SENSE OF PLACE, TIME AND SOCIAL DEVELOPMENT

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Place	28	9	17	54	18
2 Child's interaction with place	30	7	16	53	18
3 Time					
4 People	35			35	12
5 Interaction of children with people	39			39	13
6 Environmental components	32	15	18	65	22
7 Community	29			29	10
8 Children's feelings & emotions	22	5	20	47	16
9 Attitudes	26	7	16	49	16
10 Values	26	6	15	47	16

TABLE 5.7.2

RESOURCES USED WHEN TEACHING ES

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Diagrams	6			6	2
2 Pictures	11		8	19	6
3 School	14	2		16	5
4 Charts	8			8	3
5 Teacher	13	9	20	42	14
6 Children	20	10	12	42	14
7 Chalkboard			16	16	5

TABLE 5.7.3

SKILLS DEVELOPED THROUGH ES LESSONS

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Social	31	9	23	63	21
2 Language & study	30	9	17	56	19
3 Scientific & mathematical		23		23	8
4 Intellectual	17	7	13	37	12
5 Aesthetic	29	8	14	51	17
6 Practical	39	6	13	58	19

TABLE 5.7.4

TEACHER INPUT REQUIRING STUDENTS' PARTICIPATION

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Recall of facts	-	-	-	-	-
2 Problem solving	15	7	16	38	13
3 Direct observation	17		7	24	8
4 Interpretation	17		6	23	8
5 Application	38	5	19	62	21

TABLE 5.7.5

PUPIL INPUT IN THE LESSONS

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Clarification of instruments used	21		5	26	9
2 Questions answered	58	27	44	129	43

SCHOOL F RESULTS OF NON-PARTICIPANT TEACHER'S EVALUATION

TABLE 5.8.1

DEVELOPMENT OF SENSE OF PLACE, TIME AND SOCIAL DEVELOPMENT

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Place	27	24	21	72	24
2 Child's interaction with place	25	26	24	75	25
3 Time	16	18	23	57	19
4 People					
5 Interaction of children with people					
6 Environmental components	27	19	28	74	25
7 Community		27		27	9
8 Children's feelings & emotions	25	18	22	65	22
9 Attitudes	22	21	25	68	23
10 Values	26	36	29	91	30

TABLE 5.8.2

RESOURCES USED WHEN TEACHING ES

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Pictures	24	17	19	60	20
2 Flashcards			10	10	3
3 Real objects			38	38	13
4 Charts	26	25	14	65	22
5 Teacher	24	24	25	73	24
6 Children	29	24	33	86	29
7 Chalkboard		17		17	6

TABLE 5.8.3

SKILLS DEVELOPED THROUGH ES LESSONS

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Social	23	16	25	64	21
2 Language & study	25	21	27	73	24
3 Scientific & mathematical					
4 Intellectual	26	21	29	76	25
5 Aesthetic	31	22	37	90	30
6 Practical	23	23	28	74	25

TABLE 5.8.4

TEACHER INPUT REQUIRING STUDENTS' PARTICIPATION

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Recall of facts					
2 Problem solving	36	23	21	80	27
3 Direct observation	36	33	28	97	32
4 Interpretation	26	23	31	80	27
5 Application	26	32	32	90	30

TABLE 5.8.5

PUPIL INPUT IN THE LESSONS

OBSERVATIONS	LESSONS				
	1	2	3	Total	Average
1 Clarification of instruments used	23	20	22	65	22
2 Questions answered	47	50	55	152	51