

THE "NEW" GEOGRAPHY IN SOUTH AFRICAN  
HIGH SCHOOL TEACHING

by

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## ABSTRACT

The "new" geography, though a misnomer, is defined as consisting of various, sometimes controversial, approaches to modern geography teaching. This research aims to evaluate and suggest ways of modernizing high school geography teaching in South Africa.

Aspects of "new" geography are explained, including: the conceptual approach, a swing away from factual memorization; building and use of all types of models; simulations and games, a recent innovation in teaching geography; the inquiry method where the pupil learns by "discovering" for himself; problem solving by the use of the scientific method of hypothesis testing; statistical and quantitative methods used in measuring and testing geographic theories; and various types of fieldwork.

From available publications geography teaching overseas is evaluated. European school geography teaching is described, particularly in England — the leading "new" geography innovator. The Netherlands, Belgium, Austria, Sweden and West Germany also show influences of modern trends, though not as markedly as Australia, New Zealand, Canada and the U.S.A., where H.S.G.P. started a spate of similar attempts at modernization, e.g. MACOS, G.Y.S.L., Geography 14-18, O.G.P.

A Model for renewal of geography teaching in South Africa is suggested. It portrays the various teaching strategies available, with examples of their implementation.

The findings of the 1977 survey of geography teaching in South African high schools are presented tracing three themes. The 1977 findings are compared with the 1966 H.S.R.C. findings. Language group responses are contrasted and the extent of use of "new" geography in South Africa is described.

Conclusions are drawn from the findings, and recommendations for disseminating "new" geography approaches in South Africa are made.

## PREFACE

The origin of this manuscript lies more than a decade ago when the writer began a land-use survey of the Klein Berg River Valley as part of a Master's degree programme, but circumstances were continually to interrupt researches.

A car accident put the writer on crutches for seven months soon after the fieldwork and mapping were completed. Then a year's leave of absence stretched into three because of the invaluable experience to be gained from teaching on both sides of the Atlantic, in addition to visiting Japan and most European and Latin American countries.

After a year's teaching back in South Africa in 1971 brought his service with the Cape Education Department to the five-year requirement for earning study leave, the writer was dismayed to discover that the small print stipulated continuous service before study leave would be granted. It was not therefore, until 1976 that full-time research work could continue, though unsuccessful vacation attempts were made. In 1976 a new Professor of Geography indicated a land-use survey was no longer acceptable for a M.A. degree.

However, changing views and circumstances in geography teaching which had caught his attention overseas, prompted the writer to try to examine the situation in South Africa and evaluate local geography teaching in comparison with developments in the "new" geography overseas.

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## CHAPTER I

### INTRODUCTION - WHAT IS THE "NEW" GEOGRAPHY?

Since its development nearly twenty years ago the "new" geography has permeated geography teaching to such an extent that few who teach the subject today can still be unaware of its implications.

During the two decades after the second world war, content - and pedagogically - based teaching ideas were applied to curricular programmes in science and mathematics teaching which resulted in a new approach and the use of different techniques in teaching these subjects. What has been referred to in the U.S.A. as "new math" emerged. Likewise the Nuffield Foundation in the U.K. sponsored research into new methods of science teaching which led to the changed approach, modifications and improvements manifest in Nuffield Science. Geographers on the research frontiers of their subject in the late 1950's and especially the sixties, found the traditional approach and methods of geography wanting. They began to adopt a more scientific approach, making use of techniques and methods developed in both the physical and social sciences in an attempt to introduce greater rigour in the discipline.

According to Dunlop (1976, p.3) three trends were discernible:

1. A theoretical approach that stemmed from the identification of key concepts and ideas in the structure of geography and the use of models and hypotheses which flowed from models. The movement paralleled development in educational thinking (typified by Bruner, 1960) which emphasized the value of working in a sequential way with central ideas. Acceleration in the accumulation of factual knowledge required the development and application of more advanced techniques of analysis and interpretation. The need to build geography curricula which introduced conceptual thinking and higher levels of technical skill and interpretation in place of the conventional topographical classification and description followed.
2. A behavioural approach in geography that can be traced to a seminal paper by Kirk in 1951 (further developed in 1963) which first set out the links between geography and psychology. Since that time the approach to teaching in several branches of geography has swung progressively towards using the techniques of the behavioural sciences.

An emphasis on the use of games, simulation, role-play decision-making and perception studies has emerged.

3. A quantitative approach to the analysis of geographical data became embodied in the increasing use of statistical methods. These seemed to introduce greater rigour in the development of technical and practical skills in the subject. Measuring and testing techniques were moved closer to those used in the physical, social and biological sciences.

These elements which became characteristic of geographical research and teaching, induced a growing understanding of the nature of scientific inquiry in geography and a belief that, in a rapidly-changing world, styles of learning will prove more important than facts. The precedent set by British and American curricular developments embodying these trends has led to the growth of the use of the term "new" geography, a term which, according to Walford (1972,p.2), "is usually applied to that loose collection of ideas which revolve around models, hypotheses, quantitative techniques, concepts and percepts."

Although widely used, the term is a misnomer, for geography has always had aspects that were "new" to the subject. This was particularly true in the first half of the 19th century when Von Humboldt and Ritter securely laid the foundations of modern geography. During the early part of this century much that was new to geography appeared in the writings of, for example, de la Blache, Ratzel, Herbertson, Davis, and later Hartshorne, but in the last two decades, partly as a by-product of the "knowledge explosion", so much "new" geography has been developed that few can now claim to be 'au fait' with the whole subject.

According to Thomas (1970,p.275)

"The fundamental characteristic of the 'New Geography' seems not to be, as is often thought, the use of quantitative methods, but rather its changed attitude to the region within geographical studies. Thus, the study of the particular region as a unique entity has been superseded by the search for patterns common to many regions, in which the particular case is only significant as a source of data used in the process of generalization".

This altered viewpoint has been accompanied by the development of a profusion of techniques including the discovery approach to learning, the method of problem solving using hypothesis-testing techniques, role playing in simulation games, the building and use of models, the use of statistics and quantitative methods, and the practical study of geography out in the field.

All these approaches of the "new" geography had, to a limited extent, been previously used in geography teaching, but in the sixties especially, their protagonists, mainly in universities, emphasized them, often to the exclusion of the traditional approaches to geography. The result was that traditional regional geographers and teachers gained the impression that the "new" geography was virtually another subject. Hence the polarization of views on the nature of modern geography and the dichotomy between the "old" and "new" geographies which Thomas declares is: (a) missing the point that both generalizations and studies of particular cases are necessary if knowledge is to progress; and (b) making it more difficult for those who teach the "old" geography to adapt to the "new". He believes that the objectives of school and university geography are different and that consequently the subject matter taught in each will differ. He declares,

"the task of the teacher is clearly to distinguish between those aspects of the new doctrine which have a bearing on his own work and those which do not, firmly rejecting that which is irrelevant while at the same time welcoming that which can help him to teach effectively". (Ibid p.277).

He contends that the ..... "rift between old and new is narrower than it is often made to appear..." In other words, while there is much of worth that has come out of recent developments in geographic education, the foundations of the subject were well laid and even modern pupils should be exposed to the traditional intellectual demands of having to present observations accurately and concisely in clear descriptive prose.

What the "new" geography has done is to broaden the possibilities of approach providing the teacher with a battery of excellent techniques with which to vary his presentation and enable him to exploit the potential in his pupils. Thomas believes that young children need to learn by proceeding from the particular to the general. Thus he finds the view of Haggett (1965,p.4.) that regional geography is the "laboratory side of an essentially theoretical subject" as complementary to the plea of traditionalist Fairgrieve (1936,p.382) for the teacher "to start from particulars and to proceed to generalizations". James (1967,p.52) however warns:

"Let us not forget the overriding importance of using geography to teach people about the world they occupy. And let us not, as professional geographers, become so entranced with the contemplation of the methods of our field, and its underlying theory, that we all forget to face the challenging job of teaching about the world."

According to Gross (1970,p.516)

"Geography is basically not a research subject. Rather it is pedagogic and philosophic. It is primarily interpretive. It provides a way of thinking about the world and its component parts .... (and a) unique perspective of the world. .... The basic purpose of geographic instruction is to produce knowledgeable citizens, not professional geographers."

A varied approach to geography teaching is thus to be encouraged. The quality of geography teaching of the great teachers of the past is reflected in the eminence that the discipline now enjoys. The subject could not have developed without them. Nevertheless, it is true that, in the hands of some teachers, the subject has seemed to pupils to be dead and irrelevant and many have benefitted little from years of its study.

The development of new and varied techniques now gives ordinary teachers the means of making geography interesting to all members of their classes. A natural outcome of interest, once captured and sustained by a varied approach, is the disappearance of boredom and therefore an increase in understanding and appreciation of our world.

The view adopted in this thesis is that geography is not only a worthwhile subject in the school curriculum but that it should be taught in such a way that it becomes an effective tool in bringing pupils to a greater awareness of the environment in which they must live. Because pupils are all individuals with widely differing interests, backgrounds and abilities, it is only through employing a variety of techniques that the interest of the majority will be captured and sustained.

In 1961 the Association of American Geographers (A.A.G.) and the National Council for Geographic Education (N.C.G.E) set up the American High School Geography Project to investigate ways of developing an entirely new conceptual approach to school geography teaching. Their work continued through the decade, finally producing a complete one-year school geography course described in chapter 3.

The first body in the U.K. actively and intentionally to take up the task of fostering the developing of the "new" geography at school level was the Standing Committee on the Role of Models and Quantitative Techniques in Geography Teaching. It was set up in 1967 with a fivefold purpose:

1. to gather information and opinions on (a) the desirability and (b) the practical implications of increasing the role of models and quantitative techniques in geography teaching;
2. to encourage and assist investigations into teaching methods and techniques by which such changes may be effected and to help evaluate their effectiveness at various age-levels;
3. to publicize the teaching materials, data resources and publications available to teachers;
4. to stimulate awareness and understanding of relevant concepts and techniques by lectures, meetings and publications;
5. to encourage publishers and examiners to consider ways which can help the development of the subject along conceptual and quantitative lines.

Educational bodies, as well as many geographers, are concerned about the development of geography teaching at school level, for as Cooke and Johnson (1969, preface) put it:

"Techniques of study are changing more rapidly in modern geography than at any previous time in the subject's history. As a result there is a great need for a dialogue between research workers and those being admitted to the mysteries of the subject. Teachers provide the necessary link; and it is dangerous for the vitality and future health of geography that some teachers find current developments either incomprehensible or unacceptable." (Walford, 1972, p.97).

It is because the author is at one with these sentiments that this piece of research into geography teaching was undertaken. It is hoped that the results of the study will play some part in contributing to the dialogue and in combatting the "incomprehensibility" or "unacceptability" referred to, in a South African context.

CHAPTER II

LEADING ASPECTS OF THE "NEW" GEOGRAPHY

The aspects of the "new" geography receiving the most attention in the seventies and thus developing fastest are: the conceptual approach to geography teaching, the building and use of models, role-playing and simulation games, the inquiry method and discovery learning, problem-solving and hypothesis-testing, the use of statistics and quantitative methods and fieldwork. This chapter provides a brief review of each of these.

A. THE CONCEPTUAL APPROACH.

With the exponential increase in knowledge many teachers have found conventional content-orientated school geography syllabuses inadequate. The syllabus, in their view, often tends to concentrate too heavily on a mass of facts that have to be passively memorized for the examination, but are of little use or relevance thereafter. By the end of the fifties and increasingly in the sixties, an influential body of opinion had swung away from content orientated syllabuses to what became known as the conceptual approach to geography teaching. Stress was increasingly laid upon the importance of concentrating on basic central ideas or concepts in geography, rather than upon mere facts. It was realized however, that the two approaches cannot be entirely divorced from one another, for facts must remain part of any geographic concept, even if only to illustrate it.

According to Graves (1975 p.154),

"A concept is basically a classificatory device which enables the mind to structure reality in a simplified manner by concentrating on the essential attributes of certain experiences."

Broek (1965, pp.72-5), a leading figure in the new movement, suggested that the basic geographic concepts were the following: the cultural appraisal of the earth; the regional concept; areal coherence; spatial interaction; localization; the significance of scale; the concept of change. Since then, a wide array of other concepts of varying magnitude has been added by many geographers and there is divergence of opinion on the relative importance of each. Prunty's article, "What Concepts and What Sequences?" (1966, p.30) captures the feeling of dilemma well.

"It seems we need research, including research in the classroom and experimentation with materials, to establish at least the following:-

1. what concepts are intrinsic to a full-fledged background in geography in the secondary school mind;

2. what concepts are desirable at given grade levels;
3. what are the alternative - and best-substantive beginning points for initiating each concept-structure;
4. what is the relative efficiency (intellectual productivity) of alternative substantive approaches to the build-up of pre-identified concepts in the child's mind; and
5. among various possible options, what spiralled sequence of concept-developments by grade levels could be the most productive one?"

Nishi's article (1966, pp.328-31) entitled "Geographic Guidelines for Reconstructing the Social Studies Curriculum" represented another American approach, while Kohn (1966, p.356) emphasised that, in addition to choosing the concepts for study, any balanced geography curriculum must take into account the needs of society, the needs of the subject matter and the needs of the learner.

What has emerged is that there is a range of important geographic concepts such as scale, distance, region, distribution, diffusion, location and others, the geographic meaning of which the pupil should grasp clearly. These may be broadened out in class as the child matures, for some young teenagers have difficulty coping with abstract ideas. According to Graves (1975, p.182) the pupil may learn the simpler concepts that describe features or processes which can be personally observed by the process of discovery or simulated discovery. The more abstract concepts which express relationships not confined to the learners' experience might have to be taught in some more direct manner. These concepts particularly, are dependent on the use of language, so that it is as vital to geographic education as to any other, that the pupil be able to understand the language used and be able to express himself clearly through its medium, whether it be the language of mathematics, science, logic or geography. By the end of his school career the pupil should be able:

1. to think logically and to reason about geographical phenomena;
2. to make abstract generalizations from concrete instances;
3. to perceive the characteristics of an abstraction (e.g. conservation, under-development);
4. to extract relevant data pertaining to a concept from an unsorted mass;
5. to recognise cause and effect;
6. to draw inferences and make rational predictions;
7. to have a clear idea of the structure of geography and a familiarity with the world in which he lives.

To satisfy these objectives the "new" geography offers the range of teaching techniques to which the rest of the chapter is devoted.

## B. BUILDING AND THE USE OF MODELS.

Models have been used to aid explanation in geography teaching from its earliest inception. They are idealized simplified representations of reality. In simplifying reality and extracting and emphasizing the essential components of a part of reality needing explanation, they make the phenomenon easier to explain for the teacher and more easily understood by the pupil.

According to Harvey (1969,p.158) "there are a multiplicity of model types performing a multiplicity of functions associated with a multiplicity of definitions." Although Chorley (1967,p.61) developed a detailed "Map of Geomorphic Activity" attempting to classify the various types of models involved in geomorphology, for school purposes it is sufficient to divide models into three broad categories each involving an increasing degree of abstraction, as Haggett (1972,p.20) has done. Iconic models are scaled down versions of reality whose properties are the same as in reality, only the scale is changed e.g. photographs, relief models. Analog models make use of symbols to simplify and represent reality, so their properties are different from those they represent e.g. topographical maps. Symbolic models also make use of symbols, either verbal or abstract mathematical expressions, to represent far more abstract concepts e.g. Von Thunen's land-use model.

It is important that models be simple enough to be understood and used by pupils, but that they are able to be re-applied to the real world upon which they are based without undue distortion. Models make the choice between relevant and irrelevant much easier for the pupil by limiting attention to a small number of items - the essentials. They provide mental structures for pupils to recognise and use at increasing degrees of complexity as they move up through the school. According to Dunlop (1976,p.24) they also "encourage an awareness of arrangement and system which should facilitate transfer from one spatial setting to another." Fitzgerald, (1969,p.63) like many other modern geographers, sees the building and testing of models as one of the most important aspects of teaching the "new" geography.

Though often an effective and useful aid, models are not without their dangers, as illustrated by the dependence which geomorphology teachers and pupils placed on the Davisian Cycle of Normal Erosion.

During the first half of the 20th century when the tenets of this geomorphology model became accepted as the whole truth, misconceptions arose. Later investigations revealed the inaccuracies and inconsistencies in this generalized explanation.

Crisp (1969,p.14) draws attention to four dangers in the use of models. He felt that they may be oversimplified or too complex; and that they may be used to make unreasonable predictions; or unwisely to draw definite conclusions. In Australian matriculation examination answers Forster (1973,p.13) noticed the cognition of abstraction to be a difficulty in that students were unable to relate models such as the zone, sector or multiple nucleii theories on the structure of cities to actuality. He warned that this danger might worsen in the future as greater use is made of models, unless great care is exercised by educators. Previously Scarfe (1971,p.199) warned, "Let us, therefore, beware of excessive emphasis on models. We can be taken in by them. They are useful technology only." Braithwaite (1953) pre-empted this warning by insisting that the price of the use of models is eternal vigilance. As Crisp (1969,p.13) says, models "are not meant to be ends in themselves, but rather a means of understanding and memorizing generalities about the reality they represent." As long as they are used as a tool they will continue to prove, as they always have done, of inestimable value to both teacher and learner, because of their advantages in explanation and the formulation of hypotheses.

### C. EDUCATIONAL SIMULATIONS

Real life situations are simulated and pupils play out decision-making roles according to rules simulating the constraints of reality. Walford (1969), who has done more than anyone to publicize simulation games in the United Kingdom, sees in simulations human decision-makers being confronted with varying situations to test their reactions to them. According to Gunn (1970,p.338) who has wide experience with simulations through his involvement in the American High School Geography Project, " 'Educational Simulations' simply means the harnessing of simulations for educational purposes - for organizing information, for posing problems, and for stimulating interest."

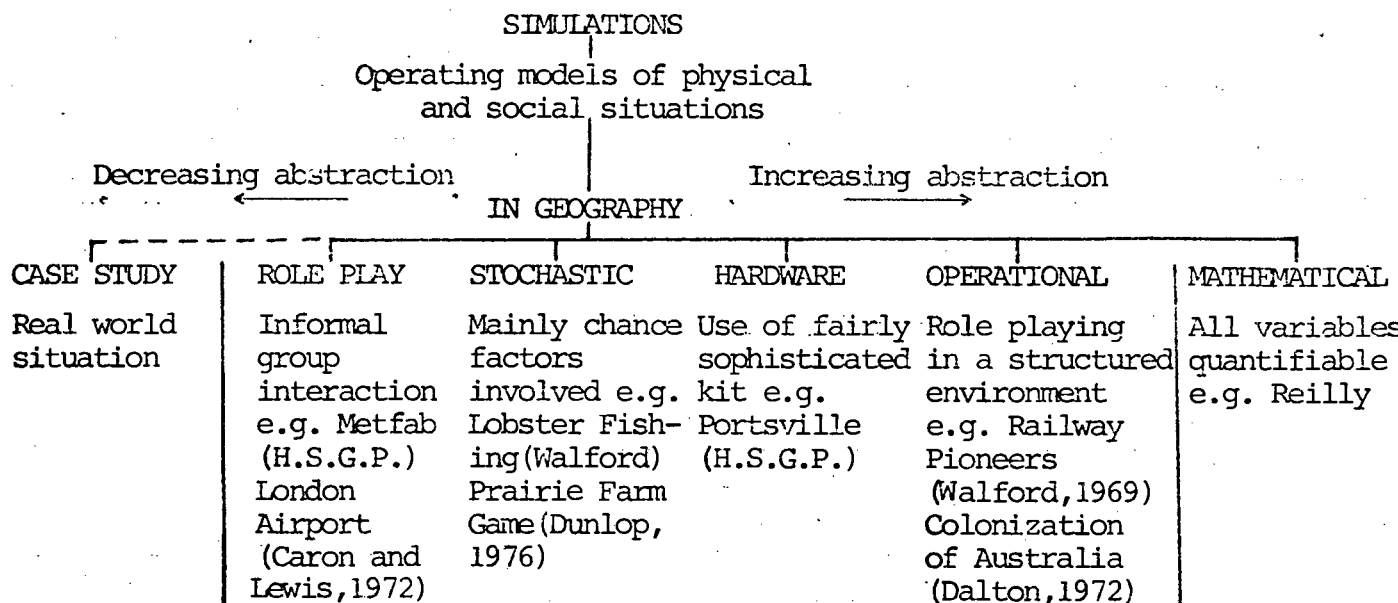
They have been used educationally in one form or another over the centuries as exemplified in the war games that nineteenth century Prussian generals used to train their officers and in the business games that contemporary industrialists use in management training. It was only with the further development of Dewey's principles of progressive education in the 1960's that the technique was accepted into school education. As stated by Boocock and Schild (1968,p.57),

"The core principles of the technique - e.g. the active and simultaneous participation of all students in an educational game, with the teacher in the role of aid rather than judge; the internal rather than external locus of rewards, and thus motivation, in a game; and the linking of the student to the outside world through the simulated environment ... can all be traced to one or another of Dewey's works."

Especially during the last decade, greater use of the technique has led to increasing numbers of simulations developed by educators appearing in periodicals, journals and in kit form, ready for use in class.

Simulations are models of reality which vary in degree of abstraction from the reality of the case study to the abstract mathematical model where all variables are quantifiable, as illustrated in figure 1.

FIGURE 1: TYPOLOGY OF SIMULATIONS



## SIMULATION GAMES

Play (contest) among participants (adversaries) making decisions under constraints (rules) for an objective (winning)

OR (after Walford)

by Topics: Farming, Location, Routing, Town Growth, Resource Exploration, Underdevelopment, Conservation/Pollution.

According to Dunlop (1976, p.60) simulation games form

"a continuum from the open-ended type of role-play in which outcomes are unpredictable, to the fully quantified set of variables which might exist in a farming game. Personality and force of argument are powerful weapons in shaping decisions at one end of the spectrum, but not at the other."

In brief, simulation games enable students:

1. to be involved in decision-making activities;
2. to make closer contact with real-life situations;
3. to experience the large number of inter-related factors that are involved in the processes with which geography deals;
4. to realize that chance factors operate in most situations;
5. to realize that there is often more than one possible solution to a problem.

They also vary an often highly structured and repetitious teaching style.

The theoretical aspects of simulation have not as yet been fully researched, but Sprague and Shirts of the Western Behavioural Sciences Institute's Project Simile (1966 quoted by Gunn 1970, p.339) give a clear indication of the advantages of using the technique in the form of the following hypotheses:

1. Maybe simulations are "motivators." Their main payoff may be that they generate enthusiasm for or commitment to: (a) learning in general, (b) social studies or some other subject area, (c) a specific course, or (d) a specific teacher.
2. Maybe a simulation experience leads students to more sophisticated and relevant inquiry. That is, perhaps the important thing is what happens after the simulation is over.
3. Maybe simulations give participants a more integrated view of some of the ways of men. Maybe they see the interconnectedness of political, social, inter-personal, cultural, economic, historical, etc., factors.
4. Maybe participants in simulations learn skills: decision-making, resource allocation, communication, persuasion, influence-resisting.
5. Maybe simulations affect attitudes: (a) maybe participants gain empathy for real-life decision-makers; (b) maybe they get a feeling that life is much more complicated than they ever imagined; (c) maybe they get a feeling that they can do something important about affecting their personal life or the nation or the world.
6. Maybe simulations provide participants with explicit, experiential, gut-level referents about ideas, concepts, and words used to describe human behaviour.
7. Maybe participants in simulations learn the form and content of the model which lies behind the simulation.
8. Maybe the main importance of simulations is their effect on the social setting in which learning takes place. Maybe their physical format alone, which demands a significant departure from the usual setup of a classroom (chair shuffling, grouping, possibly room dividers, etc.) produces a more relaxed, natural exchange between teacher and students later on.
9. Maybe simulations lead to personal growth. The high degree of involvement may provide some of the outcomes hoped for from T-groups, sensitivity training, basic encounter groups, etc."

Simulations might also encourage more pupil participation and involvement in real world activities. According to Kasperson (1968, p.420) they might help socialize the child in that

"inter-action with other players, the game rules and environment, and the player objectives all contribute to the student's acquisition of society's values and norms."

Simulations also often emphasize the inter-dependence of the social and physical environments. In addition, in giving pupils the opportunity of presenting a case verbally, either within the small group, or before the class, simulations probably help achieve a better balance between oral and written work amongst pupils.

Unlike most other processes in teaching where reinforcement is delayed, the outcome of a player's decision often follows almost immediately in the game and, if unfavourable, it is often possible to make another choice shortly afterwards. The whole range of pupils, from the slow learner up, may be fully involved and benefit, for top performers do not necessarily fare best even in competitive games. Simulations provide practice in the problem-solving skills essential in contemporary society and according to Gagne (1970, p.214),

"the individual's capability is more or less permanently changed.... (by a) process by which the learner discovers a combination of previously learned rules that he can apply to achieve a solution for a novel problem situation " of the future.

Cherryholmes (1966, p.6) reports that simulations have a powerful motivational effect, arousing interest in pupils normally indifferent to learning and increasing the attention span of others. They thus provide a way of involving bright under-achievers who resist expository techniques. As Walford (1972, p.163) says,

"pupils become motivated to read further in the subject, to try the simulation again and perhaps to design modifications and improvements in the light of their knowledge, subsequently gained - the latter being an important extra use of simulation itself."

Finally as far as the teacher is concerned, variation in technique should prove of mutual benefit to educator and learner.

The use of simulations is fraught with problems as well. Perhaps the leading one for South African teachers confined to a set externally examined syllabus, is that of time. Game compilation is extremely time-consuming and as very few South African-orientated simulations are available, they either have to be developed, or at least adapted, by local teachers. Even those available in kit form require a fair amount of preparation and can seldom be played in less than a few periods, which amounts to a whole week's work in the lower standards. The amount of time devoted to the technique is often considered too great for the amount of geographical knowledge acquired

by the pupils, but Starbuck and Kobrow (1966, p.28) found that the use of advisers to pupil teams or groups might enhance learning and "contribute to a greater balance between learning and enjoyment."

Over-excitement can distort the effects of the game for some pupils, while others might experience decreased motivation when the classroom returns to normal. Some role-playing games may give the impression that manipulating people or the environment, leads to success. It is vital that adoption of a role is merely a prelude to criticism of it in post-play discussion when players withdraw from their roles. This requires a mature objectivity unusual in younger pupils. Another over-demanding requirement for some pupils is the imaginative leap required of them when they play for example the role of a company managing director.

Educational simulations are programmed to analyse the reason for outcomes, so it is important that teachers play down the competitiveness, moving immediately on completion of the game to considering and reinforcing its real world applications, thus ensuring that transfer from the game to reality does take place. If the post-play discussion is effectively handled, the teacher can minimize these problem areas as Hall (1976, p.111) indicates:

"The units of the High School Geography Project stress the importance of adequate debriefing after a simulation or game be it Portsville, Metfab or the Game of Farming. In these circumstances, also, children will provide feedback and thereby analyse and reflect on the activity and reinforce learning at a personal level: the teacher can feed into the discussion what seem to him to be the significant aspects, indicating why he selected the simulation as worthy of their time and energy. In all cases, the games and simulations formed part of a unit; they supported other forms of learning and were themselves supported."

Another problem is the difficulty of developing a game to fulfill the desired geographic educational objectives. Hore (1969, p.134) found in his investigation into the use of models and quantitative techniques that pupils and teachers placed the desired geographic objectives of the games low on their lists of what the games had taught.

Evaluation of simulations is extremely difficult because of the number of interacting variables - pupils, aspects of the game, environment and teacher. As Kasperson (1968, p.420) noted,

"Since games are not closed systems, players may introduce unanticipated and often unrecognisable values, behaviours and rules, thus thwarting evaluation efforts."

Cherryholmes (1966,p.6) concluded after reviewing a number of studies that

"simulation does produce more student motivation and interest compared to other teaching techniques but there are not consistent or significant differences in learning, retention, critical thinking or attitude change."

Although probably an uneconomic way of teaching facts, simulations might clarify concepts vividly. Good simulations of the real world should result in giving the student a clearer insight into reality, but, according to Gordon (1972), they are important for how, rather than what, they teach, for they are unique in giving the student practice in decision-making.

French (1975), after working with simulations for five years amongst students of all age groups, found that nearly everyone could benefit from them. Bright students absorbed the essentials of simulations, exploring their relations with reality rapidly, though their interest also often waned rapidly. He found that students described as "disadvantaged" or "slow learners" might benefit most from simulations. This is because of the skill characteristics Riessman (1962,p.72) found "disadvantaged students" tend to display: viz.

1. Physical and visual rather than aural
2. Content-centred rather than form-centred
3. Externally oriented rather than introspective
4. Problem-centred rather than abstract-centred
5. Inductive rather than deductive
6. Spatial rather than temporal
7. Slow, careful, patient, persevering (in areas of importance) rather than quick, clever, facile and flexible."

Many of these skills may be used in simulations involving and benefitting the "slow learner".

Ingbar and Stoll (1970,p.53) reported that

"scattered evidence available on the effect of games and simulations on socialization and in the classroom indicates that at least a few of the far-reaching hypotheses about the effects of games might have some validity. At the same time, we are very far from having anything resembling a systematic body of knowledge."

Nevertheless Scarfe (1971,p.201) maintains that

"the general purpose of a game is to avoid states of monotony, and at present, as far as research is concerned, it is unwise to claim more than diversion or variety as the justification of games."

Furthermore,

"unless simulations are the reconstruction or reproduction of actual situations, subsequent role playing is purely fantasy. If decision-making is to be of any significance then it has to be about an actual happening which has existed,"

so that the pupil's decision can be compared with reality, for

"there is little or no evidence that simulations and role-playing techniques train people in decision-making skills, or influence their ability to resist propaganda."

He agrees with Walford (1969,p.30) that

"games in themselves do not offer a panacea in dissident geography classes that allow sweetness and light to reign; they are simply extra techniques which may help on occasion in developing modern geographical teaching."

Perhaps Walford, (1973,p.220) one of the leading exponents and developers of simulations should have the last word:

"Their success in motivating students to real interest in topics offers both encouragement and a wider horizon for their future."

An example of the way a simple simulation based on a South African situation may be developed, is illustrated in Appendix C.

#### D. THE INQUIRY METHOD OR DISCOVERY LEARNING.

Discovery learning is the name given to the way in which a great deal of learning takes place 'naturally.' From birth on for example, the child 'discovers' for himself, that sucking his mother's nipple satisfies his craving for food, and later, that touching fire causes pain. When transferred to the school situation discovery learning is perhaps one of the most desirable ways of pupils acquiring knowledge, especially for the bright or gifted child because:

1. pupils are self-motivated;
2. their interest often results in rapid learning;
3. they can work in their own time (even beyond school hours) and at their own pace (allowing for individual differences);
4. there will be less regimentation and pooling of knowledge by in-class and extra-class discussion may have a broadening effect.

The inquiry method, as it is sometimes called, may range from an unstructured situation, to a highly structured teacher-directed inquiry worksheet.

The inquiry method stems originally from the ideas of Dewey and Piaget, developed more recently by Bruner. They stress pupil involvement as active agents in the learning process. They insist that the pupil, possibly guided by the teacher, must be free to delve by himself into resources, whether in the classroom, the library or out in the field. The individual research experience so gained, they contend, will result in more effective and enjoyable learning and better concept formation. This is not to say that the pupils should attempt this without preparation. Dewey, Piaget and Bruner all stress a developmental sequence in concept formation as pupils mature which the teacher must take into account in guiding them towards discovery. Hence the research tasks set must be carefully graded to the pupil's ability.

Discovery learning is inductive. According to Kasperson (1967,p.291) it is difficult to "find imaginative classroom experiences to transmit ideas inductively" so that students may discover for themselves. Pupils should be encouraged to use the fullest possible range of resource materials and techniques in their researches, including for example, problem solving, role playing and simulation, fieldwork, model building and audio visual materials and techniques.

There have been few definitive and experimentally designed researches into the inquiry method. Its complex nature is partly responsible for this, allowing only certain of the aspects of the method to be investigated at one time. Kersh and Wittrock (1962,p.461-8) did find, after reviewing researches, that discovery learning enhances transfer and long-term retention. It also reinforces the techniques of inquiry—the strategies of problem-solving and productive "search". Kagan's (1965,p.553) researches demonstrated that impulsive children were not well suited to the delays involved in research using the hypothetical-learning mode, but Crabtree (1971,p.88) maintains that this is no reason for not using the inquiry method in conjunction with others. She insists,

"There is no absolute dichotomy between expository telling and non-directed discovery. There are many stages of guided or directed discovery in between, stages in which teachers set more and more limitations on the question researched, the numbers of choices up for discussion, or the defining criteria by which hypotheses are accepted; and in which more and more supporting instructional aids are introduced to help young learners grasp the critical relationships involved ('discover' them, if you will)".

The encouragement of this approach to learning and its implementation by teachers is still very much in its infancy. A wide range of resource materials is a prerequisite. Whether it will ever be totally implemented to the exclusion of other teaching methods as advocated by Postman and Weingartner (1971) is doubtful and remains to be seen. Certain aspects of the "new" geography nevertheless show the growing influence of the inquiry method in geographic education (e.g. fieldwork and problem-solving).



## E. PROBLEM SOLVING AND HYPOTHESIS TESTING

Increasing attention is being paid to the use of the scientific method in teaching the "new" geography. As a result of the "knowledge explosion" it is increasingly being realized, as Thomas (1970,p.77) puts it, that

"what will ultimately prove to be critical is the ability of the individual to think in a flexible way when confronted by an unfamiliar problem, an ability which will only be developed through regular involvement in problem solving rather than memorization as the basic operation in the process of education."

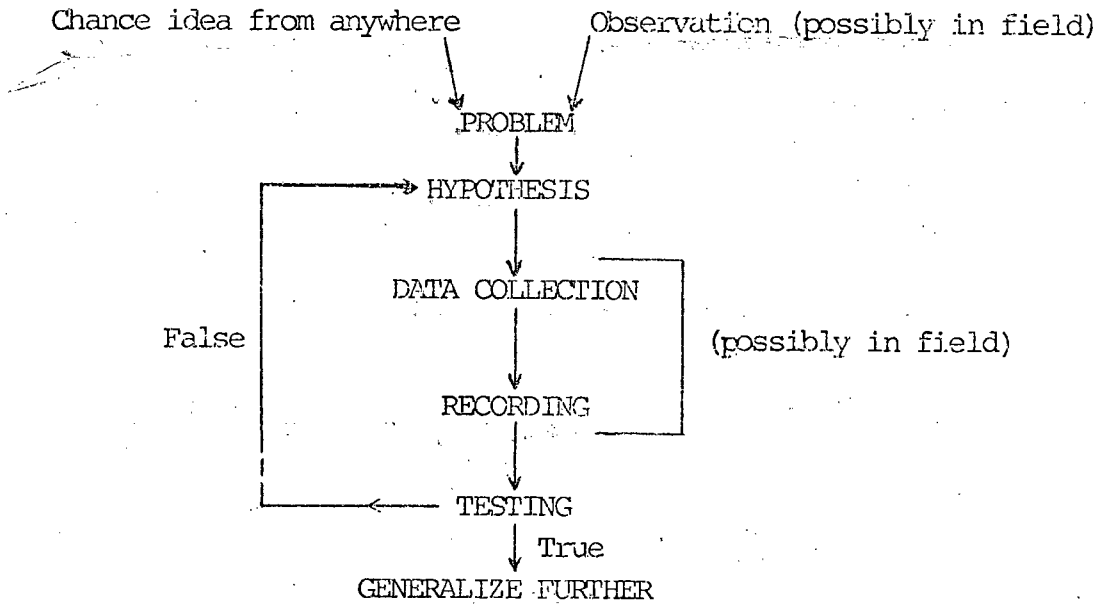
Hypothesis-testing techniques have been required by generations of geography teachers in their class questioning, but only very recently has this mode of investigation comprehensively been used by a larger number of teachers. This is partly a result of the influence of Bruner's educational ideas on the advantages of the hypothetical teaching mode where teacher and pupil co-operate to solve problems by means of conjecture. Bruner believed that a pupil's participation arouses curiosity, and he learns to assess information according to its possible contribution to the testing of an hypothesis. Hypothesis testing and discovery can result in increased intellectual potency, a shift from extrinsic to intrinsic rewards, the learning of the heuristic method and more efficient memorization (Bruner, 1963, p.425). Greater intellectual potency is achieved because pupils gradually learn to examine evidence by the economic use of hypotheses. They come to expect regularity and relatedness in information and use hypotheses cumulatively in tackling problems. Eventually practice enables them to discard irrelevant information, preventing flooding and encouraging persistence. Bruner believes the child derives satisfaction from this method of problem solving. Bruner (1966,p.96) also claims that a child should be given experience of using a theoretical model and what is involved in trying out a theory, for

"a good theory is a vehicle not only for understanding a phenomenon now, but also for remembering it to-morrow" (Bruner, 1960,p.25).

More teachers are setting their pupils problems of a geographic nature, solutions to which are hypothesised by the pupils. Relevant geographic data is then collected for testing the hypothesis.

If borne out by the evidence, the hypothesis is tentatively accepted as an explanation or solution to the problem. If not, it is rejected and another formulated and tested in a like manner, as illustrated in figure 2.

FIGURE 2: THE HYPOTHESIS - TESTING TECHNIQUE  
(according to Everson, 1973, p.110)



## F. STATISTICAL AND QUANTITATIVE METHODS

As geography increasingly adopted the scientific approach and method, it had to employ more stringent measurement techniques. For some, the "new" geography was synonymous with the "quantitative revolution" characteristic of the 1960's. At that time some geographers felt that quantification would completely re-orientate the discipline and claimed that anything not quantifiable was not geography. To-day, with a more mature approach, geographers see statistical methods only as a useful tool in weighing the importance of factors, testing hypotheses and helping to solve geographic problems.

These methods allow a geographer greater precision and facilitate comparison, particularly when distinctions are fine. By the use of sampling procedures the confidence limits within which any conclusions are drawn may be stated. The methods can also provide a basis for the development of geographic theory for use in helping to understand the complex world. For instance, conclusions about a relationship between geographic phenomena which have been tested may be transferred elsewhere and tentatively used for prediction.

Accent in the "new" geography is increasingly on "numeracy" and "graphicacy," two new terms coined to represent long used, but seldom emphasized, aspects of the subject. They are an effective way of portraying geographic information and according to Dunlop (1976,p.46) numeracy and graphicacy are as important in the education of the child as literacy. He defines graphicacy as "the ability to communicate spatial awareness, particularly by reference to maps and diagrams". Balchin (1972,p.185) contends that English, Mathematics and Geography should be regarded as the three foundation subjects in teaching, since each encompasses one of the basic groups of skills needed by modern children. In addition to being used in testing ideas and concepts, numeracy provides scope for a variety of ways of presenting geographic information in, for example, histograms, graphs and dot or choropleth maps.

## G. FIELDWORK

Fieldwork is, and always has been, a basic component of geography, for geographic information generally has to be collected through personal observation by geographers. Unfortunately the educational value of pupils having this experience themselves was not widely recognised until the inter-war period, when Fairgrieve (1936) made a plea for the personal involvement of pupils in fieldwork. No geographers did more to establish fieldwork as a method of teaching geography as well as of collecting information, than Wooldridge and Hutchings. The result was that fieldwork became increasingly an established part of geography teaching in many British schools, though not in American schools. Fieldwork is to-day considered so important that hundreds of field study centres have been set up all over Britain; and in some examinations, evidence of fieldwork is required.

Fieldwork is another manifestation of the old adage, "hear and forget, see and remember, do and understand." In fieldwork the pupil learns not only how to obtain geographic information, but some of the problems of obtaining it and some of its limitations. It is only in the field that pupils can fully implement and test their ability to read a map, perhaps the most basic skill of any geographer. There is no better way of giving pupils an appreciation of their environment than involving them personally in direct observation. In so doing, the teacher often acquires a new insight into his charges in a more relaxed atmosphere. There are also indications that fieldwork improves the attitude towards geography of children of average ability or below, as many teachers have found after a field excursion. Involvement in practical work arouses pupils' curiosity and may give them the pleasure of discovery.

The broad term fieldwork, while still often used, is increasingly being seen to include divergent approaches. 'Field teaching' is the term that has been used to denote the approach many teachers use, at least initially, to involve pupils in their environment. This often takes the form of a guided walk or bus tour through an area. At specified places the teacher stops to point out phenomena, either by means of the lecture or the question-and-answer method, before allowing the pupils the opportunity of sketching, photographing, map- or note-making, or collecting samples. Depending

on the degree of pupil participation, this might well be called fieldwork if the activity is pupil-centred; the teacher plays an advisory or information role only.

Hall (1976,p.251) re-classifies the most frequently used divergent approaches to fieldwork, as shown in figure 3.

FIGURE 3: GEOGRAPHY FIELDWORK CLASSIFICATION  
(according to Hall (1976,p.251))

	Process	Type of Structure	Teacher/Pupil	Result	
FIELD DEMONSTRATION	(a) Teacher reinforces	In (a) previous classwork is followed up including simulated fieldwork skills (i.e. orientation of map to ground, slope and contours, intervisibility)	Tightly structured linear programme prepared by teacher: 'pause and move on' by foot or vehicle	Close supervision of class as a class teacher - busy leading and talking; pupils - passive in (a) and imitative in (b)	Convergent and closed
	(b) Teacher confronts	In (b) new phenomena and new skills are introduced in the field for the first time. Students record what teacher observes for future classwork or exam study			
FIELD STUDY	Directed exploration	Pupils highly circumscribed by directives but considerable autonomy of movement. What is discovered, measured, etc., is by teacher intention, but the process is pupil-centred	Can be fairly tight (i.e. worksheet of questions) or more loosely phased around a series of guidelines. 'Colonial elephant hunt' where pupils placed advantageously to fall over their own environment but shoot their own quarry	Open supervision with pupils working in groups or individually. Teacher control by effective preparation	Convergent and closed but room for a margin of personal inference and error
FIELD TESTING	Controlled inquiry	Research into a specific hypothesis or model along carefully controlled lines in accordance with the conventions of deductive science. Problem-solving dominant	Operationally tight (accuracy essential in recording data). Degree of structure and amount of computation a function of hypothesis and techniques employed	Pupil as researcher and teacher as laboratory supervisor; with duty to safeguard data from contamination by irregularities of conduct in research and miscalculations in computation	Open, unless previously worked out by teacher, or the hypothesis overcontrived by him
FIELD DISCOVERY	Open inquiry	Journey into the unknown, where theme, guidelines, hypothesis, mode of working are the choice of the pupil. 'Discovery, Exploration, Creativity' possible in the widest sense	Loose, lightly constrained to random.	Only responsibilities of pastoral care, subject consultant by pupil request. Main work is to provide the possibility and encourage inquiry	Divergent and unpredictable

He sees fieldwork being approached in four different ways which he refers to as 'field demonstration', 'field study', 'field testing', and 'field discovery' (or what American teachers call 'field research'). The latter two use the scientific method or problem solving by involving hypothesis-testing techniques. The more advanced and older pupils in British schools are increasingly being involved in the latter approach to fieldwork. Training in the methods of field research is needed so it is usually preceded by field teaching (demonstration) or field study. As the average pupil may be bored by the sameness and rigour of

measurement often needed in testing an hypothesis, the most effective way of doing fieldwork may be to combine field study and field research. According to Fitzgerald (1969,p.63) the best method of testing the concepts learned and models created in the classroom is out in the field, using field research methods.

Fieldwork in schools is not entirely without opposition even in its stronghold, the United Kingdom. Mottershed and Owen (1972,p.232) mention the annoyance caused to people such as farmers and shop proprietors by pupils from various schools requesting information or leave to survey their establishments too often. They consider that much urban fieldwork might seem irrelevant and useless to the duller pupil instead of giving a deeper understanding of the subject and they suggest that a more productive use of time would be to present pupils with data which could then be used for making geographic inferences.

An undoubted strength of fieldwork is its versatility, enabling the effective teacher to use it for the integration of numerous branches of the discipline, as indicated in chapter IV.

South African syllabuses require that at least one fieldwork exercise be completed each year, but do not stipulate the form it should take. Its form will be determined by various factors, including:

1. the age and abilities of the pupils;
2. the experience of the teacher;
3. the geographic location of the school; and
4. the physical resources as well as relevant fieldwork material to which the teacher has access or which he can develop.

Some areas lend themselves more to field-teaching than field-research methods and vice versa for other areas. Personalities of some teachers are also more suited to field-teaching than to the use of field research. This may also be true for pupils according to their previous experience. Obviously then, teachers should make use of the resources available in whichever way they consider the most advantageous.

As fieldwork becomes more widespread, manuals, sample fieldtrips and various approaches to conducting fieldwork are being written up by teachers and others with practical experience. An example of a one-day field excursion using a combination of field study and field teaching techniques for the integration of various branches of geography is presented in appendix C. The writer hopes it may prove useful to teachers in the Western Cape.

CHAPTER III

SURVEY OF THE "NEW" GEOGRAPHY ELSEWHERE

In this chapter the writer gives an indication of the degree of diffusion of the approach and methods associated with the "new" geography. After examining the reliability of the resources used, he describes the position in Europe generally, examines the situation in the United Kingdom and selected other European countries in greater depth and then portrays the position in the other countries showing marked influences of the "new" geography. Finally an account of selected geography projects showing intensive use of the "new" geography approach and methods is given.

INTRODUCTION

The South African geography teaching situation should be viewed in the context of recent overseas developments if it is to be seen in perspective. This chapter concerns, in general terms only, the approximate position of geographic education in the first half of the present decade in most countries where geography plays an important role in the education system. It is not possible, from the limited information available, to place any country in an exact position along a continuum stretching across the range of geography teaching from exclusive use of the "old" to exclusive use of the "new" geography, were it possible strictly to define these two positions. What is needed is a view of geographic education elsewhere, against which South Africa's relative position can be gauged.

An overall estimation of the relative position in various countries can be obtained from a critical evaluation of such aspects as syllabuses and teaching methods, techniques and aids used. The generalizations made can be no more than carefully considered judgements. Geographic educational literature abounds in value judgements and unsubstantiated theories. These are sometimes the result of the extreme difficulty of measuring, for example, the attainment of educational objectives in the evaluative process. There is no saying that these judgements or intuitively felt theories are invalid. Just as traditional geographers were able, through observation and study, to develop a feel for the character of a region no less accurate perhaps in depicting that region than the modern urban geographers' quantitative rendering

of a megalopolis, so an educationist's judgements regarding his subject, gained through long experience of teaching it, might not be as far from the truth expressed in a scientific law as might sometimes be suspected.

Relph (1970,pp.193-201) claims that the world can only be understood fully by examining men's intentions, attitudes and value systems which are not easily testable by scientific laws. Like Spiegelberg (1960,p.668) he sees the world

"as being essentially subjective, and no empirical knowledge, however purged and 'objectified,' can get away from this subjective matrix of all experience."

Thus he, like Tymieniecka (1962,p.127) believes

"the world is understood not as a sum of objects or as matter, ..... but as a ..... system of relations between man and his surroundings."

This view is obviously opposed to Harvey's (1969,p.486) claim that through the testing of explanatory hypotheses it will be possible to develop a controlled, consistent and rational explanation of events, for man does not always behave rationally and predictably in an objective world.

These are problems with which some educationists such as Kurfman (1970) are trying to grapple, but which are likely to continue to plague them for the foreseeable future. As stated by Fernald (1970,p.76), there is a need for geographers to seek help from people trained in evaluation to assist in setting up "measurable objectives, develop curricula to meet these objectives and to build evaluative instruments to test the effectiveness of the program," for very little has been done in this field. It is paradoxical that most work on evaluation of school geography has been done in North America where, traditionally, geography has tended to play only a Cinderella role in secondary education.

Thus, while lacking the rigour and exactness of scientific measurement not possible within the constraints of this investigation, an attempt to gain an objective and balanced evaluation of overseas geography education has been made. Published resources as well as material elicited from co-operative personnel involved in geographic education

in Australia, Canada, Germany, New Zealand, the United Kingdom and U.S.A. have been consulted. Although there is little basis for precise and detailed comparison, it has been possible to obtain an overall impression of the extent of influence of the "new" geography in schools in these countries, sufficient to make an evaluation of the South African position in the context of world geographic education.

#### THE POSITION IN EUROPE

The Council for Cultural Co-operation of the Council of Europe in 1971 published The Teaching of Geography at School Level, a report on the findings resulting from questionnaires returned by the eighteen member countries, together with essays portraying the cultural and physical backgrounds influencing geography teaching in these countries. In his introduction Marchant, the editor, indicates that

"the analyses are not the result of precise statistical processes: few of the questions themselves - rightly or wrongly - are susceptible of such treatment." (p.10).

Nevertheless he considers

"it remains true that questionnaires and essays taken together do seem to give a balanced picture of geography teaching in each country,"

for the shortened versions published were scrutinized by the individual contributors to ensure their accuracy. Virtually all the information on the European countries in this chapter (unless otherwise indicated) was taken from this source, to which page references in brackets refer. Of the dozen questions included in the questionnaire (some sub-divided), half were relevant to this examination of the use of the "new" geography in European countries.

#### Aims and Syllabuses

The findings of the report showed the general aims of geography teaching in all countries to be similar. These aims have not been noticeably influenced by the "new" geography (p.17-18). Except in the United Kingdom, syllabuses are prescribed everywhere though "there seems an increasing tendency to leave choice within the general framework to the individual teacher" (p.39), particularly in the Netherlands and Switzerland. Some countries have differences of syllabus even within their own boundaries as a result of federalism, but in Germany ministers

of education collaborate to some extent. In the United Kingdom the only syllabuses laid down are those of the external examination boards, "but these occur only infrequently in the total course, and they offer wide choices" (p.39). All countries treat geography both regionally and systematically and most make provision for the discussion of human problems of national or international concern at some stage in the curriculum.

#### Teacher Training

There is great variation in initial teacher training between countries. Nowhere "is there a regular compulsory system of refresher courses for those already teaching," though many countries "have short voluntary courses organized either by the central or local authorities, or by teacher or subject associations" (p.29). France epitomizes the position by reporting on its own situation: "refresher courses are absolutely essential - but seldom happen." (p.30). In Iceland and Switzerland respectively sabbatical leave of a year after ten years, and six months after twelve years teaching enables geography teachers to update their geographic knowledge and teaching methods.

#### Teaching Methods

Teaching methods are still traditional in most countries. Though teacher explanation and presentation of the text is usual, many countries concur that the scientific method should be used, working from observation of the concrete to interpretation, deduction and generalization, i.e. inductively. This is, of course, the weaker channel of the 'scientific method.'

A minority of teachers in some countries is beginning to use other methods associated with the "new" geography. The need for fieldwork is subscribed to by most, though only seven countries actually encourage it e.g. by prescription (Belgium, Ireland, Switzerland and the United Kingdom) or having camp schools (Denmark, France and Germany). None approaches the degree of development of fieldwork existing in the United Kingdom where there are hundreds of field centres and where evidence of fieldwork must be presented in some examinations (p.24). Increasingly individual assignments or

projects are required of pupils using a range of resources (p.24). Sweden particularly emphasizes independent study methods. Training in geographic techniques such as map-drawing and -reading, statistical interpretation and presentation and the use of diagrams and charts is provided in most countries, though only the United Kingdom refers specifically to the increasing use of sample studies.

#### Facilities and Aids

Specialist geography rooms are found in nearly all schools only in the United Kingdom and Switzerland, though Austria, Belgium, Denmark, Finland, Sweden, the Netherlands and to a lesser extent Ireland, France, Portugal and Luxemburg have them in many secondary schools, particularly the larger ones (p.26-7).

"Most countries now seem to provide a reasonable collection of photographs or wall pictures, to equip their school adequately with slide and/or filmstrip projectors, and to provide or loan collections of transparencies" (p.25).

All countries supply wall maps and an increasing number supply large scale topographic maps, but other resource material such as statistics, monographs, and specialist reference books is only beginning to accumulate in school or class libraries in most countries. The United Kingdom is once again the exception, for many schools "are building up quite large reference libraries which include a number of professional journals". (p.26).

## GEOGRAPHY TEACHING IN THE UNITED KINGDOM

It is worth examining in more detail the teaching of geography in the United Kingdom, which remains in the vanguard of development and where much of the "new" geography originated. The introduction to the essay on geography teaching is quoted verbatim for it presents a clear picture:

"Since every school in England and Wales is free to choose its own curriculum and schemes of work, it might be supposed that geography teaching reflecting as it does the personal ideas and inclinations of many individuals and offering a wide choice of topics for study, would lack any pattern of cohesion. This is, however, far from true, for although there is scope for great variation from school to school, there are also concepts about school geography which receive widespread acceptance and which find general expression in training courses for teachers and in textbooks. It is this commonly accepted body of doctrine which makes it possible to discern both the roots of our present-day geography teaching and the new growths which are now revealing themselves" (p.116).

These roots lie in the pleas for realism in geography teaching by Fairgrieve and Stenbridge in the inter-war period and the emphasis placed by British teachers on the importance of experience in the learning process, as advocated by educationists such as Froebel and Pestalozzi. Thus "firsthand experience wherever possible has now become a necessary prelude to dealing with abstract ideas" (p.118). Fieldwork of all types is considered an essential part of geographic understanding. To cater for this hundreds of field centres have been established all over the country. They have a combined capacity of 10 000 people and are used by all levels of education. School parties visit them over week-ends and during vacations, or conduct extensive surveys from them, lasting a week or more, during term time.

Wide use is made of sample or case studies of, for example, foreign farms, mines or cities which cannot be visited. By means of radio, television, films, slides, novels and reference works in the libraries, distant places are brought into British classrooms. To gain a more accurate picture of human geography, the study of the traditional 'natural region' is giving way to a consideration of political, cultural, economic and social factors affecting foreign countries.

Attention is also being given to applying geographic skills to the solution of problems in land-use, commercial undertakings, town and country planning and such world problems as the food shortage, under-development, power resources and the population explosion.

The concluding paragraphs of the essay evaluate the position in British schools at the beginning of this decade well:

"Thus the two main strands of geographical thought - systematic and regional - are closely woven into the texture of school geography. But the emphasis has been placed on enriching the means of study by direct experience, sample studies, and modern visual and aural aids. To the well-established themes of economic geography have been added a more sympathetic treatment of human communities as social, cultural, and political groups. While geography continues to be pursued by some pupils as a rigorous academic discipline, it is hoped that for all it will provide a richer personal life and at least part of the foundation for greater international harmony .....

In a good many secondary schools teachers are devising carefully graded courses which employ statistical analysis, sampling, regression techniques, the study of networks, and simple topological map transformations. Experiments are taking place with geographical games involving decision-making and role-playing. Descriptive geography in the classroom and the field is being supplemented by theoretical models, problem-solving and hypothesis-testing. Urban studies include traffic-flows, the supply of goods and services, functional zones and planning problems. On the basis of earlier work older pupils are dealing with such concepts as Central Place theory, theoretical models of land-use, urban-growth models, theories of diffusion, and similar aspects of locational analysis. It is, as yet, too early to assess the effect of these new developments in geography-teaching, but they are attracting the attention of many teachers who are seeking to reduce the load of factual memorization and increase their pupils' understanding of general principles in geography." (p.121).

This suggests that the "new" geography is being used in Britain; statistics from a sample survey provide an indication of the extent.

(see Table 1, p.33)

## BRITISH GEOGRAPHY TEACHING SURVEY

The need to discover, for planning purposes, the rate at which certain "new" geography innovations were being taken up in schools, was one of the chief reasons for the Department of Education and Science mounting Education Survey 19. The findings of this survey were published in 1974 by Her Majesty's Stationery Office under the title School Geography in the Changing Curriculum which gives valuable additional specific information on geography teaching in British schools. The report is the result of a sample survey conducted in 1971-2 by twelve H.M. Inspectors who investigated geography teaching in 217 schools, recording on questionnaires the information gained from discussions with teachers and seeing them in action. A perusal of the report gives an indication of just how rapid and widespread the adoption of the "new" geography in Britain has been, for British schools of the early sixties still followed the patterns and methods of traditional geography. Change gathered momentum over the decade and is continuing so rapidly, that most schools seem likely to be using the "new" geography approach and methods by the early 1980's. The following summary tables and comments, based on the findings in the report, (to which page references refer) indicate the stage of acceptance and implementation of the "new" geography in British schools by 1972.

## Syllabuses

In 1972 only 45 percent of schools in the sample still used a traditional regional type geography syllabus, while a further 6 percent used the other traditional type syllabus consisting of topics handled successively and concentrically in greater depth with advancing pupil age. Fully 18 percent of schools were already using conceptually based syllabuses built around a skeleton of key ideas or concepts springing from the "new" geography; 17 percent were using an unstructured, but often intuitively arranged new type topical syllabus; while another 13 percent were using combinations of the above. Thus nearly half the schools showed some influence of the "new" geography in their syllabuses.

"The analysis shows that while regionally based syllabuses are still very common, especially in grammar schools, there is a widespread move particularly in comprehensive schools, towards new kinds of syllabus, including those which incorporate some of the most modern ideas current in school geography," (p.10).

TABLE 1: BRITISH SCHOOLS USING ASPECTS OF THE "NEW" GEOGRAPHY.

(Figures in percentage of schools in sample, N=217)

1. Methods of enquiry:	(a) case studies	71%
	(b) problem-solving exercises	34%
	(c) Open-ended enquiries	22%
2. Social applications: study of :-	(a) local problems	69%
	(b) British problems	62%
	(c) other countries' problems	60%
	(d) world problems	68%
3. Games and simulations		35%
4. Quantitative methods (newer only, e.g. scatter graphs, rank correlation, etc.)		29%
5. Theoretical models (e.g. Christaller's, Von Thunen's Burgess')		24%
6. Networks analysis		11%
Two or more combinations of numbers 3 - 6		21%

Some of these percentages may seem relatively low, but it must be remembered that the implementation of change was accomplished largely without supporting published materials (there was little before 1971) nor in-service training which occurred on a scale sufficient to influence only a small proportion of teachers. From this information it seems

"some schools graft new subject-matter and methods on to older forms of syllabus, while others give precedence to new syllabus structures with relatively minor changes of content and method. Each approach represents an early stage in the innovation process, which permits teachers to adjust their thinking to the more searching task of reconciling new syllabus patterns with related changes in skills, methods and subject-matter." (p.12)

The trend towards applying geography to socially meaningful ends is partly because an investigation of real problems is claimed to motivate more highly than academic studies and partly because

"geographic knowledge will have little value in the labour market (so) teachers must justify the subject in terms of its relevance to social values and understanding."  
(p.14)

"The emphasis on the acquisition of skills of learning (open ended enquiries), an increasing awareness of the value of motivation (problem-solving exercise and other items) and the need to make education socially relevant, were shown by the survey to be very much in the minds of geography teachers." (p.15)

TABLE 2: PARTICULARS REGARDING FIELDWORK IN BRITISH SCHOOLS

(figures in percentage of schools in sample, N=217)

Schools considering fieldwork very important	51%
Schools considering fieldwork fairly important	29%
Schools with only a small proportion of pupils doing fieldwork	11%
Schools not doing fieldwork	8%
Schools providing field teaching and traditional fieldwork done by pupils	91%
Schools doing problem-solving in conjunction with fieldwork	30%
Schools doing hypothesis-testing in conjunction with fieldwork	15%

("It is doubtful whether any schools could be found using hypothesis-testing exercises in geographical fieldwork some five years before the survey.")

Fully 80 percent of schools surveyed, regarded fieldwork as important or very important, while only 8 percent did no fieldwork at all.

All schools surveyed doing fieldwork used their local areas; in addition, over 57 percent provided residential fieldwork courses further afield. Thus,

"the new ways of teaching geography in the classroom are being paralleled by new kinds of fieldwork and these often reflect social objectives (as in some problem-solving exercises) and growing competence in quantitative techniques (as in hypothesis testing)". (p.18)

Only 13 percent of schools surveyed experienced no difficulties in the organization of fieldwork.

TABLE 3: DETERRENENTS TO FIELDWORK IN BRITISH SCHOOLS.

(figures in percentage of schools in sample, N=217)

Timetable (schools unable to organize fieldwork without much dislocation)	53%
Finance (some pupils unable to pay bus fares)	42%
Staffing (insufficient teachers for the required ratio of 1:20 pupils)	27%
Uncertainty of teachers (e.g. owing to lack of training)	26%

The report adds,

"fewer than half the schools possessed sufficient flexibility in timetabling to permit educational activities widely acclaimed to be valuable for pupils of all shades of ability." (p.17)

Facilities and Aids

Although all schools theoretically have specialist geography rooms, the survey found that in 28 percent of schools less than 60 percent of lessons took place in satisfactorily equipped rooms and in a further 34 percent between 60 and 80 percent of lessons were adequately accommodated. Thus in only 32 percent of schools could the accommodation be regarded as satisfactory. On the whole, schools were well-equipped with geography teaching aids, only 8 percent of schools classifying their resources as poor or very poor.

Conclusions

As a result of the rapidity of change to the "new" geography, the report concludes that the specialist geography teacher of the 1970's needs to be more versatile, more open-minded about his subject and more receptive to in-service training than his counterpart of 10 or 15 years ago.

The United Kingdom is the leading country in the development and general implementation of the ideas of the "new" geography. This can be deduced from the evidence quoted from the reports of the Council of Europe and Education Survey 19, from the wealth of "new" geography material recently published in the United Kingdom both in professional journals and in book form, and by noting the popularity and status of the subject in comparison, for example, with that of geography in American schools. British, and to a lesser extent, American publications, are mainly responsible for the dissemination of the ideas of the "new" geography to other parts of the world where their acceptance is highly variable - some countries absorbing them into the system immediately, others more slowly, and still others not at all.

In contrast to the British position, an examination of the answers of the various European countries to the question regarding geography teaching methods places British development in European perspective. The responses show the tremendous contrasts in European geography teaching. Quotation of a small cross-section of responses on geography teaching methods, Marchant (1971), illustrates:

- |                        |  |
|------------------------|--|
| France<br>(p.176-177)  | <ul style="list-style-type: none"> <li>"(a) Oral question and answer, short and pertinent.</li> <li>(b) Precisely planned lessons based on concrete observations or pictures; then conventional representation on blackboard followed by copying in notebook and learning by heart.</li> <li>(c) Facts and figures must be made real by comparison with the known - e.g. height of a barrage with the Notre-Dame.</li> <li>(d) In the first cycle pupils will write only definitions and a few statistics. All else will be as maps or diagrams.</li> <li>(e) In the second cycle less talking by the teacher and more discriminating note-taking by the pupil.</li> </ul> |
| Turkey<br>(p.178)      | The most fruitful methods are those which encourage pupils to study features at first hand. But this has been made difficult owing to increasing numbers.  |
| Switzerland<br>(p.178) | <ul style="list-style-type: none"> <li>(a) Study of important countries and of the main aspects of physical and human geography with the help of films, transparencies, various kinds of maps and textbooks.</li> <li>(b) Many pieces of work done by the pupils themselves.</li> <li>(c) Excursions where possible.</li> </ul>  |
| Portugal<br>(p.178)    | Modern activity methods; direct observation in outdoor lessons and excursions; samples; small regional monographs; use of library; documents; photographs, etc."   |

It is thus clear that most European countries were still traditional in their geography teaching methods, some markedly so, at the beginning of this decade. There are, however, signs of the influence of the "new" geography being felt.

## BELGIUM

Belgium exemplifies "new" geography influences by insistence that geography should be regarded as a scientific training involving investigation, analysis, synthesis and induction of general ideas. Education authorities realize that geography, like the other sciences, is continually changing with the progression of knowledge. Teachers are trained for this, so that they can use the most effective methods for making classwork constructive as a result of pupil participation. With a wide range of teaching aids pupils learn to express themselves during investigation which leads to analysis, explanatory research and general concepts.

## AUSTRIA

Austrian pupils are required, in the last but one year of school, to write a monograph on their country, working from their previously acquired knowledge, available maps, slides and films. They should include information on geology, climate, morphology, phytogeography and the economic trends (trade balance, prices and wages, competition, fiscal policy, etc) and portray the natural regions of their land.

## THE NETHERLANDS

Parts of the Netherlands' essay speak for themselves:

"Our task in school geography is not to nurture future geographers; it is to prepare our children, for a society which can no longer be self-contained, but that every day is more dependent on co-operation with, and understanding of, other societies in other environments.

Daily our children are exposed to an uninterrupted flow of impressions and information from the world outside: in the papers, over the wireless, on television, in the cinema. Our task is to help them bring some order into these impressions. To achieve this, we cannot leave out those matters that particularly attract them; their points of interest have to be reconciled with ours. We certainly cannot leave out a subject because it does not fit into some academic conception of geography. School geography is a subject in its own right. We must not neglect or ignore the advances of geography as a science, but we have to decide on their appropriateness to school geography by their relevance to our educational needs.

Our teachers enjoy great freedom in fulfilling their task. In the higher forms they often pose some

basic problem: under-development, race relations, world population, and world food supply; or they discuss the geographical aspects of some international situation...

The world for which we are preparing our children is their world, a world in the making. Let us hope that our teaching may so contribute to it that they will enter this world of the future in a spirit of international understanding, with an outlook that is global but nevertheless (and none the less) rooted in their own cultural heritage". (pp.88 and 89)

Theirs is a view subscribed to by other countries too, though not as expressively, perhaps because not so clearly seen.

#### SWEDEN

The Swedish teacher has considerable freedom in choosing methods and materials for dealing with the prescribed syllabus and also encourages the independent study methods so well suited to geography. A quotation from the curriculum of the Swedish Gymnasium (senior secondary school) indicates the influence of discovery learning and self-activity, and the wide range of teaching aids and resources used in Swedish schools.

"The demand for increased independence in pupils' study accentuates the need for teaching aids. The central aids are the teacher's tuition and the printed study material, but the pupil should become accustomed to studying on his own without continued reference to these aids. For this purpose it is important that pupils should learn to gather information from sources which they will encounter in their professions, as students or citizens: the daily newspapers, journals, maps of different kinds, statistics, different kinds of information issued by public authorities, firms, organizations, political parties, national and local government. Works of reference such as the Swedish Official Yearbook the State Budget, U.N. Statistical Yearbook and Swedish Corporations are important sources. For many sections of the teaching it is essential to use visual aids. These include not only photographs of human activity in its natural or cultural environment, but also special maps and diagrams. The teaching aids should be used throughout the work, whether by the teacher for going through the subject or by the pupils in their studies. They must not be reserved for particular sections of a subject, particular exercises, or particular lessons. They should be precisely aids, means of building up presentation and information - i.e., the natural tools that are put to constant use. An important point is that, in their own demonstrations and expositions before the class, the pupils should learn to make use of several instruments." (p.103)

These last four countries together with West Germany seem to have felt the influence of the "new" geography most on the European mainland.

WEST GERMANY

Though there is little evidence of change in the West German report, this is perhaps because senior geography is given very limited time in curricula. Development is limited, according to Geipel, (1972,p.32) by three factors:

- (a) the vested interests in traditional geography of parents, teachers and the textbook industry;
- (b) the solid bastions of university opinion in favour of regional geography curricula; and
- (c) the lack of German development of educational research and learning theory.

Nevertheless Geipel believes young geographers have been sufficiently impressed by the "new" geography to be intolerant of opposition to its development in Germany in the future.- In 1971, some young German geography teachers followed the American lead in trying to rejuvenate the subject at school level, by setting up their own geography project. Raumwissenschaftliches Curriculum-Forschungsprojekt (R.C.F.P.) aimed to improve and modernize geography teaching. Geipel and his team meet at least twice a year, and have published four or more units for use in German schools. Their resources are very limited so progress is likely to be slow in comparison with the American High School Geography Project (H.S.G.P.) completed in a more prosperous era.

AUSTRALIA

Geography education in Australia which stems, like that in South Africa, originally from the United Kingdom, shows marked influences of the "new" geography. This is particularly true of South Australia, Victoria and New South Wales. Western Australia has no geography as such in its junior schools and Queensland is in the process of changing from a traditional systematic approach to a more flexible curriculum. South Australia has designed a course based on a conceptual approach

and using discovery learning, but is having considerable difficulty in applying the course in the classroom. In 1970 Victoria dispensed with all centralized curriculum guidelines, and after considerable confusion, is now swinging back very strongly to a highly structured core curriculum with extended options.

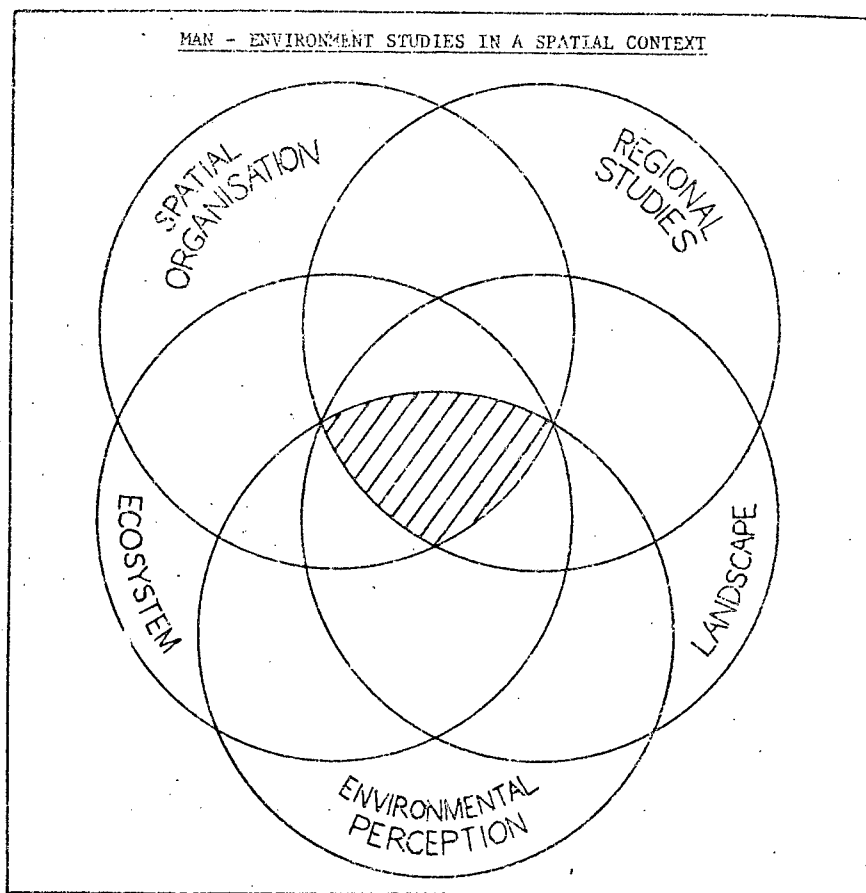
As early as 1961 in New South Wales geography changed from a static, factual, content-orientated subject to become an inquiry, skill-based course, developing from a landscape approach (in years 8 and 9), to a geography of world affairs (in year 10), to a "patterns and processes" approach to physical, human and regional geography (in years 11 and 12). Associated with this change were advances in teaching methods and techniques involving the use of statistical methods, simulation games and expansion in fieldwork. Resources necessary for discovery learning and the inquiry method involving pupil participation were also developed. As pupils could choose their subjects freely, geography gained strongly at the expense of more traditional history and foreign languages, to become the most popular freely elected subject after the compulsory English, mathematics and science.

After the abolition of the externally set School Certificate Examination in the state, the junior curriculum (years 7-10) was recently revised as a result of teacher demand for greater flexibility and less prescription. Figure 4 indicates the flexibility now available to teachers in structuring their geography courses. The syllabus since 1975 has been simply an extremely flexible statement on curriculum, the aims and objectives of which are also shown in Figure 4.

FIGURE 4: WAYS OF STRUCTURING A COURSE IN GEOGRAPHY

Source:

N.S.W. Secondary Schools Board, 1978, Geography in Years 7 to 10, Government Printer, pp. 5-6.



The diagram illustrates the overlap among the various structures. In selecting an approach to structuring a course, teachers may prefer to use one of these structures or a number of them.

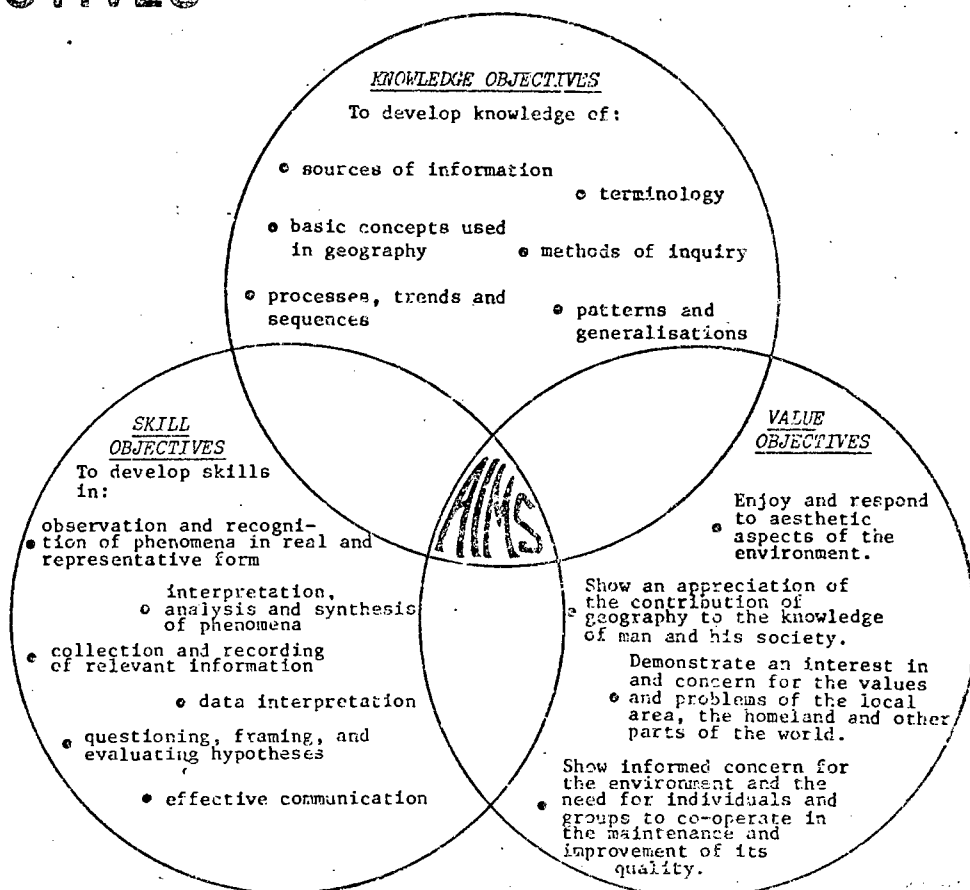
## AIMS AND OBJECTIVES

AIMS are broad intentions underlying a course of study. The Aims of this course are to develop:

- abilities to cope with the changing environment
- abilities in making personally and socially responsible decisions with particular reference to spatial problems.
- an informed appreciation of the environment
- an understanding of spatial patterns and the processes contributing to them
- skills in acquiring, understanding, communicating and applying knowledge.

OBJECTIVES are specific intentions underlying a course of study.

The following objectives form the framework on which strategies, tasks, materials can be developed to provide appropriate learning experiences.



Predicted problems in its implementation are now emerging, according to Laurie Dicker, Chairman of the N.S.W. Geography Syllabus Committee responsible for the development and revision of curricula in the state. He lists the problems:

"the lack of training, experience and ability of teachers in a predominantly school-based course construction, and subsequently a realistic evaluation of curricula and the associated teaching/learning strategies; - the problem of evaluation of subjective aims and objectives; - the insecurity in some teachers' minds of 'whether we are doing the right thing'; - the loss of security of a regimented sequenced content syllabus and its associated texts." (quoted from a personal letter dated 14/7/77).

As an external examination counts 50 percent of the final matriculation result, the new senior geography course is less flexible. It is based on a systems approach in 2-unit or 3-unit courses depending on interest and ability. The implementation of the course is checked and balanced by a combination of the following factors: the inspectorate, a centralized examination, the setting up of workshops, the development of resources, and a teacher in-service training system -- all of which result in the dissemination and cross-fertilization of ideas and experience.

Thus geography teaching in the most populous part of Australia shows a similar degree of adaptation and implementation of the "new" geography to what has occurred in the United Kingdom. The traditionally close Commonwealth ties between these two countries as well as with New Zealand, help to explain the co-incidence of development between the three countries, for New Zealand geography education is also very much in the process of adapting the ideas of the "new" geography for its own use.

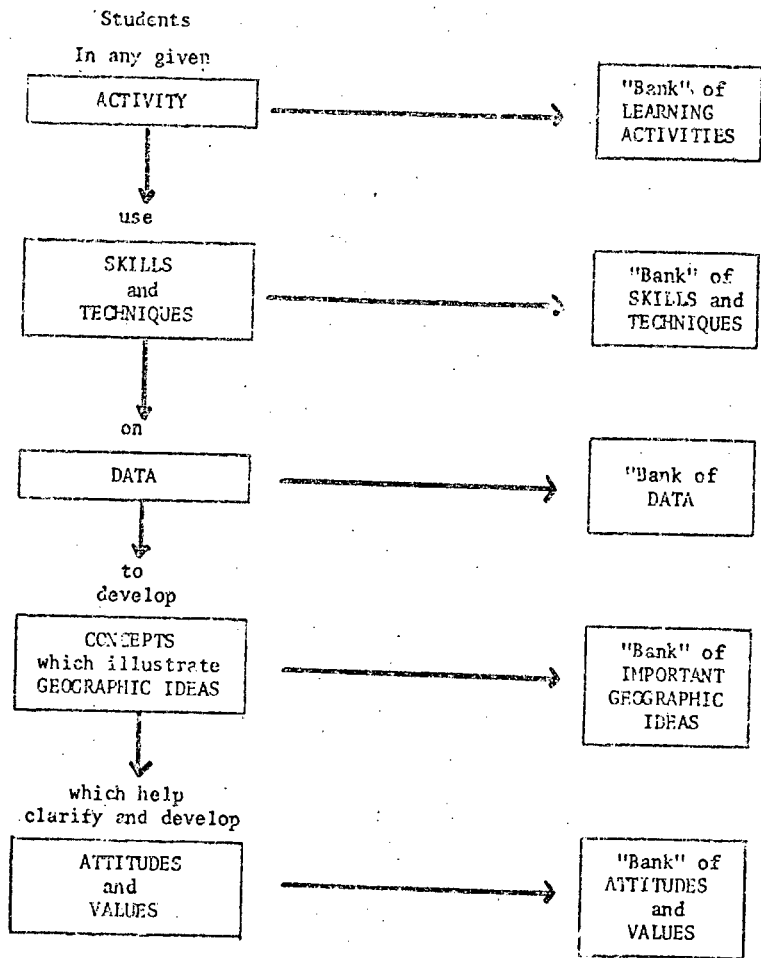
## NEW ZEALAND

The New Zealand Department of Education Curriculum Development Unit in liason with the National Geography Curriculum Council (N.G.C.C.) formed in 1975 and comprised mainly of serving teachers, has been involving a broad spectrum of all teachers very fully in a major revision of all aspects of geographic education, to bring it more in line with recent trends. Their already modified aims and objectives suggest an environmentalist approach which will be fully orientated to the "new" geography, making use of models, simulation games, the inquiry approach and individual research, hypothesis testing, field exercises and case studies (p.12 Geography Newsletter No. 8, Part 1 of the Report of the N.G.C.C. Meeting of March/April 1976.) The N.G.C.C. are putting great stress on values education, subscribing to the view of Stoltman (1974 quoted in New Zealand N.G.C.C. No. 9, p.29) that

".....the classroom is not going to be a values-free arena. Virtually everything the teacher does, the materials contain, the school administration enforces, and the students reflect are products of values-laden judgments. The only remaining option in the school milieu is to provide an open expressive environment for the analysis of values issues. The goal for the (geography) classroom must be to provide a place for students to learn to distinguish objectivity from bias, to separate fact from fantasy or opinion, and to experience the values analysis process."

The N.G.C.C. intends working gradually and taking into account opinions of all teachers, local circumstance, educational research and the needs and abilities of the pupils, in formulating new syllabus(es). To ensure flexibility, "banks" are being built up, as shown in figure 5, for use in future course planning and teaching. The full involvement of teachers and the magnitude of the task make for slow progress, but already some of the "banks" are on trial, being used within the confines of the syllabus. It is likely that New Zealand will, within a few years, be fully implementing the ideas of the "new" geography within its education system.

FIGURE 5: COMPONENTS USED IN DEVELOPING GEOGRAPHY PROGRAMMES



The term "bank" is used to include the notion of withdrawing material for developing school programmes and depositing or adding further items according to the needs of students in a particular school, or in respect of changes suggested by developments in geography

Source: N.Z. N.G.C.C. Newsletter No. 8 (1976),  
New Zealand Department of Education Curriculum Development Unit, Wellington.

CANADA

In Canada, as in Australia, there are great differences in geography education from province to province, but the status of the subject in Canadian schools is low. Geography is often only taught as a lesser part of the Social Studies program. As in New Zealand, the last decade has seen a strong swing towards values education in Canada, with an accent on problem-solving and decision-making experiences. Pupils are taught to apply factual data so as to arrive at "best solutions" for contentious issues. Alberta Department of Education (1971,p.5) for instance, claims

"Alberta's social studies program seeks to help students utilize personal freedom in discovering ways to improve man's relationship to his social and physical environment.... Values and related feelings and attitudes are the prime determiners of actions."

Thus it is important for education to provide experiences which allow Canadian students to clarify their personal values and to understand the values of others. To facilitate this, flexibility is given for teachers and students to practise responsible decision-making by planning together significant learning experiences relevant to their lives. Naturally many of the techniques used in the "new" geography are employed in Canadian social studies programs, but the amount of time spent on what can be considered as strictly geographical is somewhat limited in comparison with the time spent on geography teaching in the other Commonwealth countries mentioned.

#### THE UNITED STATES OF AMERICA

The American and Canadian situations are closely allied as a result of similar diverse traditions, environment and history. Little attention has been given to teaching geography in schools. Geographers with a commitment to expanding geography teaching in schools felt that a re-appraisal of the subject matter and of the educational approach was needed. Thus, under the auspices of the National Council for Geographic Education (N.C.G.E.) and the Association of American Geographers (A.A.G.) the High School Geography Project (H.S.G.P.) was begun in 1961. Within three years H.S.G.P. had moved entirely under the wing of the A.A.G., and it was receiving substantial financial support from the National Science Foundation. By 1970 when a brand-new, revolutionary, one-year, high school geography course had been produced, two-and-a-half million dollars had been spent enticing enterprising young geographers out of research into education to develop their "new" ideas.

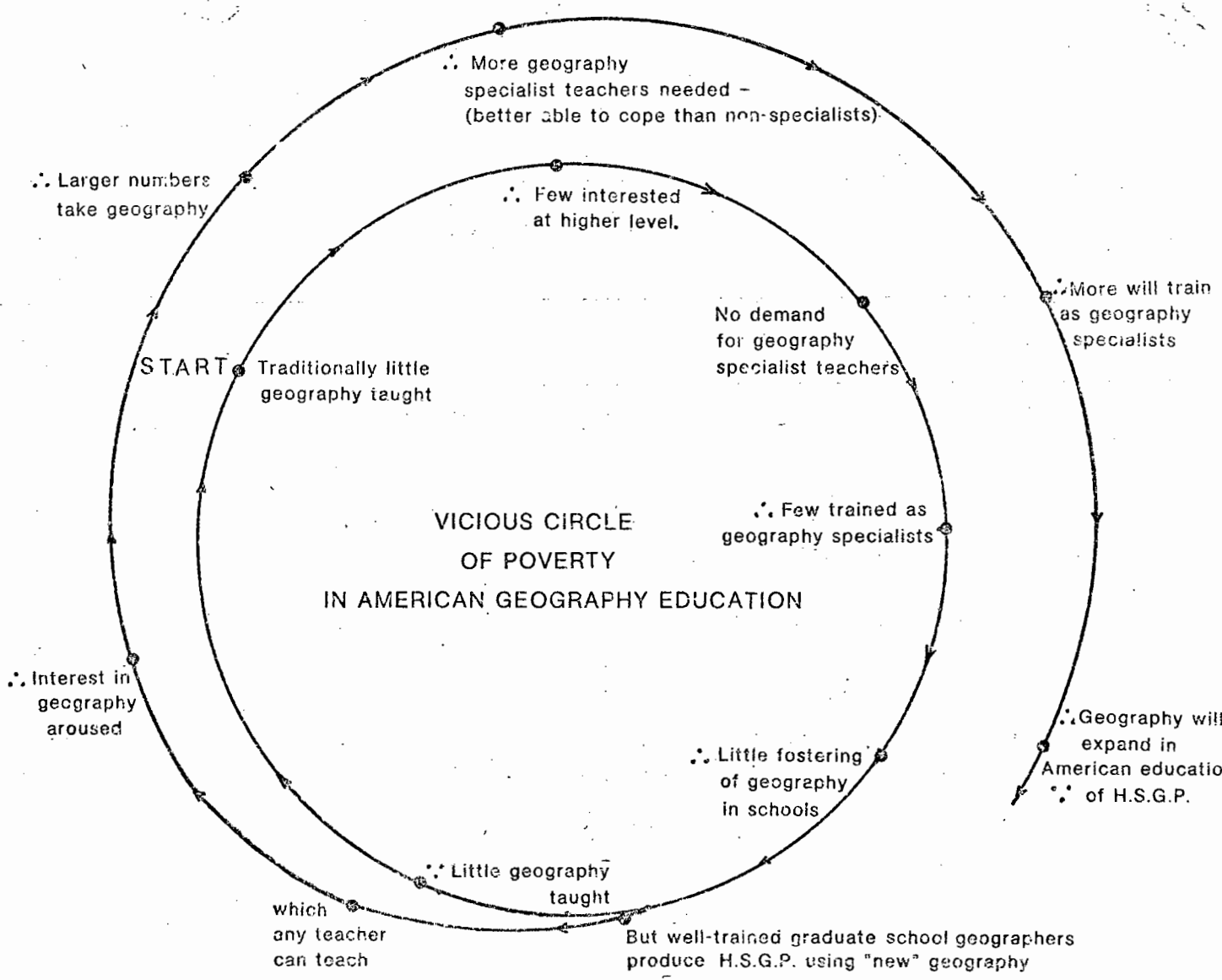
#### Selected Geography Projects

H.S.G.P. was the fore-runner of a spate of geography projects aimed at modernizing the teaching of the subject. As H.S.G.P. has been crucial in the development of school geography in the U.S. and its influence has reverberated throughout the geography world, it is described and evaluated at some length. Its contents and organization appear in appendix (A).

THE AMERICAN HIGH SCHOOL GEOGRAPHY PROJECT (H.S.G.P.)

The aim of H.S.G.P. was to foster geography in high schools by developing a course which would capture the interest of teachers and high school students (ages 14 to 16 years) and could be presented to students with no foundation in geography by any teacher, even without training in geography. The latter was an essential requirement, for few geography specialists are found in American schools, geography seldom being offered as a separate course there. Any geography taught is included usually only as an aspect of social studies, so that limited teacher training time is spent on the subject. The end result is a vicious circle of geographic poverty in the American education system. The development of strong graduate schools in geography, however, has provided the geographers needed to help break out of the circle as shown in figure 6.

FIGURE 6: BREAKING THE VICIOUS CIRCLE OF POVERTY IN AMERICAN GEOGRAPHY EDUCATION



These constraints were important to the form of H.S.G.P.

According to Helburn and White (1970), respectively the project director and chairman,

"materials had to satisfy the criteria of being solid geography, satisfying to students, attractive to teachers, reflective of contemporary trends in education and commercially publishable."

H.S.G.P. had to be flexible, activity orientated, designed for use by pupils of a wide ability range (eventually the upper 60 - 70 percent of the range) and little geographic background, and use an inquiry approach. As Helburn (1972,p.50) indicated, social, economic and political values impinge on curriculum development, both in the choice of subject matter and in the kinds of classroom process encouraged, and value judgements concerning the direction of reform have to be made. Eventually the following objectives for H.S.C.P. crystallized from discussions involving hundreds of people — Helburn (1968,p.281):

1. Students will work with a representative variety of facts or generalizations from all the regions of the world, including physical and social topics;
2. Students will understand certain basic abstractions e.g. eco-system, man-land relations, location, sequent occupance, distance, pattern, spatial distribution, spatial interaction, areal association, diffusion, region, spatial hierarchy, and change through time.
3. Student's training should focus on four skills objectives: an increased awareness of place and its significance;.... ability to deal with data in terms of their spatial characteristics; ~~ability to formulate appropriate problems which derive from that awareness;~~ .... ability to solve — (perhaps-partially?) ~~those problems.~~
4. Students will want to ask questions which will help them understand the contents of the world. They will collect information to answer these; select relevant material; and hypothesize answers, recognising they are tentative."

Beyond these general objectives every activity in each of the six units has its specific objectives listed in the teachers' guides.

The project team developed

"a problem-structured set of learning experiences in which students would use various data to reach generalizations in ..... which the development of cognitive skills ranging from the more specific, lower-order skills such as comprehension and translation, to higher-order skills such as analysis, synthesis and evaluation would be encouraged." (Patton, 1972,p.52).

Figure 7 indicates the improvement in American classroom teaching which

CONTRASTING TRADITIONAL AMERICAN AND H.S.G.P. TEACHING MODES AND THEIR RESULTS

FIGURE 7: AS ORIGINALLY CONCEIVED (according to Helburn, 1968)

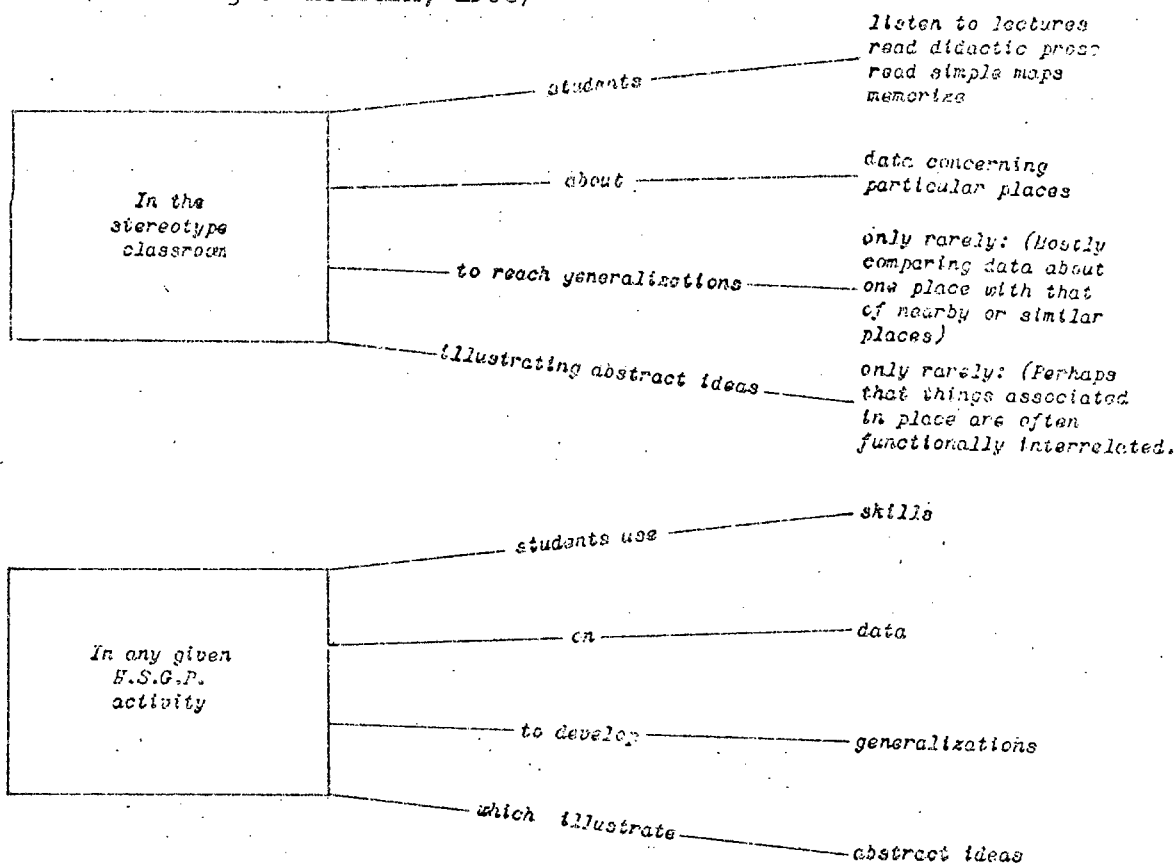
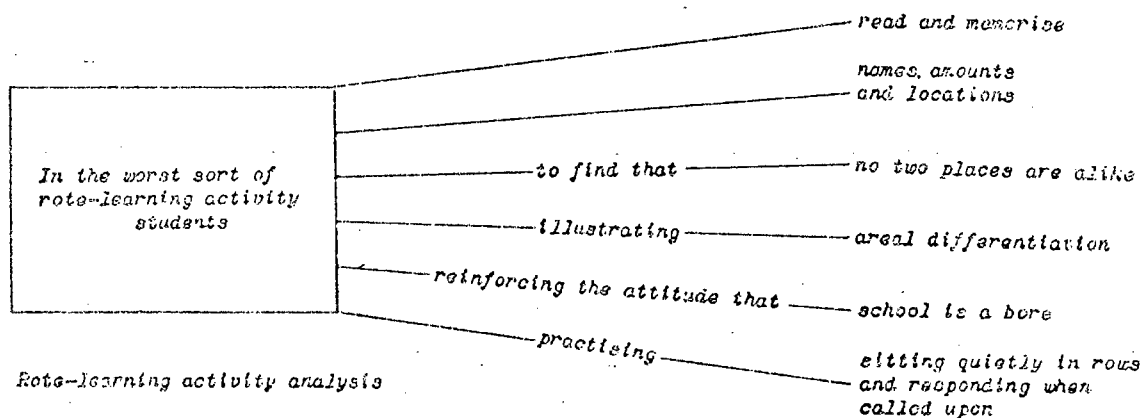
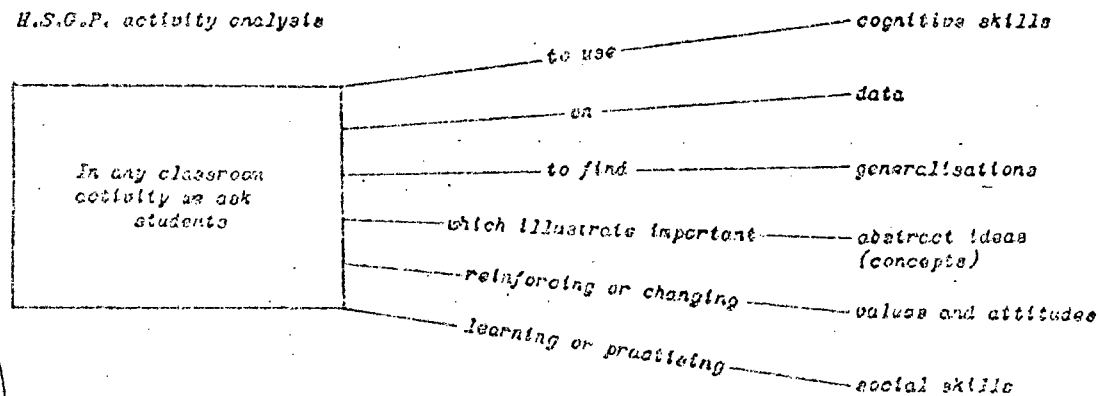


FIGURE 8: IN FINAL FORM (from D.J. Patton (ed), Final Report of H.S.G.P. 1970)



H.S.G.P. activity analysis



the project team designed H.S.G.P. to facilitate in its original form (1967), while figure 8 compares the teaching strategies traditionally used in the American classroom with those which H.S.G.P., in its final form, employs.

Each of the 200 odd lessons in the course carried detailed instructions for classroom organization and procedures including open-ended inquiry questions for which there were no "correct" answers.

The course format was revolutionary in that it consisted of virtually everything needed in the classroom - student resources, student work manuals, role cards, activity sheets, teachers' guide, filmstrips, records, overhead transparencies, and hardware models. Material was presented in as varied a way as possible with the aim of enhancing pupil interest, for, according to McNee (1968,p.70),

MS | "Effective teaching might be defined as the development of appropriate strategies for the overcoming of ..... emotional resistances to new ideas."

H.S.G.P. sought to diffuse the very best ideas of modern geography as understood in the leading graduate schools, whether these ideas were generally considered "old" or "new", according to McNee (1968,p.73). It popularized the use of many aspects of the "new" geography such as the conceptual approach to geography teaching, the inquiry method, problem-solving and hypothesis-testing, models (both hardware and theoretical), role-playing and simulation games. According to Pattison (1970,p.23)

"H.S.G.P. combines a discipline-reflecting conceptual design with a procedural scheme that heavily emphasizes socially orientated skills. The H.S.G.P. course, to an extent not anticipated when the project began, is built around social activities that have come to be seen increasingly as classroom preparation for coping with 'contemporary human problems.'"

It was generally well-received, especially by the pupils with whom the simulations such as Portsville, were particularly popular. According to Gunn (1975,p.265) six teaching approaches have made H.S.G.P. attractive to other countries.

1. Openers take into account the world of the learner at the beginning of a sequence of lessons, find out what he knows, develop his interest or disturb his mind-set.
2. Concept developers give visual and verbal data building on students' experiential base to build concepts.

3. Skill development results from activities designed to extend students' ability to interpret documentary sources, to draw inferences from data and predict results from given information.
4. Simulations stimulate interest, secure involvement, allow peer learning and pose problems for inquiry.
5. The inquiry technique uses the hypothesis-forming-testing-validating procedure.
6. The valuing process explores the bases of decision-making at all levels of personal and community life in three stages: identification - defense in the face of new data - action."

Gunn indicates that H.S.G.P. has been mostly used in Canada, Australia, New Zealand, the United Kingdom, Singapore and Brazil. This widespread use is an indication of its flexibility and adaptability, but it is not a panacea. For instance, according to Gunn, (1972) H.S.G.P. cannot easily be used in countries such as France, Japan and South Africa because their school systems are so dominated by the universities, that syllabuses are simply brought up to date to conform with university entrance requirements. Even within the U.S., H.S.G.P. has its critics. Marsh (1973,p.37) and Orr (1973,p.4) having used it, both wrote articles in the Journal of Geography criticising certain aspects. The conceptual approach seemed to be their chief complaint. As Marsh put it, "the overall picture is an eclectic assortment of unconnected concepts" lacking focus, and "with a minimum of interrelationships of concepts between units." In addition, he felt that the concepts had too high a level of abstraction for below average fourteen year olds. Orr agreed, but indicated that H.S.G.P. allowed the teacher and better students freedom to help the weaker pupils. Both felt that students were not given sufficient opportunity to inter-relate concepts, thus limiting their worth. Although H.S.G.P. was planned conceptually so that students would develop generalizations illustrating the concepts, Educational Testing Services were unable to measure the success of their ability in this regard, on completion of the course. Their tests did show however, that student interest, motivation and ability to perceive geographically all improved (Gunn,1972,p.80).

Graves (1968,p.68) was concerned about the copious use of theoretical models and the lack of physical geography in the project which concerned itself almost entirely with human geography. This latter concern has perhaps been negated by the fact that the Earth Sciences Curriculum Project, working independently but concurrently with

H.S.G.P., produced an excellent course, "Investigating the Earth," which introduces the American high school student to physical geography. Fitzgerald (1969, p.63) discussed H.S.G.P.'s use of models from another point of view. He was critical of the lack of concern for fieldwork, and suggested that an opportunity to test out in the field the conceptual models developed in the project, had been lost. He considers that in the "use of generalized conceptual 'models' the final intellectual step should be the testing (by the pupils themselves) of the models created".

Notwithstanding these criticisms Lansky and Stafford (1967,p.175) commended H.S.G.P. for encouraging the scientific attitude of respect for objective evidence, tentativeness in drawing conclusions and accepting theories, and scepticism about pet ideas. Cason and Carswell (1970,p.539) showed that H.S.G.P. materials are usable, in whole or in part, for social studies courses in a variety of circumstances. Rolfe (1971,p.220) even from across the Atlantic, considers that H.S.G.P. has had a "small but significant initial impact on geography teaching in the U.S." If this is true -- and in 1971 H.S.G.P. had only been generally available to schools for a few years, a short time for any impact to be felt in education -- its impact can be partly ascribed to the lowly status geography previously held in American schools. Inevitably it will take many years for the subject to reach a status in U.S. schools commensurate with that it enjoys in Britain, for example.

H.S.G.P. sparked off the development of other projects in different parts of the country such as the Minnesota Conceptual Geography Project and 'Man, a Course of Study' (MACOS) which will probably aid in improving the position of geography in U.S. schools. The Minnesota project is what its name implies, and like H.S.G.P. is a conceptually organized course in geography. In MACOS Bruner (1966,Chap.4.) asks three basic questions about man: "What is human about human beings? How did they become so? How can they be made more human?" The answering of these questions in the course is structured around the concept of the life cycle, and obviously includes the consideration of important values questions.

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The impact of H.S.G.P. has certainly not been limited to the U.S. In addition to being used elsewhere, it has been instrumental in persuading West Germany, Finland, Israel and Hong Kong to develop their own projects, while in the United Kingdom many projects connected with various facets of geography teaching have been set up. Of these, the Schools Council has been responsible for the establishment of numerous national curriculum development projects. These include:

The Humanities Project;

The Integrated Studies Project;

The Liverpool Project in Geography/History/Social Science for 8-13 year olds;

Geography for the Young School Leaver (G.Y.S.L.) at Avery Hill College of Education; and the

Geography 14-18 project at the University of Bristol School of Education.

In addition, there is the Oxford Geography Project (O.G.P.) published by Oxford University Press. The first three are all integrated projects with geography playing a limited role only.

#### GEOGRAPHY FOR THE YOUNG SCHOOL LEAVER (G.Y.S.L.)

Like the American H.S.G.P. the British G.Y.S.L. is a resource-producing project, but it is designed for the average and below average pupil. Emphasis is therefore on multi-media presentation and pupil activity, with an economy of simply-written text. It was designed to be geographically sound, interesting and relevant to the pupil both at school and afterwards. Its objectives in terms of ideas, skills, values and attitudes are listed in the teachers' guides. They accord with the new trends away from description to analysis and prediction. The three units, Man, Land and Leisure, Cities and People, People, Place and Work, published by Nelson were disseminated with the aid of local curriculum development groups in over a hundred local education authority areas, but the success of the project remains to be evaluated.

#### SCHOOLS COUNCIL GEOGRAPHY 14-18 PROJECT.

According to Reynolds, (1973) one of Geography 14-18's team, the Project was partly

- (a) to generate new teaching materials for eventual publication;
- (b) to try out a modified examination system giving scope to new ideas; and

(c) to help geographers in planning and evaluating curriculum renewal. From evidence of other completed projects, the team found those consisting of packaged materials seldom affected the pattern of learning in schools appreciably. The team felt it was the "way in which the teacher involved his students in recovering and articulating meanings from the learning process" (Hall, 1976, p.174) which needed modification. They therefore set about working for change as illustrated in figure 9 (p.54). The Cambridge Local Examinations Syndicate agreed to a G.C.E. O-level programme with only 50 percent of the final evaluation being based on the examination set on the core syllabus, the aims and structure of which are shown in figure 10 (p.54). This meant that 30 percent of the mark would come from course work and the other 20 percent from a choice of an individual study, or a second written paper. Naturally the examination would have to require candidates to work on given data, using previously developed skills to solve problems set within the core syllabus and thus covering concepts and models included in its structure.

Thus participating teachers had flexibility of choice in the material studied providing that they complied with the broadly defined aims and structure as set down in figure 10. An example of the way a syllabus was designed at Colston's Girls' School is outlined by Jones and Reynolds (1973). There it was found that time constraints on teachers made a comprehensive prior analysis of teaching objectives and relevant learning experiences impossible. Nevertheless teachers become conscious of the need for harder thinking on these matters and the fruits might well come from cumulative experience once the basic resources are obtained.

The Geography 14-18 Project lasted from 1971-5 and produced several publications including a teacher's handbook for the course leading to the G.C.E. O-Level examination. Reynolds and Tolley wrote two guidelines on coursework assessment and individual studies, aspects of which are useful to teachers anywhere. As the team had concentrated on the 14-16 age range, the Schools Council have approved a new-project, Geography 16-19, to be centred at London Institute of Education.

FIGURE 9: GEOGRAPHY 14-18 PROJECT:

A 'SYSTEM-WIDE' STRATEGY

FOR CHANGE

(based upon the Interim Report)

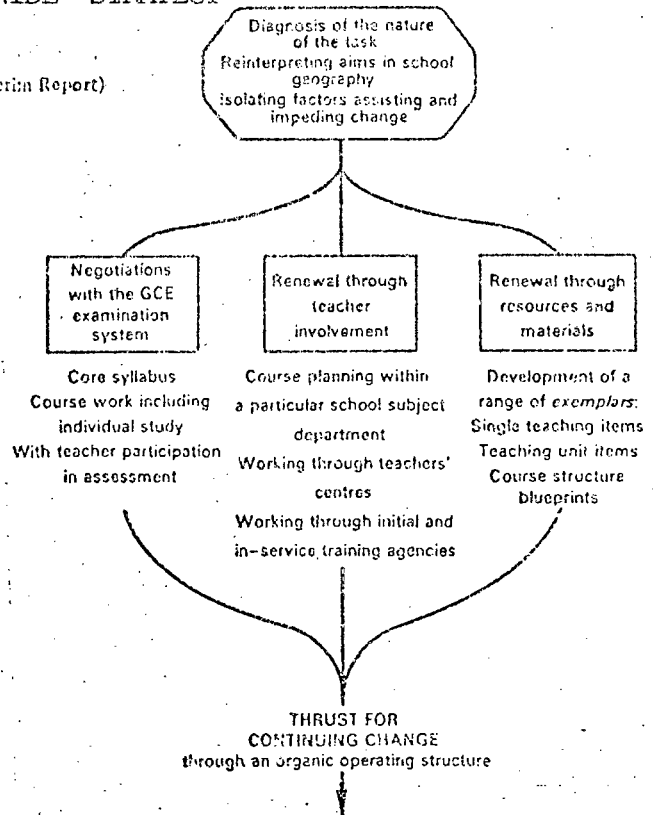


FIGURE 10: GEOGRAPHY 14-18 PROJECT: AIMS AND STRUCTURE OF THE CORE SYLLABUS\*

AIMS		
<p>The main aim of the core syllabus is to enable pupils to use important skills, ideas and models in geography to classify and interpret their everyday experience, to discern order in landscapes and to bring regional and world problems into appropriate frames of reference. Thus the basic criteria used by participating teachers to select places, regions and themes to study should be that they contribute significantly to the pupils' understanding of:</p>		
<p>(1) (a) The geographical character of the local area, and of the British Isles considered as a unit; the use of large-scale OS maps                      (b) Significant contrasts and similarities in:                      (i) other economically developed regions of the world                      (ii) less developed regions of the world                      (c) The working of wider physical and economic systems at a world-wide scale</p>		
<p>(2) (a) The processes underlying landscape and spatial patterns                      (b) Environmental inter-relationships considered in terms of systems and sub-systems; and hence with multiple or cumulative causes, rather than simple cause and effect or deterministic explanations                      (c) How landscapes and spatial patterns change, and may be expected to continue to change, especially in the context of technological change                      (d) The role of decision-making, and of the values and perceptions of decision-makers, in the evolution of patterns in human geography                      (e) The importance of the scale at which patterns and systems are considered                      (f) How ideas, models and maps simplify complex geographical reality</p>		
STRUCTURE		
A	B	C
Illustrative examples to be chosen from	Wider systems or contexts to be considered	Approximate distribution of examples chosen
<p><b>SECTION 1</b>                      1.1 Weather and climate                      1.2 Contrasting landforms                      1.3 Conservation of natural resources</p>	<p>Atmospheric and oceanic circulation                      Longer-term geologic and shorter-term geomorphic processes                      Hydrologic cycle</p>	<p>Local and British Isles                      45-65% approximately</p> <p>Other developed regions of the world 10% - 20% approximately</p> <p>Less-developed regions of the world 10% - 20% approximately</p>
<p><b>SECTION 2</b>                      2.1 Agricultural land-use                      2.2 Location, growth and decline of industries                      2.3 Transport networks                      2.4 Economic growth and trade                      2.5 Settlement patterns between and within towns                      2.6 Population growth and distribution</p>	<p>Physical                      Technological                      Economic                      Social                      Political</p> <p>processes influencing spatial patterns and landscapes</p>	<p>Wider physical and economic systems at a world scale 10%-15% approximately</p>

\* from *New Professionalism for a Changing Geography* (Schools Council, December 1973)

## THE OXFORD GEOGRAPHY PROJECT.

The O.G.P. is published in the form of three books each accompanied by a separate teacher's guide. The course is much more manageable than the H.S.G.P. at a small fraction of the cost. It caters for a wide ability range, progressive and more difficult tasks being clearly indicated. Like the H.S.G.P. it is flexible and can be used at varying depths. It is based on a framework of concepts including distance, area, interaction, association, centrality, connectivity, accessibility, hierarchy, gravity, scale, time-sequent occupance, spatial diffusion, etc. which are constantly applied to regions. As the course progresses the key ideas and skills introduced simply in Book 1, The Local Framework, are examined in greater complexity, and a more abstract consideration of theory occurs in Books 2, European Patterns, and 3, Contrasts in Development. The course uses all the techniques of the "new" geography, but none are allowed to assume an importance over and above the subject they are intended to illuminate. In this way Mrs. Long's (1971, p.177) reminder that "children's interests at this age are transitory and it is important to vary the diet," is catered for.

In some ways the O.G.P. contrasts markedly with H.S.G.P. as a result of differing emphases in the U.K. and U.S. Fieldwork, for instance, missing altogether from H.S.G.P., is very much an integral part of the O.G.P. British teachers must produce or organize all the teaching aids they deem necessary for the work and because most British teachers are fully qualified geographers, they are left to present the various aspects of the course in the way they deem suitable. Its adaptability makes most of the O.G.P. very suitable for use in the South African context in contrast with the H.S.G.P.

This adaptability is a characteristic of the "new" geography in general; chapter IV will show how the various facets of the "new" geography may be incorporated with the "old" geography in a versatile framework of teaching strategies which teachers may use.

## CHAPTER IV

TEACHING STRATEGIES - A MODEL FOR "NEW" GEOGRAPHY TEACHING  
IN SOUTH AFRICA

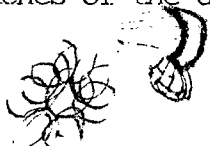
It should be possible to construct a model illustrating the components of good, effective, integrative, modern geography teaching and the teaching strategies needed for its achievement. This chapter suggests a framework which may prove helpful to South African teachers.

A perusal of modern geographic literature will show ample evidence of all the aspects of the "new" geography described in earlier chapters. Geographic literature also abounds in models of all types. The writer is not aware of any attempt to model contemporary geography embodying its various facets, approaches, methods and techniques. Such a model should incorporate the best of the "old" as well as the "new" geography, but if it is to include the multiplicity of facets making for good geography teaching, it would probably be so intricate as to limit its usefulness.

Much has been written about the personal qualities, abilities and attributes of a good teacher; it is not the intention to include lengthy discussion of such characteristics here.

It is often difficult to identify the personal attributes that distinguish the good teacher from the mediocre teacher and, because such judgement is usually subjective, there is frequently disagreement over the qualities that a good teacher should possess. For the present, it suffices to say that the good teacher is distinguished by particular personal attributes and abilities, sometimes intangible, but nevertheless fundamental. It may be assumed that most teachers continually strive to foster such qualities as are likely to improve teaching ability.

Apart from personal attributes, a good teacher will make use of the most appropriate approaches, teaching methods and techniques -- i.e. teaching strategies -- available. While the underlying importance of personal qualities in good geography teaching is accepted, the rest of the chapter will be devoted to the teaching strategies that modern geography teachers could integrate into their teaching. Integration may be considered on two planes -- the need for integrating the various teaching strategies in a geographer's teaching pattern and the need for integrating the various branches of the discipline. Both of these are important and,



when used, are likely to result in more effective geography teaching. The emphasis here will be on the integration of method rather than geographic content.

Modern geography teachers have at their disposal a battery of aids, approaches and techniques which, judiciously used, can make them highly effective and stimulating as teachers. In addition to the traditionally used textbooks, library resource materials, teaching aids and testing procedures, this battery includes those aspects of the "new" geography described in chapter II.

To modernize geography teaching in South Africa, teachers need to integrate effectively the "new" as well as "old" geography teaching strategies, with the elements of the subject matter. Figure 11 is a model showing these strategies. Those selected for the construction of the model are those which, from current literature, appear to be significant in modern geography teaching overseas. Teachers should judiciously select and vary their teaching strategies according to the aspects of the syllabus, and to the classes, involved. The most appropriate strategies will be those most likely to involve the pupils successfully in their geographic studies. A wide range of factors should be considered before selecting teaching strategies. These will include:

1. the teachers' own personality and teaching abilities;
2. the abilities and experience of the pupils;
3. pupils' personalities;
4. the personality of the class as a whole;
5. the school environment;
6. the time and any other constraints applicable to the teaching situation.

In a subject as diverse as geography it is surprising that diversity of teaching method has not always been a hallmark of geography teaching. It may, however, become the characteristic of geography teaching in South Africa with judicious implementation of the diversity of teaching strategies embodied in the model (fig. 11). This could cause geography teaching to become more varied and more effective, resulting in greater pupil understanding of the geography of the world and thereby equipping them to play a more useful part in their community.

THE MODEL (available in fold-out form, p.62)

At the centre of the model of teaching strategies for "new" geography teaching is the discipline itself, embodying the diversity of subject matter school geography syllabuses require teachers to handle with their pupils. This central section may also represent any particular geographic phenomenon or aspect of the subject worthy of study. It is circumscribed by parts of five large overlapping circles portraying the various teaching strategies which may effectively be integrated in modern geography teaching. The overlap indicates the inter-relationship between strategies, none being exclusive of another, in the teaching process.

The teaching strategies are arranged in a logical sequence, though not necessarily the only one usable, explained working anti-clockwise from the top left-hand quadrant.

The first circle contains the source of much geographic information which lies in library reference material including journals, periodicals, magazines and newspapers. Reference material will probably be consulted, for instance, if pupils use the inquiry method in discovery learning.

Alongside is a segment for textbooks containing the basic material included in the syllabus. This is perhaps the chief single resource upon which most teachers and pupils depend.

Consequently the next segment is from the circle devoted to testing and examining the mastery of this material, using a wide variety of methods. These range from one-word completion type questions to matching, multiple choice, paragraph and essay-type questions testing the whole range of abilities from recall through understanding, analysis and synthesis to evaluation. Practical abilities such as sketching or measuring may be tested out in the field — hence the protrusion of the segment into the fieldwork circle.

A large variety of teaching aids of all types is available to the modern geography teacher (see p.3 of the questionnaire, appendix D), and certainly these are not confined to the bottom left-hand quadrant. This does, however, seem a logical place for the mechanical aids such as projectors which can effectively aid the teacher in testing, making a far greater range of materials and question types available for use. (For example, a slide of a meandering river with cut-off and slip-off slopes may be projected, and the pupils asked to explain the processes

involved in the formation of the features shown, as well as to draw a labelled sketch of them.)

The other segment of this circle is devoted to models. It is sub-divided to show the range of models from the iconic type, such as photographs, or the analog maps, perhaps shown to the class by projector, to the symbolic type represented by Von Thunen's Land-use model.

Symbolism is part and parcel of most simulations which are included in the text circle. In this facet of geography teaching, geographers need to be on guard. For, if effective teaching is to be ensured when using role-play and games, the successful transferences of this symbolism should be checked. This is probably the most important part of the exercise, and the effective geography teacher will ensure that the necessary transference has taken place in the pupils' minds when integrating the various aspects of the simulation during the after-game discussion and re-inforcement.

The top righthand quadrant also involves some symbolism in that pupils must be able to interpret the various ways of representing statistics such as graphs, histograms, pie diagrams and lines of best fit. They should also be able to use quantitative methods in testing hypotheses or solving geographic problems. The problem-solving technique may be required in the use of the inquiry method, so that these two overlapping circles also tie in with each other.

Another vitally important source of geographic information is the field. Fieldwork is represented by the small circle surrounding geography at the centre of the model. Fieldwork is all-embracing because each teaching strategy may be employed at some stage in fieldwork, whether in preparatory classwork for the field-trip or in post-trip data processing or re-inforcement follow-up. The size of its circle is limited by the time which can be devoted to fieldwork within the strictures of most modern educational systems, so its circle will vary in size from country to country, being particularly small in America, for instance. In addition to providing the setting for testing knowledge of geography obtained previously, fieldwork can also be used effectively for the integration of the various fields of the discipline as illustrated in appendix C. On this excursion pupils are exposed to aspects of geomorphology, pedology, climatology, rural land-use and urban-economic and regional geography. The integrative nature of fieldwork may be further illustrated on the methodological plane by the following example.

SIMULATIONS ?  
TEXTBOOKS ?  
LIBRARIES ?

Before going out into the field to collect data for testing a hypothesis, say -- that longshore drift occurs southwards and westwards along the shores of Table Bay -- this fieldwork project for senior pupils may be preceded by use of the inquiry method. A problem may be set on the method to be used in collecting the data, e.g. "How can longshore drift be measured?" This will require pupils to consult textbooks or library materials before being tested by having to present their findings to the class. In the presentation they may use any teaching aids needed, including models, or even a simple simulation of what they intend doing in the field. It will then be necessary for the teacher to correct any weaknesses or misconceptions about the technique to be employed before the class actually sets off on the field trip. This will ensure that the exercise itself is as fully prepared as possible, and will thus have a greater likelihood of being productive in yielding data which will support or negate the hypothesis.

The population geography section of the standard 8 syllabus provides an illustration, on a longer time-scale, of the way in which the teaching strategies in the model may be employed during a term spent on the study of demography.

An excellent way of introducing the topic of population is by showing either of the Shell educational films, "Flood or Famine" or the "Land must Provide". These films make a tremendous impact on the pupils, capturing their interest in the topic immediately. The teacher may then lead discussions on issues raised in the film, such as the population explosion. The teacher may proceed to explain the basic concepts of demography (e.g. migration, distribution and the demographic transition) as well as the techniques used in representing population characteristics.

The pupils will consult the textbook(s) at home, and make contact with analog models such as maps of world population distribution and increase, life expectancy, protein and calorie intake, per capita income and family planning, and symbolic models such as the vicious circle of poverty and the demographic transition.

While those members of the class with an interest in role-play and drama are preparing a short simulation illustrating the reasons for the historical growth of world population for presentation to the class, the other class members may be given an open-ended assignment based on

the library resources available (e.g. U.N. Demographic Yearbook). Using discovery learning or the inquiry method to collect further information for class consideration and discussion, they may provide some interesting and stimulating material which could be presented using what they consider to be the most effective statistical and quantitative methods available.

Fieldwork experience may be gained by the class during a short pedestrian count at a shopping centre. The pupils may be confronted with the problem of classifying pedestrians according to (a) sex, (b) race and (c) dependency. Whereas pupils may determine these three characteristics with a fair degree of certainty, age may prove a problem in terms of the time taken to ask the question(s) and the resistance of some to answering. This type of fieldwork lends itself to the formulation and testing of hypotheses suited to the circumstances, such as, for example :

1. More economically active pedestrians than dependants will pass.
2. White females will predominate at the time of survey.

The ability to represent population data graphically and effectively having been tested in the compilation and presentation of the pedestrian count findings, final testing may be oriented towards content, using multiple choice techniques. Analysis of mapped data and synthesis of the population problems facing the world and their solution, will perhaps best be examined in essay-type questions.

Teaching strategies may be similarly integrated in innumerable other ways. Although each facet of the model has been used for illustrative purposes in both these examples, it is unlikely that this will often occur in practice. To avoid monotony in their pattern of teaching and to generate interest and extend their pupils to full potential, effective geography teachers will integrate as many teaching strategies as deemed necessary, at the appropriate time.

The integration of such a variety of strategies may, to the inexperienced, seem to be time-consuming. At first, it is. It certainly requires accessibility to a range of resources, many of which are now becoming available to schools in South Africa, e.g. the 1:50 000 topographic maps and stereo-pair air photographs listed in education department catalogues or the various types of projectors, transparencies, slides and filmstrips for which monetary allowances are available. It also requires of the teacher thought, planning and preparation for which many teachers have limited time, but with practice, this all becomes second nature. The end result is likely to prove worth any extra time spent. Far more interesting lessons will yield far more involved and

TEACHING STRATEGIES: A MODEL FOR  
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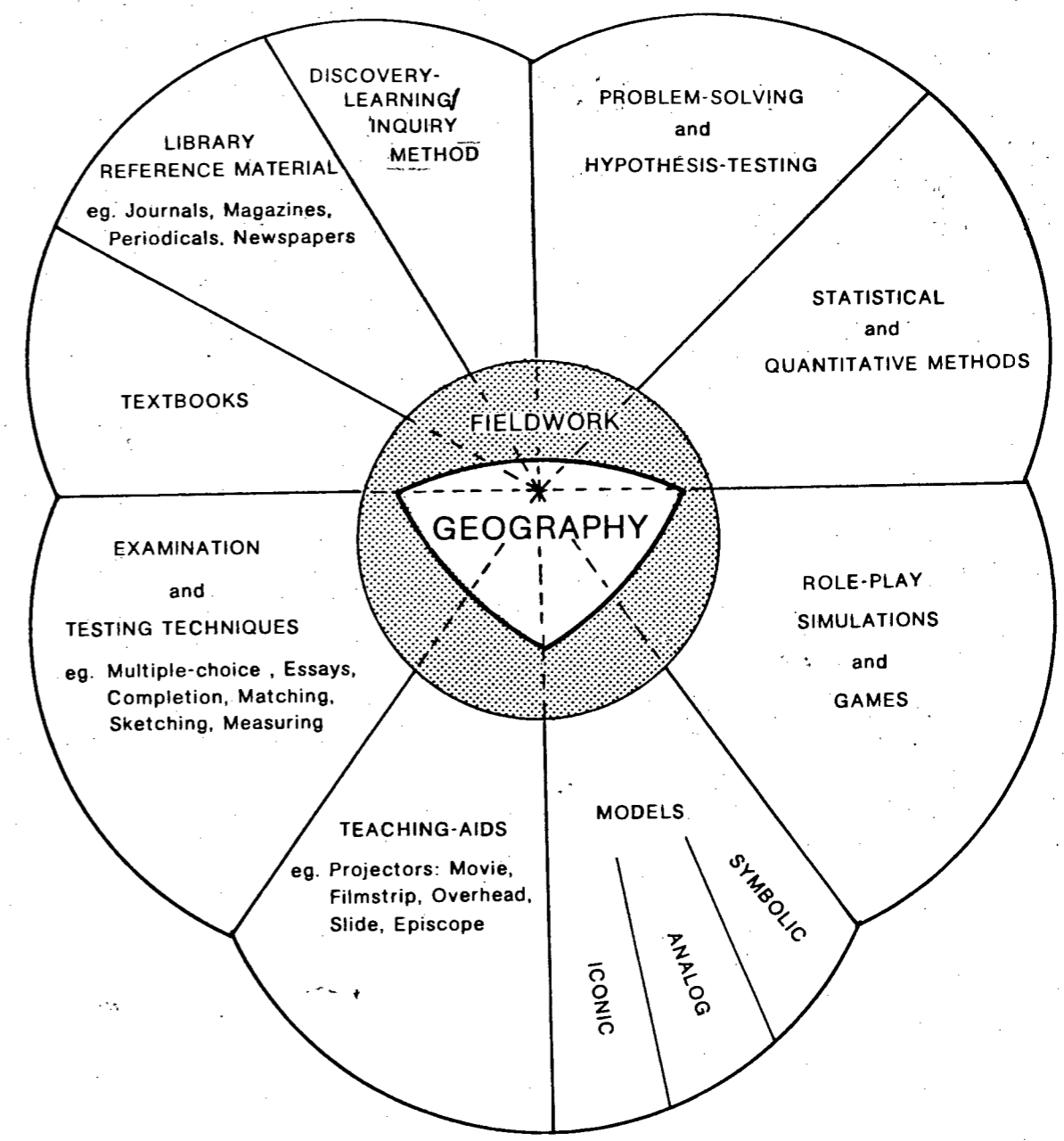


FIGURE 11

enthusiastic pupils with a greater awareness of the geography of their world and their place in it.

The next and longest chapter, chapter V, presents a report on a survey of geography teaching in South African high schools conducted by the writer in 1977. The report gives an indication of where South African geography teaching lies with regard to the use of the "new" geography. From the findings it is possible to infer how implementation of the teaching strategies embodied in the model could result in improving the quality and standard of geography teaching in South Africa.

## CHAPTER V

## 1977 SOUTH AFRICAN GEOGRAPHY TEACHING SURVEY REPORT

## INTRODUCTION

The influence of the "new" geography has not only been felt in the overseas countries mentioned in Chapter III. It has made a profound impact upon university geography in South Africa and is also influencing the character of geography being taught in South African high schools.

In South Africa the first Senior Certificate Examination based on the new differentiated syllabuses was written at the end of 1975 or 1976, depending on the province. The geography now being taught in South African high schools is more detailed, conceptually more advanced, and of greater volume than what was taught a decade ago. If our teaching methods and techniques do not also improve concomitantly, the end-product of our geographic education system, our pupils, might be considered not to have benefitted from the change -- or even to have retrogressed, relative to other lands.

It is perhaps valid to think that the ordinary South African school-leaver has a clearer idea of the geography of our planet than his north American counterpart, but it is equally likely, judging from the material in Chapter III, that he or she is not as geographically well-informed as the average British school-leaver.

As a result of the contemporary situation in geography, it appeared that an examination of geography teaching in South African high schools might prove a worthwhile subject of research. As far as can be ascertained, no attempt has been made recently in South Africa to assess the situation regarding the teaching of geography countrywide since the Human Sciences Research Council (H.S.R.C.) undertook its survey on the teaching of geography in South African secondary schools in 1966.

It seemed therefore that a survey which could be used comparatively with that of the H.S.R.C. was necessary in order to obtain an indication of the progress in geography teaching over the decade. The H.S.R.C. survey was much more exhaustive than the 1977 survey could be,

or needed to be, including as it did separate questionnaires to be answered by four different groups:

- (a) principals;
- (b) geography teachers (divided into sub-groups -- standards 6-8 and standards 9 and 10);
- (c) standard 9 and 10 pupils; and
- (d) university lecturers and professors.

Much of the information obtained then, now seems irrelevant. Yet there is a great deal more information regarding the "new" geography that does not appear in the H.S.R.C. survey. It was felt that this information should be included in the 1977 survey effectively to evaluate the South African situation relative to the position elsewhere.

This study does not set out to be definitive or even original. Most of the ideas it contains are gleaned from the writings and experience of others. The questionnaire itself had to be comprehensive, include all aspects of geography teaching with particular reference to the "new" geography, yet had to be of a length which teachers would not consider burdensome and it had to arouse their interest. This was attempted in the preamble to the questionnaire (see Appendix D).

During August and September 1976 the questionnaire was compiled. It was circulated to geographer friends and acquaintances throughout the country for their comments and suggestions. Many constructive ideas and recommendations were incorporated in the final draft questionnaire. Like the H.S.R.C. survey, the 1977 questionnaire devoted questions to personal information about teachers; the facilities schools possessed; the textbooks they used; the examinations set; and the syllabuses. An important additional section on the "new" geography included questions on:

- A fieldwork;
- B models and their use;
- C simulations and games;
- D discovery learning or the inquiry method;

- E statistical and quantitative methods; and
- F hypothesis-testing and problem-solving techniques.

Finally the questionnaire was rounded off with a page of evaluation questions and a detachable list of a dozen publications which interested teachers might like to consult for furthering their knowledge of the "new" geography approach (see Appendix D).

The questionnaire was then submitted to the Cape Department of Education requesting permission for its circulation in their schools. Permission was provisionally granted in December 1976 on condition that some modifications were made. The modified questionnaire was submitted to the various other departments of education from whom (except for the Transvaal who only gave their permission in March 1977) leave for its circulation was soon granted. The fifteen page questionnaires were dispatched to schools teaching geography to matriculation level in late January and early February 1977 with a request for their completion by the end of February. They continued to flow in, however, until the April vacation. A few were returned unattempted, sometimes with a covering note indicating that geography was no longer taught, or that the teacher responsible for its teaching was too new to be able to answer the questions accurately.

The percentage return of the 750 questionnaires dispatched during the first term of 1977 differed quite markedly from one education department to another, ranging from a 50 percent response by teachers in the Cape and those controlled by the National Department of Education, to 23 percent from Transvaal and Black teachers, as indicated in Table 4. (p.69). This comparatively poor response from the Transvaal can perhaps be partly ascribed to the Transvaal Education Department's delay in granting permission for the survey until March 1977. This meant only a limited few weeks were available to Transvaal teachers for the 1½- to 2-hour task of answering the questionnaire before the Easter vacation deadline. Another contributory factor might have been the three deletions in the questionnaire required by the Transvaal Education Department. Time constraints required these to be hurriedly done in thick black khoki pen, leaving a poor visual impression.

The findings of the survey are an indication of contemporary geographical thinking and practice in South African high schools. In

many of its questions the survey merely asked for opinions and the findings cannot be taken as conclusive; they reflect the contemporary position, continuously in a state of flux. Such is the increasing pace of change accompanying the "knowledge explosion", that the opinions expressed in these findings are probably being modified as this dissertation is being written, so that its findings will be out of date by the time it is completed.

An indication of the progress and speed of change in South African geography teaching may be gained by a comparison of certain aspects of both the 1966 H.S.R.C. and the 1977 surveys, but a number of factors should be borne in mind when considering their findings.

#### FACTORS FOR CONSIDERATION WHEN COMPARING THE 1966 AND 1977 SURVEYS

##### 1. The Universe and Numbers of Respondents

The H.S.R.C. sent questionnaires to all White geography teachers in South Africa, 1 295 of whom responded (H.S.R.C. Report, p.14). In addition, 604 of the universe of 722 principals surveyed (H.S.R.C. Report, p.3) responded, representing a return varying from 70 per cent for non-departmental schools to 100 percent for state schools in Natal. The H.S.R.C. considered these respondents to be representative of the whole White population group (Condensed English Report, p.2).

The 1977 survey included a wider population, in that 750 questionnaires were sent to schools of all race groups, Black, Coloured, Indian and White, under the control of the respective departments of education, as well as to many non-departmental private schools.

For reasons of economy and scale, questionnaires were addressed only to the Senior Geography Teacher/Head of the Geography Department, instead of surveying all teachers of geography as the H.S.R.C. had done. It was assumed that the heads of geography departments would consult with their colleagues as requested and would represent their views and practices in their responses. A survey of the total geography-teaching profession of South Africa was beyond the financial and time resources available to the writer.

Thus, whereas the 1966 H.S.R.C. findings are based on the

responses of 1 295 geography teachers drawn from 617 schools out of a universe of 691 schools surveyed (H.S.R.C. Report, p.4), the 1977 findings are based on a larger universe of 750 schools, but on a smaller number of respondents. The 270 respondents represent an unexpected, encouraging 36 percent return of the questionnaires dispatched. Occasionally it seemed that a more valid comparison could be made by comparing the percentage of the 481 standard 9 and 10 group teachers in the H.S.R.C. survey with the 1977 percentages, as this group's views would be likely to correspond more closely to the views of the senior geography teachers, most of whom naturally fall into the standard 9 and 10 teacher groups.

## 2. Co-Operation of Education Departments

Whereas the H.S.R.C. survey had the full co-operation and assistance of the various education departments, the 1977 survey received a measure of backing from the Orange Free State Department of Education only. This department indicated that "school principals are expected to give their assistance to surveys that may prove to be interesting, informative and useful to departments of education in general" in the accompanying letter with each questionnaire. In contrast, the two largest departments of education (Transvaal and Cape) actually caused delays, difficulties and extra expense in the preparations, before allowing the survey into their schools. Departmental delay in permitting the survey meant Transvaal teachers had only three weeks in which to return their questionnaires. This probably contributed to the surprisingly low 24 percent return from that province, shown in Table 4 (overleaf). The fact that the Orange Free State ranks in the middle with a 38 percent return, perhaps suggests that departmental backing of a survey does not necessarily unduly influence the percentage return.

TABLE 4. QUESTIONNAIRES DISPATCHED AND RETURNED BY LANGUAGE  
MEDIUM — Education departments ranked according to  
percentage return

Rank	Education Department	ENGLISH		AFRIKAANS		TOTAL No.		Percentage Returned
		Out	In	Out	In	Out	In	
1	Cape	55	29	75	36	130	65	50
1	National	1	-	33	17	34	17	50
3	Indian	75	37	-	-	75	37	49
4	Natal	50	23	12	6	62	29	47
5	Orange Free State	8	3	58	22	66	25	38
6	Non-departmental schools	31	11	-	-	31	11	35
7	Coloured	31	8	51	14	82	22	27
8	Transvaal	62	15	165	39	227	54	24
9	Black	42	9	1	1	43	10	23
	Totals	355	135	395	135	750	270	36

TABLE 5. QUESTIONNAIRES DISPATCHED AND RETURNED BY LOCATION —  
Education departments ranked by numbers of schools  
offering senior geography

Rank	Education Department	METROPOLITAN		NON-METROPOLITAN		No. of Schools
		Out	In	Out	In	
1	Transvaal	165	42	62	12	227
2	Cape	76	38	54	27	130
3	Coloured	56	14	26	8	82
4	Indian	47	22	28	15	75
5	Orange Free State	24	9	42	16	66
6	Natal	40	19	22	10	62
7	Black	29	6	14	4	43
8	National	20	11	14	6	34
9	Non-departmental schools	25	9	6	2	31
	Totals	482	170	268	100	750

TABLE 6. METROPOLITAN REGIONS RANKED ACCORDING TO NUMBERS OF RESPONDENTS

Rank	Metropolitan Region	No. of Respondents
1	Pretoria/Witwatersrand/Vereeniging (P.W.V.) region	54
2	Cape Town/Bellville	33
3	Durban/Pinetown	28
4	Port Elizabeth/Uitenhage	14
5	Pietermaritzburg	10
6	Bloemfontein	8
7	East London/King William's Town	6
8	Kimberley	5
9	Free State Goldfields (Welkom)	2
		170

Table 6 indicates how the locational classification of responding schools was made. Metropolitan regions are taken to include those cities in the top three orders of Davies' (1972, p.262) South African urban hierarchy, as well as those of the 4th order which lie within a forty-five minute time/distance of them. This makes the cultural and educational facilities of the higher order cities reasonably accessible to schools in Paarl, Stellenbosch, Uitenhage, King William's Town, Kroonstad, Potchefstroom, Vanderbijlpark and Carletonville for instance, but it excludes other 4th order cities that are beyond the forty-five minute time/distance limit.

### 3. The Quality of the Return

When surveying a total population (universe), the possibility of data obtained not being truly representative of the population arises, particularly if the percentage return is small. The overall 36 per cent return of the 750 questionnaires distributed was somewhat higher than expected, and most encouraging. Nevertheless, there is much room for variation in the data if the return is not truly representative of the population.

It was not possible to validate the quality of the return statistically, partly as a result of the constraints placed on the survey by the departments of education concerned. The nature of the questions asked and the answers given, does not really lend itself to statistical treatment. This does not, however, preclude the information obtained from being most useful as an indication of the

contemporary position in South African high school geography teaching. The survey indicates the changes which have occurred over the last decade and provides material which could be both informative and useful to planners and those in control of geography education in the country.

Notwithstanding the above, an attempt is made to justify the interpretations and statements contained in this report.

Table 7 (overleaf) presents a comprehensive summary of the 1977 survey arranged as accurately as identification of the origins of questionnaires would permit. In the case of a dozen of the 270 questionnaires returned (10 from the Transvaal), their location had to be conjectured from badly smudged postmarks. The 8 metropolitan to 4 non-metropolitan ratio resulting after detection work, corresponds with the 64 percent to 35 percent ratio of metropolitan to non-metropolitan high schools existing in South Africa. It is thus believed that the figures in Table 7 are reasonably accurate, particularly as the 12 form but a small percentage of the return.

In an attempt to test the quality of the return the questionnaires of the Cape Education Department's schools were examined. This province produced the highest percentage (50 percent) return, and is the province for which the necessary detailed information was most easily obtainable. In the Cape section of Table 7 it may be seen that:

- (a) The ratio of metropolitan to non-metropolitan respondents is the same as the ratio of metropolitan to non-metropolitan schools under the Cape Department of Education; and
- (b) Considering the language medium of the majority of the pupils, the ratio of English-medium to Afrikaans-medium schools returning questionnaires corresponds with that for the whole Cape school population. Thus it is suggested that:
  - (i) the respondents were fairly representative of Cape geography teachers in respect of location and language medium; and
  - (ii) that any bias in the data would be small and have only a limited effect on the overall findings.

TABLE 7: LOCATION AND MEDIUM USED BY RESPONDENTS - EDUCATION DEPARTMENTS RANKED ACCORDING TO RESPONDENT NUMBERS

Departments of Education	Cape		Transvaal		Indian		Natal		C.F.S.		Coloured		National		Pvt.		Black		Country-wide 135 135	S.A. Tot. 270	% of Schools Surveyed 36				
	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.								
Rank	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21				
Total Respondents	65	54	37	29	25	22	17	11	9	8	6	5	4	3	2	1	1	1	1	1	1				
Medium	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.	E A Tot.				
Respondents	24 14 38	14 28 42	14 28 42	15 4 19	3 6 9	7 7 14	- 11 11	9 5 1 5	9 5 1 5	9 5 1 5	7 7 14	7 7 14	3 6 9	15 4 19	8 2 10	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2			
No Response	24 14 38	44 79 123	25	16 5 21	5 10 15	16 26 42	1 8 9	16 23 -	16 23 -	16 23 -	16 26 42	1 8 9	5 10 15	16 5 21	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2			
Questionnaires Despatched	48 28 76	58 107 165	47	31 9 40	8 15 24	23 33 56	1 19 20	25 28 1 29	25 28 1 29	25 28 1 29	23 33 56	1 19 20	8 15 24	31 9 40	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2			
Respondents	5 22 27	1 11 12	15	8 2 10	- 16 16	1 7 8	- 6 6	2 4 -	2 4 -	2 4 -	1 7 8	- 6 6	- 16 16	8 2 10	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2			
No Response	5 22 27	3 47 50	11	1 1 1 2	- 26 26	8 10 18	- 8 8	4 10 -	4 10 -	4 10 -	8 10 18	- 8 8	- 26 26	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2			
Questionnaires Despatched	10 44 54	4 58 62	28	19 3 22	- 42 42	9 17 26	- 14 14	6 14 -	6 14 -	6 14 -	9 17 26	- 14 14	- 42 42	19 3 22	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2	1 1 1 2			
Total Schools Surveyed	58 72 130	62 165 227	75	50 12 62	8 58 66	32 50 82	1 33 34	31 42 1 43	31 42 1 43	31 42 1 43	32 50 82	1 33 34	8 58 66	50 12 62	58 72 130	62 165 227	75	50 12 62	8 58 66	32 50 82	1 33 34	31 42 1 43	356 394	750	100

Non-Metro  
Metro  
Total

In a similar examination of the figures in Table 7 for the rest of South Africa, it was found that all ratios of metropolitan to non-metropolitan and of English-medium to Afrikaans-medium school respondents varied less than 5 percent from those respective ratios generally extant within the respective departments. In fact, many ratios were even closer as the following examples show.

In the Orange Free State. The ratio of metropolitan to non-metropolitan respondents (36 percent to 64 percent) is the same as the ratio of metropolitan to non-metropolitan schools in the Orange Free State, and the ratio of English- to Afrikaans-medium school respondents (12 percent to 88 percent) also corresponds with that of the province as a whole.

In Natal. The ratio of metropolitan to non-metropolitan respondents (66 percent to 34 percent) is within a percent of the ratio of metropolitan to non-metropolitan schools (65 percent to 35 percent) which, as can be seen from Table 7, is in turn within a percent of this ratio (64 percent to 36 percent) for South Africa as a whole. The ratio of English- to Afrikaans-medium school respondents (79 percent to 21 percent) is within 2 percent of the ratio of English- to Afrikaans-medium schools in Natal (81 percent to 19 percent).

In the Transvaal. The ratio of English- to Afrikaans-medium school respondents (28 percent to 72 percent) is within a percent of the ratio of English- to Afrikaans-medium schools despite the low percentage (only 24 percent response from that province).

Even with the low percentage response from Coloured schools (27 percent) the ratio of metropolitan to non-metropolitan respondents (64 percent to 36 percent) was within 4 percent of that for the Coloured Education Department schools as a whole (68 percent to 32 percent), and the ratio of English to Afrikaans returns (36 percent to 64 percent) was within 3 percent of the language media ratio existing among Coloured high schools.

As a result of this uniformly low degree of variability it is suggested that the 270 respondents may be taken as fairly representative of the universe of senior geography teachers they represent. Nevertheless it is as well to appreciate that the findings may well contain unknown elements of bias not easily measurable, but which should be borne in mind.

It may be presumed that the 36 percent of senior geography teachers who spent 1½ to 2 hours answering the questionnaire did so to the best of their ability, for they were under no duress to complete the task. They probably considered the task to be worthwhile -- 79 percent considered the survey could serve a useful purpose, particularly if changes based on the findings are made, and a further 18 percent thought perhaps this was true. It may also be presumed that they are the keener, more interested and progressive teachers. Consequently their answers are likely to yield results somewhat biased in favour of modern ideas and the use of the "new" geography. The picture reflected in these results might therefore be more encouraging than the real situation warrants. This is unfortunate, but it is a situation which would be difficult and time-consuming to attempt to correct by conducting a sample survey of those schools which failed to return questionnaires. Even were this to be done there would be no guarantee that the degree of bias would be shown up. In any case, the time factor mitigates against a further sample survey. It is of interest to note that at least five of the 65 Cape schools which failed to return questionnaires are known personally by the writer to be what might be described as "progressive" in their geography teaching, a couple even being in the group of schools exempted from writing external examinations. Thus the expected "progressive" bias in the results obtained may not be nearly as great as might be expected.

There are other sources of bias. For instance, the degree of truthfulness and accuracy with which the teachers have answered the questionnaires could be questioned. Most teachers returned questionnaires with their school stamp upon the envelope, and so could be easily identified. They may therefore have answered with the aim of creating a good impression. How objectively teachers are able to view their own teaching methods is another debatable issue.

However, most questions in the survey simply ask for an honest opinion. The findings should therefore, rather than being taken as a precise statement on the state of the art of geography teaching in South Africa, be taken as an indication of what South African geography teachers are doing in their schools, and what their views on the "new" geography may be.

## TERMS AND REFERENCE METHOD USED IN THIS REPORT

In this report, when the word "teachers" is used in connection with the 1977 survey, it refers to the 270 senior geography teacher respondents.

Appendix D contains the full questionnaire as dispatched to senior geography teachers in all South African high schools teaching geography to matriculation level. An Afrikaans translation was naturally sent to Afrikaans, or predominantly Afrikaans-medium schools. Education department information was not always completely accurate. A few questionnaires were returned either asking for a replacement in the other language or indicating that, despite departmental information to the contrary, geography was not taught to matriculation level in that school.

To facilitate referring between the report text and the questionnaire, references to part of the questionnaire being discussed are given in the following form:

(Q.II, p.3, q.6a) where Q.II represents Section II of the questionnaire,  
 p.3 represents page 3 of the questionnaire  
 q.6a represents question 6, answer a of that section.

On the fold-out section of the questionnaire pages a breakdown of respondent numbers for each possible answer is given in the following form (percentages rounded off to nearest percent):

Number of Respondents			
English	Afrikaans	Total	%
135	135	270	100

The percentages given are calculated from the total number of respondents answering the question (N). It is an important figure because the numerous failures to answer questions, especially on the "new" geography, may indicate a lack of knowledge about the subject under consideration. Where numerous alternatives are answered percentages are calculated from the 270 total return.

## THE REPORT

After an introductory section portraying the teaching personnel responding to the survey, this report is divided into three main sections, each tracing themes which are apparent in the findings.

- A. Comparable aspects of the 1966 and 1977 surveys is the first of these themes. The changes in various aspects of geography teaching which have occurred over the decade are traced.
- B. The second theme portrays the contrast in responses between the two language groups represented. Throughout this theme, for reasons of economy, the writer has used the terms English and Afrikaans to refer to teachers who are English-speaking or Afrikaans-speaking, or schools where the medium of instruction is predominantly the language indicated. He trusts no offence will be taken to this usage by either language group.
- C. The third focusses on those aspects of the "new" geography not handled in either of the other themes, and the extent of their use in South Africa.

### Teaching Personnel

The first section of the 1977 questionnaire requested personal information. Although some respondents were not prepared to divulge their age or sex, the vast majority did.

Of 258 respondents 77 percent were male and only 23 percent female. A greater percentage of the English group were female (26 percent) than of the Afrikaans group (20 percent).

The bar-graphs in Figures 12 and 13 respectively indicate the age groups into which the respondents fall, and their geography teaching experience (see overleaf).

Despite the fact that they have not had the required minimum of four years' teaching experience as laid down by education departments, nearly a quarter (24 percent) of the respondents are senior geography teachers. It may be wondered how effectively the geography departments may be run at these schools by teachers with such limited geography teaching experience.

FIGURE 12: AGE GROUPS OF RESPONDENTS (Q.I, p.1, q.1)

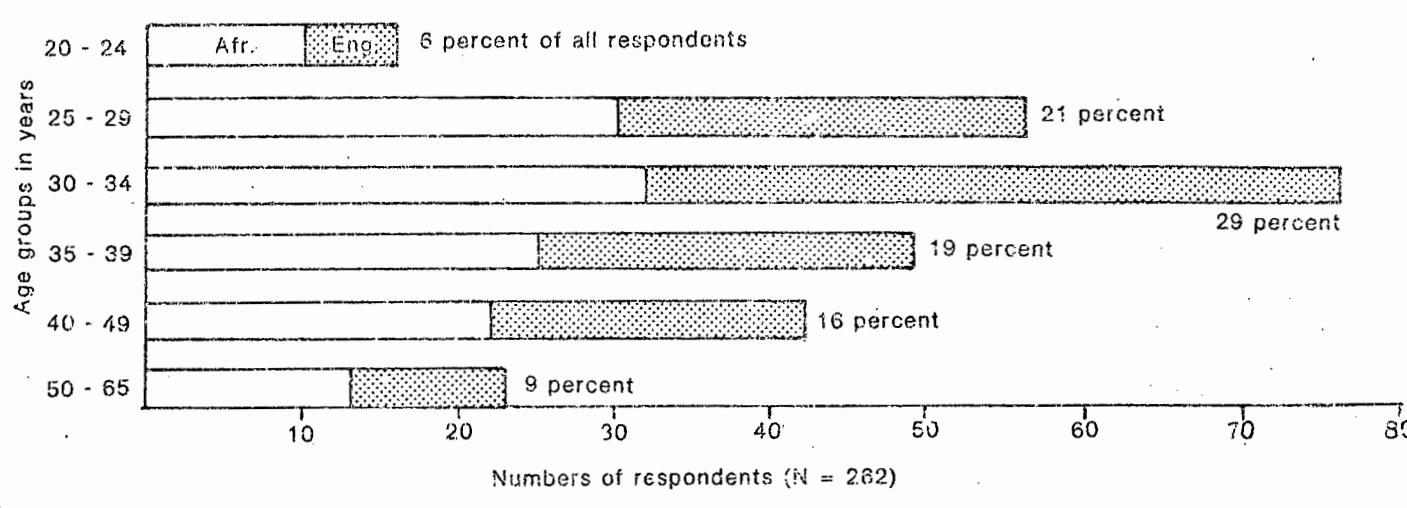


FIGURE 13: GEOGRAPHY TEACHING EXPERIENCE (Q.I, p.1, q.3)

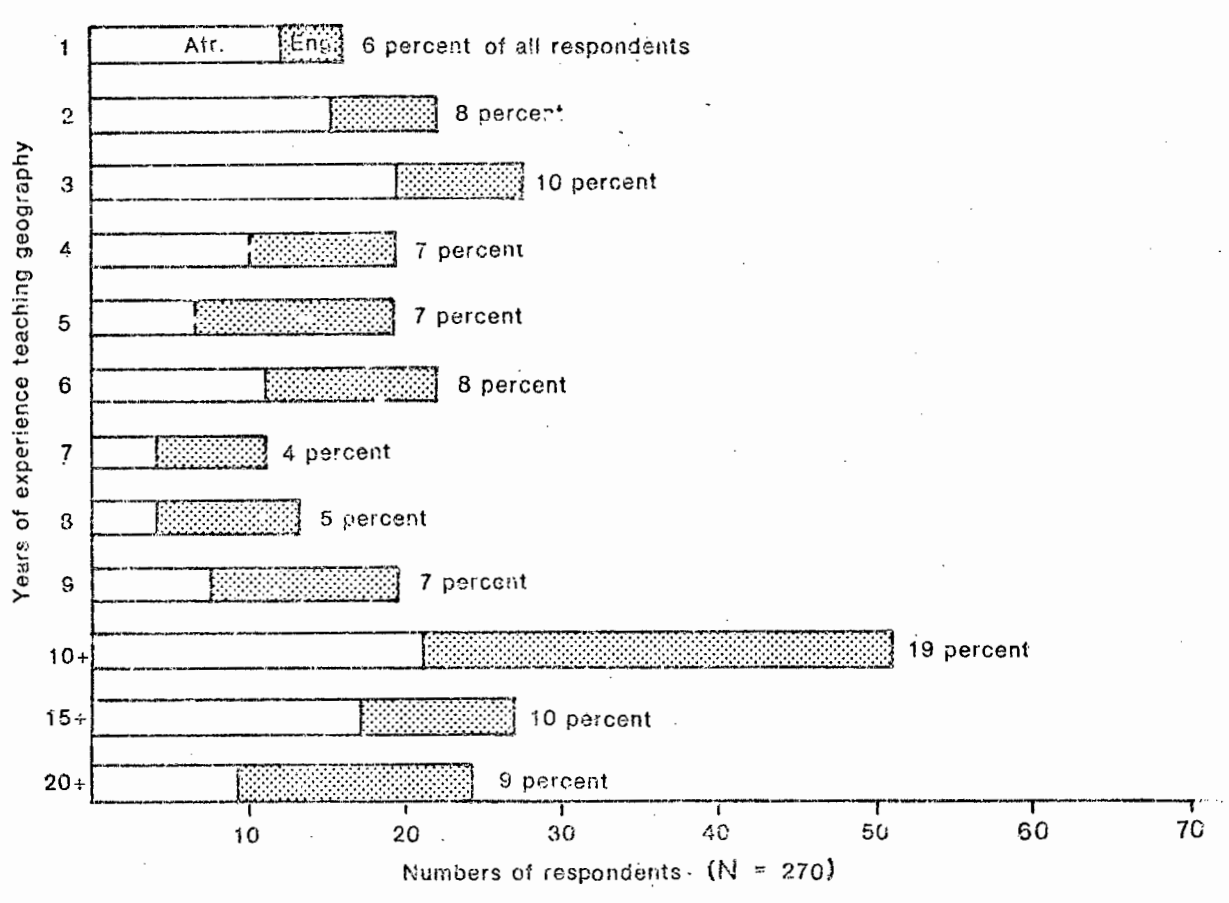


Figure 13 suggests that, though English-speaking teachers form the majority of teachers with more than five years' teaching experience, the numbers of Afrikaans-speaking teachers are increasing

each year, so that they outnumber their English counterparts with only a year's teaching experience by more than two to one. Geography is becoming an increasingly popular teaching subject taken at some Afrikaans universities.

FIGURE 14: STANDARDS TAUGHT AT SOME TIME COMPARED WITH STANDARDS TAUGHT IN 1977 (Q.I, p.1, q.4-5)

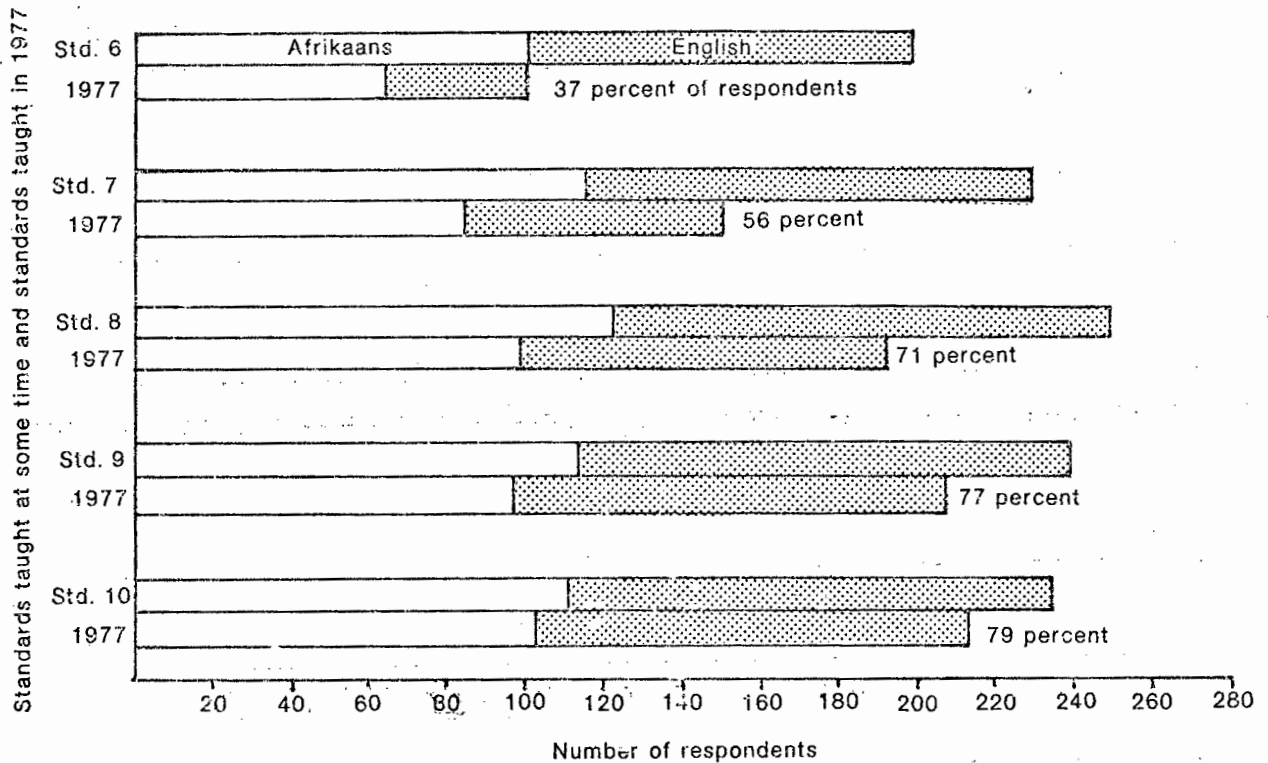


Figure 14 indicates that in 1977 more than twice as many respondents taught standard 10 as taught standard 6. This is to be expected for senior teachers are more likely to have wider knowledge and experience which, as heads of departments, they feel should be devoted to preparing senior pupils for the public examination — hence the progressive increase in percentages of respondents teaching the senior classes.

There is need for concern about the time devoted by about half the senior geography teachers to their main task of teaching geography (Q.I, p.1, q.11-12). As the time spent by teachers during school hours on preparing geography material increases, the percentage of teachers involved drops off from an hour per week for about a third of the teachers (32 percent) to three hours per week for less than a fifth

of teachers (18 percent), indicating that few teachers have much time during school hours for preparing their work. Less than a quarter of teachers (23 percent) spend more than two hours per day, but about half the teachers (49 percent) spend less than an hour per day preparing their lessons. In addition to time spent after school hours in preparation, there is also marking and correction work to be done. Nearly half the teachers (46 percent) are only able to spend one period per week marking during school time, while a mere 8 percent have one period per day available for marking. This means that most correction work must also be completed at home, yet 63 percent of teachers spend an hour or less per day marking after school closes, while only 16 percent spend more than two hours per day marking.

This suggests that the majority of teachers of geography do not put in a working day of even eight hours teaching geography. The fact that nearly half the teachers (45 percent) (Q.VII, p.15, q.2) share as their third factor for improving their geography teaching, the need to be less involved in other school activities, e.g. sport and administration, suggests that probably about half the teachers do, in fact, spend as much time on their job as normally expected of the labour force. The rest spend more time than the average worker does and some certainly spend a great deal more. Nevertheless, it is of concern that about half the teachers should be spending so relatively little time on their subject, geography, a subject that definitely requires a large input of time if it is to be taught really effectively.

#### A. COMPARABLE ASPECTS OF THE 1966 AND 1977 SURVEYS

An encouraging improvement since 1966 is illustrated by the fact that the percentage of senior geography teachers mainly responsible for the teaching of other subjects has been halved from 20 percent to 10 percent during the last decade (Q.I, p.1, q.10). Fully 90 percent of teachers now teach geography for half of their teaching time or more, whereas only 80 percent of the standard 9 and 10 teachers did so in 1966 (H.S.R.C. Report, p.273).

At first it appears that teachers' qualifications have improved in the 1966-77 decade. In 1977 no less than 91 percent of senior geography teachers possessed a minimum qualification of

Geography II (Q.I, p.1, q.8) whereas in 1966 it was 82 percent. It is difficult to evaluate qualification changes because of the nature of the universe used in the 1977 survey. In 1966 White teachers only were included whereas in 1977 only the senior teachers were included. Nevertheless there probably has been an improvement over the decade as it can be presumed that much of the teaching in the senior classes is done by the senior teachers. Furthermore the present position is encouraging in that 80 percent of the senior teachers majored in geography, and some even possess higher degrees.

The position with regard to professional qualifications is as healthy, 85 percent of teachers having at least a recognised teaching certificate (Q.I, p.1, q.9).

Job satisfaction of geography teachers has remained unaltered during the decade, 85 percent being happy and satisfied teaching geography, while the remaining 15 percent are satisfied, but only in certain circumstances. Surprisingly, not a single teacher indicated unhappiness and dissatisfaction in his job, though many of the non-respondents may be dissatisfied, and consequently may not have bothered to respond.

The answers to the question on the constraints placed on the enjoyment of geography teaching appear to indicate a heightened consciousness of dissatisfaction among geography teachers (Q.I, p.2, q.14). Table 8 (overleaf) shows the complaints ranked in order from the most to the least frequent. The complaints common to both 1966 and 1977 surveys are ranked on the right with percentages, whereas the lefthand columns show all ranked contemporary complaints.

The relatively high level of complaint in 1977 where the percentages of complainants is double that of 1966 contrasts markedly with the low level of complaint indicated by the 1966 percentage figures (H.S.R.C. Report, p.276). In 1966 there were only 273 complaints from 481 standard 9 and 10 teachers. Instead of using 481 as a base for calculating its percentages, the H.S.R.C. used these 273 complaints. Thus its findings indicate percentages of all complaints, and not of the teacher respondents which would, in reality, be a figure less than

TABLE 8. FACTORS LIMITING THE ENJOYMENT OF GEOGRAPHY TEACHING  
IN 1966 AND 1977 (Q.I, p.2, q.14)

1977		Q.	Complaint	1966		1977	
%	Rank	Letter		%	Rank	Rank	%
55	1	i	I experience difficulties in arranging fieldwork				
47	2	k	The accent on examinations allows insufficient time for teaching geography as it should be taught	14	4	1	47
46	3	i	The syllabus is too long and detailed	24	1	2	46
38	4	e	Mainly the weaker pupils take geography in my class	18	2	3	38
36	5	h	I have difficulty obtaining the necessary teaching aids	13	2	4	36
17	6	a	I have too much marking to do	5	6	5	17
16	7	b	I have too much preparation to do				
13	8	j	The syllabus construction and content do not attract, motivate, maintain pupils' interest	12	5	6	13
13	9	d	The pupils are not interested in geography	2	9	7	13
12	10	n	My academic training did not equip me for teaching modern syllabuses	4	7	8	12
8	11	c	I cannot motivate the modern pupil				
7	12	g	I do not have sufficient knowledge of geography				
3	13	m	I have lost my initial enthusiasm for teaching geography				
2	14	f	I teach the subject by force of circumstance.	3	8	9	2

two-thirds of that given. This further emphasizes the increased consciousness of very real problem areas experienced by today's teachers. Departments of education would do well to take note of these complaints and try to alleviate the more widespread ones in the interests of better geography teaching. Even if a degree of bias may be expected from respondents who, being the more active teachers, feel these difficulties more acutely, this increase is cause for substantial concern; the 150 respondents experiencing difficulty in arranging fieldwork in 1977 actually represent no less than a fifth of the

universe of senior geography teachers in the whole country. If so many senior teachers are experiencing difficulties with fieldwork, the rest of the teachers are probably struggling too. As fieldwork was not required by the 1966 syllabus, it was not included in the 1966 survey. Since its introduction in the new syllabus fieldwork seems to have become the dominant cause of problems to geography teachers, for it now ranks top of the complaints in Table 8, with fully 55 percent of teachers indicating that arranging fieldwork limits their enjoyment of geography teaching. This finding emphasizes the need for departmental assistance to teachers in arranging fieldwork. This is being given to some extent in that teachers, individually and in groups, are developing fieldwork exercises at teachers' centres. Some of these exercises are being distributed by the teachers' centres concerned. The compilation of these exercises is time-consuming and requires a certain amount of expertise and experience. Thus, teachers out of range of teachers' centres may be at a disadvantage and could be aided in another way, perhaps by a visit from an inspector or experienced adviser.

Contemporary teachers are certainly feeling the pressure of the examination system, as indicated in Table 8 by the big jump from 14 percent to 47 percent of teachers feeling their teaching to be limited by the accent on examinations. This stress on preparing pupils for examinations obviously limits the enjoyment of teaching geography, and has risen from fourth position to being the chief of the 1966 complaints in 1977.

Although length of syllabus has dropped from top position in 1966 to third factor limiting enjoyment of teaching, it still appears to exert an important influence. The percentage of teachers complaining about this nearly doubled between 1966 and 1977.

The relative rank of most other factors limiting teacher enjoyment has not changed much over the decade though the percentage of teachers mentioning these complaints has generally increased markedly, with one exception -- the drop from 12 percent to 8 percent of teachers complaining about the syllabus construction and content. The fall of this factor from fifth to eighth position, suggests that teachers may be more satisfied with the present syllabus than they were with the 1966 syllabus, a conclusion borne out elsewhere (see p.114).

In summary, these findings indicate a serious situation if they are true of the total South African geography teaching population. Even if the percentages refer only to the active and better teachers, which may be the case, some corrective action by departments of education is needed if so many teachers are troubled by these aspects of their work. It is to be hoped that this action will be forthcoming. Indeed, education departments are at present examining the whole question of fieldwork and the examination system. Syllabuses are being shortened and revised and are becoming more of a challenge to the intelligent pupil, instead of the easy option geography courses were sometimes thought to provide. In addition, education departments are providing more of the essential teaching aids than was their wont in the past, but further action, particularly with regard to the chief problem, fieldwork, is essential.

#### Facilities (Q.II, p.2)

TABLE 9. COMPARISON OF FACILITIES POSSESSED BY SOUTH AFRICAN SCHOOLS IN 1966 AND 1977 AND BY RACIAL GROUPS IN 1977

Facilities	1966		1977									
	White Teachers*		Total Schools		White Schools		Indian Schools		Coloured Schools		Black Schools	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Geog.Room/Lab.	183	14	80	30	65	32	9	24	4	18	2	20
Storage Room	200	15	116	43	97	48	10	27	7	32	2	20
Space for												
Models	177	14	87	32	72	36	7	19	4	18	4	40
Class Museum	173	13	40	15	33	16	1	3	5	23	1	10
Class Geog.Library	393	30	92	34	80	40	6	16	5	23	1	10
None of these			132	49	82	41	26	70	17	77	7	70
Geog.Club or Soc.	69	5	36	13	31	15	3	8	2	9	-	-
No. of Respondents	1295		270		201		37		22		10	

\*As the 1966 findings represent the percentages of teachers, they are somewhat inflated as some of the H.S.R.C. respondents came from the same schools. Nevertheless the findings give an indication of the situation in South African schools in 1966.

Although there has been a distinct improvement during the decade in the facilities available for high school geography teaching in South Africa, as reflected in the percentage increases in Table 9, the position is still far from satisfactory.

Education departments have recognised the need for specially equipped classrooms/laboratories and a storeroom for effective geography teaching. Yet of the total schools responding to the survey only 11 percent (q.1) indicate that a geography laboratory is planned, while 5 percent (q.2) indicate storage space is planned. Although the decade has seen an increase in the number of geography laboratories since 1966 when only 14 percent of teachers taught in properly equipped rooms (H.S.R.C. Report, p.122), the pace of improvement is slow, for only 30 percent of schools possess geography laboratories today, while 43 percent have adequate storage space available. This is a disquieting situation, especially under the present economic circumstances with little hope of the needed facilities being provided. Effective geography teaching is much more easily accomplished in a suitably adapted room equipped with necessary aids. Even after the presently planned laboratories have been provided, more than half the schools in the country teaching geography to matriculation level will probably not be doing so under optimal conditions. The situation is exacerbated by the fact that many of the larger schools require two or even three geography rooms to cater for the number of pupils taking geography. It is also disquieting that the other racial groups are so much behind the White group in almost all the facilities possessed.

A further shortcoming is indicated by the fact that almost half (49 percent) of South Africa's schools do not have adequate space for physical models, class museums or class libraries. The shortage of space for class museums and libraries has hardly changed at all during the decade. In 1966 13 percent had space for museums cf. 15 percent in 1977 and 30 percent had space for libraries cf. 34 percent in 1977. This gloomy picture is only slightly improved by the increase of space over the decade for models from 14 percent to 32 percent of schools, but space for these most necessary adjuncts remains an urgent priority.

The scope for encouraging and developing pupil interest in geography extra-murally at South African schools remains severely limited. Although the number of schools that have an active geography club or society has increased from less than 5 percent to 13 percent over the decade, this small number means that an excellent way of involving pupils in geography is not being utilized (q.4). This is unfortunate, for teachers who are involved with such societies find that they increase pupil interest in geography by the presentation of films, slide shows

and talks on geographically interesting parts of the world. They also provide opportunities out of class time for pupil research, model-making, simulation-gaming and visits to places of geographic interest, all having a broadening effect on pupils. Furthermore these societies provide opportunity for the development of resourcefulness and leadership amongst the society organizers. Any facility providing so much worthwhile educational opportunity to pupils should be strongly encouraged.

#### Teaching Aids (Q.II, p.3, q.6)

Because of the somewhat involved nature of the question on teaching aids in the questionnaire and the wealth of discussion it generates, discussion is separated into two distinct sections. Only those aspects of the 1977 survey directly comparable with the H.S.R.C. findings are included here. The rest of the discussion will be found with Tables 10 and 11 in the section entitled "Resources for Learning" on pages 121-127. Because of the nature of the material, Tables 10 (page 124) and 11 (p.125) are arranged in fold-out form for easy referencing from text discussion. In Table 10 a wide range of teaching aids is ranked in order from the most used aid, as determined by the 1977 survey. The table is arranged, as in the questionnaire, in three columns indicating teaching aids A, possessed, B, used, and C, which would be used if available. A final column (B + C) is inserted and theoretically indicates, according to the 1977 findings, the percentage of schools which would use the various aids if all aids were freely available. Table 11 ranks the most needed geography teaching aids according to 1977 respondents. In the right hand comment column is an indication of how easily and inexpensively half of these aids may be obtained.

The 1966 survey showed atlases used by 99 percent of teachers, globes by 98 percent, wall maps by 81 percent, wall diagrams/charts by 76 percent, topographic maps by 74 percent, slide projectors by 73 percent and film projectors by 62 percent to be the leading teaching aids used in South African geography classrooms (H.S.R.C. Report, p.144).

Since then, the position has changed quite dramatically as a result of technological innovations and greater expenditure on geography teaching aids. Table 10 indicates just how much more use teachers are now making of some teaching aids and, furthermore, how many more aids

there are in use today compared with 1966: the blank spaces in the 1966 columns indicate aids not listed in the H.S.R.C. survey. The table shows that there are approximately twice as many aids used now as there were a decade ago. This is an encouraging situation, for a wide variety of aids used effectively in the classroom should combat the ever-present threat of boredom among pupils and bring them closer to the real world in which they live, and for which they are being prepared.

A striking anomaly, the percentage drop between 1966 and 1977 in the use of eleven of the aids (percentages circled in column B, Table 10) is difficult to explain. In seven of the eleven cases, it can be seen that the percentage of schools possessing the aids has, in fact, risen over the decade (1977 percentage in column A underlined). It is unlikely that greater possession by schools would be accompanied by decreased usage. The inclusion in 1977 of Black, Coloured and Indian schools, which do tend to have fewer teaching aids as a result of limited finances, might play a role in explaining the anomaly. However, when this possibility was tested by simply removing the figures for these race groups from the total before recalculating the percentages, their removal was found to be insufficient to explain the differences. This tends to suggest a discrepancy in the 1966 percentage use figures (column B). There is a marked difference in the 1966 correlation between possession and usage values (percentages in column B underlined) compared with the close correlation between the percentages of possession (column A) and use (column B) in 1977 -- never more than 6 percent difference (except for the rain gauge). This indicates, as is to be expected, that schools generally use those aids they have available. It is highly unlikely that in 1966 more than 50 percent of teachers borrowed or otherwise acquired the topographic maps and wall diagrams/charts, or that more than 20 percent of teachers similarly acquired the barometers or hygrometers they used.

The reliability of these particular figures in the 1966 H.S.R.C. survey is made doubtful by the fact that Questions 6.11 and 6.12 of Section 6 in the questionnaire, dealing respectively with pupil possession of atlases and the use of air photographs in studying topographic maps, are not reported at all, neither in the full Afrikaans version nor the English summary of the H.S.R.C. report. This is

unfortunate as the figures might have shed some light on the above problem. These anomalies must therefore remain unexplained, though the relevant finding as published in the Condensed English Version of the H.S.R.C. Report (p.20), is quoted as it shows contrast with the present position:

- "(1) Although a reasonable number of aids are indicated as being essential and desirable for the teaching of the subject, they are, in most cases, never employed by teachers.
- (2) More use is made of aids in Standards 9 and 10 than in 6 to 8. The employment of aids is, to a certain extent, in accordance with the necessity or desirability of having aids available."

Save for the leading geography teaching aids already mentioned in the first paragraph of this section and used by more than half the teachers in 1966, the disturbing lack of use of essential aids mentioned in the 1966 report quoted above, has been partially remedied during the decade. The number of aids used by half the teachers in 1966 can be seen to have doubled by 1977. But it remains disappointing that so many of the numerous aids are still used in relatively so few schools -- more than half the aids listed are still not used in even half the schools. If the percentage of schools who would make use of these aids (column C) is added to those who do use them (Column B), the position could improve dramatically as shown in the final column of Table 10 (B + C). This indicates that at least half the schools would use virtually all the aids listed if they were available. More than three-quarters of the schools indicate they would use the dozen most popular aids.

Perhaps some are deluding themselves in this regard. Table 11 (p.125) ranks the aids teachers indicate they would use if available. In the right hand column comments appear alongside half the aids, indicating how easily and/or cheaply they may be obtained. This suggests that many teachers have not shown much resourcefulness towards their acquisition, so the likelihood of their being used, if supplied, remains questionable. The H.S.R.C. finding that many available aids are not employed, still seems to be partially valid in 1977. Nevertheless, the findings indicate that most schools having aids use them, and a small percentage of schools even use aids they do not possess -- presumably they are borrowed. This suggests that the availability of more

teaching aids in schools would probably contribute directly towards improving geography teaching in South Africa.

The present 19 percent of teachers who use wall diagrams/charts compared with the 76 percent of teachers who used them in 1966, is disturbing, even allowing for the questionable nature of the 1966 figure. Only 22 percent of teachers then had them to use, though some teachers might have included the raw material for blackboard maps and diagrams as applicable to the question. This may mean that teachers are not making these aids as they used to, possibly owing to pressure of time caused by usually heavy extra-mural school commitments. More hopefully, these time-consuming aids have been replaced by adequate and more easily stored overhead projector transparencies which, in 1977, three-quarters of teachers indicate they use. This high degree of usage in 1977 of an aid not even listed in 1966 indicates how quickly useful teaching aids may be taken up when as liberally made available by departments of education as overhead projectors have been during this last decade. Certainly overhead projectors and the use of transparencies which can be bought or made, have done more to revolutionize geography teaching in South Africa over the decade than any other single teaching aid.

Education departments have promised schools many of the aids listed, but the findings show the dearth which still exists, which will only be remedied by very necessary and considerable departmental expenditure.

#### Textbooks (Q.III, p.4)

There have not been any appreciable changes over the decade in geography teachers' opinions regarding textbooks.

In 1966 there was a balance between teachers in favour of the prescription of texts by education departments and those against this practice. By 1977 the position had not altered much, 41 percent being in favour of prescription, 25 percent against, and 34 percent accepting prescription of texts in certain circumstances (q.1).

In both surveys about 80 percent of teachers were in favour of the inclusion of graded questions and tasks throughout textbooks (q.6). Some textbook writers in South Africa are at present doing this,

certain ones more effectively than others, e.g. Earle (1974) and Swanevelder (1974).

It is encouraging to note that the three recommendations regarding textbook writing made by the H.S.R.C. have been realized to a certain extent in most texts, namely:

- A lists of sources are given;
- B assignments do usually appear at the ends of chapters;
- C questions in the form of problems requiring reasoning are set. (Condensed English Version of H.S.R.C. Report, p.32).

In 1966 fully 85 percent of teachers considered the textbooks covered the syllabus to a large or certain extent. After the recent change to the differentiated syllabuses the position in 1977 is that 72 percent of teachers consider the new textbooks fulfil the aims and needs of the syllabus very or fairly well, while 26 percent feel that they do only partially (compared with 12 percent in 1966) (q.7).

Fieldwork (Q.V.A, p.6)

The general impression gained from the respondents is that, as in some overseas countries, fieldwork will become an important aspect of the geography syllabus to be used by future South African teachers and pupils.

It is encouraging to note that recommendations of the H.S.R.C. in 1966 regarding fieldwork have been implemented. At that time the H.S.R.C. recommended in its Condensed English Report, pp.32-33:

- "(1) that activities outside the classroom should form a normal part of the teacher's teaching programme and that fieldwork, especially in the lower standards, should be regarded as part of the geography teaching programme, and
- (2) that special provision for fieldwork should be made in the syllabus and that consideration should be given to the setting of questions in the final examination on knowledge acquired as a result of fieldwork."

Fieldwork is now included in the core syllabus followed by all education departments, and questions in the final examination do require knowledge acquired as a result of fieldwork in their answers. In addition, some departments of education (e.g. Cape, Transvaal and Natal) do make provision, as recommended in 1966, for primary school geography programmes to include fieldwork. For instance, in the Western Cape, primary pupils may spend up to a week visiting the departmentally subsidized "School in the Wilds" near Villiersdorp, where fieldwork exercises from various subject areas are tackled.

Despite progress towards integrating fieldwork into the curriculum over the decade, the conservative nature of teachers is reflected in the still relatively small number of teachers who consider fieldwork essential in 1977. Whereas a decade ago only 18 percent of teachers considered fieldwork essential, that figure has now more than doubled to 39 percent, while the rest (except for 5 percent who considered fieldwork to be of little or no value cf. 12 percent in 1966) felt it was highly desirable or of moderate value (q.1). Approximately 75 percent of teachers did no fieldwork in 1966, but now that it is required by the syllabus, fully three-quarters of the senior teachers do at least one fieldwork exercise per standard per year (q.6). This shows great progress over the decade. Nevertheless the 25 percent who do no fieldwork is a disquietingly high figure when fieldwork is actually required by the syllabus.

A definite contrast is evident between what was considered fieldwork in 1966 and current ideas. The contrast emphasises the progress that has been made over the decade. The H.S.R.C. questions dealing with fieldwork involved what today would usually be termed 'field teaching'. What was considered to be fieldwork in 1966 consisted of about a quarter of the teachers in each of the following cases:

- (a) expecting their pupils to keep weather records; and/or
- (b) taking their pupils outside during lessons to illustrate or demonstrate natural phenomena in a practical way; and/or
- (c) taking their pupils to visit inter alia museums, botanical gardens, planetariums, weather stations and factories.

By contrast, the survey showed fieldwork in 1977 to consist predominantly of classes going into the field to undertake assignments entailing personally made observations and measurements, answering questionnaires or filling in worksheets, i.e. what today is often termed field research. Fully 56 percent of teachers now conduct fieldwork of this nature (q.2). The percentage increases from standard 6 to standard 9 are indicated in Table 12.

TABLE 12. TEACHERS WHOSE CLASSES DO FIELDWORK ASSIGNMENTS INVOLVING ANSWERING QUESTIONNAIRES OR WORKSHEETS (Q.V.A, p.6, q.3)

Standard	Percent of Teachers
6	27
7	44
8	66
9	75
10	64

The drop-off in standard 10 is probably due to the pressure of time while preparing for the external examination. The rather low percentage of involvement of the junior standards can probably be ascribed to the large number of pupils who must be catered for. A considerable amount of planning, preparation and organisation is essential before large numbers can be productively employed in fieldwork without causing damage or dislocation to the environment in which they work. This is particularly true of certain high population density areas with numerous large schools in close proximity. The public (farmers, shoppers, business proprietors, etc.) in some areas overseas have become annoyed and unco-operative when inundated by pupil fieldworkers. This will have to be borne in mind when planning fieldwork exercises in South Africa. United Kingdom fieldwork planners are aided by excellent codes of conduct which have been compiled, e.g. The Country Code, The Coastal Code, The Outdoor Studies Code, The Mountain Code. South African educationists have a duty to produce similar codes of behaviour expected of the country's inhabitants for the preservation or improvement of the present environment.

Although in three-quarters of respondents' schools, pupils now do fieldwork, in only 30 percent do pupils undertake independent individual

fieldwork studies (q.4). The percentages involved in the various standards are shown in Table 13.

TABLE 13. TEACHERS REQUIRING PUPILS TO UNDERTAKE INDEPENDENT INDIVIDUAL FIELDWORK STUDIES (Q.V.A, p.6, q.5)

Standard	Percent of Teachers
6	28
7	42
8	51
9	55
10	59

The increasing percentages in the higher standards suggest that teachers consider ability to work alone in fieldwork improves with age.

Table 14 indicates the average number of times each class goes into the field each year to conduct fieldwork.

TABLE 14. ANNUAL FIELDWORK EXERCISES (Q.V.A, p.6, q.6)

Number of Times	Percent of Teachers
0	25
1	41
2	23
3 - 4	9
4+	2
Total	100

Perhaps the rapid decrease is a further indication of the difficulties teachers experience in organizing fieldwork, as well, possibly, as the costs involved in conducting fieldwork.

A disappointing number of respondents indicated that they used fieldwork in the way in which it can perhaps be most suitably employed -- i.e. to integrate the various aspects of geography and so attempt to maintain the unity of a subject which can easily fragment into isolated segments. (For fuller discussion on this, see Chapter IV.)

Table 15 shows the 1977 position regarding the branches of geography in which fieldwork methods are involved, ranked in descending order.

TABLE 15. BRANCHES OF THE GEOGRAPHY SYLLABUS WHERE FIELDWORK METHODS ARE EMPLOYED (Q.V.A, p.6, q.8)

Branch	Percent of Teachers
1. Geomorphology	56
2. Urban geography	46
3. Mapwork	34
4. Climatology	33
5. Integration of aspects	21
6. Regional geography	13

Unfortunately fieldwork assignments throughout the school are still accorded minimal weight in the year-end mark. Thus 92 percent of teachers accord such assignments less than 10 percent of the total mark and 67 percent less than 5 percent of the final mark (q.7). Unless this situation changes, with more weight being given to fieldwork, it will tend to remain of secondary importance as a geography teaching method. It should not when 87 percent of teachers agree on its effectiveness being high (q.9) or reasonable, and 89 percent of teachers consider their pupils enjoy it definitely or to a reasonable extent (q.10). It is therefore recommended that education departments allow fieldwork much more weight in the final evaluation of pupils.

#### Discovery Learning/The Inquiry Method (Q.V.D, p.9)

The possession of a class geography library has remained unchanged during the decade with only a third of teachers possessing one. Limited opportunity thus exists in South Africa for the widespread growth of discovery learning. Furthermore, the traditional South African authoritarian teaching ethos will not generally adapt easily to discovery learning and the well-defined structured syllabuses also militate against the open inquiry approach to a certain extent. For these reasons and because the establishment of class libraries is becoming increasingly expensive, the development of this method on a large scale is unlikely to occur in South Africa in the near future, though it will continue to be used in a limited way, both

orally and in written form, as it has been in the past.

In 1966 three-quarters of the teachers thought it essential or desirable that pupils collect information from reference material during class, i.e. use the inquiry method (H.S.R.C. Report, p.214). During the decade since, the method has assumed even greater significance despite the relative lack of resource facilities — 95 percent of respondents in 1977 indicate that they use the inquiry method both orally and in written form (q.3). Respondents consider that it should be used (q.5), at least sometimes, particularly as 81 percent of their pupils enjoy this method used orally (q.4) and 75 percent enjoy it used in the written form (q.4).

In 1977 only 26 percent of respondents felt that they had the necessary time to acquaint themselves with library resource material for effective guidance of pupils in self-inquiry (q.2). This is disturbing, for it is essential that teachers keep abreast of geographical literature in general and particularly of literature available in their school libraries. The 1977 findings in this respect contrast markedly with those of 1966 when 68 percent of geography teachers indicated that they kept abreast of new geographic acquisitions to their school libraries (H.S.R.C. Report, p.170). It seems, from the low 26 percent of 1977 respondents who keep abreast, that this may be a facet of a teacher's life that suffers because teachers have to spend time on too many other school activities such as sport and administration. Support for this explanation is shown by the large 55 percent of respondents who hardly had sufficient time to know what their library contained, while another 19 percent of respondents definitely had insufficient time. No mention is made of the nature of publications referenced in 1966, so it is possible that the number of truly geographical publications obtained by schools in 1966 may have been even fewer than the present alarmingly low figures in Table 19 (page 99) indicate. It seems unlikely that many more truly geographical publications would have been obtained then.

The small departmental annual library grants for periodicals which have to be shared among the various subjects are inadequate for more than a periodical, or at most two, per subject. While these grants remain low there is little hope of the situation improving.

## Problem-Solving/Hypothesis Testing (Q.V.F, p.11)

In a problem-orientated world the use of problem-solving techniques in education has grown over the last decade. In 1966 about half the teachers presented their classes with geographic problems which had to be solved in class discussion (H.S.R.C. Report, p.194). By 1977 more than three-quarters of senior teachers employed this technique with an oral presentation in class (q.1). More than half the teachers, however, never require their pupils to solve geographic problems experimentally in the field (q.3).

The importance of problem-solving techniques in encouraging use of the scientific method remains unrecognised by a third of the teachers; 29 percent are not sure of the effectiveness of the hypothesis-testing technique in teaching geography and a further 9 percent consider it not worth using (q.6).

TABLE 16. COMPARISON OF ASPECTS OF PROBLEM-SOLVING IN 1966 AND 1977 (Q.V.F, p.11)

	1977			1966		
	Often	Seldom	Never	No	Yes	Unsure
Teachers who set geographical problems to be solved in class discussion (q.1)	40%	37%	23%	50%	50%	
Teachers who set geographical problems for pupils to solve on their own (q.2)	15%	48%	36%	6%	76%	18%
Teachers who consider a percentage of their pupils can use the technique effectively (q.5)	> 75%	4%			3%	
	50%-75%	10%			20%	
	25%-49%	30%			33%	
	< 25%	57%			44%	

Although three-quarters of the teachers in 1966 required matriculation pupils to analyse problems independently, collect relevant material, form a hypothesis and draw their own conclusions, 77 percent felt that less than half of their pupils could, in fact, do so (H.S.R.C. Report, p.205). In contrast no less than 87 percent of 1977 respondents estimated that less than half of their pupils could use hypothesis testing techniques effectively (q.5), though 10 percent of pupils often did, and another 52 percent seldom used them (q.4).

The 1977 survey found that only 62 percent of respondents felt that

hypothesis formulation and testing is an effective method of teaching (q.6); 77 percent do use it orally in class while 63 percent, at least sometimes, and 15 percent often require their pupils to use this method of problem solving individually on their own (q.2).

These figures suggest some regression over the decade in the use of the hypothesis-testing technique, and in the ability of pupils to use it effectively (87 percent of teachers have a majority of pupils who cannot use them in 1977 compared with 77 percent in 1966). An explanation of this regression may lie in the changing view of hypothesizing which has taken place over the decade. The modern hypothesis testing technique today involves more rigorous measurement than many teachers in 1966 possibly considered necessary. Various other reasons for this finding emanate from the questionnaire (q.7):

- (1) that teachers have not found the technique particularly effective. Only 62 percent regard it as an effective method of teaching — only 15 percent feel that it is very effective, the rest of the 62 percent only fairly effective (q.6);
- (2) that teachers have insufficient time, suitable texts, or data resources for its use. These are the first, third and fifth reasons respectively in rank which teachers give for their limited use of statistical and quantitative methods;
- (3) that geography pupils are often not mathematically inclined — the second reason teachers give for their limited use of these methods;
- (4) that teachers have little experience of the method (also their fourth reason);
- (5) that neither the syllabus, nor the school area, lends itself to the use of the method.

The above help to explain the lack of success in the use of the scientific method, in South African high school geography teaching.

## Syllabuses (Q.VI, pp.12-14)

Over the decade there seems to have been an increase in the number of teachers who are aware of the stated aims of geography teaching. In the 1977 survey 99 percent of respondents indicate that they are familiar, or fairly familiar, with the aims of the syllabuses they teach (q.4), whereas in 1966 15 percent were uncertain. A healthy situation prevails when 98 percent of respondents agree, at least partly, with these aims as indicated by the 1977 survey (q.5).

Although three-quarters of the teachers in 1966 (H.S.R.C. Report, p.47) considered that the syllabuses furthered the objectives of geography teaching, 15 percent were uncertain whether or not they did, suggesting that these teachers might not have been fully aware of the aims and objectives. Over the decade the percentage of uncertain teachers has dropped to less than 5 percent, while fully 92 percent of 1977 teachers feel that syllabus content does further the aims of geography teaching (p.13, q.6).

The problem of completing the core syllabus during the year remains an important issue (q.7). Table 17 compares the two surveys in this regard.

TABLE 17. COMPLETION OF SYLLABUSES IN 1966 AND 1977  
(Q.VI, p.13, q.7)

Percent of Teachers of Standards	1977		1966		
	5-7	8-10	6	7&8	9&10
who usually complete core syllabuses	44	50	68	61	55
who seldom complete core syllabuses	39	39	24	30	27
who never complete core syllabuses	17	11	8	9	18

(HSRC Report p.57)

Only about half the teachers do usually succeed in completing the syllabus. Although this percentage is lower than it was a decade ago the percentage of teachers who never complete the syllabus has also dropped, suggesting that the position has not changed appreciably since 1966. This is unfortunate. Dissatisfaction with overloaded syllabuses is borne out by teachers' suggestions for improvement of the syllabus. In both surveys the leading suggestion for improving the syllabuses was to shorten them. This will be dealt with in greater depth later,

in Section C, on the extent of the "new" geography in South African high school teaching.

#### B. CONTRASTING LANGUAGE GROUP RESPONSES TO THE 1977 SURVEY

Although a slightly larger number of Afrikaans than English questionnaires was distributed, exactly the same number (135) of each language group was returned for processing. This represents a 38 percent return of the English and a 34 percent return of the Afrikaans questionnaires. In certain aspects of their responses distinct differences in viewpoint between English- and Afrikaans-speaking respondents are discernible as a result of the different cultural backgrounds and educational traditions existing in the schools of the two main language groups.

Of the two groups, the findings indicate that Afrikaans-speaking teachers are far more bilingual than their English counterparts. Half the Afrikaans-speaking teachers indicate that they have taught geography in both languages compared with less than a fifth of the English teachers (Q.I, p.1, c.6).

TABLE 18. COMPARISON OF ENGLISH AND AFRIKAANS RESPONDENTS IN METROPOLITAN AND NON-METROPOLITAN AREAS

	Metropolitan Areas	Non-Metropolitan Areas
Percentage of Respondents	63	37
Percentage of English Respondents	58	36
Percentage of Afrikaans Respondents	42	64
Percentage of S.A. Schools (English)	55	34
Percentage of S.A. Schools (Afrikaans)	45	66

Table 18 shows that a slightly larger percentage of English than Afrikaans teachers responded to the questionnaire, though the differences are small.

Facilities (Q.II, p.2)

While the level of provision of geography laboratories in all

schools is low, Afrikaans schools appear to be less well-served than English schools. Only 20 percent of Afrikaans schools possess geography rooms whereas nearly double the number of English schools (39 percent) have them (q.1). There are also nearly twice as many English as Afrikaans schools with geography societies or clubs (q.4).

TABLE 19. SUBSCRIPTION TO GEOGRAPHIC PERIODICALS/JOURNALS  
(Q.II, p.2, q.5)

No. in Q.	Title	Rank	% Schools Subscribing	% Eng.	% Afr.
6	National Geographic	1	61	72	50
5	The Geographical Magazine	2	40	46	34
1	The South African Geographer	3	32	31	33
2	The South African Geographical Journal	4	18	29	6
3	Geography	5	6	9	4
4	Teaching Geography	6	5	6	4
7	Journal of Geography	7	4	5	4

The table shows, as is to be expected when most geographical periodicals or journals are published in English, that fewer Afrikaans than English schools subscribe to each of them, except for The South African Geographer in which some articles appear in Afrikaans. Taken together, Afrikaans schools subscribe to an average of only just over one periodical per school whereas English schools subscribe to an average of nearly two periodicals per school. Even this is a low figure, presumably resulting from the meagre periodical grant allotted to schools. If teachers and pupils are to keep abreast of geographical developments it is essential that a larger number of periodicals be obtained.

#### Teaching Aids (Q.II, p.3, q.6)

Schools of both language groups are approximately equally equipped with a basic minimum of teaching aids such as globes, atlases, wall and topographic maps, but Afrikaans schools are less well equipped than their English counterparts in many of the more sophisticated aids. Of the 44 aids assessed, almost half (21) show distinctly different

levels of possession and use between the two language groups. In Table 20 the aids are divided into two sections, the upper where English schools are overwhelmingly predominant and the lower listing the only four aids possessed and used by more Afrikaans schools. Five groups of aids, audio-visual, meteorological equipment, air-photo, cartographic and others are involved. Those with their questionnaire numbers underlined are aids possessed and used by more than half the respondent schools. The table shows in its upper section the percentages of English as opposed to Afrikaans schools A, possessing, B, using and C, which would use, if available, the aids exhibiting the greatest disparity between the language groups (see overleaf).

The generally low level of possession and use of audio-visual aids by Afrikaans schools can be partly ascribed to the lack of availability of a wide range of movie films, filmstrips and slide folios in Afrikaans. The fact that the percentage use (column B) figures would about double by the addition of the column C percentages suggests that a ready market would be available for many of the aids if education departments provided the finance required for them and if filmstrips, slide folios and films were translated into Afrikaans.

The low Afrikaans percentages for meteorological equipment indicate that Afrikaans schools must do far less practical work in climatology, unless many of their pupils have their own instruments at home on farms, for instance.

A partial explanation of the generally low proportions for Afrikaans schools is discernible in the third most important factor limiting the enjoyment of teaching for Afrikaans teachers -- the difficulty they experience in obtaining the necessary teaching aids (Q.I, p.12, q.14). This is only the fifth limiting factor amongst English teachers. The isolated rural situation of many Afrikaans schools is perhaps partly responsible. Of the respondents, nearly twice as many English as Afrikaans schools have easy accessibility to the three main metropolitan regions (P.W.V., Cape Town-Bellville, and Durban-Pinetown regions) where audio-visual materials and other geographic equipment are on display and can easily be obtained. Improvement in handling of requisitions by education departments may facilitate acquiring some aids but Afrikaans schools will, for the most part, have to remain subject to the disadvantages and difficulties of the mail-order system.

TABLE 20. COMPARISON OF ENGLISH AND AFRIKAANS SCHOOLS:

POSSESSION AND USE OF TEACHING AIDS (Q.II, p.3, q.6)

		Q. No.	Teaching Aids	A. Possess % Eng/Afr	B. Use % Eng/Afr	C. would use, if available % Eng/Afr
English Schools Predominant		Audio-visual	(29) Overhead projector	75/63	74/52	7/13
			(30) Movie projector	74/35	71/26	9/24
			(31) Slide projector	71/42	72/40	13/21
			32 Filmstrip projector	56/29	54/25	15/24
			34 Filmstrips	51/20	53/19	19/34
			35 Slides	46/19	51/24	22/34
			37 Overhead transparency-maker	53/35	54/38	22/25
English Schools Predominant		Meteorological Equipment	(15) Sixes' /Max. & Min. thermometer	76/59	75/60	15/20
			(17) Hygrometer	70/42	69/44	15/27
			19 Barometer	54/34	54/31	27/38
			21 Anemometer	25/10	21/ 9	41/45
			(22) Raingauge	73/54	60/51	17/24
			23 Stevenson screen	23/13	20/13	45/46
English Schools Predominant		Air-Photo	4 Ortho-photos	21/10	18/11	38/44
			(5) Air photographs	78/60	79/71	15/21
			(6) Stereoscopes	68/57	67/56	24/31
Afrikaans Schools Predominant		Others	24 wall diagrams/charts	32/ 7	32/ 7	17/24
			25 Black demonstration globe	27/35	26/33	27/32
		Cartographic	14 Orrery to demonstrate movements in the solar system	13/21	12/24	45/49
			8 Opisometer for measuring winding distances on maps	9/18	10/15	52/52
			11 Pantograph for reducing or enlarging maps	2/13	2/12	51/45

The four aids possessed and used by a larger number of Afrikaans than English schools are ranked low amongst the most used aids (Table 10) but high amongst the most needed aids (Table 11). Both language groups feel equally strongly about using them if they were available.

Textbooks (Q.III, p.4, q.1-5)

Responses on the use of textbooks show relatively strong differences in attitude between the two language groups as indicated in Table 21.

TABLE 21. TEACHER PREFERENCE IN TEXTBOOK SELECTION  
(Q.III, p.4, q.1-5)

	Percentage of Respondents	
	English	Afrikaans
Departmental prescription of texts (q.1)	23	60
A basic text to be used mainly or exclusively (q.5)	24	67
Texts conforming, for example, to the syllabus (q.3)	61	84
Complete freedom of choice of texts (q.2)	79	42
A variety of texts and resources (q.5)	76	31

The table indicates that Afrikaans teachers lean heavily in favour of a single basic textbook, departmentally prescribed and conforming to the syllabus. On the other hand, the English group markedly prefer greater freedom of choice and exposure of their pupils to a greater variety of texts and other resources.

Between 53 percent (for standard 6) and 65 percent (for standard 10) of schools use a single basic textbook, there being a perfect balance between English and Afrikaans schools. Table 22 (overleaf) shows that, although most school geography texts conforming to the syllabus are available in both languages, there is a tendency for English respondents to prefer English authors and vice versa.

TABLE 22: TEXTBOOKS EMPLOYED BY SCHOOLS USING A SINGLE BASIC TEXT (Q:III, p. 4, q. 4)  
 (Percentages are of the schools depending upon one textbook only)

Title	Date	Author	Publisher	Eng.	Afr.	Tot.	%
Std 6							
Junior Secondary Geography for Std. 6	1973	Craig et al	Nasou Ltd.	8	32	40	28
Junior Geography for Std. 6	1974	Barnard, Beyers et al	Nasou Ltd.	7	27	34	24
Window on the World, Book 2, Std. 6	1974	John Earle	Juta & Co.	33	0	33	23
Man's Environment	1973	Nicholson & Morton	Shooter & Schuter	18	7	25	17
			Others*	4	8	12	8
			% of respondents			<u>144</u>	
Std 7							
Junior Secondary Geography for Std. 7	1976	Craig et al	Nasou Ltd.	21	30	51	35
Junior Geography for Std. 7	1974	Beyers et al	Nasou Ltd.	7	26	33	24
Man's Environment	1973	Nicholson & Morton	Shooter & Schuter	21	5	26	18
Window on the World, Book 3, Std. 7	1976	John Earle	Juta & Co.	24	0	24	17
			Others*	0	9	9	6
			% of respondents			<u>145</u>	
Std 8							
Senior Geography	1974	Swanevelde et al	Nasou Ltd.	21	50	71	44
Our New World	1974	Barnard & Nel	Maskew-Miller	35	20	55	35
Man's Environment	1973	Nicholson & Morton	Shooter & Schuter	16	3	19	12
			Others*	3	13	16	10
			% of respondents			<u>162</u>	
Std 9							
Senior Geography	1975	Swanevelde et al	Nasou Ltd.	60	80	140	81
Man's Environment	1974	Nicholson & Morton	Shooter & Schuter	19	2	21	12
Our New World	1976	Barnard & Nel	Maskew-Miller	9	2	11	6
			% of Respondents			<u>172</u>	
Std 10							
Senior Geography	1976	Swanevelde et al	Nasou Ltd	60	82	142	81
Man's Environment	1975	Nicholson & Morton	Shooter & Schuter	31	2	33	19
Our New World	1977	Barnard & Nel	Maskew-Miller	1		1	
			% of respondents			<u>176</u>	

\* Others include:

- Living Geography
- Geskiedenis/Aardrykskunde Prakties
- Praktiese Kursus vir Geskiedenis/Aardrykskunde Prakties
- Via Afrika
- L.B. Hurry
- Joubert et al
- Iantrechts

## FACETS OF THE "NEW" GEOGRAPHY

## Fieldwork

Although difficulty in organizing fieldwork is the leading factor limiting enjoyment of geography teaching for both language groups, more Afrikaans (62 percent) than English (49 percent) teachers stress it as a difficulty (Q.I, p.2, q.14). Drawing up fieldwork exercises is not an easy task without the necessary experience. Because more than twice as many Afrikaans as English respondents teach in rural areas, more Afrikaans teachers have to attempt compilation of fieldwork studies without the aid or stimulation of contact with their colleagues. This increases their difficulties in comparison with their more numerous metropolitan English counterparts.

Distinct differences between the two language groups are also evident in the opinions expressed on the role of fieldwork in geography. Fieldwork is considered essential or highly desirable by 83 percent of English teachers compared with only 63 percent of Afrikaans teachers, of whom a relatively high 28 percent consider it of only moderate value (Q.V.A, p.6, q.1). A contributory factor in the explanation of this difference is likely to be the method of conducting fieldwork generally used by Afrikaans teachers. Only 44 percent of Afrikaans pupils mainly in senior classes (q.3) do fieldwork assignments involving answering questionnaires or worksheets compared with 69 percent of English pupils (q.2). The distinct differences between the two language groups in the numbers of English as opposed to Afrikaans teachers requiring their pupils in the various standards to do this type of fieldwork assignment is indicated in Table 23.

TABLE 23. TEACHERS STRUCTURING FIELDWORK AROUND A QUESTIONNAIRE OR WORKSHEET, BY LANGUAGE MEDIUM (Q.V.A, p.6, q.3)

Standard	Numbers of Teachers	
	English	Afrikaans
6	29	12
7	43	24
8	60	41
9	73	43
10	61	36
Totals	92	60

Similar differences, though not quite as marked, are evident with regard to the numbers of teachers requiring pupils to undertake independent individual fieldwork studies as shown in Table 24.

TABLE 24. TEACHERS REQUIRING INDEPENDENT FIELDWORK STUDIES  
BY PUPILS, BY LANGUAGE MEDIUM (Q.V.A, p.6, q.5)

Standard	Numbers of Teachers	
	English	Afrikaans
6	15	7
7	19	14
8	24	16
9	26	17
10	27	19
Totals	44	34

Models (Q.V.B, p.7)

The two language groups also differ in their employment of the different model types. Fully 89 percent of English teachers use maps for most and many aspects of their work, whereas 75 percent of Afrikaans teachers do; a further 23 percent use maps for only some aspects of their geography teaching (q.1). Whereas 55 percent of English, compared with only 27 percent of Afrikaans teachers, use symbolic models for some aspects of their work (q.5), fully 43 percent of Afrikaans teachers never use symbolic models in contrast with only 13 percent of English teachers (q.6). The fact that 85 percent of Afrikaans respondents consider symbolic models essential, very useful or of some use, may suggest that many of the 43 percent who never use them do not know enough about them (q.7), and could therefore benefit from some training in their value and use.

Simulations and Games (Q.V.C, p.8)

Responses to questions on simulations and games accentuate the limited exposure Afrikaans teachers have, partly as a result of their isolation and language, to new developments in teaching. Only 9 percent of them have used this new technique in geography teaching, whereas 25 percent of English teachers have tried it (Q.V.C, p.8, q.1). The generally very limited use of this technique (now being successfully employed overseas) suggests that South African geography teachers

should be exposed to its advantages, perhaps through the medium of a film or videotape of the conduct and planning of a simulation game based on a local source.

Problem Solving (Q.V.F, p.11)

An aspect of the "new" geography more used by Afrikaans than English teachers is problem solving and hypothesis testing, often employed in oral form by 52 percent of Afrikaans compared with only 29 percent of English teachers (Q.V.F, p.11, q.1). Whereas 57 percent of English pupils are set geographic problems to be solved using this method alone, this occurs in the classroom of 70 percent of Afrikaans respondents (q.2).

Syllabuses (Q. VI, pp.12-14)

Not all schools use the syllabuses of their respective departments of education. The majority of Black schools indicate that they follow the National Senior Certificate syllabus, while less than half the Indian schools follow their own syllabus, the majority using that of Natal, and others the Transvaal syllabus. As a result of the Joint Matriculation Board prescribing a core syllabus, however, the content differences between departments are small. Table 25 indicates the numbers and percentages of respondents using the different syllabuses by language medium in rank order.

TABLE 25. SYLLABUSES FOLLOWED BY RESPONDENT SCHOOLS BY LANGUAGE MEDIUM (Q.VI, p.12, q.2)

	Rank	Eng.	%	Afr.	%	Total	% of Respondents
Cape	1	29	10	39	14	68	24
Transvaal	2	18	6	41	15	59	21
Natal	3	44	16	8	3	52	19
Orange Free State	4	4	1	21	8	25	9
National	5	8	3	14	5	22	8
Coloured Affairs	5	8	3	14	5	22	8
Indian Affairs	7	16	6	-	-	16	6
Joint Matriculation Board	8	10	4	1	-	11	4
Black	9	3	1	-	-	3	1
Totals		140*		138*		278*	100

\*A few schools are in transition from one syllabus to another, hence the extra respondents.

More Afrikaans- than English-speaking teachers are familiar with the syllabuses of the standards 5-7 junior secondary course, whereas the opposite is true of the standards 8-10 senior course (Q.VI, p.12, q.3). The opinions of Afrikaans and English teachers on improving the standards 8-10 higher grade syllabus differ (Q.VI, p.14, q.11). The majority of those who consider shortening the most needed improvement are Afrikaans (57 percent) whereas the majority supporting the second and third ranked "new" geography alternatives -- (d) and (c) respectively -- are English (58 percent and 56 percent respectively).

Afrikaans teachers comprise 57 percent of those reasonably satisfied that the contents of present syllabuses are highly relevant to the needs of modern pupils, whereas the majority (77 percent) of teachers considering modern syllabuses as relevant to a limited extent only, are English (q.14).

The question on the aims of geography syllabuses in South Africa (q.1) yielded inconclusive results. In this discussion the writer takes a value stand which he thinks will accord with the values of the majority of modern academic university geographers. Obviously others with different values would interpret the findings differently.

A study of the abbreviated aims in Table 26 (a) - (j) (overleaf) will show that they can be divided into three groups:

Group 1 - the logical and academic type aims embodied in letters (b) - (f);

Group 2 - the aims couched in emotive and value language (g) - (i);

Group 3 - the practical/factual aims (a) and (j).

From Table 26 it can be seen that the English-speaking teachers consider that all the aims in Group 1, the logical academic type, should be the most important, i.e. be ranked 1 - 5 on the A-List (shaded on Table 26) -- even the order of these five (c), (b), (e), (d) and (f) is logical and possibly typical of modern academic geographers. On the other hand, Afrikaans speakers include (g), the cultivation of a love of the subject, ranked third of the five most important aims. This aim the English accord seventh place only. Both language groups are agreed that the practical factual Group 3 aims (a) and (j) should be at the bottom of the list, with the emotive/value Group 2 aims (g) - (i)

TABLE 26: COMPARISON OF AFRIKAANS AND ENGLISH RANKINGS OF THE AIMS OF GEOGRAPHY TEACHING THAT A. SHOULD BE MOST IMPORTANT AND B. ARE STRESSED MOST IN SOUTH AFRICAN HIGH SCHOOLS (Q.VI, p.12, q.1.)

Group	Letter in Q.	Good Geography Teaching Aims:*	A - List			B - List			
			Group	Eng.	Afr.	Total	Total	Afr.	Eng.
3	(a)	To give a grasp of the facts of world geography	3	8	9	9	6	9	5
	(b)	To give an understanding of geographic problems		2	2	1	4	5	3
	(c)	To give an understanding of spatial inter-relationships		1	5	3	2	4	2
1	(d)	To give an understanding of conceptual geography	1	4	1	1	1	1	1
	(e)	To train in critical logical geographic thinking		3	4	4	5	3	5
2	(f)	To equip for self-inquiry and further study		5	8	7	10	10	8
	(g)	To cultivate a love of the subject		7	3	6	8	7	9
	(h)	To engender interest in fatherland and world	2	6	6	5	7	6	7
3	(i)	To inculcate the wonder of creation		9	7	8	9	8	10
	(j)	To prepare pupils for examination success	3	10	10	10	3	2	4

Overall rankings  
i.e. English and  
Afrikaans together

\* (N.B. These aims have been abbreviated so the Table should be used in conjunction with p.12 of the questionnaire)

between, when considering the aims that should be paramount on the A-List.

When considering the B-List aims which are stressed most in practice in South Africa today, both language groups elevate (j), the preparation of pupils to achieve the best examination results. Afrikaans support raises it from last to second rank while it is ranked fourth by the English. English teachers consider that aim (a), to give a clear grasp of the body of important facts about world geography, is stressed so much in South Africa that it also joins the top five; though the Afrikaans teachers leave it in the same place they put it in the A-List — ninth. This corroborates a finding reported elsewhere — that South African geography education is too content- and examination-orientated; consequently some of the admirable aims set out in the syllabuses may not be fully realized as a result of the system itself. This is self-defeating. Either the aims should be re-assessed and modified or, if they are considered by those responsible for syllabus construction to be satisfactory, the syllabuses should be redesigned to accord with their aims.

A most important aim, particularly in relation to preparation of pupils for universities, is (f), to equip pupils for self-inquiry and further study. The English teachers put it fifth in their A-List, but it drops overall to seventh as a result of the Afrikaans teachers listing it eighth only, behind the Group 2 emotive/values aims. Both language groups rank it low on the B-List so that it appears last overall on the B-List.

A correlation analysis made Spearman's Rank Correlation coefficient for the correlation between English and Afrikaans respondents on the A-List to be 0,66. For the B-List rho of 0,73 showed a stronger correlation between English and Afrikaans respondents. There was far less correlation between the A and B lists.

The overall picture is considered reasonably satisfactory in respect of the A-List of aims that should be most important in geography teaching. There is general agreement on the importance of Group 1 aims (b) - (e), and supporters of (f) are only a few less in number than those for (g) and (h). This means that South African pupils are

being taught by teachers who, in general, agree with contemporary aims.

It is unfortunate that there is not a closer correlation between the A and B lists, for the aims stressed in South African classrooms (the B-List), accord less with the views of modern geographers. This is true, particularly as far as the development of the subject as an academic discipline at university level is concerned. Teachers are of the opinion that the educational authorities put great stress on (j) the examination, and (a) the mastery and repetition of facts (neither of which is stressed at university level) at the expense of (f) equipping the pupils for self-inquiry and further study -- a prime requisite at university. Without students of geography trained to do individual research the discipline cannot develop in South Africa. The "knowledge explosion" coupled with the increasing complexity and pace of modern life means that greater accent will be placed in future on individuals to solve the myriad problems facing the human race -- hence the increasing need to encourage self-inquiry. Pupils also need preparation for a future life of greater leisure time. Encouraging self-inquiry is one way of assisting them to use their leisure enjoyably and productively.

The Joint Matriculation Board (J.M.B.) should reconsider the examination system and type of questions set in geography and evaluate them in the light of these findings. It also appears time for education departments to re-evaluate their stand on the aims of education in general and of geography teaching in particular. As they are concerned primarily with mass education for the whole population, education department aims for geography teaching need not be the same as the J.M.B. aims which are orientated to maintaining university entrance standards. The "new" geography trend away from factual knowledge to conceptual knowledge should be given more consideration in South African school geography. Syllabuses, examinations and the approach to geography should be kept up to date to ensure that syllabuses fulfil the aims specified in the preambles.

Final Evaluation (Q.VII, p.15)

English-speaking teachers formed 69 percent of those who consider themselves as effective at geography teaching as they could be (q.1). But it is the English teachers who consider a concentrated

refresher course or a period of study leave more important in improving their teaching than the Afrikaans teachers do (q.2). On the other hand, Afrikaans teachers form the majority of those who consider the need of more teaching aids and the abolition of the external examination system as effective ways of helping to improve their teaching.

Perhaps the underlying difference between Afrikaans and English teachers is signified by the fact that the majority of those classifying themselves as conventional are Afrikaans, while the majority regarding themselves as modern and dynamic are English (q.3). Nevertheless, the survey findings indicate that most differences between the language groups are relatively small and that teachers do not differ a great deal over the whole spectrum.

### C. THE EXTENT OF THE "NEW" GEOGRAPHY IN SOUTH AFRICAN HIGH SCHOOL TEACHING

Bearing the Teaching Strategies model in Figure 11 in mind, this section of the report will attempt to portray the extent of "new" geography in South African high school teaching. It will discuss the aims of, and attitudes towards, geography teaching, syllabuses and other aspects of the information obtained from the 1977 survey not dealt with previously. It will conclude by discussing resources for learning and the survey findings on examinations.

#### Aims and Objectives

The fairly high degree of consensus amongst respondents on Group 1 aims (Table 26) being those that South African teachers should be striving towards in their geography teaching, accords well for the future development of the "new" geography. These are the aims, from the list supplied, which modern geographers would be likely to choose as being most important. Unfortunately the aims that respondents consider are stressed in the South African geographic education system are not in as close accordance with the "new" geography. In fact, the "new" geography developed partly as a reaction to the aims of Group 3, ranked third and sixth on the B-List (Table 26). Notwithstanding this, respondents consider that the South African geography education system does stress four of the Group 1 aims. There is also some evidence suggesting a downgrading of the importance of the examination

system upon which aim (j) (ranked third on the B-List) depends. At present an experiment is being conducted, exempting or partially exempting some sixty schools in the Cape and Transvaal from having to write the public examination. If the experiment provides evidence for its extension to include a greater number of schools, it may result in South African education becoming less examination-orientated, so that aim (j) may fall in importance. New methods using the inquiry approach could result in the elevation of aim (f), equipping pupils for self-inquiry and further study. This could result in aim (f) taking its place alongside the other Group 1 aims concomitant with the "new" geography in the B-List of aims stressed in South African teaching.

There is no reason, under present conditions, why the "new" geography should not be applied in South African high schools. In fact the survey shows it is being used in some classrooms. The "new" geography does not, of itself, conflict with the core syllabus which is largely drawn up and controlled by the J.M.B. This control is perhaps unfortunate, for it means that a university-orientated body, interested in preparing students for entrance to university, decides on syllabuses for the education of the masses, a small percentage of whom will attend university. There is much to be said in favour of the British two-tiered system of education where the university entrance authorities only control syllabuses for a relatively small number of A-level pupils. It allows the mass of the populace to benefit from a less academic, perhaps more relevant, O-level education, before going out into the world to make a living. The South African differentiated system has similar mass education objectives to the British O-level system, but these cannot be realized while it is an academic straight-jacket prescribed by J.M.B. control.

In the present situation, it would perhaps be true to say that the South African education system does not prevent the "new" geography approach, but allows its development rather than encouraging it. Certainly, many aspects of the "new" geography may be used within the framework of the present system and syllabuses. The need for fairly strict adherence to the core syllabus necessitated by the public examination system, and the tendency for South African geography teachers to depend on the textbook and follow tradition, teaching as they were taught, militates against rapid change to the "new" geography in South Africa.

## Syllabus Modification

There are encouraging signs of support for aspects of the "new" geography in the recommendations for improvements in the various geography syllabuses advocated by the majority of respondents to the 1977 survey.

This support for the "new" geography is most strongly shown where the pressure of the public examination is least felt, in the junior secondary course of geography for standards 5 to 7. In contrast with the senior course where shortening is the most strongly advocated change to the syllabus, and despite the fact that only 44 percent of respondents complete the junior syllabus each year (Q.VI, p.13, q.7), a shortening of the syllabus is only the fourth priority for its improvement (Q.VI, p.14, q.13). All three alternatives for improvement of the syllabus ranked ahead of this one (shortening) are strongly orientated to the "new" geography.

Although 29 percent of teachers are satisfied and another 61 percent are fairly satisfied with the content of the standards 5 - 7 syllabus, the majority felt that it could be improved. Fully 73 percent of respondents advocate the changes contained in Table 27.

TABLE 27. MODIFICATIONS ADVOCATED FOR THE STANDARDS 5-7 SYLLABUS, RANKED (Q.VI, p.14,q.13)

(Percentages based on the 197 who responded to the question though some chose two or three alternatives)

Rank	Letter in Q.	Abbreviated modification*	%
1	(b)	Less regional geography, more case studies	50
2	(c)	Redesigned "new" geography course similar to O.G.P.	41
3	(d)	South African equivalent of G.Y.S.L.	29
4	(a)	Shortening, e.g. geomorphology left out	25

\*N.B. These modifications have been abbreviated, so that the table should be used in conjunction with p.14 of the questionnaire.

The fact that a course modelled on the O.G.P. met with the support of more than two-fifths of the respondents is encouraging for

the development of the "new" geography in South Africa, because the O.G.P. is strongly orientated towards the philosophy and methods of "new" geography. That so many teachers are prepared to support a break with the past when the publication itself has only been in circulation for a few years, speaks well for its quality and for the open-minded judgement of geography teachers opting for this alternative. By so doing they belie the traditional conservatism of the teaching body.

Although only 7 percent of teachers are not at all satisfied with the content of the higher grade syllabus in standards 8 - 10 (Q.VI, p.13, q.10), 53 percent consider that there should be greater differentiation in content and standard between the present higher grade (H.G.) and standard grade (S.G.) syllabuses (q.8) (36 percent of respondents disagree and 12 percent are unsure). The modifications which 68 percent of respondents would like to see implemented in S.G. syllabuses are indicated in abbreviated form in Table 28.

TABLE 28. MODIFICATIONS ADVOCATED FOR THE S.G. STANDARDS 8 - 10 SYLLABUS, RANKED (Q.VI, p.13, q.9)

(Percentages are based on the 184 who responded to the question though some chose two or three alternatives)

Rank	Letter in Q.	Abbreviated Modifications*	%
1	(a)	Shortening	61
2	(c)	Shortening, but more application of "new" geography	47
3	(b)	Less factual, more conceptual geography	45
4	(d)	A different specifically S.G. syllabus orientated to creating attitudes and values by the study of current events and world problems	37
5	(e)	More regional geography	18

\*N.B. These modifications have been abbreviated, so that the table should be used in conjunction with p.13 of the questionnaire.

The most strongly supported change advocated for H.G. and S.G. in standards 8 - 10 is a shortening of the syllabus, but there is strong support for the alternatives incorporating more of the "new" geography for both grades.

Although 29 percent of teachers are satisfied and a further 64 percent are fairly satisfied with the content of the H.G. syllabus for standards 8 - 10 (Q.VI, p.13, q.10), 78 percent of respondents feel that the changes summarised in Table 29 would improve it.

TABLE 29. MODIFICATIONS ADVOCATED FOR THE H.G. STANDARDS  
8 - 10 SYLLABUS, RANKED (Q.VI, p.14, q.11)  
(Percentages based on the 211 who responded to  
the question, though some chose two or three  
alternatives)

Rank	Letter in Q.	Abbreviated modifications*	%
1	(a)	Shortening	53
2	(d)	Shortening but more application of "new" geography	51
3	(c)	Less factual, more conceptual geography	38
4	(e)	Study of current events to create attitudes and values	26
5	(b)	More regional geography, more countries	14

\*N.B. These modifications have been abbreviated so that the table should be used in conjunction with p.14 of the questionnaire.

It is interesting to note that some aspects of these alternatives were included in the H.S.R.C. recommendations a decade ago. The 1966 findings showed that

"... applied political geography with the accent on interpretation of current world problems, and the relation between international commerce and political affairs, and the supply of food throughout the world, should be added to the syllabus as topics".

Support varied from 52 percent to 93 percent among provinces (Condensed English Report, p.9). Little evidence of the implementation of these recommendations is discernible in present syllabuses. It is to be hoped that more notice of teacher opinion in 1977 will be taken by syllabus compilers, than appears to have been accorded the 1966 recommendations. Nevertheless, it speaks well for the compilers of the new differentiated syllabuses that 86 percent of teachers regard present syllabus content as reasonably relevant to the needs of the modern pupil (Q.VI, p.15, q.14).

## OTHER FACETS OF THE "NEW" GEOGRAPHY

From a comparison of the information in Table 1 with the 1977 findings, it appears that less use is made in South Africa of models, simulations, games and statistical and quantitative methods than was done in the United Kingdom at the beginning of the decade. The local situation is improving -- the H.S.R.C. Report presents little evidence of the use of these facets of the "new" geography a decade ago.

Models (Q.V B, p.7)

TABLE 30. TEACHER USE OF MODELS IN GEOGRAPHY

Percentages using different types of models:	Usually	Often	Seldom	Never
Maps (q.1)	48	34	17	-
Iconic models (q.2)	16	40	31	13
Iconic models constructed by teacher (q.3)	19	15	39	27
Iconic models constructed by pupils (q.4)	6	14	41	39
Symbolic models (q.5)	9	41	22	28
Teacher opinion on their use (q.6):	Essential	Very Useful	Some Use	Little Use
Iconic models	41	36	21	2
Symbolic models	23	33	36	10

Maps have always been held to be "the chief tool in the trade" of the geographer, yet 17 percent of respondents indicate that they are used for only some aspects of their work. Maps of all types (atlas, sketch and topographic) are used by 82 percent of pupils for most or many aspects of their work (q.1).

Symbolic models are seldom or never used by half the teachers and a further 41 percent use them for only some aspects of the work, leaving a mere 9 percent who use them for most aspects of geography (q.5). Yet, strangely, 90 percent consider symbolic models useful (q.6). Why symbolic models should not be used more is not clear, though it may be that half the teachers have insufficient knowledge of them.

Iconic models are seldom or never used productively by 44 percent of teachers (q.2) despite the fact that, for instance, relief model-making is a most useful exercise particularly for artistic or dextrous pupils. In only 20 percent of schools do pupils build iconic models often or usually, though they are occasionally built in another 41 percent of schools (q.4). This leaves 39 percent of schools where

iconic models are unknown which, considering how useful they can be in illustrating the concepts of contour drawing, is a most disquieting situation. It is surprising, remembering the pressure of time on most teachers, that nearly three-quarters of them build iconic models themselves, even if over half of them do so but seldom (q.3).

The value of all types of models to good geography teaching should be strongly emphasized at every opportunity, e.g. refresher courses, if increasing use of these aids is to be encouraged.

#### Simulations and Games (Q.V.C, p.8)

The overwhelming majority of South African geography teachers have never used simulations or games in their teaching. This can be ascribed to the relatively short time that such devices have been in general use, even overseas, and to the fact that very little development of this sophisticated teaching strategy has so far taken place in this country.

Only one respondent uses simulations and games often while 11 percent have used them a few times (q.1). A further 6 percent have used them once only. Of the 17 percent of teachers who have used games at all, about half used games developed by others, while 60 percent (percentages calculated on the base of the 45 respondents who have used simulations and games), developed them themselves (q.2). The games which have been used were half competitive and half non-competitive (q.3). The vast majority (87 percent) were group games, only 29 percent being designed to be used by the individual (q.4).

Despite the small number of respondents who have actually used simulations and games, 41 percent of the 231 respondent teachers indicate they are certainly or probably worth the extra time they usually involve, considering the diverse benefits often gained by participants. These include interaction through role-playing, the appreciation of difficulties involved in real-life decision-making and personal involvement in geographic problems. A further 37 percent were uncertain whether it was worthwhile spending extra time on simulations, leaving less than a quarter of respondents doubtful about, or definitely against, doing so (q.5). This is encouraging for the future use of simulations and games in South Africa.

Of the respondents who do not generally use simulations or games, 45 percent would like to, but feel that the syllabus does not permit enough time for their use. Another 14 percent of teachers would like to use simulation games, but do not know how to begin. Nearly a third of teachers (32 percent) indicate that they do not know enough about games or their value (q.6). Perhaps the answer to this difficulty is for a South African film to be made showing the advantages to be gained from simulations and games, how they operate and how they can be developed by the teacher. There are sufficient South Africans with the knowledge and experience to be able to produce a successful and informative film on the subject, and in this way, to disseminate the knowledge and the value of this aspect of the "new" geography.

#### Statistical and Quantitative Methods (Q.V.E, p.10)

It is important when interpreting the data on statistical and quantitative methods to bear in mind the disparity between the numbers of teachers who answered the questions about the traditional graphs, histograms, etc. (the number of respondents ranged from 220 to 259, i.e. 81 percent to 96 percent of all respondents) and the very much smaller number who responded to the questions on the more recently employed scatter graphs, rank correlations, etc. where numbers varied from 130 to 208, i.e. 48 percent to 77 percent of all respondents. In other words the percentages regarding the questions on the latter group of statistical techniques are based largely on answers from only 50 - 60 percent of the total number of respondents. It could be assumed that the rest of the respondents know little about modern statistical techniques, and therefore do not use them at all. (To emphasize the contrast between the use of the traditional and modern statistical techniques, the percentages referring to the latter will, in certain circumstances, be inserted in square brackets [ ] beside the percentages appertaining to the traditional techniques.)

It is surprising that 10 percent of teachers indicate that they never use even the traditional graphs or histograms (q.1), for it is difficult to understand how the subject can be taught effectively without at least the aid of some statistics. It is not unexpected that the number of teachers who never make use of quantitative techniques such as scatter graphs and rank correlations is as high as

41 percent of the 208 respondents to the question, given the generally conservative nature of teachers.

Table 31 shows that of the 90 percent [58 percent] of respondents who do use the traditional [modern] statistical methods, about half (48 percent) [62 percent] do not require their pupils to collect the data themselves, while only 11 percent [4 percent] of respondents often require pupils to collect the data themselves (q.2). Although nearly half (46 percent) of the pupils plot or work with the traditional type data often by themselves, only a fifth (21 percent) do so with the modern statistical methods (q.3), though 38 percent of pupils do occasionally work alone with both types of statistical methods (q.3). Most teachers consider that the majority of their pupils enjoy working with statistics, though over a fifth (22 percent) are unsure with regard to the traditional type and nearly a third (31 percent) are unsure with regard to the modern statistical methods (q.4). A further 5 percent do not think their pupils enjoy working with traditional, while 16 percent do not consider their pupils enjoy working with the modern statistical techniques. Teachers agree that their pupils cannot be relied upon to draw independent accurate conclusions from either of the two types of statistical representations (q.5). But, with a little help, 45 percent may be able to if dealing with the traditional, though this figure drops to 31 percent when considering the modern methods. For the rest, it is a case of some pupils being able to manage, but not others (41 percent) [45 percent], while only 2 percent [12 percent] can never manage to draw accurate conclusions at all (see Table 31 overleaf).

Despite these rather low percentages almost 80 percent of teachers consider the traditional, and 62 percent consider the modern techniques to be effective aids in geography teaching, while a further 12 percent and 26 percent respectively are unsure (q.6). Furthermore, 89 percent of teachers consider the traditional, and 78 percent the modern techniques sometimes useful or essential, with a further 8 percent [18 percent] being uncertain (q.7).

This suggests an open-mindedness which could assist teachers to master the modern statistical techniques at departmental inservice courses run by the universities or at Teachers' Centres. Sixty-four respondents feel the need for such courses by indicating that they know

TABLE 31: THE USE OF STATISTICAL AND QUANTITATIVE METHODS (Q.V.E,p.10)  
 (Figures in percentages of respondents to question, N = 270)

	A. Traditional Type				B. Recently Developed			
	Usually	Often	Seldom	Never	Usually	Often	Seldom	Never
Percentage of pupils using them (q.1)	29	41	20	10	7	17	34	42
Pupils collecting data themselves (q.2)		11	41	48		4	34	62
Pupils plotting or working data themselves (q.3)		46	38	16		21	38	41
	Definite	Fair	Unsure	No	Definite	Fair	Unsure	No
Pupil enjoyment of their use (q.4)	19	54	22	5	10	44	31	16
	Alone With Help	Some Pupils	With Much Aid	Never	With Help	Some Pupils	With Much Aid	Never
Pupil ability to draw accurate conclusions (q.5)	4	45	41	7	2	31	45	12
	Very Effective	Sometimes Helpful	Little Use	Unsure	Very Effective	Sometimes Helpful	Little Use	Unsure
Effectiveness of these methods (q.6)	23	56	9	12	18	44	12	26
	Essential	Sometimes Useful	Little Use	Unsure	Essential	Sometimes Useful	Little Use	Unsure
Importance in geography (q.7)	39	50	3	8	32	46	3	18

little about the use of statistical and quantitative methods. Nearly twice as many complain of the lack of time or that their pupils are non-mathematical and do not understand the notation used with statistical methods. Certainly, for some individuals, there is a mental block against the subject which is extremely difficult to overcome (Q.V.F, p.11, q.7).

The unsatisfactory overall situation in South Africa concerning these facets of the "new" geography is not without hope. Responses indicate that at least a quarter, and often considerably more, of teachers are using modern statistical techniques, having been trained in their use at university during this decade. It can be concluded then, that, although these aspects of the "new" geography are not effectively or often used by the majority of teachers, there is a large enough group using the current trend, to ensure that the "new" geography does make its presence felt. But much more training is essential if South African geography teachers are to realize fully the potential for effective, stimulating teaching.

#### RESOURCES FOR LEARNING

Resources have always been important in effective geography teaching, but with the "new" geography approach they have become essential. The effective teacher needs to bring the earth into the classroom, where most teaching must, of necessity, take place. This may be more easily and effectively achieved by the good teacher with the aid of an ever-increasing range of resources. A wide variety is needed to cater effectively for the wide range of personalities the teacher is attempting to stimulate. Learning takes place most rapidly, productively and beneficially when the pupil is interested and regards the process positively. Interest is stimulated by appeal to auditory and visual senses, particularly the latter; a variety of stimuli should generate interest, and thus a positive attitude from all pupils towards the subject. Effective learning is largely dependent on pupil attitude which, in turn, is dependent upon geography teachers and their use of resources.

Geography teaching would not necessarily be dramatically improved if a wide range of resources was available in all schools, for the resources in themselves do not make for better teaching.

Rather, resources enable the well-prepared teacher to make lessons more realistic, meaningful and understandable to a class. Resources such as films, filmstrips, slides, photographs, (oblique, air and ortho-) atlases, maps, wall diagrams and models can also be of considerable benefit if used by the pupil in conjunction with the inquiry method for discovery learning.

Some of the resources have already been discussed in this report. Others, arising out of the investigation, require amplification.

Library resource material is of prime importance if discovery learning is to take place. It should be as easily and as often accessible as possible. Ideally, the geography room itself should house resources for ready reference. These materials may include a comprehensive encyclopaedia, geographic dictionaries, a broad range of atlases, statistical data sources and periodicals.

A wealth of useful illustrative geographical material is available from the periodicals listed in Table 19 (p.99.) The two most popular magazines contain up-to-date articles presented in an interesting, concise and easily readable form appealing to pupils. The two South African journals, next in rank, sometimes have articles on geography teaching while other articles enable pupils to keep abreast of current developments of interest to them in South African geography. Geography, to which only 6 percent of respondents subscribe, has useful articles catering for a wide range of geographical interest and is perhaps more readable by pupils than many other geographic journals. Teaching Geography and the Journal of Geography are respectively the British and American periodicals catering particularly for teachers. They contain numerous excellent articles on new approaches and teaching methods, with examples which sometimes may be directly applicable in South African classrooms. In addition to these, there are numerous other periodicals which occasionally produce excellent articles of a geographic nature. All staff members could be asked to look out for these so that photostat copies may be made for the geography library.

Much of this type of material can be reproduced in transparency form for use with the overhead projector. Many teachers are now building up a library of useful resource materials including statistical tables, graphs, sketch maps, diagrams, drawings, models, tests and

examination questions in transparency form. These can be easily stored and, through an effective indexing system, located for immediate use when required. Preparation is fairly time-consuming and to avoid duplication of time and effort, some schools build up a departmental set which is available to all geography teachers when required.

The 1977 findings indicate that only limited use is being made, by about a third of schools (Q.II, p.3, q.6), of excellent audio-visual resource material available in the form of films, filmstrips and folios of slides, despite the annual grants allotted by departments of education. South African distributors offer only a limited range of the audio-visual materials available overseas. This partially explains the situation indicated in Table 10 (page 124). Other contributory factors include: inaccessibility resulting from materials being available only in the largest metropolitan regions; the expense of the imported articles and the fact that they are often foreign-orientated. There is a need for some local geography group to compile more relevant geographical slide collections which can be cheaply duplicated and made available to schools. But the uniformly low percentages in the last column (B + C) in Table 10, for episcopes, film and filmstrip projectors, slides and filmstrips, suggest that between a half and a third of teachers would not use these aids, even if available. This suggests that teachers may be unaware of the benefit which audio-visual aids can be to pupils if properly used. There thus seems to be a need to stress the advantages of these techniques.

Ortho-photos and opisometers are inexpensive and fairly new but little known teaching aids, which may be easily and conveniently used. An enlarged air photo of their home area is more easily recognisable to young pupils than an abstract map. When they see the contour lines placed on the ortho-photo, close together where familiar steep slopes occur and far apart on the flatter land, pupils should grasp the contour concept of showing relief more easily. An opisometer can measure real distances on maps far more rapidly and accurately than by using a piece of string. Reading the distance on the dial also gives practice in differentiating between the most common scales used on topographic maps, for most opisometers have a variety of scales on their dials.

Some teaching aids are more easily acquired than many teachers

TABLE 10: GEOGRAPHY TEACHING AIDS 1966 AND 1977 COMPARED  
(Ranked in order from most used) (Q.II,p.3,q.6)

No. in Aid Q.	A Possessed			B Used			C Would be used, if available					
	1977		1966	1977		1966	1977		B + C			
	Rank No.	%	%	Rank No.	%	%	No.	%	%			
	Globes (of any type)	1	220	81	87	1	230	85	98			
1	Atlases	2	218	80	76	2	228	84	99	35	13	97
3	Topographic maps	3	208	76	19	3	224	82	74	37	14	96
2	Wall maps (continents)	4	203	75	80	4	206	76	81	46	17	93
5	Air photos	6	188	69	7	5	204	75	37	48	18	93
36	O.H.P. transparencies	5	201	74		6	200	74		38	14	88
26	Physical globe	6	188	69		7	194	71		31	11	82
15	Max. & Min. thermometer	9	184	68	24	8	184	68	43	46	17	85
29	Overhead projector	8	187	69		9	171	63		27	10	73
6	Stereoscopes	11	169	62		10	167	61		74	27	88
17	Hygrometer	13	152	56	24	11	154	57	46	57	21	78
31	Slide projector	12	154	57	50	12	152	56	73	45	17	73
22	Rain gauge	10	173	64		13	151	56		56	21	77
27	Political globe	15	145	53		14	147	54		34	13	67
30	Movie projector	14	148	54	31	15	133	49	62	44	16	65
37	O.H.P. transparency- maker	16	120	44		16	125	46		64	24	70
19	Barometer	17	119	44	32	17	115	42	52	88	32	74
32	Filmstrip projector	18	116	42		18	107	39		54	20	59
7	Magnetic compass	19	108	40	22	18	107	39	33	101	37	76
35	Slides	21	89	33		20	102	38		76	28	64
34	Filmstrips	20	97	36		21	98	36		72	26	62
25	Black demonstration globe	22	84	31		22	80	29		81	30	59
24	Wall diagrams/charts	23	54	20	22	23	53	19	76	58	21	40
39	Camera for taking slides	24	51	19		24	52	19		109	40	59
16	Thermograph	29	43	16		25	51	18		111	41	59
38	Electronic pocket calculator	25	50	18		26	49	18		81	30	48
14	Orrery	27	47	17		26	49	18		128	47	65
23	Stevenson screen	25	48	17	7	28	44	16	19	123	45	61
21	Anemometer	27	47	17	4	29	41	15	18	117	43	58
20	Barograph	32	39	14		29	41	15		111	41	56
4	Orthophotos	31	41	15		31	40	15		112	41	56
41	Relief models	34	35	13	10	31	40	15	45	136	50	65
8	Opisometers	33	36	13		33	34	13		142	52	65
33	Episcope	29	43	16	24	34	30	11	30	110	40	51

(Source: HRSC Report p.144)

TABLE 11: MOST-NEEDED GEOGRAPHY TEACHING AIDS 1977 (Q.II,p.3,q.6)

No. in Q.	Aid	Would use, if available			Comments
		Rank	No.	%	
8	Opisometer	1	142	52	Inexpensive to buy
41	Relief Models	2	136	50	Pupils can make them
42	Soil-testing kit	3	133	49	Simple kit available from science laboratory
40	Model-making facilities	3	133	49	Many schools have metalwork/woodwork facilities
11	Pantograph	5	131	49	
43	Mineral-testing kit	6	130	48	Simple kit available from science laboratory
14	Orrery	7	128	47	
12	Clinometer	8	123	45	Pupils can make simple one
23	Stevenson screen	8	123	45	
10	Plane table	10	118	43	
21	Anemometer	11	117	43	Pupils can make simple one
44	Sandtray	12	114	42	
4	Ortho-photos	13	112	41	Cheaply available, mainly of large urban areas but coverage is expanding rapidly
13	Sextant	14	111	41	
16	Thermograph	14	111	41	
20	Barograph	14	111	41	
18	Hydrograph	17	110	40	
33	Episcope	17	110	40	
39	Camera for taking slides	19	109	40	Many pupils & teachers have their own
9	Alidade	20	104	38	
7	Magnetic compass	21	101	37	Inexpensive to buy
28	Apparatus to illustrate map projections	22	96	35	Fairly easy to construct at school
19	Barometer	23	88	32	
25	Black demonstration globe	24	81	30	
38	Electronic pocket calculator	24	81	30	Many pupils & teachers have their own
26	Slides	26	76	28	Many teachers & pupils have their own
6	Stereoscopes	27	74	27	
34	Filmstrips	28	72	26	
37	O.H.P. Transparency-maker	29	64	24	Many teachers make their own
24	Wall diagrams/charts	30	58	21	Many teachers make their own
17	Hygrometer	31	57	21	
22	Rain gauge	32	56	21	Inexpensive to buy plastic one
32	Filmstrip projector	33	54	20	

seem to think; as indicated in the comment column in Table 11 (page 125). Three of the items respondents indicate are most needed are simple enough for even pupils to make. They are relief models, anemometers and clinometers (see J. Rummig: *Make and Use Models*, 1. Wind and Rain, and 2. Sun and Shadow, University of London, 1964). Certainly many of the 44 percent of schools which indicate that they would use model-making facilities, have them available in their woodwork or metalwork rooms. Teachers and pupils in many schools possess pocket calculators, and cameras for taking their own slides. These may be put to geographic use, as they are in some schools. Inexpensive lens adaptor rings may be fitted to 35mm S.L.R. cameras enabling close-up photographs or slides of pictures to be taken from books. It is also relatively easy to construct an apparatus for illustrating how the differences in the three main groups of map projections are obtained. The graticule of the globe is drawn on an ordinary round-bottomed flask. When a light is inserted into the flask clamped upside down in a retort stand, the graticule will be represented amazingly accurately on a good translucent map-overlay-paper cylinder, cone or plane surface held in contact with the flask at the appropriate place.

These are but a few of the more useful aids to which modern teachers have relatively easy access and it is to be hoped that teachers will encourage their pupils to construct easily made aids. The most likely way of making teachers aware of them and other resources is through their inclusion in refresher courses. Individual teachers may also share their experiences in the construction and use of learning resource materials at geography teacher group meetings and workshops held under the auspices of Teachers' Centres or Teachers' Associations.

Hopefully the improvement in supplying schools with teaching aids which has occurred over the last decade will continue. The need is obvious from Table 11. According to the 1977 survey no less than 87 percent of respondents consider education departments responsible for providing necessary resources for learning, while 10 percent are uncertain about this (Q.V.D, p.9, q.6). Thus it appears that improvement in this aspect of geography teaching is felt to be the responsibility of departments of education. According to two-thirds of the respondents, the requirements most needed are: first, a great many more teaching aids (most important to 68 percent of teachers) and

second, a properly equipped geography room (important to 63 percent of teachers) (Q.VII, p.15, q.2). The third ranked requirement ties these two together, for 45 percent of teachers consider that they need to be less involved in other school activities such as sport and general administration. This would enable them to organize, arrange, classify and catalogue their geography resources and prepare to use the "new" geography approach effectively in their teaching.

#### EXAMINATIONS (Q.IV, p.5, q.1-9)

No other aspect of the survey exhibits such a consistently high degree of concurrence from respondents as the answers on examinations. Examinations play a vital role in evaluation of the pupil, the teacher, the syllabus and the education system in general. The responses to the statements about examination systems indicate vitally important information about the extent of the "new" geography in the country and the directions which teachers consider South African school geography should take. Education departments and the J.M.B. should find the information useful.

Almost all teachers responded to the statements about examinations — 263 of the 270 respondents being the lowest number of responses to a statement. Their answers strongly support the implementation of the "new" geography philosophy and approaches through the examination system. (Fully 81 percent of respondents agree that the form of the final examination and the type of question set should be used as the best way of implementing the aims of a new geography syllabus (q.6).) The overwhelming support for the statements (more than 80 percent of respondents are in agreement with them) is encouraging. The dissemination of "new" geography approaches would probably be most effectively promoted by the implementation in the local examination system of the ideas contained in some of these statements. There is ample evidence for this in the findings.

A remarkably high 94 percent of teachers agree that the examiner should guide teachers towards using aspects of "new" geography such as the inquiry-method of teaching, hypothesis-testing techniques and encouraging critical evaluation in pupils by setting some of the type of questions requiring these abilities in the final examination (q.8). The same number (94 percent) of teachers also agree that the

aim of the final examination should NOT be to find out how much of the syllabus content the pupil knows, but how he can use the geographic facts, techniques and processes of critical thought he has learnt, to express himself effectively in concise, lucid geographic terms (q.5).

Ninety-four percent of teachers agree that, when a new syllabus is introduced, a sample examination paper should be circulated with it to guide teachers in their interpretation of the syllabus (q.7). The need for this is emphasized by the opinion of 85 percent of teachers who agree that the type and standard of geography teaching is determined largely by the type of question set and the standard of marking in the final examination (q.3). Furthermore, 88 percent of teachers agree that the examiner can indirectly influence the pupil's enjoyment of geography and the benefit he obtains from its study (q.2). No fewer than 87 percent of teachers agree that less stress should be put on the final examination by allotting a percentage of the final mark to projects and the year's work (q.9). This would be in accordance with modern trends.

It is interesting to note that only 7 percent of teachers indicate that the examination has little or no effect on their geography teaching methods, 34 percent that the examination has some effect, and another 34 percent that the examination affects their geography teaching methods strongly. For the remaining 25 percent of teachers the final examination largely determines their geography teaching methods (q.1).

It seems therefore to be of the utmost importance that the J.M.B. and education departments should move away (as for instance was envisaged from 1979 in the Cape Department's exempted and partially exempted schools) from the present total dependence on the final examination towards giving much greater weight to project and other work completed during the year. Practical work cannot be effectively evaluated under public examination conditions, but should be an integral and vital part in the syllabus, carrying its due weight in the final mark for assessing a candidate's progress in the subject. This could be adequately achieved by practical testing conducted at convenient times and locations in the normal school programme.

It is vital, if the J.M.B. and education departments desire South African geography teaching to develop and modernize, that they appoint examiners and moderators familiar with the philosophy and methods of the "new" geography, for experience has shown everywhere how important a part the examination can play in determining the type of teaching practised in the classroom.

## CHAPTER VI

## CONCLUSIONS AND RECOMMENDATIONS

The findings of the 1977 survey reported in this thesis are neither definitive nor official. As indicated, the survey was not conducted under the auspices of any official bodies. It nevertheless yielded findings significant for geography teaching in South African high schools.

The survey includes responses from 36 percent of senior geography teachers of all race groups in 750 South African high schools offering geography to matriculation level. As accurately as could be ascertained this is the universe of South African schools offering geography for matriculation. Despite numerous sources of bias inherent in a return of that size and nature, it is suggested that the findings are, within acceptable limits, representative of the universe of South African high school geography teachers. Conclusions that may be drawn from the study therefore provide an indication of current teacher-body opinion. It is hoped that the conclusions will prove useful and relevant to educational policy-makers and planners in South Africa.

One intention of the study, embodied in the first theme of Chapter V, was to trace the changes in geography teaching which took place in the decade 1966 - 1977. There is evidence to suggest that appreciable development and change has taken place in geography teaching. The fact that many of the recommendations made in 1966 by the H.S.R.C. need to be repeated indicates that the pace of change has been relatively slow. Slow improvement is not necessarily a weakness. It may be recalled that all so-called progress overseas in the teaching of several disciplines has not been found to be improvement — some indeed, has come to be regarded as retrogressive. (In the U.S.A. the "new math", for example, is said to have left a legacy of people unable even to balance their chequebooks!) A policy of festina lente in education is advisable, but educational authorities should take care not to stultify development and thus quash initiative.

An important aim of this study was to evaluate South African geographic education in relation to that found in other countries. The position elsewhere is described in Chapter III, while the survey

report in Chapter V portrays the local situation.

TABLE 32. 1977 POSITION AND FUTURE SCOPE FOR "NEW" GEOGRAPHY  
IN SOUTH AFRICAN HIGH SCHOOLS

(Percentages of all\* respondents using and favouring the use of aspects of "new" geography)

	% Using		% Favouring Use	
Fieldwork questionnaires (Q.V.A, p.6)	56	(q.2)	87	(q.9)
Models: Iconic (Q.V.B, p.7)	70	(q.2)	90	(q.6)
Symbolic (Q.V.B, p.7)	50	(q.5)	81	(q.6)
Simulations & Games (Q.V.C, p.8)	17	(q.1)	36	(q.5)
Statistical & Quantitative Methods:				
Modern (Q.V.E, p.10)	19 (45)	(q.1)	46	(q.7)
Traditional Type	67 (86)	(q.1)	81	(q.7)
Hypothesis Testing (Q.V.F, p.11)	57	(q.4)	57	(q.6)
Inquiry Method:				
In Oral Form	67 (86)	(q.3)	79 (95)	(q.5)
In Written Form	53 (84)	(q.3)		

\*N.B. N = 270 Percentages are calculated using all 270 respondents as the base, even though many failed to answer the questions. Thus the percentages given are the lowest possible, for they presume that those who failed to answer did not favour that aspect of the "new" geography. Percentages in brackets include respondents "sometimes" or "seldom" using that aspect, or "possibly" prepared to accept its efficacy.

The state of South African geographical education is summarized in Table 32 which, taken in conjunction with Table 1, puts geography teaching in perspective in this country. While not directly comparable, Tables 1 (page 33) and 32 show that geography teaching in South Africa is not too unfavourably placed in relation to geography teaching in the United Kingdom, which leads the world in the implementation of new geography approaches. While on current evidence South Africa is unlikely to assume a position of leadership in the field, it can benefit by monitoring development in the United Kingdom, and so avoiding the pitfalls suffered by that country in the renewal of its geography education system.

A further aim of the study was to ascertain the degree of awareness and use of the "new" geography among South African teachers

and to measure the climate of opinion on recent trends in geography teaching overseas. Table 32 shows a high degree of local awareness of current trends. It also indicates that teachers believe in the efficacy of modern approaches and are prepared to implement them in their teaching, given sufficient time, training and the necessary materials and aids. It appears though that South African teachers have not as yet uniformly implemented all aspects of the "new" geography in their classrooms. A high proportion of teachers are fully aware of the need to modernize and improve. Such teachers provide fertile ground for the successful dissemination of the Teaching Strategies model (Figure 11, page 62) which emphasizes the need for variation of approach and method. Some examples of the application of the model are given in Chapter IV and in the appendices, but, because so little has been done in this field, the scope for the development of South African materials using modern approaches is unlimited.

It was hoped that the survey would ascertain both the problems encountered by teachers in 1977, and their opinions as to the efficacy and relevance of their teaching. The report indicates that, though most teachers felt they were reasonably effective geography teachers and were teaching syllabuses relevant to modern pupils, a swing towards greater use of the "new" geography in their teaching would be beneficial. Before meaningful renewal can take place certain problems must be alleviated. These are included in the final section of this chapter containing the recommendations.

It was not the intention of the writer to evaluate teachers' personalities or characteristics, or the part such characteristics play in the educative process. Teacher responsibility for geographic education is fully accepted, for teachers provide the fulcrum around which all else revolves. They are strategists, planners, innovators, organizers, compilers, co-ordinators, supervisors and examiners -- in fact, the educators. So important is their role that more time and effort should be spent on its evaluation. The importance of personal characteristics of teachers in relation to the use of the varied teaching strategies of the "new" geography is an open field for further research.

Although South African high school geography teaching is in a

relatively healthy position in comparison with that of most countries, there is certainly scope for improvement. This is so particularly in relation to those facets of the "new" geography which many teachers still do not use. The country is fortunate in possessing an education system (unlike some countries, e.g. Canada and U.S.A.) in which geography has always played an important part and high school geography has strong foundations that will support adaptation and controlled change. Adaptive change requires careful planning. Teacher involvement in the process should be highly beneficial, as has been the case in New Zealand. It should lead to practical evolutionary development rather than revolutionary change. Suitably qualified, trained and experienced geography teachers can assist local education departments to adapt modern approaches to current needs. (In the Cape this is being done by secondment of serving teachers for varying periods to Teachers' Centres, to work on specific tasks.)

It is vital that the needs of South African geographic education first be carefully re-evaluated and its aims and objectives clearly specified in terms of the philosophy of the "new" geography. As shown in Chapter V, J.M.B. control of syllabus compilation and content means that the spirit of a differentiated education system cannot be manifested in the standard grade senior geography syllabus. The S.G. syllabus is so tied to the purely academic requirements of university entrance, that virtually the sole provision for differentiation lies in the form of the examination questions. This is self-defeating and negates the idea of differentiation. The solution perhaps, is for South Africa to change to a two-tiered system modelled on British O- and A-levels, which would cater better for non-academic South African school leavers.

A most necessary and strongly desired change in the South African geographic education system is the adaptation of the examination system to accommodate "new" geography approaches. In 1966 the H.S.R.C. Report recommended:

"that examining methods should be revised constantly by the education authorities concerned and that research in this connection should be undertaken on a national basis . . ."

and

"that the examination questions should be of such a nature

EX

= | that certain information is given to pupils and they are expected to make deductions rather than to merely reproduce facts." (Condensed English Report, p.33)


Some movement towards the realization of these aims has occurred over the decade, as a comparison of recent matriculation examination papers with those of the last decade will show. The recommendations remain largely unfulfilled under the various examining bodies. If any research into the question of examinations has taken place on a national basis, there is little evidence of its effects on the structure and nature of present examinations.

From their responses to the questionnaire (Section IV on examinations) the great majority of teachers (over 80 percent) envisage a somewhat different examination system from the traditional one which has remained in vogue in South Africa for more than a generation. They foresee a system in which:

- (1) a sample examination paper is circulated with a new syllabus;
- (2) the examination is a way of implementing the aims of the syllabus and setting the standard of geography teaching;
- (3) the examination evaluates the candidate's grasp of techniques, processes of critical thought and ability to express himself in concise geographic terms;
- (4) questions require the use of modern techniques such as hypothesis testing and evidence of the use of fieldwork; and
- (5) the examination is not the only means of evaluation; projects and other work should count towards the final mark.

Though recent matriculation geography papers do show some evidence of a swing towards these ideals, the J.M.B. and education departments will have many changes to make before such an examination system becomes reality in South Africa.

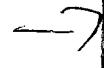
Among other aspects of geography teaching examined in the survey, the identification of problems that South African teachers encountered in teaching geography in 1977 was of particular importance. From the findings the following four main problem areas may be identified:

- 
- (1) involvement in administrative and extra-academic duties impinges on the time available to teachers for teaching;
  - (2) the need for updating and re-educating personnel;
  - (3) the whole question of fieldwork;
  - (4) the need for better facilities and teaching aids.

Recommendations for the resolution of these problems conclude the chapter.

While many teachers enjoy administration, sport and other essential aspects of school life, nearly half the respondents felt that if they were to improve their geography teaching, the time needed would have to be at the expense of extra-academic duties. In many countries sport coaching is conducted by people employed for that purpose. The same is true of aspects of administrative or cultural life in the school. The result is that teachers who wish to devote themselves fully to geography teaching have the time to do so. The findings suggest the need for an investigation of this problem — one that is increasingly being felt by many teachers in all subject areas.

If geography teaching is to be further modernized there is a need for renewal throughout the geographic education system. This may be effected by a combination of strategies.

- 
- (1) Geography study committees should actively encourage modern teaching approaches.
  - (2) Geography inspectors with a clear knowledge of the "new" approaches may visit schools to guide teachers.
  - (3) Examiners and moderators need to concentrate more on concepts as well as content, testing pupils' powers of comprehension, analysis, synthesis and evaluation.
  - (4) Refresher courses should be available to all geography teachers — if all cannot attend, the senior teachers must ensure the dissemination of the new ideas amongst their departmental colleagues.
  - (5) In-service work at Teachers' Centres should be encouraged by appointing dynamic leaders and making funds available inter alia for teacher secondment, field excursions, and slide reproduction.

- (6) Study leave should be granted to teachers prepared to use their accumulated leave to improve their geography teaching. This need not necessarily be used for taking a university degree or course. There is such scope for the development of simulations, models and other facets of the "new" geography in South Africa, that many teachers could be most productively employed for a term or two working along these lines.

The 1977 findings show fieldwork to be the major cause of concern to the majority of teachers. Compiling good fieldwork exercises is a laborious process for which most teachers have little time. It is consequently essential that the teachers in an area pool their fieldwork resources under the auspices of teachers' centres or teachers' associations. Together, especially when aided by a teacher with wide experience of fieldwork, teachers can develop well-constructed fieldwork exercises or assignments for general distribution to the teachers of the area who may modify them according to the needs of their own pupils. In rural areas where there are few teachers with sufficient fieldwork experience, it will be necessary for departments of education to send geography inspectors or seconded teachers to organize fieldwork there.

Only in this way is the aim of involving all pupils in fieldwork likely to be realized in the near future. Two factors, previously mentioned, support the need for this approach:

- (1) fully 25 percent of senior teachers still do no fieldwork despite the fact that the syllabus requires it;
- (2) arranging fieldwork is a major difficulty limiting the enjoyment of teaching geography for 55 percent of respondents.

The lack of training and experience in conducting fieldwork necessitates the inclusion of fieldwork training in the final year of a teacher preparation course. The need for student teachers to gain actual experience in teaching fieldwork could also be very helpful to serving teachers, for students have more time available during their training period for developing fieldwork exercises for use in schools. The teacher could then devote his time to follow-up work on completion of the exercise and its evaluation. In this way universities and colleges could become reference libraries for field studies available to all schools in the area, to the benefit of all concerned.

Where there are sufficient numbers to warrant the cost of setting up field centres, it would be advantageous for all departments of education to develop them as has been done in the Transvaal and Natal. Field centres provide the facilities where pupils work under controlled conditions and the danger of environmental despoilation is minimized.

To forestall damage to the natural environment resulting from increasing fieldwork by schools and to foster a good public image for school fieldworkers, codes of behaviour similar to those in the United Kingdom should be drawn up. Education departments in consultation with teachers and other public bodies concerned should be responsible for this task. Only with the strict implementation of the rules of these codes will the unfortunate effects on the environment experienced in so many parts of the modern world, be avoided. Furthermore, the importance of conserving their environment will be emphasised to the country's future citizens.

The implementation of the above recommendations should mean that fieldwork will merit greater weight in the final assessment of pupils. The present total dependence on the final examination will have to make way for fieldwork and project evaluations to be included.

The 1977 findings show that availability of facilities and teaching aids remains an aspect of substantial importance to geography teachers. It is a reflection of the inertia in South African geography teaching that the H.S.R.C. recommendations of more than a decade ago have to be repeated in 1977.

- "1. It would appear that there is a serious shortage of well-equipped Geography laboratories or classrooms. It is consequently recommended that, in the erection of new school buildings, special provision should be made for Geography laboratories with standard equipment as in the case of Physical Science laboratories.
2. Teachers should employ teaching aids to a greater extent than is the case at present. These aids are indispensable in making the teaching of Geography meaningful, topical, pleasant and lively and are essential for winning and maintaining the pupils' love for and interest in the subject. It is recommended that, where this is not adequately the case, the various educational authorities should make ample provision for the various teaching aids required by teachers . . .

3. The necessity for the use of teaching aids should, furthermore, be brought to the immediate attention of teachers and prospective Geography teachers. The teaching of Geography is unfavourably affected by teachers who do not fully realize the value of teaching aids." (Condensed English Report, p.32)

It is regrettable that such basic and essential recommendations were not implemented during a decade of relative affluence when large sums were spent on education in most western countries, including South Africa.

The results of the 1977 survey indicate that :

- (1) more than two-thirds of South African schools still do not have properly equipped geography rooms;
- (2) more than two-thirds of South African geography teachers still consider the most important need for the improvement of their teaching to be the provision of many more teaching aids;
- (3) teacher-trainees are still leaving training colleges and universities without fully realizing the value of teaching aids.

There has been some development over the decade as the survey findings have clearly shown. Probably the most noteworthy single improvement is the fact that, where few, if any, schools possessed them in 1966, more than two-thirds of schools are now equipped with overhead projectors.

For successful implementation of the "new" geography approaches twofold action by all departments of education appears necessary.

- (1) Finance should be made available to provide all schools with a geography room. Basic teaching aids and other resources needed should be supplied. (For instance: the library allowance and particularly the annual periodical grant, should be greatly increased to keep pace with the tremendous price increases of published materials; effective geographical slide collections should be developed at teachers' centres.)
- (2) The need for the employment of all types of resources should be emphasized in teacher training, at in-service refresher courses and by inspectors of education in their visits to schools. Teachers should be further encouraged to share

their ideas and aids at teachers' centres and help others to adapt their geography teaching methods to the "new" geography approach.

In summary, if the "new" geography in South Africa is to keep pace with development overseas, education departments will have to pay much more attention to fostering the subject.

Inter alia they will need to:

- (1) provide all schools with fully equipped geography rooms, many more teaching aids and resources for learning;
- (2) appoint examiners who will set questions testing pupil ability in comprehension, analysis, synthesis and evaluation acquired through the "new" geography approach;
- (3) modify the examination system by giving greater weight in the final mark to project work and continuous assessment;
- (4) revise or redraft syllabuses to make them less prescriptive and more in keeping with the philosophy of the "new" geography;
- (5) encourage the use of teaching methods and strategies associated with the "new" geography by re-training teachers at in-service courses or by encouraging them to update themselves during periods of study-leave.

Were recommendations of this kind to be implemented, South African geography teaching would have the capacity to equal the teaching of the discipline anywhere else in the world.

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## APPENDICES

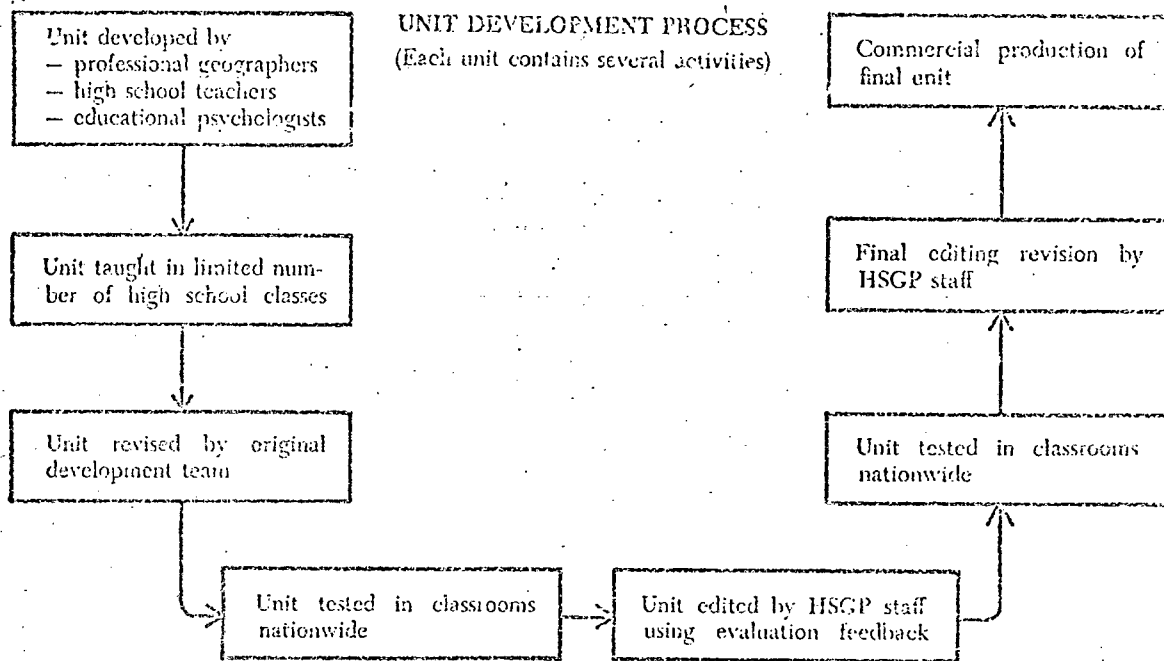
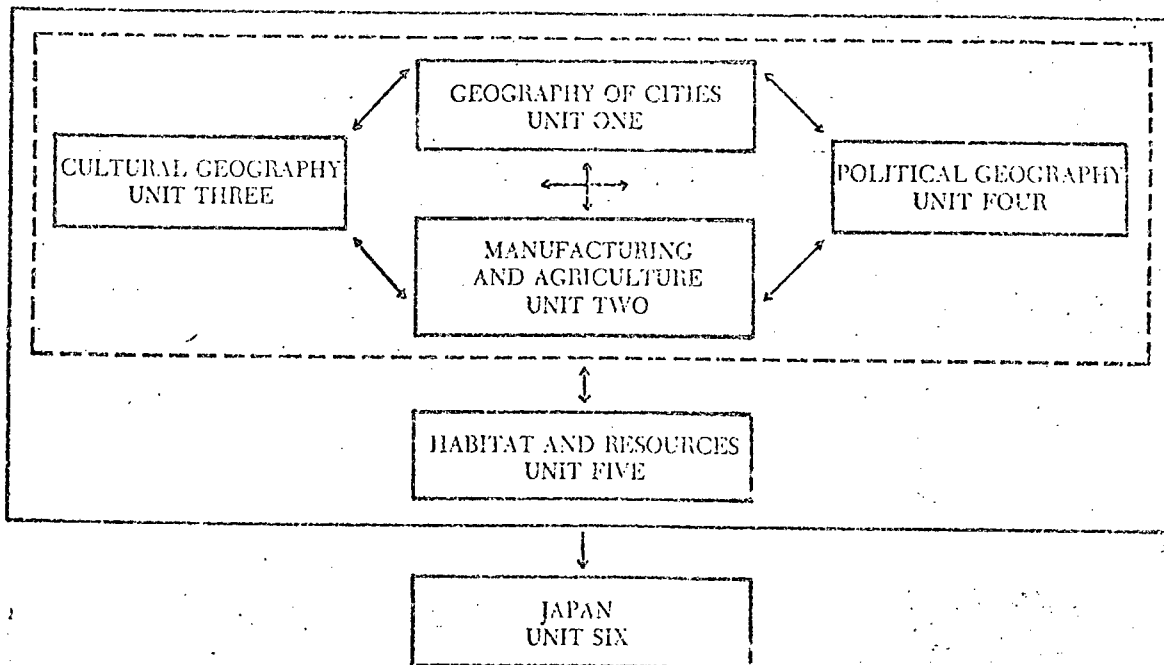
APPENDIX A

H.S.G.P. OUTLINE

(Source: Gunn, A.M. (1972))

GEOGRAPHY IN AN URBAN AGE

A one year course for students aged fourteen to sixteen



Teacher poses generalized question or problem

STRUCTURE OF AN ACTIVITY

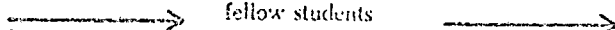
Teacher poses interpretive question or asks for a value judgment



Student given data

Student interacts with the data and with fellow students

Student forms concepts or generalizations or evaluates data



EXAMPLE OF AN ACTIVITY:

LOCATION OF THE METFAB COMPANY

One of the activities from Unit two:  
Manufacturing and Agriculture

PROBLEM

"In which of the 25 largest cities in the United States would you locate a metal fabricating company?"



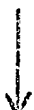
Students given data about raw materials, labor force, transportation facilities, financial structure, etc. about 25 largest cities.



Students work in groups assuming roles of various officers in the Metfab Company to analyze the data and make company location decision.

QUESTION

"What factors influence the location of a factory?"



CONCEPT GENERATED

Optimum factory location depends on varying combination of factors:

- availability of raw materials
- adequate transportation facilities
- skilled labor supply
- healthy local economy
- personal preferences of company officials.



UNIT TWO: MANUFACTURING AND AGRICULTURE

Eleven activities

Forty-two class periods of fifty minutes each

MAJOR QUESTIONS POSED

- What factors influence the location of manufacturing?
- What is the influence of manufacturing on both the standard of living and the landscape of the United States?
- What decisions must a farmer make in order to determine what he will raise?
- How are the problems of mass hunger and the world's food supply interrelated?

Highlight Activities

Geographic Patterns of Manufacturing

Location of the Metfab Company

Hunger

Game of Farming

Media And Strategy

Associating maps of various manufacturing distributions with descriptions of factors that influence their location

Role-playing simulation to determine optimum location for a hypothetical metal fabricating plant

Discussion of problem of mass hunger and its related problems

Role-playing game in which students simulate farming in Western Kansas during three time periods

## UNIT ONE: GEOGRAPHY OF CITIES

Six activities

Forty-two class periods of fifty minutes each

### MAJOR QUESTIONS POSED

- What factors influence city location and growth?
- What is the internal land-use arrangement of the city?
- What functions do cities serve?
- How are cities inter-related?

#### *Highlight Activities*

City Location and Growth

New Orleans

Portsville

Cities with Special Functions

#### *Media And Strategy*

Analysis of hypothetical site diagrams

Class analysis of topographic maps, aerial photographs, census tract data

Simulation exercise in which students build three-dimensional model of a hypothetical city

Matching exercise using photographs of specialized cities

## UNIT THREE: CULTURAL GEOGRAPHY

Five activities

Sixteen class periods of fifty minutes each

### MAJOR QUESTIONS POSED

- What is cultural relativity?
- What factors influence cultural diffusion?
- What aspects of world cultures are becoming more similar due to mass communication and rapid travel?

#### *Highlight Activities*

Different ideas about cattle

A lesson from sports

Canada: A regional question

Culture Change: A trend toward uniformity

#### *Media And Strategy*

Analysis of filmstrips showing different uses of cattle around the world.

Research and discussion on the origin and diffusion of sports.

An examination of the boundaries that separate two adjacent cultures in Canada.

Pictorial analysis of traditional and modern cities around the world.

## UNIT FOUR: POLITICAL GEOGRAPHY

Five activities

Twenty-two class periods of fifty minutes each

### MAJOR QUESTIONS POSED

- How does the legislative process affect the spatial distribution of things within a political territory?
- How do boundaries function as the limits of a political territory?
- What kinds of compromises are necessary in the settlement of an international dispute?

### Highlight Activities

Section

School Districts for Millersburg

Point Roberts

### Media And Strategy

Role-playing simulation in which students allocate a hypothetical state's budget

Analysis of a hypothetical city in an attempt to set up districts for new high schools

Role-playing exercise simulating a boundary dispute between the United States and Canada

## UNIT FIVE: HABITAT AND RESOURCES

Seven activities

Thirty-two class periods of fifty minutes each

### MAJOR QUESTIONS POSED

- How can habitats be recognized according to their degree of modification by man?
- How are similar habitats used differently by different culture groups?
- What factors are important in resolving conflicts over resource use?

### Highlight Activities

Habitat and Man

Two Rivers

Rutile and the Beach

Waste Management

### Media And Strategy

Examination of color photographs showing a variety of ways in which man has changed his habitat

Analysis of data and discussion of two similar habitats to determine the cultural variations in use of the habitats

Role-playing simulation based on conflict over resource utilization in Australia

Examination of problems of solid, liquid and airborne waste disposal in New York City

## APPENDIX B

## CROSSROADS

*(An example of a South African simulation exercise widely applicable).*

*This is a simple simulation involving a whole class of any size. It requires one period preceded by at least one homework period for preparation. It is versatile, suitable for use in studying urbanization anywhere and can be used in:*

*STD. 7 - Urbanization*

*STD. 8 - Population Geography, Brazil, Japan;*

*Std.10 - South African population, Urban problems.*

*It has the added advantage of being currently topical. It has no special requirements beyond photostat copies of published materials, mainly newspaper articles, and is suitable for use with any teenagers.*

*The exercise is a simulation of the argument/discussion between groups of squatters and government policy-makers/administrators - each trying to convince the other to accept their case.*

*Government case: The squatters must go.*

*Squatters' case: They should be allowed to stay.*

- AIMS*
- 1. To re-inforce (a) the reasons for urbanization and (b) the problems concomitant with it.*
  - 2. For pupils to realize that different groups perceive the same problem differently.*
  - 3. For pupils to realize the difficulties of decision-making where groups' attitudes and values differ.*
  - 4. To give practice in analysing and extracting valid arguments for a stance from diverse detailed information.*
  - 5. To give practice in arguing/proposing a point of view.*

## PREPARATION AND ORGANIZATION

The simulation should be conveniently scheduled into the normal teaching program, for one important function it performs is to break into the monotony of normal class procedure. Certain aspects of urbanization should have been dealt with previously. If not, they may be incorporated into a conventional lesson on urbanization as a world trend.

World urbanization statistics should be presented in table and graph form (e.g. from U.N. "Demographic Yearbook"). Various countries should be compared and then related to South African figures.

The pupils are then asked to list as many reasons for the drift of population to the cities as they can. These are discussed and board-listed.

Pupils list the effects of this drift on (a) the city and (b) its people, both the original inhabitants and the migrants. These effects may be sub-divided into 1. beneficial and 2. detrimental.

The threads will then be drawn together, emphasizing the 'revolution of rising expectations' caused by what the underprivileged see and hear via the mass media of the high living standards and facilities enjoyed by people in cities. This leads to attempts to break out of the 'vicious circle of poverty' often characteristic of poor rural subsistence economies. The avenue of escape which is seen to promise 'eldorado', a better future, is migration to the city. Consequently people flock to the urban areas which cannot adequately provide shelter, work or security. This leads to the slum development and squatter shanty-towns so common around the outskirts of most large cities in third world countries. e.g. Lima, Caracas, Rio, Mexico City, Hong Kong, Lagos, Teheran, Cape Town. Some countries attempt to deal with the problem, others neglect it.

## HOMEWORK

The pupils are given a handout containing information sheets (mostly quoted from articles), a map and a simulation preparation sheet. They are asked to read the information sheets and prepare for their part in the simulation.

Two possible simulations are suggested:

1. A parliamentary debate with the opposition demanding that squatters be allowed to remain at 'Crossroads'; the government is determined to demolish the squatter camp.
2. A simulation of the discussion/argument between groups of squatters and government officials, each trying to convince the other to accept its case:
  - (a) The government case - Squatters must go.
  - (b) Squatters' case - They should be allowed to stay.

Either simulation or both may be used.

The class is divided into groups according to the simulations to be attempted. Each individual must take a stance (preferably one towards which he is sympathetic) and prepare a logical argument to persuade the opposition. The argument should be rational.

In the follow-up pupils should be required to evaluate how they benefitted from the simulation. It should be made clear that there is no correct answer — what seems morally right is not necessarily a practical proposition (cf. Time article on Brazil). Most cases are much more intricate than they may seem at first. The teacher should ensure that any misconceptions arising in the simulation are dispelled.

## SIMULATION - SHEET

## 1. Parliamentary debate on the Opposition motion:

"Squatter shanty-towns should not be cleared until alternative accommodation is provided for the inhabitants."

You should extract as much information as you can from the information sheets to back up your stance. Using this and your general knowledge, prepare a clear, logical, watertight argument to present your stance in the debate, not neglecting ways of defeating the opposition. Organize it in such a way as to be able to make your points without undue repetition of points already made effectively by earlier speakers.

## 2. Squatter/Officialdom Discussion/Argument.

- (a) Imagine you are B.A.A.B. (Bantu Affairs Administration Board) officials detailed to clear Crossroads Squatter Camp. Prepare a plan of action to do this designed to cause as little unrest and discomfort as possible to those concerned. Also prepare yourself to handle a meeting with a deputation of the squatters likely to request an audience with you on the subject. Bear in mind the deteriorating human relations position in South Africa.
- (b) Imagine you are a squatter householder living with your family at Crossroads. Prepare a cogent statement of (1) why you are a squatter, (2) why you are in Crossroads and (3) why you should be allowed to stay. You should be prepared to be a member of and spokesman for a squatter delegation to visit B.A.A.B. requesting that Crossroads be allowed to remain.

In the meeting, (in class) in addition to presenting your simulated view, you should, as a class member, try to reach an objective evaluation of the discussion/argument in the hope of finding a workable long-term solution to the problem.

LATIN AMERICA

## Brazil's Wasted Generation

*In spite of a boom, 16 million children are hopelessly deprived*

Since 1969, Brazil has achieved one of the world's most spectacular rates of economic growth, impressive industrialization and a heady standard of living for its thriving middle class. In the great booming cities, flashy cars carry hordes of executives from comfortable apartment houses to offices in downtown skyscrapers. The white sands of Ipanema and Copacabana beaches teem with people enjoying the good life. What mars this idyllic picture is a social scandal more massive in Brazil than anywhere else on the South American continent. Amid all the delights of Brazil live more than 2 million children who have been abandoned by their destitute parents and another 14 million who live in such poverty that abandonment almost seems preferable. These 16 million people—one-third of Brazil's youth—are growing up in circumstances so deprived that they are unlikely ever to play a useful role in modern society.

The outcasts among them have been called "nobody's children," and they range from infants to teen-agers. They have been turned out into the streets of every major city in the land. In Rio de Janeiro alone, more than 100 children under three years old are abandoned each month. As the kids themselves say, they "join the struggle"—a term aptly describing their attempts to survive. In Rio, Recife and São Paulo they can be found—or more precisely stumbled upon—in alleys and on avenues and beaches. They rove in gypsy bands, sleep in construction pipes, in rat-infested cellars of abandoned buildings or on street corners in miserable heaps. Their beds are torn newspapers, their clothing mere scraps of cloth. Their days are spent in hustling, prostitution and petty crime. They prey upon each other as well as passersby. Even the police have been accused of organizing waifs into thieving bands and then collecting the better part of the loot.

The children who remain with their parents are similarly corrupted. Mothers and even grandmothers have forced their pubescent offspring into prostitution. Not long ago, an eight-month-old girl was left at the door of a child care center. She had been beaten and was infected with venereal disease. In another notorious case, a gym teacher interrupted a 14-year-old's attempt to rape a woman in her own office. Fleeing, the youth turned, drew a pistol and fired upon the man and killed him. Questioned by police, the boy boasted that he was planning to murder his mother, who had tried to drown him in a river when he was an infant.

Children who fall into the hands of the authorities are not necessarily any better off than the wandering urchins. One 13-year-old boy who spent six months in an Espírito Santo detention center told reporters: "They beat me on the back and the throat with boards and pieces of rubber with nails in it. Sometimes at night, four or five guards would come and rape us. They raped the little girls too. We screamed but it did no good." Complaints to child welfare officials went unheeded. The director of the children's home was accused of beating his wards and supplying some of them to homosexuals. In a Manaus São detention home, eight hapless girls vainly attempted collective suicide by swallowing large doses of poisonous detergents and tranquilizers. In Rio, a 15-year-old boy, arrested for a series of thefts, told police: "I hate rich people, especially the children." Abandoned at seven, he had spent the following years shuttling between orphanages and detention homes. Yet another youngster recently was brought before a Rio magistrate and explained his crimes in a curious but oddly touching fashion: "What do you expect from me? I never even had a single birthday cake!"

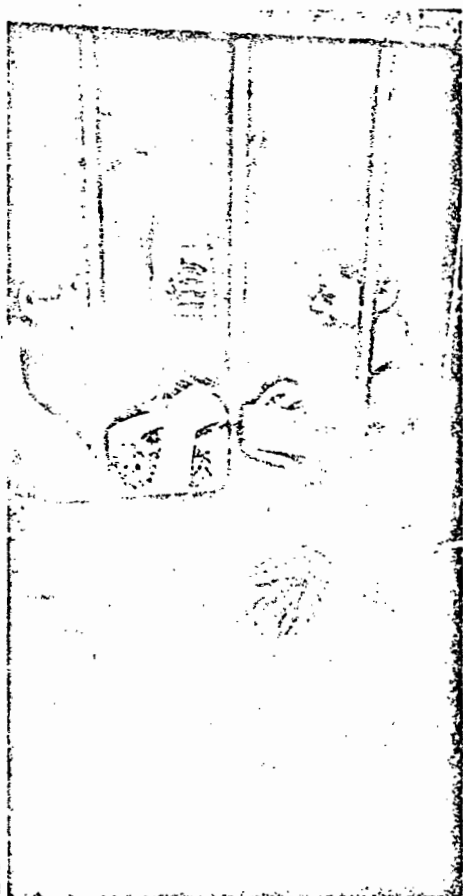
So serious is the hemorrhaging of Brazil's wasted generation that nothing but an all-out emergency program could possibly stanch it. As it is, the government spends only \$38 million a year on children's services—and even that is poorly distributed. Only 11.8% of all Brazil's cities and towns receive any aid at all for needy children. There is only one government or private-care agency for every 10,000 needy or abandoned children. Only 10% of these institutions are located in the poverty-stricken northeast, where nearly one-half of the country's deprived young are to be found. Well-intentioned attempts by agencies and individuals to find adoptive parents are hampered by the fact that few eligible grownups want to take in dark-skinned children; they prefer the relatively few who are blond and blue-eyed.

Ironically, the scandal is one consequence of Brazil's economic advance. For more than a decade, millions of peasant families have fled the countryside in search of factory jobs in the cities. For most, the effort has been futile. Lacking skills and education, they have settled for poverty-level employment at best—and in all too many instances, no job at all. By working ten hours a day, six days a week, an ambitious woman might earn about \$75 per month, scarcely enough to survive in a wooden and tin-can hovel, let alone support her children. At the same time, the peasants contribute endlessly to a stunningly high birth rate (37.1 per thousand). Thousands of parents are forced to cast their offspring out like rubbish.

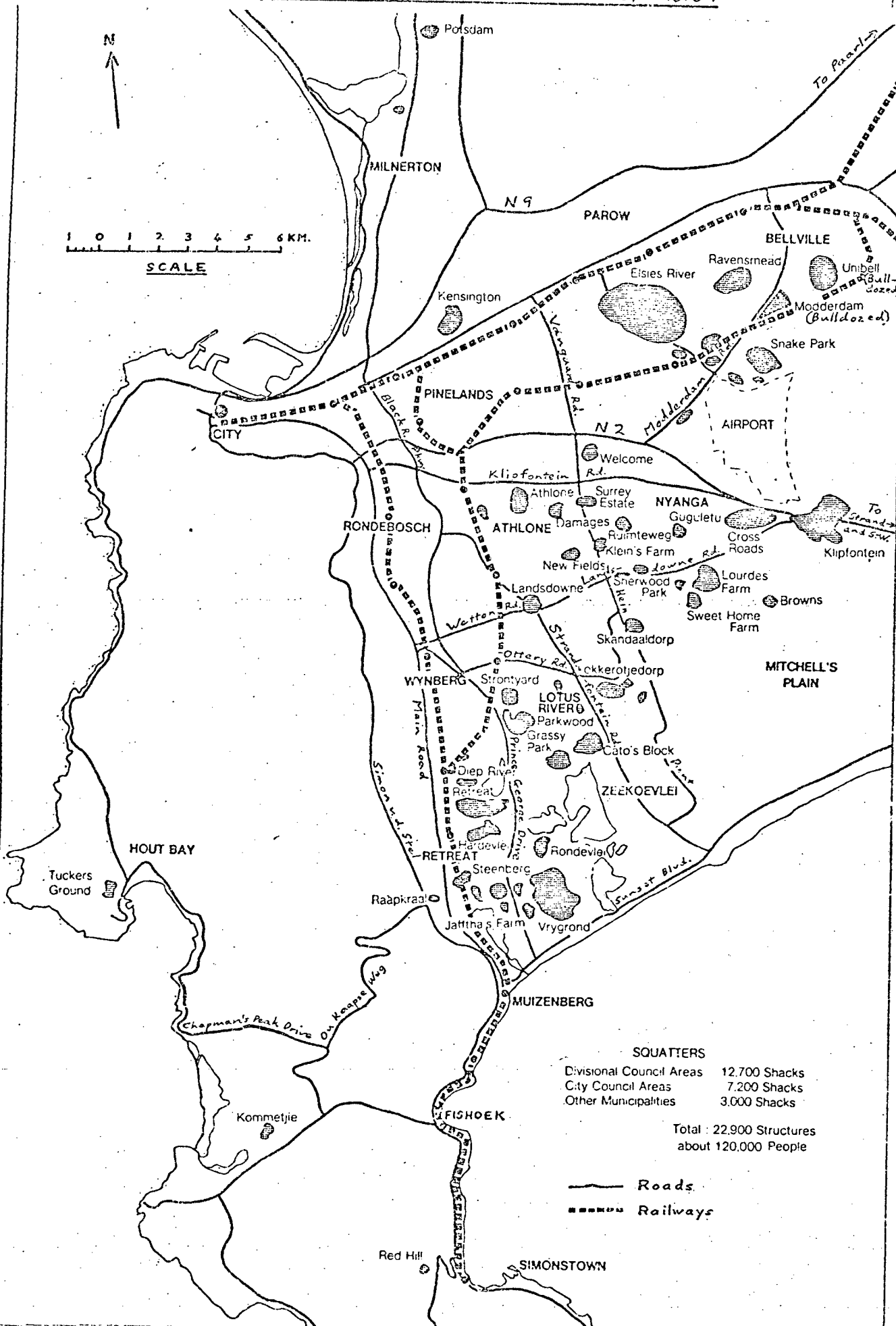
Time Magazine Article  
for  
Crossroads Simulation

What is to become of these outcasts? Already, about half the country's 110 million population is 19 years of age or younger. Some experts predict that within 20 years or so, Brazil will be burdened with millions of adults so undernourished, unskilled and uneducated that they will be impervious to any kind of civilizing process. Experts report that the signs of this prophecy are already unmistakable. With nothing to look forward to, the children indulge in delusions of a glorious future. Says a psychologist: "We have illiterate seven-year-olds who say they are going to be doctors." At a São Paulo orphanage, the IQ of the youngsters ranges between 50 and 70; in the U.S., people with such scores are classified as mentally retarded. Says Irna Marília Kaden, director of Rio's child welfare agency: "A person with psychological disorders and mental impairment, a sick person—a sick, fragile population—cannot act as an agent of development. And what's worse, he is a dead weight to be sustained by those who are healthy." For a nation whose population is expected to increase to 1 billion in less than a century, that weight may be too heavy to bear.

20



Rio de Janeiro's scandal: wasting away on a chic Copacabana beach; in anguish on a downtown street; sharing a cell with adults. After joining the struggle, the outcasts will grow up uneducated, unskilled and impervious to any civilizing process.



**SQUATTERS**

Divisional Council Areas	12,700 Shacks
City Council Areas	7,200 Shacks
Other Municipalities	3,000 Shacks

Total : 22,900 Structures  
about 120,000 People

— Roads  
 ■■■■■ Railways

# Life without security

By JOHN BATTERSBY

The Black Sash survey, discussed below, was conducted during January and February of this year and is based on interviews with the heads of 900 of the 3 000-odd households that make up Crossroads, making it one of the most comprehensive surveys ever done at the camp.

The survey was done to provide some general information about 900 Crossroads cases which were handled by the Athlone Advice Office during the period March 1975 to December 1977.

The research was by Sipho Fuyant, Janet Graaff and Nomahlube Nabe. The report on the survey was compiled by Janet Graaff and Noel Robb.

Information tabled in the report on the survey has been correlated with similar information released in a report by the Southern African Labour and Development Research Unit (SALDRU) published in December 1977.

## All his life

THE conclusions of a comprehensive Black Sash survey on the Crossroads emergency camp once again underline the constructive contribution that this self-supporting and law-abiding community makes to the larger community of greater Cape Town.

The report discloses that the failure of many residents to keep up their service levy payments can be partly explained by the sense of insecurity which has existed at the camp since the recent demolitions of the Modderdam, Werkgenot, and Unibel squatter camps in Bellville South.

The report observes that the security of the 20 000 inhabitants of Crossroads remains tenuous in spite of the fact that the men who have made the camp their home are in Cape Town to work and are living with their families for perfectly normal reasons.

In terms of Government policy both husband and wife must qualify in terms of the Urban Areas Act in order to be eligible for family housing. That means they must both have been born in the city, or lived there for at least 15 years or have been continuously employed by one employer for at least 10 years.

'Should Crossroads be demolished only about 100 families will be offered alternative accommodation. Yet there must be at least another 500 households in which the man not only qualifies to remain in Cape Town but has spent his whole working life in the city,' the report states.

At a time when the number of unemployed blacks in South Africa is conservatively estimated by the Government at 12.4 percent of the economically active work force it is a sobering if not astonishing thought that 92 percent of the Crossroads men who were legally qualified to be in the Peninsula were currently employed in the formal sector and only 2 percent were unemployed.

The report also pointed to the even more surprising figures of the SALDRU survey which showed that 81 percent of all Crossroads heads of household were employed in the formal sector and that only 6 percent were unemployed.

Of the 900 people interviewed for the Black Sash survey it was found that 21 percent qualified to remain in the city in terms of the Act.

Of those households that had a qualified adult as the head 93 percent had only a man who qualified, 4 percent had only a woman who qualified, and 3 percent had both a man and a woman who qualified.

Eighty-nine percent of the 'qualified' men were not only married but lived with their wives while 5

percent lived with their girlfriends and 6 percent lived alone.

Another sobering finding was that 54 percent of the 'qualified' men came to Cape Town 30 years ago or more, 44 percent between 20 and 30 years ago and only 2 percent between 10 and 20 years ago.

'At least 89 percent of the "qualified" male householders are married and living with their wives. They have chosen to live in shacks rather than in the bachelor quarters to which they are entitled in Langa, Nyanga or Guguletu,' the report states.

The vast majority of "qualified" men have lived and worked in Cape Town for well over 18 years.

These are the people the Government refer to as illegal and refuse to accommodate in their ideological framework. The vast majority of these men are making an essential contribution to the economic infrastructure of the Western Cape.

It is appalling to think that such men are still unable to live a family existence unless they squat illegally in such places as Crossroads,' the report observes.

Squatting then, must be seen against the background of, on the one hand, the Government's declared intention of making things difficult for blacks 'illegally' in the Western Cape and, on the other hand, the attempt by 'qualified' men to maintain some form of family life. Then there are those households with both husband and wife who 'qualify' but for whom there is no housing available.

In making things difficult for 'illegal' blacks the Government is inevitably acting against thousands of 'qualified' black men

who are trying to live with their families.

The failure of many Crossroads residents to keep up with their monthly dues was the reason given by the Divisional Council to begin demolitions at the camp. Warning notices to the residents to pay up or face demolition of their shacks became the subject of an urgent application to the Cape Town Supreme Court.

The application resulted in an out of court settlement between the squatters and the Divisional Council granting the camp a temporary, if precarious, reprieve.

## Up to date

'From the sample in the follow-up study it was found that 58 percent of the house-owners were up-to-date with their payment of dues as at January 31, 1978; a further 20 percent were one month overdue, leaving only 22 percent more than one month overdue,' the report states.

'We should like to suggest that should security of tenure be guaranteed, overdue dues would be forthcoming, especially from the "qualified" householders.'

The report concludes: 'Crossroads has solved not only the housing problem but also the stresses and strains of divided families. For three years now the men have lived a normal family life as a result of their own efforts, and the contribution of the Cape Divisional Council.'

It would be a tragedy indeed if so much constructive effort were to be destroyed by the demolition of Crossroads, and the subsequent dissolution of a self-supporting, law-abiding and close-knit community.'

# THE VILLAGERS

FAIR LADY APRIL 12

WITH nightfall comes silence at the Crossroads squatter camp.

Clumps of Port Jackson bush sway to and fro in the gusting south easter. Washing left hanging up overnight dances on precariously rigged lines.

There is nobody about. It is 9.30, and but for a few, the flicker of kerosene lamps behind curtained windows have disappeared.

Crossroads sleeps.

But in the day, this community — living on a site owned by the Divisional Council near the Nyanga township — has a distinctive lifestyle.

⊗ A chairman and a general committee of some 30 members run the camp and liaise with the authorities.

⊗ Responsible to the committee are "headmen" who each represent sections of the camp.

⊗ The committee have appointed "peacemen" who carry out patrols to eliminate crime.

⊗ A justice system exists whereby minor offences carry a reprimand by the general committee. More serious ones are reported to the police.

Communication through the camp — by word of mouth — is amazingly fast. The general committee, according to committee members, call the headmen together, who in their turn spread the message to their sections.

The majority of people in the camp seemed happy, largely because of the low incidence of crime. All the

By SEAN O'CONNOR and SIMON BARBER

residents interviewed by the Cape Times cited this reason for not wanting to live in a township.

Some people said that though they would like a house similar to those in the three Peninsula townships, they would want to live in it at Crossroads. Others showed affection for the shanties they had built — and which they own.

All spoke fondly of Crossroads, referring to it as their "village". They said they enjoyed the feeling of community.

Crossroads has two schools — the Noxolo ("peace") lower and higher primary school and the Sisamielo ("we have tried") lower primary school.

Two members of the general committee said there might be "a hundred" churches in the camp, many of them being independent house churches, all playing a vital role in the community life.

The day-time atmosphere in Crossroads is relaxed. Children push homemade wire toys in the narrow lanes outside their shacks, and chase each other round refuse bins, while women, some with babies strapped to their backs, bend over wash buckets in the early morning.

There are several vegetable stalls on the lanes, and yesterday morning the Nozibele Cash Store run by Mr. Derrick Mgoqi did a roaring trade.

The general committee members said the Divisional Council supplied refuse bins which they emptied once a week. They also provided toilet buckets which were taken away twice a week.

Life starts in Crossroads at 7am when the men make their way to work. Children walk to school, their books in old carrier bags.

Crossroads is, one might say, an urban kraal.

Far from just a squatter camp, Crossroads may well be the model town — of the future

TO CALL Crossroads a squatter camp is to disregard the lively village life that is led by one of Cape Town's last remaining squatter societies. A real township has grown on the dunes. Residents refer to 'the village', and its population of 20 000 gives it a population almost as big as that of Outshoorn.

'We have a strong community spirit here. People love each other,' says Muriel Mbobosi, a teacher at one of Crossroads's two primary schools. They also have committees, churches, boxing classes and a distinctive high-spirited character.

In a study comparing Crossroads and the black township Nyanga next door, the University of Cape Town's Urban Problems Research Unit has ascribed this sense of community to a feeling that they belong to the village and the village belongs to them. In a township, there is a sense of alienation and of being controlled by a bureaucracy.

In five years Crossroads has grown from a scattering of shacks among the Port Jackson bushes to the high-density village it is today.

Crossroads shops, along with all the neighbourly chatter and the incessant raucous crowing of its many chickens, give it an attractive village air. On a Wednesday morning, you bump into the local dry cleaner on his weekly rounds, a pile of clothes over one shoulder and invoice book at the ready. General dealers sell goods ranging from plastic baths to fresh bread, delivered daily by a baker. And there is kind of constant bazaar going on, too, as women sell their vet-kock and knitting from window sills and stalls in the sandy streets, while the menfolk (80 per cent of them) are away working in town.

BECAUSE it is an emergency camp, squatters are not allowed to enlarge their shanties. For this reason only and because they do not have any security of tenure, they do not improve their homes, says Rick Granelli of the UPRU.

Their shanties, seen from the outside, are grey and grim. And yet the village is not depressing. It is exciting and it is the village spirit that makes it so. There is a feeling of Africa there, remarked on by everyone who visits Crossroads. One regular visitor who has come to know the community says that she has quite succumbed to the charms of the sun setting behind a line of washing on

top of a dune, while drums start their rhythmic announcement of the evening church services.

LIFE at Crossroads is highly organised and safe. Theft and violence are rare, and the village was peaceful during last year's riots. It is administered by the Divisional Council which supplies roads, 20 water taps and a refuse and toilet-bucket removal service, as well as a mobile clinic, whose family planning service was attended by nearly 2 000 residents last year. But community life is regulated, with great enjoyment of the mechanics of civic government, by an annually elected committee, and each of the schools has its committee, too. Meetings are very formal. Every word is translated into either English or Xhosa although everyone is laughing by the end of the first telling of a joke. Speeches, like those given at the recent opening of the new Noxolo school, which was attended en masse by the community in Sunday best or tribal regalia, reveal a relish for high rhetoric. Crossroads adores a bit of a do.

It has all the attributes of a stable and settled civic community, and is an encouraging example of what can be achieved on the site and service principle.

IT HAS been calculated that South Africa will have a black urban population of 34 million by the year 2 000, and that eight more cities the size of Soweto will have to be built in 22 years. Cheap housing for everyone is ideal, but even cheap housing is immensely expensive. It is difficult to see how housing provided by authorities can keep pace.

'I believe there is great scope for the site and service scheme,' says Dr T. M. Corry, Regional Director of the Urban Foundation in the Western Cape, who points out that the Foundation has demonstrated its confidence in the stability of Crossroads by funding its schools. 'To be effective,' he says, 'site and service schemes must give residents security and negotiability of title.' He quotes a report by the National Building Research Institute which says that squatter camps will become increasingly necessary as transit and reception areas. 'Authorities must develop mechanisms which permit planned land acquisition in advance of need,' the report reads. 'Premature demolition, more often than not, merely creates worse problems . . .'

# Why Absalom is so cynical...

THE precarious situation of black residents in the Western Cape has again been spotlighted by renewed Government pronouncements on their 'special' status.

Briefly, the Government argument is that the Western Cape belongs to whites and coloured people, and that blacks have no claim to the area.

In practical terms, this policy excludes blacks from any job in the

Western Cape if a coloured person is available to do it.

It also means that black residents in the Western Cape will be denied the new leasehold rights on homes which will be granted to blacks in other parts of 'white' South Africa.

Finally, it means that blacks in the Western Cape live under the constant threat of seeing their 'temporary per-

manent' residence status being withdrawn.

At least one Nationalist MP has already suggested that blacks should gradually be phased out of the area.

All of this may seem tidy and plausible in the minds of Nationalist theoreticians — but how does it look to a black resident of Langa, Nyanga or Guguletu?

The Argus decided to find out.

**GERALD TSHUKA** is a 25-year-old father of two for whom the practical implications of Nationalist ideology have become a harsh reality.

Gerald was born in the Peninsula. So was his father. So was his grandfather.

In terms of Government policy he has no historical roots here.

He is unemployed. He lost his last job as a handyman in an engineering factory because of staff reductions caused by the economic recession.

"I cannot find work," he says despairingly. "Jobs are few, and every time I have come up with a possibility I have been told by BAAB (Bantu Affairs Administration Board)

For him, the ultimate injustice came a few months ago when he was arrested for not registering as a work seeker.

"It is crazy," he said bitterly. "First, I am prevented by law from obtaining the sort of work I would like to do, and then

I am arrested for not seeking work.

"And to crown it all, I was fined R50. Can you beat that?"

Stephen Vuyo is 25. He matriculated with university exemption. He has held five jobs in the past three years — all as a casual labourer — and has

What do they think of whites?"

Absalom replies slowly, without emotion: "I think you are all brutal, inhuman and insensitive."

His feelings, stated with such quiet conviction, do not bode well for the future of black/white race relations in the Western Cape.

But just how valid are black claims to a permanent stake in the socio-economic life of this area?

For an expert opinion we turned to Dr Simon Bekker, senior lecturer in the Department of Sociology at Stellenbosch University, who for the past year has been co-ordinating a major research project on the subject.

The project is due to be completed in 1980.

He said preliminary findings showed that the

urban black population is largely resident in the area was a stable and settled community that had formed an indispensable part of the economy since the mid-1890s.

"The regional economy has developed in such a way that there is and will remain a constant need for African labour," said Dr Bekker.

He could see no wisdom in trying to remove "second and third generation black Capetonians" from the area.

"Apart from the enormous social disruption that this would cause I cannot see how it could practically be done," he added.

Also, there was no reason to believe that the economic factors which at present caused the demand for black labour would be permanent.

"As a result of the present recession large numbers of coloureds have been pushed off to the low-wage labour market where they have taken over jobs traditionally regarded as African jobs."

He noted that in each chapter of Government dealings with blacks in the Western Cape, economic considerations have inevitably outweighed ideology.

"The latest move in excluding the Western Cape from the new leasehold scheme should thus be seen as a symbolic gesture reaffirming the belief that 'white' and coloured interests here are paramount."

"Ultimately I think you can take it that the Africans are not going to be removed, simply because they are indispensable to our economic life."

that a coloured man must get the job before me.

"I must stand at the back of the queue because I don't really belong here. But where do I belong?"

Absalom Ntupheko, 26, is articulate, cynical, and similarly unemployed. He matriculated in

been unemployed for the last three months.

"His earnings ranged between R17 and R30 a week. He is not optimistic about finding another job."

He views the latest Government pronouncements on his status with scorn and frustration.

1972. He has been out of work since 1975.

Asked how he supports himself, he smiles and says, "I sell things."

Between 1972 and 1975 he obtained a succession of jobs as a casual labourer. Then, disillusioned, he dropped out of the official labour market.

"I was born here. I am a human being. Why am I treated like this?"

"The Government cannot chase me away. I belong here."

Gerald Tshuka, Absalom Ntupheko and Stephen Vuyo are angry young men — and there are many others like them.

## 'Strict control' of black labour in West Cape

The Argus Parliamentary Staff

THE Minister of Labour, Mr S P Botha, said in the Assembly yesterday that the Western Cape was primarily the home of the white and coloured people and not that of the black man.

Replying to the debate on his vote Mr Botha said that the employment of black labour in the Cape was governed by strict controls although if an employer was not able to find coloured workers black labour could be provided by means of a permit.

The Minister said, however, that there were thousands of coloured people who were out of

NAT MPS PLEA

Each in the debate two Nationalist MPs made a plea for a white-coloured 'partnership' in the Western Cape and for reducing the number of black workers in this region to an absolute minimum.

Mr Piet Marais (NP Helderberg) said a basic message of the Government's constitutional proposals was that white and brown people belonged together in the same country.

He said nobody could deny that the whites had allowed themselves to become dependent on the labour of foreign

nations — the black peoples of South Africa.

It was Government policy that black people should have no form of permanence in the Western Cape.

## Removing the W Cape blacks is a long story

By Johann Potgieter

THE history of Government attempts to remove Africans from the Western Cape is a story of the interplay between economic and ideological factors.

In 1955 the then Secretary of Native Affairs, Dr W W M Eiselein, declared the Government's intention eventually to remove Africans from the area.

Despite this policy black labour continued to enter the Western Cape, responding on the one hand to the labour requirements of the area, and fleeing, on the other hand, the poverty of the underdeveloped rural areas.

In an attempt to restrict the labour markets of the established industrial areas and to speed up economic development by industrial decentralisation, the 1967 Physical Planning Act gave the Minister of Planning far-reaching control over the employment of blacks by industries in the 'white' areas.

Pressure from industry and farmers resulted in the appointment of the

examine the field of decentralisation.

A 1971 White Paper on the recommendations of the committee relaxed some of the restrictions of the 1967 Act in most of the industrial centres.

But the Western Cape was excluded. The White Paper said the area remained a coloured labour preference area and that the relevant sections of the Act must be stringently enforced.

The White Paper also laid down wider boundaries for the Western Cape: the area now contained 67 municipal districts — far more than in the Eiselein doctrine.

Boards

The establishment between 1971 and 1973 of the 22 Bantu Affairs Administration Boards removed from the local authorities all say over urban blacks.

The Government now gained total control over every aspect of township administration, influx control, and the allocation of black labour. The labour market in a particular Board area came under the control of the Board's labour bureau.

Three Board areas are inside the coloured West-

ern Cape: Peninsula, Southwestern, Cape, Karoo.

The 1975 report of the Theron Commission gave new impetus to the idea that the object of trying to remove blacks from the Western Cape was to protect the coloureds.

In a crucial chapter the commission argued that blacks acted as a 'wedge' between the upper and lower strata of the coloured 'group', thereby preventing the upliftment of the 'group' as a whole.

The recession of the mid-1970s is now pushing large numbers of coloured workers into the ranks of the unemployed. Because a job scarcely many coloured people are taking employment that is traditionally regarded as 'African'.

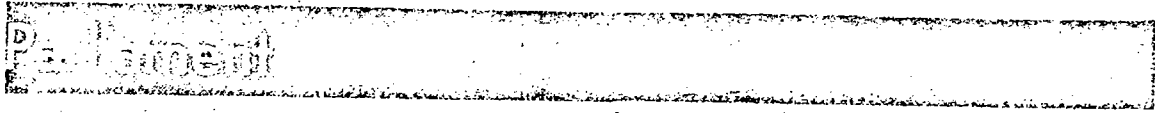
Many 'legal' blacks — who qualify to be in the area 'permanently' in terms of the 1975 Urban Areas Act — are retrofitted and have difficulty finding new jobs.

A situation arises where coloureds become available to do the hard jobs that blacks usually do. Hence the need for contract labour from the home lands of reserves, and the Nationalist view of a Western Cape without blacks is reinforced.

# all squatters soon

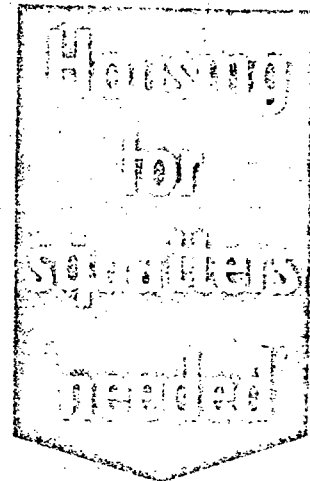
THE Government hoped to house all coloured squatters within the Cape Town municipal area in the next 18 months, Mr Louis Fouche, Secretary of Community Development, said in Cape Town last night.

FRIDAY APRIL 28 1978



## Dr Slabbert hits at decision on blacks in the Western Cape

# Leasehold bar 'weird'



The Argus Parliamentary Staff

THE Government's decision not to allow leasehold privileges for blacks in the Western Cape approached the 'absurd' and weird.

This was said by Dr F van Zyl Slabbert during the community development Vote in the Assembly yesterday.

Dr Slabbert warned that if the Government continued with such an approach it would deliberately plan for urban instability and black labour depression.

### 'Crisis'

Introducing the budget debate on the Vote, Dr Slabbert said it was clear that the greatest housing crisis lay in the field of black housing. The extent of the problem was far greater than was made out in the latest publication of the Department of Community Development.



Dr F van Zyl Slabbert

'If the picture is sombre for the country as a whole then because of the recent statements by Government spokesmen, it approaches the absurd and weird in the case of the Western Cape,' he said.

### 'Nonsense'

Dr Slabbert said that it was argued by some Government members that even blacks, who qualified under section 10, should be removed from the area and not allowed the same local authority powers for their communities.

It was argued that

blacks were strangers to the Cape and that they had only recently arrived in large numbers because of the economic boom of the sixties.

'This is obvious and demonstrable nonsense,' Dr Slabbert said.

'How can a proper housing policy be devised with such an attitude prevailing?' he asked.

One thing was clear and that was that the Government did not have sufficient funds to solve the black housing shortage. The other thing that was certain was that the situation would get worse.

The Argus Parliamentary Staff

NO right-thinking person could argue that black squatters in so-called white areas did not have a need for housing wherever they might find themselves in the future, Dr F van Zyl Slabbert (PFP, Ren-debosch) said in the Assembly yesterday.

Speaking during the budget debate on the community development Vote, Dr Slabbert said that the Government might argue that most black squatters were there illegally, but no one could argue that they did not have a need for housing.

Mr Z P le Roux (NP, Pretoria West) said that action taken against squatters had to be seen against the need to preserve law and order and sound health.

He said the Government was not unsympathetic to squatters. On the contrary, it was sympathetic towards them and had acted in a sympathetic way.

However, there came a point where the Government had to act to preserve law and order and sound health conditions and action against squatters should be seen in this light, he said.

# 400 000 houses for blacks needed—judge

The Argus Correspondent  
**JOHANNESBURG.** — South Africa has a shortfall of 400 000 houses for blacks — 200 000 in the homelands and the rest in 'white areas,' Mr Justice J H Steyn, executive director of the Urban Foundation said here today.

Speaking at the official opening of Round Table's national meeting he also called for Round Table membership to be opened to people of all races.

The leasehold proposal announced by the Minister of Piurzi Relations, Dr C P Mulder, last week should offer blacks unassailable title which could not be arbitrarily terminated, he said.

The right of occupation should be registered and the lease should be transferable by sale, donation or exchange. The leasehold should apply to urban blacks who were entitled to be in the area permanently.

If these conditions were met private capital could be mobilised both from lending institutions and

from employers to provide urban blacks with houses of their choice.

There was a shortfall of 400 000 houses for blacks — 200 000 in the homelands and the rest in white areas. In the Pretoria-Rand-Vereeniging area the deficit was 73 600 units.

A conservative estimate was that houses would be needed for 175 000 Soweto people or 32 500 families.

South Africa occupied a complex position somewhere between the advanced and underdeveloped nations and the country was simultaneously con-

fronted by problems related to each of the problems.

Some of the problems with which South Africa had to deal were:

⊙ In spite of the remarkable achievement of authority at all levels, particularly in the field of sub-economic housing, many families were without homes.

⊙ Citizens motivated to improve themselves and to make a contribution towards a prosperous, stable South Africa were still too often obliged to live in unacceptable, often overcrowded conditions.

⊙ Basic services such as roads, lighting and transport were often inadequate or absent.

## Areas of concern

The Urban Foundation had identified several areas of concern: Housing; the improvement of the physical environment; education and vocational training; employment opportunities and projects to improve the situation, including an investment of R400 000 for electricity at schools.

Mr Steyn called for Round Table membership to be opened to people of all races who could make a real contribution to the ideals of the organisation.

'The very diversity of background and experience which people of all races would bring to the organisation would surely enrich you all.'

# Squatter housing: Solution in sight, says govt report

Political Correspondent

APRIL 23

**HOUSE OF ASSEMBLY.** — The squatter problem in the Cape Town municipal area will be "completely solved" by 1980, the Secretary for Community Development, Mr L Fouche, said in his annual report tabled in Parliament.

He said up to 60 percent of the nearly 15 000 dwelling units under construction at Mitchell's Plain would be used directly or indirectly to relieve the plight of the inhabitants of 5 752 squatter shacks in the City Council area.

"It is evident, therefore, that the squatter problem in the municipal area of Cape Town will be completely solved on completion of these schemes in 1980."

In addition to current building operations, "enormous schemes" would shortly be launched elsewhere in the Cape Peninsula, with the result that a solution was already in sight to the squatter problem.

Mr Fouche acknowledged that few squatter families will be able to afford houses in Mitchell's Plain.

'Arrangements had therefore been made, he said, whereby preference in the

allocation of Mitchell's Plain houses would be given to tenants of existing schemes so that cheaper dwellings vacated in this way could be made available to low-paid squatter families.

He emphasized that squatter shacks which were built before 1974 would not be demolished until alternative accommodation had been made available.

But he added that illegal squatting is "such a serious social evil, its elimination required drastic measures", and warned that action will be taken against those who "make themselves guilty of this practice in future".

The prevention of squatting, if necessary by demolishing newly erected squatter shacks, was "certainly one of the most unavoidable tasks with which a public body has ever been

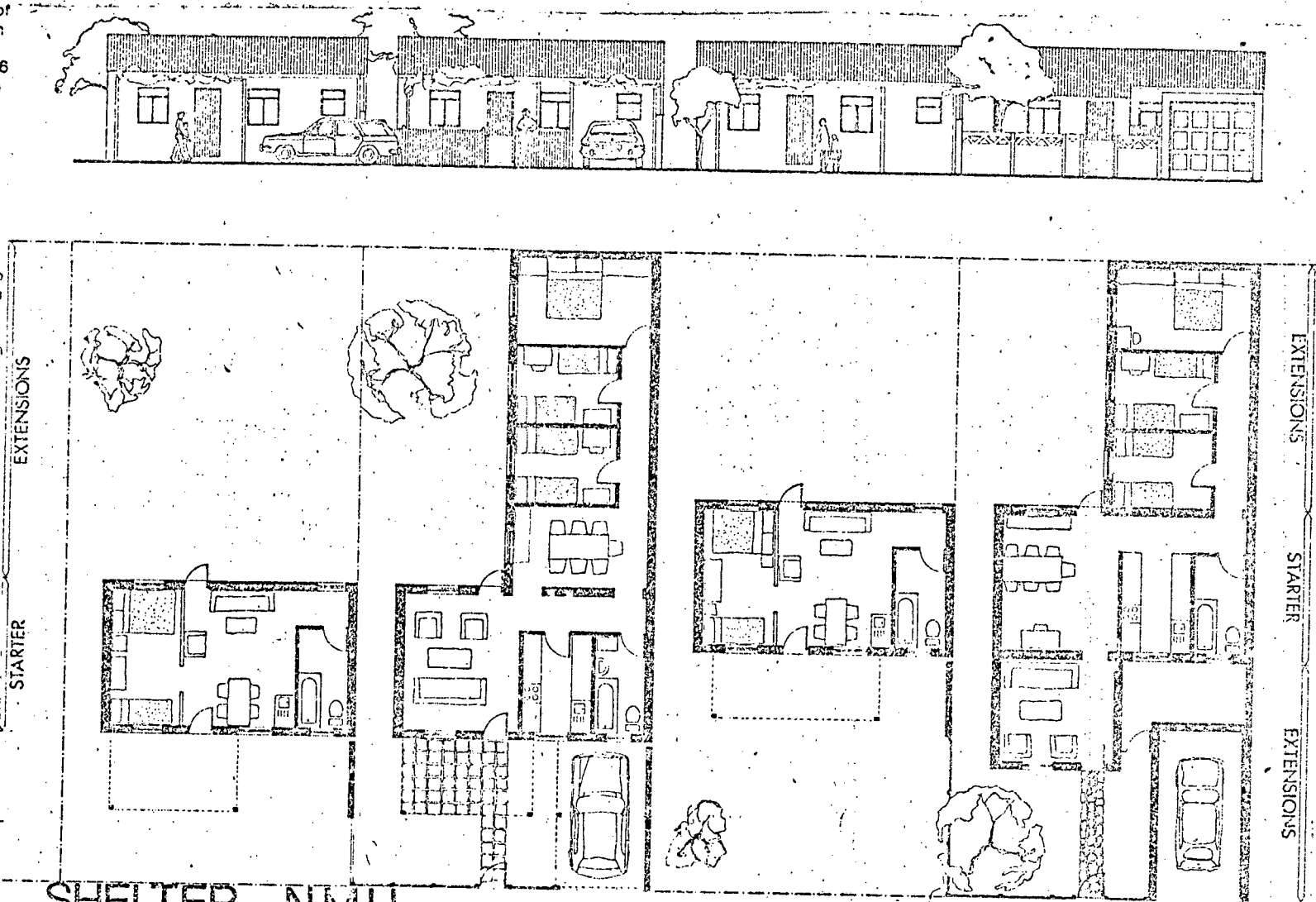
burdened".

On the coloured housing problem generally, Mr Fouche said that lack of funds at an early stage made it impossible to maintain favourable progress.

But 26 769 dwellings were under construction at present (Cape Town 23 769, Johannesburg 1 072 and Durban 1 228), and it was expected that additional funds would be made available.

"The indications are that . . . from 1978 to 1980 the backlog will be reduced at a very rapid rate and unless there is a serious setback, the position should improve immeasurably within five years," he said. "There will be spectacular progress in the future."

On the left of this diagram is a starter house set 4,6 metres from the street boundary, showing the contractor-built first stage and, adjoining it, the extensions made to it, to turn it into a five-roomed house. On the right is an alternative starter house, set 7,4 metres from the street boundary, showing next to it extensions which include three bedrooms, a lounge and a garage. The illustrations above the diagrams give some idea of what the starter houses will look like from the street — in their first and also in their fully-extended phases.



SHELTER N.M.H

# Work begins on 'starter' housing

## APPENDIX C

## SALDANHA - PIKETBERG FIELDWORK EXCURSION

- AIMS
1. To familiarize pupils with historical and recent developments and the part these play in the economy of this area of the Western Cape.
  2. To teach them the basic geology/geomorphology of the region.
  3. To present them with firsthand experience of the varied land-use of the region.
  4. To help pupils to develop an ability to "read" the landscape.
  5. To give them experience in interpreting aspects of urban morphology.
  6. To give them practice in fieldwork methods and techniques.
  7. To develop pupils' concern for the preservation of the environment.

In behavioural terms, on completion of the exercise pupils should be able to:

1. discuss the development of the area intelligently.
2. read a geological map of the area.
3. distinguish between the different Sandveld and Swartland soil types and draw soil profiles.
4. locate and explain the dominant economic activities of the area, and draw sketch maps indicating them.
5. interpret aspects of urban morphology in Western Cape towns.

6. understand and appreciate the need for environmental concern.
7. read a landscape with reasonable geographic insight.

**METHOD:** By means of an informative questionnaire, maps and diagrams, guide pupils towards developing their knowledge of a part of the Western Cape using both field teaching (where the teacher provides information) and field research (where pupils acquire information themselves) techniques.

**ROUTE:** See map.

**ITINERARY:** (Times approximate and adjustable).

- 7.30 Leave Cape Town via Black River Parkway, Milnerton, Blouberg and Melkbos to visit Koeberg Nuclear Power Station construction site at Duinefontein.
- 8.30 Take Darling road to visit Atlantis residential and industrial areas.
- 9.30 Visit Mamre village, mission station, traditional old trading store and mill.
- 10.00 Break: to explore.
- 10.30 Drive via Darling and new coastal highway to:  
EITHER: OR:
- |                            |   |
|----------------------------|---|
| A. Langebaan Naval Station | B. Langebaanweg & Iscor's iron ore terminal — one hour exploratory tour — OR one hour visit to phosphate works. |
|----------------------------|---|
- 11.45 Board naval crash boat to visit iron ore and oil terminals and island penguin colonies before landing at Saldanha.
- 13.00 Drive via Vredenburg to Laaipek for lunch and swim.
- 14.30 Cross Sandveld to Piketberg and study town morphology.
- 15.45 Tea break.
- 16.00 Climb Versfeld Pass into Piketberg to study agricultural land-use.
- 17.30 Return via National road, N.11, to Cape Town arriving  $\pm$  19.00.

## TEACHERS' FIELDWORK PREPARATION CHECKLIST

## A MONTH BEFORE

1. Arrange transport, bookings, permits etc. required.
2. Advise staff so as to cause as little inconvenience as possible in the school.
3. Place notification on notice-board.
4. Arrange typing and stapling of task-sheets.

## A WEEK BEFORE

1. Ensure typing and stapling of task-sheets completed.
2. Prepare pupils for their tasks - e.g. how to construct clinometer, collect babyfood bottles or plastic bags for samples.
3. Obtain parent's/guardian's permission slips and transport fees.
4. Ensure the equipment required will be available.
5. Arrange any catering required.

## THE DAY BEFORE

1. Confirm the transport bookings, times and arrangements.
2. Collect the equipment needed:

e.g. Stop watches	Tape Measures
Magnetic compasses	Maps
Loud-Hailer	Whistles (for teachers)
Pocket calculator	Snake-bite outfit
Geological hammer	Field-glasses
Camera	

3. Remind classes
  - a. of their own checklists
  - b. of the whistle signals
  - c. not to litter - either outside or in buses
  - d. not to trespass on private property, disrupt activities or inconvenience people anywhere they visit.

## FOLLOW-UP - FOR PUPILS

1. Sort field notes, sketches etc. into logical presentable order, rewriting where untidy and completing where necessary as soon after return as possible.
2. Work groups to co-ordinate their material in preparation for reports.
3. Leader reports to class on method used and information and results gained.
4. Teacher works through work-sheet questions discussing problems and consolidating learning.
5. Projects completed by pupils for marking.

## SALDANHA - PIKETBERG FIELDWORK EXCURSION QUESTIONNAIRE

There are numerous questions, many of which can only be answered in situ. It will save you a great deal of time and effort at home to answer neatly, as many of them as possible, while on the trip.

## CAPE TOWN TO DUINEFONTEIN

From S.A.C.S. we make use of freeways, interchanges and viaducts to traverse the city suburbs. Settlers' Way was expensive to build in comparison with the Black River Parkway.

1. Write down as many things contributing to this expense as possible.
2. Distinguish between an interchange and a viaduct.

After passing Kodak premises there is a wide variety of land-uses (ways in which the land is used) in Maitland, Salt River and Paarden Eiland.

As fast as possible:

3. Write down as many different types of land-use as you can see from the viaduct.
4. (a) What is the most important function of this part of Cape Town, i.e. the area which can be seen from the viaduct? (Residential, business, industrial, recreational, transport, etc.)  
 (b) Why is this a good area for this sort of activity?  
 (c) What disadvantages are associated with this activity?

The Koeberg Road which passes through Brooklyn, Ysterplaat, Rugby and Milnerton is an example of ribbon development with the suburbs and shopping areas strung out along the main road.

5. (a) What other Cape Town roads have this type of development?  
 (b) Why does it occur?
6. (a) How does the Milnerton shopping centre differ from those of Brooklyn and Ysterplaat through which we have just passed?

- (b) Why is it different?
- (c) What does this tell us about the local population?
- (d) List any further evidence to support your (c) answer.

7. (a) Why do we suddenly find a tower-block here?
- (b) List the advantages and
  - (c) the disadvantages of tower block developments.

After leaving Milnerton and crossing the bridge over Rietvlei you should notice recent changes in the environment.

8. (a) List them and their effects.
- (b) Were they necessary? Explain.

As we approach South Africa's first nuclear power plant set on the farm Duinefontein a few kilometres N. along the coast from Melkbosstrand, 28 kilometres from Cape Town, consider the following: Electrical energy consumption in South Africa doubled during the last decade and will more than do so in the next. (e.g. The 1973 peak power demand of 7350 MW (megawatts) was 11% more than the 1972 peak.)

9. List the numerous causes of this rapid rise.

Giant pithead coal-fired (thermal) power stations (Kriel, Arnot, Hendrina) in the E. Transvaal generate up to 3000 MW, burning as much as 24000 metric tons of coal (24 trainloads) per day. The E.SCOM power supply grid connects Cape Town with the Transvaal by two 400KV lines. Then why build a nuclear station here?

- (a) Western Cape power consumption is increasing rapidly (1971 - 4000 kWh, 1973 - 4600 kWh) - and cannot be supplied here.
- (b) Using South Africa's rich uranium resources in small quantities will save the 5m. tons of coal p.a. Koeberg's 2000 MW electricity output would use. Coal thus saved will increasingly be used in the plastics and chemical industry and for exports as world coal demands increase.
- (c) Local industry will be encouraged by supplying R250m. worth of the R500m. construction costs of Koeberg.
- (d) A coastal site is necessary for the vast amounts of cooling water required - 100 metric tons of water/second will be used, its temperature being raised from 13°C. to 23°C.

10. What effects will this have on the ecology of the area?
- (e) Koeberg is close to existing power lines and transportation network, facilitating construction (C.T. harbour, Bellville railway yards). It is also close to development areas (Atlantis, Saldanha).
- (f) It is thinly enough populated for safety requirements and the construction site is satisfactory.
- (g) The 1973 oil crisis emphasized South Africa's need to be self-sufficient in energy - hence the need to develop nuclear capacity and conserve coal e.g. for SASOL.
- (h) Cape Town is furthest from our coalfields.
11. Should relatively high risk nuclear plants be constructed?
12. What visual impact will the plant make?
13. Will Cape Town be self sufficient in electricity supply with the completion of Koeberg in 1983-4? Explain.
14. Note its situation and sketch the lay-out of the power plant site.

#### EN ROUTE TO ATLANTIS

We are entering an important agricultural area of the W.Cape, through which we shall pass all day, comprised of two clearly defined parts - the Sandveld and Swartland. Note the grainlands on the higher less sandy ground as we ascend the hill. This is a reflection of the differences in the underlying parent rock. The Swartland is underlain by old rocks of the Malmesbury series comprised of slates, quartzites and shales which, on weathering (like the volcanic granitic intrusions of the Western Cape e.g. Paarl Rock) form clayey soils ranging from yellowish to red or light grey. The Sandveld is composed of infertile sandy soils resulting from recently deposited calcareous material laid down on the sea-bed during periods of higher sea-level when the Cape Peninsula was an island. They are usually light in colour though both types often have a dark humus layer on top resulting from decayed vegetation.

15. (a) With the aid of your geological map and your observations throughout the day, try to make generalized distinctions between the Swartland and Sandveld.

(b) Try to explain the origins of each name.

16. Why were bluegums planted along the Durling road?

In 1974 Atlantis was on the drawing boards only. It has been planned to house nearly  $\frac{1}{2}$  m. Coloured people by the beginning of next century. Sixty percent of Coloured breadwinners at present earn only about R200/month. The government intends building 2500 housing units p.a. from 1980 to 1990 and 3000 p.a. thereafter. Situated 45 km. from Cape Town it is a new growth point (like Saldanha and Richard's Bay) in accordance with government decentralization and separate development policies.

17. (a) What is decentralization?

(b) Why is decentralization considered necessary?

18. (a) What problems are likely to be experienced in development here? Explain.

(b) How may these be overcome?

The government's Atlantis development plan envisages a balanced independent functional community comprised of 6 separate towns of varying populations constructed as follows (See Map 3):

Town 1 (Wesfleur)	60000	People	1975-80
" 2	95000	"	1981-87
" 3	115000	"	1988-95
" 4	48000	"	1996-98
" 5	30000	"	1999-2003
" 6	<u>102000</u>	"	2004-2010
Total:	<u>500000</u>		

19. List the advantages of having separate towns of these sizes.

20. List the factors the town planners probably considered when drawing up their plans.

Development plans also embody aesthetic considerations, and

land-use suited to the area (e.g. disturbing the sensitive ecology of the sand dune area is being guarded against; urban sprawl towards Pella and Mamre will not be allowed). Each town is being carefully planned with neighbourhood centres and pedestrian walkways along which parks, schools, hospitals and churches will be situated, connecting them with the pedestrian mall town centres. Around each town will be a ring road providing the main bus route and nobody will be more than  $\frac{1}{2}$  km. from a bus route via which access to other places by bus or train will be possible.

21. List any evidence of the above already present in Wesfleur.

#### MAMRE

Obtain the information sheet available at Mamre mill.

22. (a) Why was a settlement first established here?  
 (b) When? (c) By whom? (d) What was it called?  
 (e) How did the inhabitants make a living? Explain.  
 (f) When did it become a mission station?  
 (g) When did its name change?  
 (h) When was the present mill built?  
 (i) For what purpose?  
 (j) On what did the economic life of the area depend in the 19th century?  
 (k) Has this changed recently for the people of Mamre?

23. Draw a rough but neatly labelled and presented sketch street-plan of the settlement; OR, present a concise report on the benefits you have derived from your visit to Mamre.

#### EN ROUTE TO LANGEBAAN

From Mamre we ascend the Bobbejaansberg.

24. What differences in agriculture do you notice on crossing the Bobbejaansberg? Consult your geological map and then explain these

differences fully and why they occur. Refer to parent rock material and resulting soil type, crops grown, evidence of farming methods and techniques used, soil erosion and its control, etc.

The Darling area is famous for its veld flowers. The W. Cape has a greater variety of plant species than found anywhere else in the world. Many of these flower together producing beautiful displays in the spring.

25. What climatic conditions allow this phenomenon?

26. (a) Explain how plants adapt to these climatic conditions.

(b) Try to find samples providing evidence of these adaptations at stopping places. Take special care not to disturb or destroy the plants. Try to identify and list those you find.

Look for evidence of changing sea-levels in the area N. of Darling. Can you discern any marine erosion (wave-cut) platforms or remnants of marine cliffs?

Saldanha Bay, first discovered by its namesake in 1503, is the largest sheltered deep-water harbour in the country (see the comparative map). Yet its development had to wait until recently because of lack of water. It lies 100 km. N. of Cape Town ( $33^{\circ}$ S. vs.  $34^{\circ}$ S. latitude respectively.) This shows the rapid drop in rainfall northwards. The low winter rainfall seldom reaches 300 mm. so that the small number of inhabitants has always been short of water.

27. How may they have made a living?

During World War II Saldanha Bay provided a safe assemblage for convoys. The S.A. Navy obtained the necessary water by pumping from the lower Berg River. Only recently has the Department of Water Affairs pipeline from the Berg River basin made commercial and industrial development of a port at Saldanha possible, ensuring the continued growth of the fish-canning industry there.

Because of its deep water and situation close to a Coloured

development area, Saldanha Bay was chosen as the chief export port for S.A.'s vast supplies of high grade (68%) Iron ore at Sishen in the N. Cape. This necessitated the construction of an 861km continuous solidly welded railway line resulting in a low wear factor on the heavy trucks required for 80 ton truck-loads of ore. The line and 3.2km. wharf necessary to reach deepwater from the rail terminus on the N.E. shore were completed by private enterprise in 1976. A further 3m. dredging will allow 300 000 tonners to load, but at present a 350 m. long 23.5m. deep channel allows 150,000 ton bulk carriers to dock at the loading bay which is protected from the Atlantic swell by a breakwater joining Marcus Island to Hoedjies Pt. on the N. shore (see Map of S.B.). At the end of the wharf is an oil tanker terminal with facilities for pumping oil to a vast underground storage tank farm nearby. Because large vessels need 6knot speeds to steer and long distances to stop, they are brought in by tugs, turned around and docked facing the open sea ready to leave under their own power.

At present, six (three up and three down) 2.2km. long ore trains with three electric units each complete the eighteen hour journey between Sishen and Saldanha Bay each day, so that 15 - 18mt. of iron ore can be exported annually. By adding short extra loops at intervals to allow passing along the line, this amount could be more than doubled, increasing South Africa's foreign earnings from iron-ore exports appreciably. The whole system is highly automated and electrically operated with the aid of a computer and micro-wave radio connecting all even numbered loops (see diagram) and using 300 different channels so that each train may have separate contact. Because there is automatic detection of dragging equipment, axle overheating, etc., only 100 maintenance staff are required. Unloading is done by an automatic tippler handling 8000 tons of ore/hour two trucks at a time without uncoupling. Many kilometres of conveyor belt then distribute the ore either to stockpiles or into the carriers which must be carefully loaded by giant loaders (see sketch) so that the weight is evenly distributed. You should remain alert as we pass through the Saldanha Bay area to collect evidence and jot down notes for use in your essay when you return home. See what you can find out about the ecology of the Langebaan Lagoon.

Essay Write an essay on the changes and effects likely to result from the Sishen to Saldanha Bay iron ore export scheme, concentrating

on such aspects as: the economic effects, population changes, and environmental impact. Include photographs where possible.

28. Is ecology important?

29. Is it necessary to be conservation minded?

#### SALDANHA BAY TO LAAIPIEK

30. (a) Draw a field sketch of the distinctive geomorphological feature near Vredenburg.

(b) What is it?

(c) Explain its origin briefly.

31. Briefly describe the lower Berg River valley as we approach Velddrif.

32. What is the dominant occupation in Velddrif and Laaipek?

33. List as many reasons as you can for these two villages growing up here.

34. List any evidence you come across of ancillary activity to the main industry present in these villages.

35. Why has it been necessary to build breakwaters at the Berg River mouth?

#### VELDDRIF TO PIKETBERG.

As we cross the Sandveld towards Piketberg take note of the poor sandy soils and the land-use.

36. (a) Name the most common trees found here. They are not indigenous.

(b) Where are they from?

(c) Why are they here?

(d) Are they a problem?

(e) If so, why?

37. (a) Take a soil sample for comparison with the Swartland and Piketberg soils.  
 (b) Draw a soil profile at a convenient place, also for comparison.  
 (c) When you have done the same thing for the other two soil types, try to isolate as many differences or similarities as you can. See if you can discern the transition from Sandveld to Swartland with the aid of your geological map as we proceed Eastwards.  
 (d) What effects do these soil types have on crops and yields?
38. (a) Do you see any evidence of widespread soil erosion that has occurred in these areas, especially in the inter-war period?  
 (b) How may soil erosion be limited?  
 (c) List any evidence of attempts to do so that you see.

Piketberg is all that is left in this area of a different rock-type from the rest we have seen to-day. You should nevertheless recognise it.

39. What rock is it?
40. Can you tell its structural form from your geological map?  
 (The arrows indicate dip or slope of strata.)
41. (a) For what purpose are the quarries on the slopes just South of the town used?  
 (b) In what rock are they?

#### PIKETBERG TOWN

The town was founded during the Hottentot wars of the late 17th century as a military guard post, hence the name, from the French 'piquet' - the spelling has only changed recently. Its site and street plan are typical of early South African towns, being situated on a spur flanked by streams on either side and backed by the high ground of the mountain. The two long main down streets allowed long plots for cultivation, fronting on the irrigation furrow of the street down which water, diverted from the streams higher up, flowed. Originally houses fronted onto the streets. Look for any remaining examples of this.

42. (a) What do you notice about the position of the church and market square?  
 (b) Why are they situated there?
43. Where have the businesses tended to cluster?
44. What functions does the town serve now?
45. (a) How important is it?  
 (b) Is it likely to grow much?
46. Draw a rough street-plan of the town.

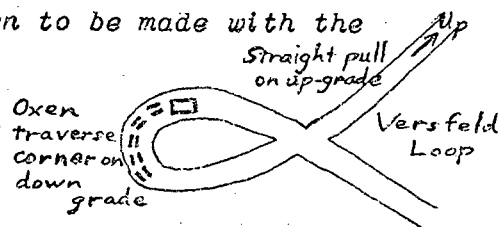
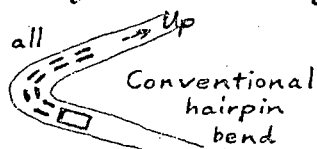
### PIKETBERG — THE MOUNTAIN

Although Swartland farmers had used the highlands as a cattle run before the mid-19th century, it was not until the latter half of the century that farmers realized its potential for fruit farming.

47. Why should Piketberg be one of South Africa's leading export deciduous fruit producing areas when little fruit is grown elsewhere in its vicinity?

Fruit farming was unprofitable until a pass up the mountain was constructed by a local farmer, Mr. Versfeld, and twenty Coloureds. He, in 1888, invented the Versfeld loop which aided the oxwagons in negotiating sharp corners by allowing the turn to be made with the wagon on the down grade (see diagram).

Oxen cannot all pull or maintain momentum



After World War I and the introduction of faster motorized transport, fruit farming expanded. But it was not until the construction of a new pass in 1945 that Piketberg became a producer especially of apricots, peaches and apples for export.

48. (a) What facilities are necessary in the infra-structure for export fruit?  
(b) Is there any evidence of these in Piketberg?

As you ascend Piketberg notice the change in natural vegetation.

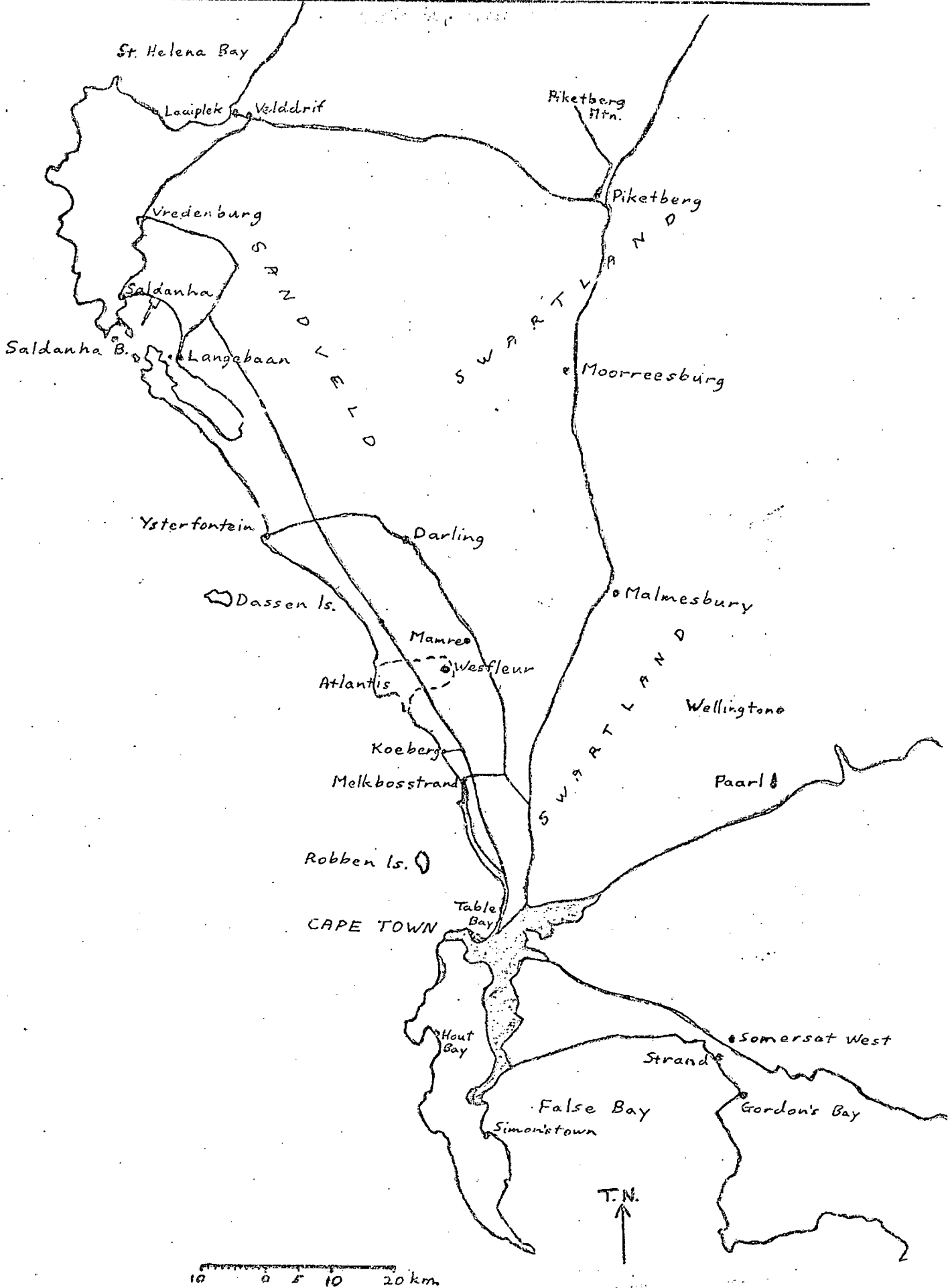
49. (a) Briefly describe and explain the contrast.  
(b) Name as many examples of plant types as you are able.
50. Consider the rows of pine trees at the top of the mountain.  
(a) What do they tell you about the climate?  
(b) What do they tell you about the fruit grown?  
(c) Why are the trees planted there?
51. (a) List the types of fruit trees you can recognise.  
(b) Estimate the percentages of each type of fruit grown.  
(c) Estimate the percentages of land under fruit trees.  
(d) What other types of land use exist?
52. (a) Are there many dams?  
(b) What can you deduce from this answer about precipitation amounts?  
(c) Is there evidence of much irrigation or of other sources of water?
53. From a suitable vantage point, draw a field sketch map indicating the agricultural land-use of the area.

#### Final Report

Your final report should be presented neatly with all questions clearly answered and maps, diagrams, field sketches, samples, etc. neatly and fully labelled so that they clearly convey the intended information.





Your final task is to give an account of how you benefitted from this field excursion. This may be done in essay form or you may feel that you can effectively communicate your views and feelings via your method of presenting your report.

# SALDANHA-PIKETBERG FIELD STUDY EXCURSION





Surface Geology Key

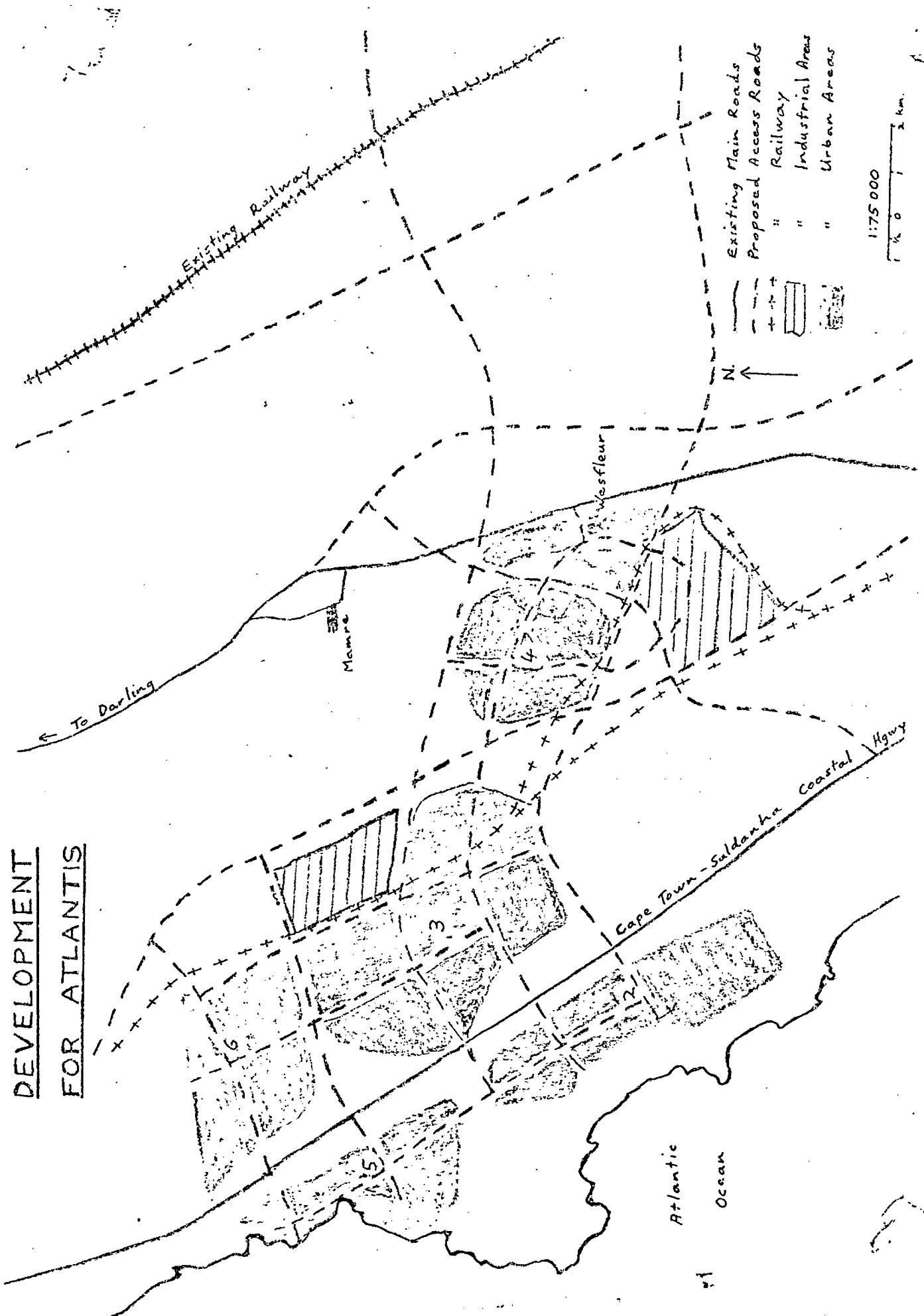
-  Recent Unconsolidated Sands
-  Table Mountain Series - sandstone, shales
-  Malmesbury Beds - slates, quartzites
-  Old Igneous Rocks - granite

A

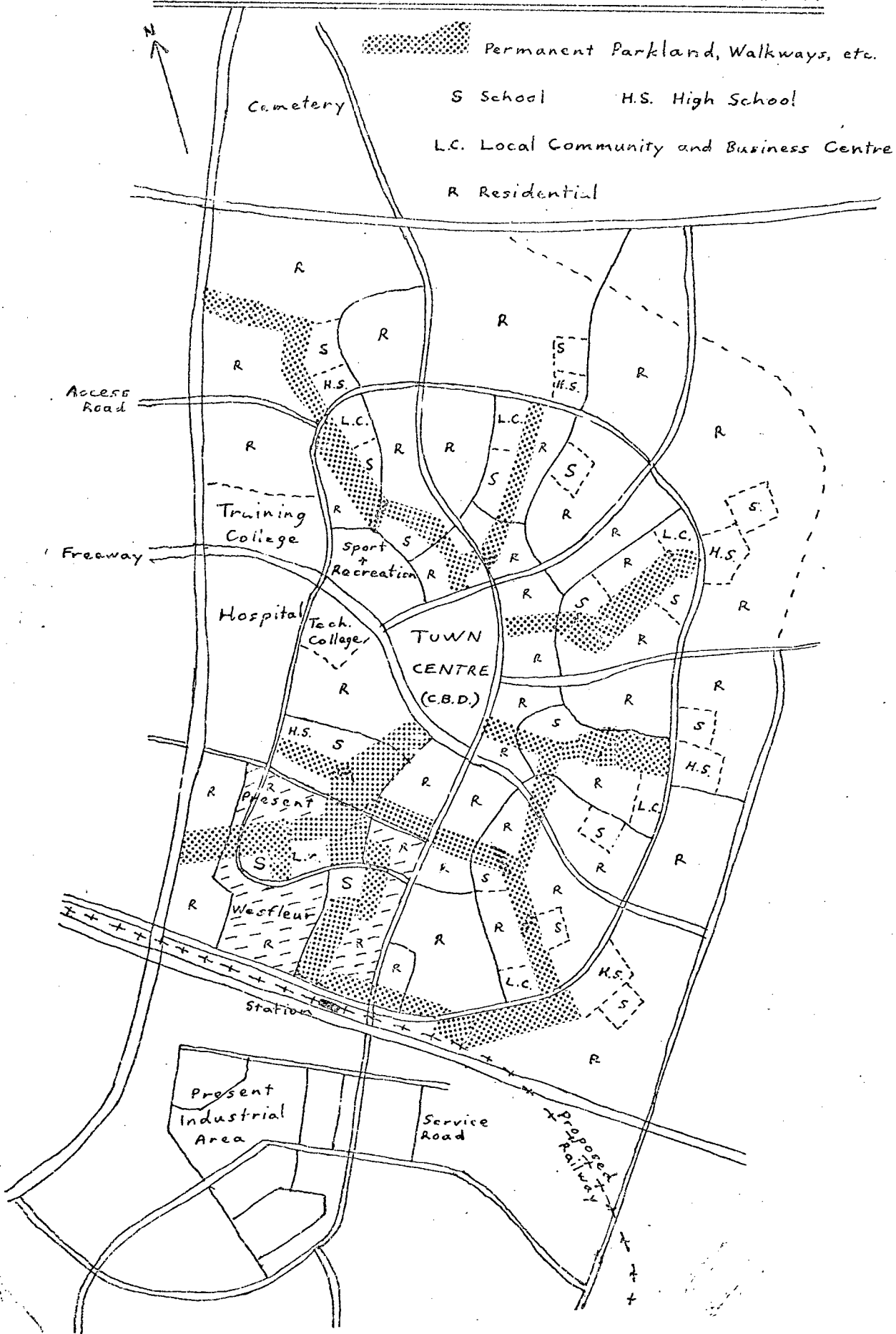
Z

2

# DEVELOPMENT FOR ATLANTIS



# TOWN 1 OF ATLANTIS SCHEME - WESFLEUR



Permanent Parkland, Walkways, etc.

S School

H.S. High School

L.C. Local Community and Business Centre

R Residential

Cemetery

Access Road

Training College

Freeway

Sport + Recreation

Hospital

Tech. College

TOWN CENTRE (C.B.D.)

Present

Wesfleur

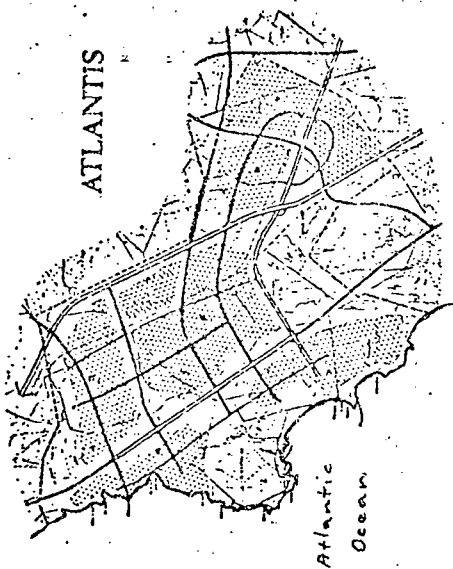
Station

Present Industrial Area

Service Road

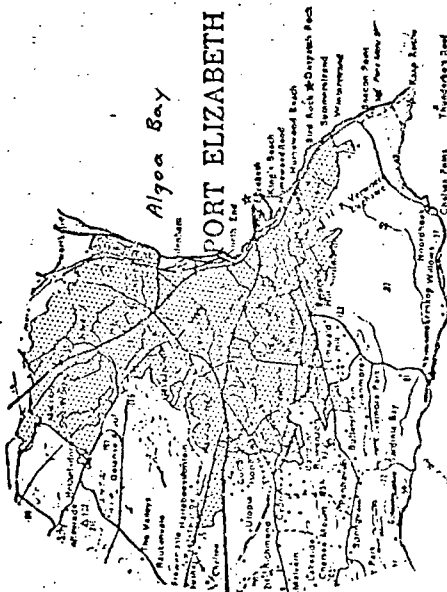
Proposed Railway

ATLANTIS



Atlantic Ocean

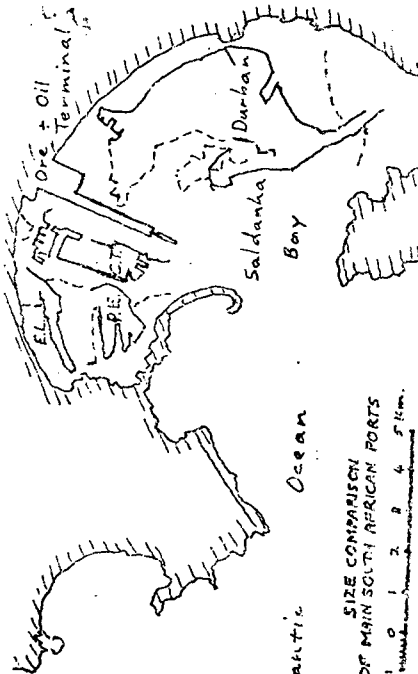
PORT ELIZABETH



Algoa Bay

VERGELYKING  
COMPARISONS

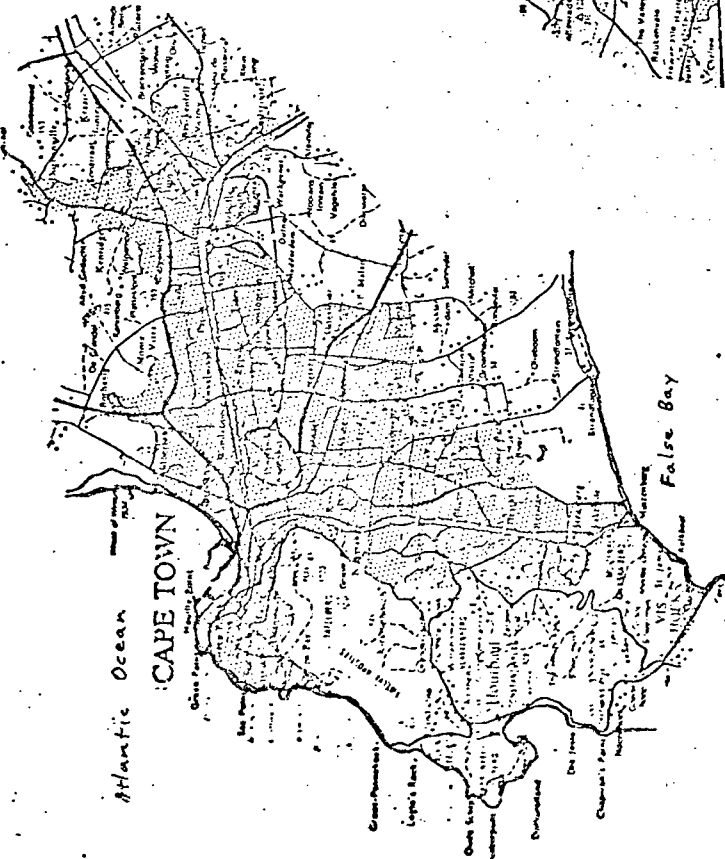
1: 250 000  
0 2 4 6 8 km



Atlantic Ocean

SIZE COMPARISON  
OF MAIN SOUTH AFRICAN PORTS  
1 0 1 2 3 4 5 km

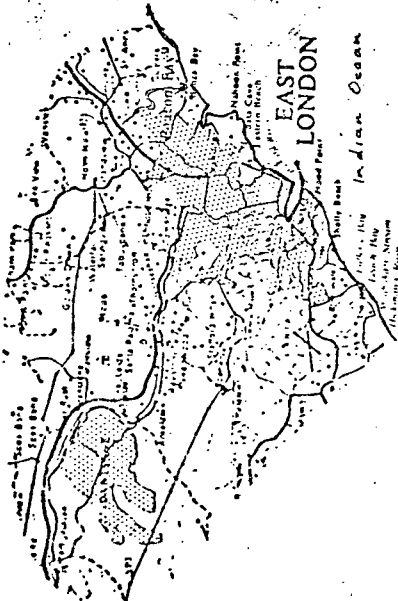
CAPE TOWN



Atlantic Ocean

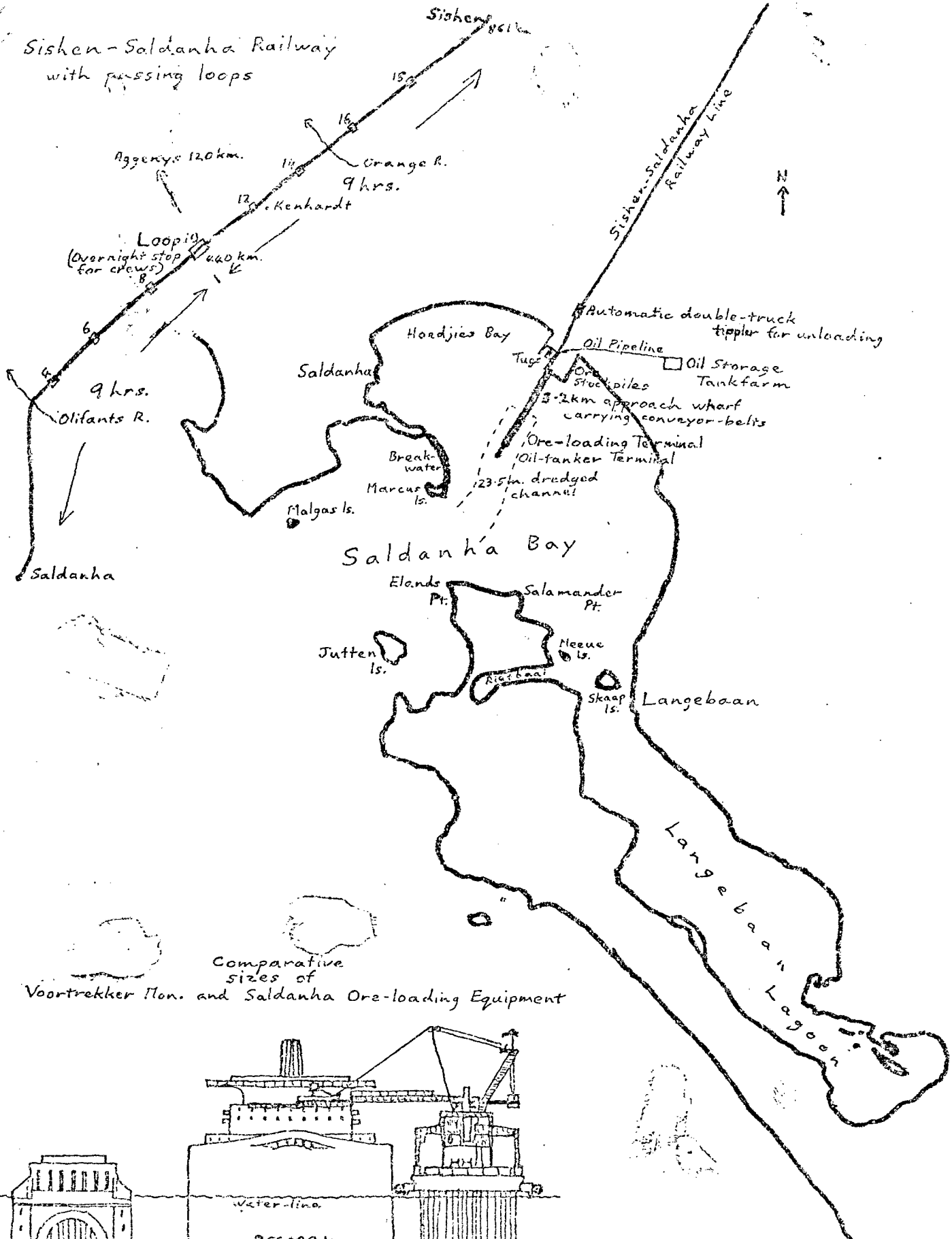
False Bay

EAST LONDON

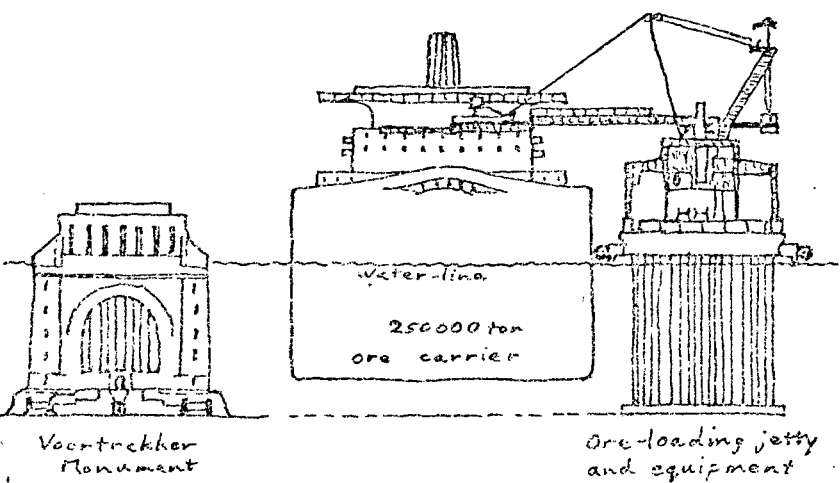


Indian Ocean

# SISHEN-SALDANHA IRON-ORE EXPORT PROJECT



Comparative sizes of Voortrekker Mon. and Saldanha Ore-loading Equipment



TO: The Senior Geography Teacher, i.e. Head of the Geography Department, of all South African High Schools.

The aim of this survey is to improve the teaching of geography by ascertaining the problems encountered by geography teachers, and making recommendations to make their task more stimulating, interesting and effective. Your co-operation will therefore be greatly appreciated.

A decade ago, in 1966, the Human Sciences Research Council conducted a survey of geography teaching in South African secondary schools just at the time that a wave of new thinking about geography teaching was beginning to swell. Since then this wave has reached maturity and broken over some geography education institutions overseas, resulting in a different and stimulating approach to geography teaching and research. This has carried geography, like the other sciences, beyond its early factual, descriptive, classificatory stage of development, to a more mature stage, where relationships between phenomena are examined more analytically and objectively than heretofore.

Although this "new" geography as it is sometimes called, is much in evidence in overseas publications and periodicals, and is working its way from the universities down into some schools, it seems its viewpoints and techniques have made only limited appearance in South African classrooms, though its effects are in evidence in our universities.

With some Transvaal schools experimenting in new educational techniques and some Cape schools becoming experimental from 1977, it seems an appropriate time to take stock of the South African geography teaching situation, in the hope that the results might prove useful in guiding future development in geography teaching in the country. In his foreword to the report on the 1966 H.S.R.C. survey, Dr P M Robbertse hoped that the report would broaden horizons and engender a new approach to geography teaching in S.A. This survey will attempt to evaluate the success of the H.S.R.C. survey report in this regard by:-

1. Collecting data comparable with the 1966 H.S.R.C. data;
2. Ascertaining the problems in teaching geography encountered in 1977 in South African high schools;
3. Ascertaining senior geography teachers' own opinions as to the efficacy and relevance of their teaching; and
4. Ascertaining the degree of awareness of, and climate of opinion regarding recent trends in geography teaching overseas.

It is hoped that the results of this survey will give an indication of changes which have occurred over the last decade in geography teachers' attitudes and the techniques they use in teaching their subject.

Although fully aware of the limited time senior geography teachers have available, the Department of Education Geography Study committee nevertheless believes that the returns likely to be gained from this survey fully merit requesting ALL senior geography teachers to devote a couple of hours, either on their own, or in consultation with fellow geography teachers, to answering the accompanying questionnaire. Naturally the information and opinions given will be anonymous, treated strictly confidentially, and used for research purposes only.

You are asked to consider all the questions and their implications carefully before answering them forthrightly, even if they may seem unclear to you - there may be a good reason for this seeming lack of clarity. The return of the completed questionnaire in the addressed envelope provided is requested AS SOON AS POSSIBLE, to the S A COLLEGE HIGH SCHOOL, NEWLANDS AVENUE, NEWLANDS, 7700, CAPE TOWN. Those interested in a summary report of the results obtained from processing the questionnaire returns may include a self-addressed envelope with the questionnaire. The findings will be forwarded to you as soon as possible.

Questions should be answered: (a) in the spaces provided, or  
(b) by CIRCLING the NUMBER(S) in the right hand column(s) next to the answer(s) considered MOST applicable, as shown below:

Is geography a subject worth teaching in secondary schools?	Yes	①
	No	2
	Not sure	3

Here "yes" is considered the most applicable answer.

OPINION QUESTIONNAIRE TO SENIOR GEOGRAPHY TEACHERS IN SOUTH AFRICAN HIGH SCHOOLS WHERE GEOGRAPHY IS TAUGHT.

Eng Afr Total % Eng Afr Total %

1. PERSONAL INFORMATION

1. Please indicate your age ....	Ages:	20-24	6	10	16	6					
		25-29	26	30	56	21					
		30-34	44	32	76	29					
		35-39	24	25	49	19					
		40-49	20	22	42	16					
		50-65	10	13	23	9					
			130	132	262	100					
2. Please indicate your sex	Male		94	105	199	77					
	Female		32	27	59	23					
			126	132	258	100					
3. Indicate your number of years geography teaching experience (circle the applicable number)		1	4	12	16	6	2	7	15	22	8
		3	8	19	27	10	4	9	10	19	7
		5	13	6	19	7	6	10	11	22	8
		7	7	4	11	4	8	9	4	13	5
		9	12	7	19	7	10	30	21	51	19
		15+	10	17	27	10	20	15	9	24	9
								134	135	269	100
4. Indicate the standard levels you have taught in secondary schools (circle ALL the applicable numbers)	standards	6	98	100	198	73	7	112	116	228	84
	(N=270)	8	127	122	249	92	9	126	113	239	89
							10	111	124	235	87
5. Indicate the standard levels you now teach	standards	6	37	63	100	37	7	67	84	151	56
	(N=270)	8	98	93	191	71	9	111	97	208	77
							10	110	103	213	79
6. Indicate the language mediums you <u>have</u> used	English							132	64		
	Afrikaans							25	130		
	Other							0	0		
7. Indicate the language medium you <u>usually</u> use	English							128	31		
	Afrikaans							11	129		
	Other							0	0		
8. Indicate your highest academic qualifications in GEOGRAPHY e.g. Masters degree, Geog. I, P. T. C. II, etc.	Masters							3	6	9	4
	Honours							20	22	42	16
	Geog. III							81	75	156	60
	Geog. II							14	16	30	12
	Geog. I							8	3	11	4
	Senior Certificate							5	6	11	4
								132	128	260	100
9. Indicate your professional qualifications in GEOGRAPHY e.g. U.E.D. geography method, P. T. C. III, etc.	U.E.D.							110	106	216	85
	Other							6	5	11	5
	None							8	18	26	10
								124	129	253	100
10. Indicate your time in school spent teaching geography.	Teach geography only							68	40	108	40
	Teach mostly geography							40	55	95	35
	Teach half geography half other subject(s)							17	23	40	15
	Teach less geography than other subject(s)							10	17	27	10
								135	135	270	100
11. Estimate the average amount of time you spend each week preparing geography material(s)	(a) hours in school time	1	37	38	75	32	2	39	27	66	28
		3	18	24	42	18	4	26	25	51	22
	(b) hours out of school							120	114	234	100
		2	19	26	45	17	3	13	16	29	11
		4	26	28	54	20	6	30	21	51	19
		8	13	11	24	9	10	16	12	28	11
		12	7	7	14	5	15	8	9	17	8
								132	130	262	100
12. Estimate the average amount of time you spend each week marking geography	(a) hours in school time	1	52	52	104	46	2	36	34	70	31
		3	15	17	32	14	4	11	8	19	9
	(b) hours out of school							114	111	225	100
		2	35	20	55	20	3	26	25	51	19
		4	32	33	65	24	6	22	17	39	15
		8	3	13	16	6	10	8	17	25	9
		12	8	6	14	5	15	1	4	5	2
								135	135	270	100
13. Are you happy and satisfied teaching geography? (Circle ONE only)	Yes, very							73	92	165	61
	Yes, quite							36	29	65	24
	Yes, but only in certain circumstances							23	18	41	15
	Not really							1		1	
	Definitely not							0			
								135	135	270	100

14. Do you find your enjoyment of teaching geography limited by one or more of the following? (circle as many as you feel apply)						
(a) I have too much marking to do	1	6	31	15	46	17
(b) I have too much preparation to do	2	7	29	14	43	16
(c) I cannot motivate the modern pupil	3	11	13	9	22	8
(d) The pupils are not interested in geography	4	9	20	14	34	13
(e) Mainly the weaker pupils take geography in my class	5	4	47	57	104	38
(f) I teach the subject by force of circumstance	6	14	1	5	6	2
(g) I do not have sufficient knowledge of geography	7	12	11	8	19	7
(h) I have difficulty in obtaining the necessary teaching aids	8	5	36	63	99	36
(i) The syllabus is too long and detailed	9	3	48	77	125	46
(j) The syllabus construction and content does not attract, motivate and maintain the interest of my pupils	10	8	21	15	36	13
(k) The accent on examination allows insufficient time for teaching geography as it should be taught	11	2	65	62	127	47
(l) I experience difficulties in arranging fieldwork	12	1	66	84	150	55
(m) I have lost my initial enthusiasm for teaching geography	13	13	6	2	8	3
(n) My academic training did not equip me for teaching modern syllabuses	14	10	22	11	33	12
(o) Other reasons (please specify)..... (N=270)						
15. Have you attended a refresher course(s) in geography teaching?	Yes	1	104	87	191	71
	No	2	30	47	77	29
			134	134	268	100

II. FACILITIES

1. Does your school have a specially equipped geography room/laboratory?	Yes	1	53	27	80	29	
	No	2	67	100	167	60	
	Provision is being made for one	3	17	15	32	11	
			137	142	279	100	
2. Do you have an adequate storage room nearby?	Yes	1	64	52	116	42	
	No	2	66	83	149	53	
	Provision is being made for one	3	9	5	14	5	
			139	140	279	100	
3. Circle those of the following for which you have adequate space.	Models	1	50	37	87	32	
	Class Museum	2	25	15	40	15	
	Class geography library	3	51	41	92	34	
	None of these	4	65	67	132	49	
	(N=270)						
4. Is there an active society or club catering for the interests of geography pupils at your school?	Yes	1	23	13	36	14	
	No	2	107	122	229	86	
			130	135	265	100	
5. Circle the geography periodicals/journals you or school subscribe to:							
JOURNAL FOR GEOGRAPHY now the SOUTH AFRICAN GEOGRAPHER	} S.A.	1	3	42	45	87	32
THE SOUTH AFRICAN GEOGRAPHICAL JOURNAL		2	4	40	8	48	18
GEOGRAPHY	} U.K.	3	5	12	5	17	6
TEACHING GEOGRAPHY		4	6	8	6	14	5
THE GEOGRAPHICAL MAGAZINE		5	2	62	46	108	40
NATIONAL GEOGRAPHIC	} U.S.A.	6	1	98	68	166	61
JOURNAL OF GEOGRAPHY		7	7	7	5	12	4
Others: (please specify)..... (N=270)							



111. TEXTBOOKS

		Eng	Afr	Total	%	
1.	Are you in favour of a department of education specifying the use of a specific textbook(s)?	Yes	31	80	111	41
		No	46	21	67	25
		In certain circumstances	<u>58</u>	<u>34</u>	<u>92</u>	<u>34</u>
			135	135	270	100
2.	Do you prefer complete freedom in the choice of a text or texts?	Yes	103	55	158	61
		No	<u>27</u>	<u>76</u>	<u>103</u>	<u>39</u>
			130	131	261	100
3.	Do you prefer texts to follow a set form e.g. conforming to the syllabus?	Yes	81	112	193	72
		No	32	19	51	19
		Not sure	<u>20</u>	<u>4</u>	<u>24</u>	<u>9</u>
			133	135	268	100
4.	If you use <u>a</u> single basic text, please specify:					
	<u>Title</u>	<u>Author</u>	<u>Publisher</u>			
	Std 6	.....	.....			
	Std 7	.....	.....			
	Std 8	.....	.....			
	Std 9	.....	.....			
	Std 10	.....	.....			
5.	Circle the number next to the alternative you MOST PREFER to complete the following statement: "Geography pupils need ....."					
	(a) a basic text to be used almost exclusively		5	37	42	15
	(b) a basic text to be relied on mainly, with occasional use of other resources		29	60	89	31
	(c) a basic text to be used as an outline only, other resources supplying much information		52	25	77	27
	(d) a number of texts, including sample studies and the thematic type, the best parts of which are used for the relevant aspects of the work		54	20	74	26
	(e) no text at all, other resources, from the library, film-strips, teaching kits, printed notes, etc. being used under the teachers' guidance, to acquire and learn the basic knowledge necessary.		-	<u>2</u>	<u>2</u>	<u>1</u>
			140	144	284	100
6.	Are you in favour of texts where graded questions and tasks are set throughout the texts, or after each short section as in John Earle's <u>Window on the World</u> or the <u>Oxford Geography Project</u> (O.U.P. '74)?	Yes	109	103	212	79
		No	11	12	23	9
		Not sure	<u>15</u>	<u>18</u>	<u>33</u>	<u>12</u>
			135	133	268	100
7.	How well do you consider the South African texts available at present fulfill the aims and needs of the new differentiated syllabus es?	Very well	14	13	27	10
		Fairly well	71	94	165	62
		Only partially	43	27	70	26
		Hardly at all	<u>4</u>	<u>1</u>	<u>5</u>	<u>2</u>
			132	135	267	100

IV. EXAMINATIONS

Circle the number of the rejoinder you consider applies BEST to EACH of the following statements:

			Eng	Afr	Total	%
1. The form of the final examination .....	(a) has little or no effect on my geography teaching method	1	5	14	19	7
	(b) has some effect on my geography teaching method	2	46	45	91	34
	(c) strongly affects my geography teaching method	3	56	37	93	34
	(d) largely determines my geography teaching method	4	<u>28</u>	<u>39</u>	<u>67</u>	<u>25</u>
			135	135	270	100
2. The examiner can indirectly influence the pupils' enjoyment of geography and the benefit he obtains from its study, by the type of question he asks in the final examination.	Strongly agree	1	34	57	91	34
	Agree	2	77	67	144	54
	Disagree	3	14	10	24	9
	Strongly disagree	4	<u>7</u>	<u>1</u>	<u>8</u>	<u>3</u>
			132	135	267	100
3. The type and standard of geography teaching is determined largely by the type of question set, and the standard of marking, in the final examination.	Strongly agree	1	31	45	76	29
	Agree	2	74	73	147	56
	Disagree	3	23	14	37	14
	Strongly disagree	4	<u>2</u>	<u>1</u>	<u>3</u>	<u>1</u>
			130	133	263	100
4. It is not the function of an examiner to influence teachers' teaching methods and pupils' answer presentation - the examination should simply find out how well the pupils know the content of the syllabus.	Strongly agree	1	36	59	95	36
	Agree	2	60	50	110	42
	Disagree	3	23	18	41	15
	Strongly disagree	4	<u>11</u>	<u>8</u>	<u>19</u>	<u>7</u>
			130	135	265	100
5. The aim of the final examination should NOT be to find out how much of the syllabus content the pupil knows, but how he can use the geographic facts, techniques and processes of critical thought he has learnt, to express himself effectively in concise, lucid geographic terms.	Strongly agree	1	69	69	138	52
	Agree	2	60	51	111	42
	Disagree	3	5	11	16	6
	Strongly disagree	4	-	-	-	-
			134	131	265	100
6. The form of the final examination and the type of question set should be used as the best way of implementing the aims of a new geography syllabus.	Strongly agree	1	24	46	70	27
	Agree	2	76	66	142	54
	Disagree	3	28	21	49	18
	Strongly disagree	4	<u>2</u>	<u>1</u>	<u>3</u>	<u>1</u>
			130	134	264	100
7. When a new syllabus is introduced a sample examination paper should be circulated with it, to guide teachers in their interpretation of the syllabus.	Strongly agree	1	68	94	162	60
	Agree	2	56	35	91	34
	Disagree	3	8	5	13	5
	Strongly disagree	4	<u>3</u>	<u>1</u>	<u>4</u>	<u>1</u>
			135	135	270	100
8. The examiner should guide teachers towards using the inquiry method of teaching, hypothesis-testing techniques and encouraging critical evaluation in pupils, by setting some of the type of questions requiring these thought processes, in the final exam.	Strongly agree	1	47	56	103	39
	Agree	2	75	68	143	55
	Disagree	3	8	8	16	6
	Strongly disagree	4	<u>0</u>	<u>1</u>	<u>1</u>	<u>0</u>
			130	133	263	100
9. Less stress should be put on the final examination by allotting a percentage of the final mark to projects, year's work, etc.	Strongly agree	1	59	67	126	47
	Agree	2	61	47	108	40
	Disagree	3	11	17	28	10
	Strongly disagree	4	<u>3</u>	<u>4</u>	<u>7</u>	<u>3</u>
			134	135	269	100

C. SIMULATIONS and GAMES can be either competitive between teams or individuals, or non-competitive. Real life situations are simulated and pupils play out decision-making roles according to rules simulating the constraints of reality. For example the Railway Pioneers Game described by Rex Walford in his Games in Geography (Longmans 1969) is a game in which various railway companies made up of groups of pupils representing the various officers of the competing 19th century companies involved, race to build tracks across North America to the west coast.

		Eng	Afr	Total	%	
1. Have you used any simulations or games in geography classes?	No	1	101	123	224	83
	Once	2	7	8	15	6
	On a few occasions	3	25	4	29	11
	Often	4	<u>1</u>	<u>0</u>	<u>1</u>	<u>0</u>
			134	135	269	100
2. Were they developed by others or by yourself?	Others	1	15	9	24	11
	Myself	2	20	7	27	12
	Not applicable	3	<u>77</u>	<u>94</u>	<u>171</u>	<u>77</u>
			112	110	222	100
3. Were they competitive or non-competitive?	Competitive	1	18	6	24	11
	Not-competitive	2	13	10	23	11
	Not applicable	3	<u>77</u>	<u>87</u>	<u>164</u>	<u>78</u>
			108	103	211	100
4. Were they individual or played in groups?	Individual	1	8	5	13	6
	Group	2	26	13	39	18
	Not applicable	3	<u>78</u>	<u>86</u>	<u>164</u>	<u>76</u>
			112	104	216	100
5. Do you consider simulations and games worth the extra time they usually involve considering the diverse benefits often gained by participants, e.g. interaction through role-playing, appreciation of difficulties involved in real-life decision-making, personal involvement in geographical problems, etc.?	Certainly	1	24	11	35	15
	Probably	2	33	28	61	26
	Not sure	3	47	41	88	37
	It is doubtful	4	18	19	37	15
	Definitely not	5	<u>3</u>	<u>15</u>	<u>18</u>	<u>7</u>
			125	114	239	100
6. If you do not generally use simulations or games is it because:	(a) you consider them a waste of time?	1	5	12	17	6
	(b) you do not know enough about them and their value	2	46	41	87	32
	(c) you would like to, but don't know how to get started?	3	19	18	37	14
	(d) you would like to, but there are few applicable ones available in South Africa?	4	20	6	26	10
	(e) you would like to, but the syllabus does not permit enough time?	5	63	59	122	45
	(f) you would like to, but the syllabus is not suited to their use?	6	10	19	29	11

(N=270)

9. MODELS have always been used in geography, but recently there has been a spate of model-building. Models include three types of scaled down simplified representations of reality:
- (a) iconic models, e.g. photographs and relief models whose properties are the same as in reality;
  - (b) analog models, e.g. maps; and
  - (c) symbolic models, e.g. abstract mathematical formulae and Von Thunen's land-use model whose properties are represented by symbols, verbal or mathematical.

		Eng	Afr	Total	%					
1. Do your pupils use maps (atlas and/or large-scale and/or sketch-maps) in the study of geography?	(a) For most aspects of geography	1	78	52	130	48				
	(b) For many aspects of geography	2	42	50	92	34				
	(c) For some aspects of geography	3	15	31	46	17				
	(d) Seldom	4	<u>-</u>	<u>2</u>	<u>2</u>	<u>1</u>				
		135	135	270	100					
2. Do your pupils make productive use of iconic models in studying geography?	(a) Usually	1	20	23	43	16				
	(b) Often	2	50	56	106	40				
	(c) Seldom	3	50	33	83	31				
	(d) Never	4	<u>14</u>	<u>21</u>	<u>35</u>	<u>13</u>				
		134	133	267	100					
3. If you use <u>iconic</u> models, do you construct or produce them yourself?	(a) Usually	1	23	23	46	19				
	(b) Often	2	16	22	38	15				
	(c) Seldom	3	54	43	97	39				
	(d) Never	4	<u>34</u>	<u>32</u>	<u>66</u>	<u>27</u>				
		127	120	247	100					
4. Do your pupils construct iconic models, e.g. relief models?	(a) Usually	1	9	8	17	6				
	(b) Often	2	16	21	37	14				
	(c) Seldom	3	67	40	107	41				
	(d) Never	4	<u>40</u>	<u>63</u>	<u>103</u>	<u>39</u>				
		132	132	264	100					
5. Do you use <u>symbolic</u> models in teaching geography?	(a) For most aspects of geography	1	15	10	25	9				
	(b) For some aspects of geography	2	74	36	110	41				
	(c) Seldom	3	28	31	59	22				
	(d) Never	4	<u>18</u>	<u>57</u>	<u>75</u>	<u>28</u>				
		135	134	269	100					
6. Do you consider the use of <u>A</u> , iconic, and <u>B</u> , symbolic models in geography teaching			<u>A iconic</u>				<u>B symbolic</u>			
			Eng	Afr	Total	%	Eng	Afr	Total	%
	(a) essential?	1	42	39	101	41	29	23	52	21
	(b) very useful?	2	50	40	90	36	46	33	79	33
(c) of some use?	3	30	21	51	21	44	43	87	36	
(d) of little use?	4	<u>2</u>	<u>4</u>	<u>6</u>	<u>2</u>	<u>7</u>	<u>17</u>	<u>24</u>	<u>10</u>	
		124	124	248	100	126	116	242	100	

V. THE "NEW" GEOGRAPHY

This section aims to enquire into the extent in South African schools of knowledge of, and use of, what is often called the "new" geography. Short definitions are given to explain those of the terms used which may be unfamiliar.

A. **FIELDWORK** is the process of observing, measuring and recording data in the field, be it in the local environment, out in the country, at the coast, at a shopping centre, or making a traffic survey, for example. Such work forms the basis of subsequent analysis, interpretation and explanation.

		Eng Afr Total %					Eng Afr Total %				
1.	The role of fieldwork in geography, in your opinion, is										
	(a) essential						1	64	41	105	39
	(b) highly desirable						2	48	46	94	35
	(c) of moderate value						3	19	38	57	21
	(d) of little value						4	4	7	11	4
	(e) a waste of time						5	-	3	3	1
							135	135	270	100	
2.	Do your classes do fieldwork assignments involving answering questionnaires or worksheets?	Yes					1	92	60	152	56
		No					2	43	75	118	44
							138	135	270	100	
3.	If so, specify in which standards	6	29	12	41	27	7	43	24	67	44
		8	60	41	101	66	9	73	43	116	76
	(N=152)	10	61	36	97	64	post matric			-	-
4.	Do your pupils undertake independent individual fieldwork studies?	Yes					1	44	34	78	30
		No					2	88	97	185	70
							132	131	263	100	
5.	If so, specify in which standards	6	15	7	22	28	7	19	14	33	42
		8	24	16	40	51	9	26	17	43	55
	(N=78)	10	27	19	46	59	post matric			-	-
6.	Indicate, roughly, the average number of times per year each class goes out into the field to conduct fieldwork.	None					1	28	38	66	25
		Once					2	62	47	109	41
		Twice					3	29	33	62	23
		3 - 4					4	15	10	25	9
		5+					5	1	4	5	2
							135	132	267	100	
7.	Roughly, what percentage of the final year-end mark do fieldwork assignments count?	< 5%					1	78	79	157	68
		6 - 10%					2	25	31	56	24
		11 - 25%					3	14	5	19	8
		> 26%					4	1	-	1	0
							118	115	233	100	
8.	For what aspect(s) of the syllabus do you use fieldwork methods?	To integrate the various aspects					1	33	24	57	21
		Climatology					2	49	42	91	34
		Geomorphology					3	93	60	153	57
	Other, (please specify here): . . . . .	Urban geography					4	82	44	126	47
	. . . . .	Regional case studies					5	20	16	36	13
	(N=270)	Mapwork					6	44	49	93	34
9.	How effective, as a teaching method, do you consider fieldwork?	Highly effective					1	50	33	83	33
		Reasonably effective					2	63	72	135	54
		Rather ineffective					3	14	12	26	11
		A waste of time					4	1	4	5	2
							128	121	249	100	
10.	Do you consider most of your pupils enjoy fieldwork?	Definitely					1	60	51	111	47
		To a reasonable extent					2	55	43	98	42
		A few only					3	9	14	23	10
		No, hardly at all					4	1	1	2	1
							125	109	234	100	

D. DISCOVERY LEARNING/THE INQUIRY METHOD is where pupils are guided by the teacher to do individual research, for instance into problems which have been set them. A range of resource facilities including reference works, maps, periodicals, filmstrips, data sources, etc. are needed for consultation by the pupils, preferably in the classroom.

		Eng		Afr		Total		%			
1.	Do you have a well-stocked library or class-library, providing sufficient resources for the effective use of the inquiry method, available to your pupils in most class periods?	Yes	1	46	42	88	33				
		No	2	89	92	181	67				
			135	134	269	100					
2.	Have you sufficient time available to know well what your library contains, enabling you to guide your pupils effectively through their learning?	Yes	1	41	28	69	26				
		Hardly	2	75	71	146	55				
		Definitely Not	3	17	35	52	19				
			133	134	267	100					
		A oral				B written					
			Eng	Afr	Total	%	Eng	Afr	Total	%	
3.	Do you use the inquiry method in your classes <u>A</u> , orally and/or <u>B</u> , in written form?	Usually	1	32	36	68	28	24	14	38	16
		Often	2	64	49	113	46	59	45	104	43
		Seldom	3	19	33	52	21	38	48	86	36
		Never	4	9	3	12	5	4	9	13	5
			124	121	245	100	125	116	241	100	
4.	If you do, do your pupils enjoy it?	Definitely	1	30	31	61	27	19	19	38	17
		To a certain degree	2	65	58	123	54	76	54	130	58
		Not sure	3	17	21	38	17	21	25	46	20
		No	4	-	5	5	2	2	10	12	5
			112	115	227	100	118	108	226	100	
5.	Do you consider it a method that <u>should</u> be used, at least sometimes?	Yes	1	113	100	213	79				
		Possibly	2	19	25	44	16				
		Not sure	3	3	8	11	4				
		No	4	1	-	1	1				
			136	133	269	100					
6.	If you do, do you consider the necessary resources for its use should be provided by education departments?	Yes	1	113	119	232	87				
		Not sure	2	14	12	26	10				
		No	3	6	2	8	3				
			133	133	266	100					

E. STATISTICAL AND QUANTITATIVE METHODS involve the use of various techniques to solve problems and examine hypotheses accurately and objectively. These involve the use of, for example, histograms, scatter graphs, mathematical techniques used in an attempt to describe, explain or predict interrelationships, and hypothesis-testing.

			A traditional				B recent			
			Eng	Afr	Total	%	Eng	Afr	Total	%
1. Do your pupils make use of <u>A</u> the traditional line graphs, histograms, etc. and <u>B</u> the recently developed scatter-graphs, rank correlation, etc.?	Usually	1	37	38	75	29	3	12	15	7
	Often	2	60	45	105	41	15	21	36	17
	Seldom	3	23	29	52	20	40	31	71	34
	Never	4	<u>12</u>	<u>15</u>	<u>27</u>	<u>10</u>	<u>52</u>	<u>34</u>	<u>86</u>	<u>42</u>
				132	127	259	100	110	98	208
2. If they do, do they collect the data themselves?	Often	1	15	13	28	11	2	5	7	4
	Seldom	2	52	48	100	41	26	28	54	34
	Never	3	<u>58</u>	<u>59</u>	<u>117</u>	<u>48</u>	<u>56</u>	<u>44</u>	<u>100</u>	<u>62</u>
				125	120	245	100	84	77	161
3. If they do, do they plot or work with the data by themselves?	Often	1	59	47	106	46	13	17	30	21
	Seldom	2	43	43	86	38	25	30	55	38
	Never	3	<u>12</u>	<u>25</u>	<u>37</u>	<u>16</u>	<u>35</u>	<u>24</u>	<u>59</u>	<u>41</u>
				114	114	228	100	73	71	144
4. If they do, do they enjoy using them?	Definitely	1	18	24	42	19	4	9	13	10
	To a certain extent	2	68	53	121	54	26	33	59	44
	Not sure	3	23	26	49	22	20	21	41	30
	No	4	<u>6</u>	<u>6</u>	<u>12</u>	<u>5</u>	<u>17</u>	<u>4</u>	<u>21</u>	<u>16</u>
				115	109	224	100	67	67	134
5. If they do, do they draw accurate conclusions from the end product?	by themselves	1	5	4	9	4	-	1	1	0
	with a little help	2	46	54	100	46	14	26	40	31
	some pupils, but not others	3	45	46	91	41	24	34	58	45
	only with much aid	4	15	-	15	7	16	-	16	12
	never	5	<u>3</u>	<u>2</u>	<u>5</u>	<u>2</u>	<u>12</u>	<u>3</u>	<u>15</u>	<u>12</u>
				114	106	220	100	66	64	130
6. How effective are these techniques as an aid in geography teaching?	Very effective	1	31	26	57	23	11	17	28	18
	Sometimes helpful	2	77	59	136	56	37	31	68	44
	Of little use	3	6	16	22	9	7	11	18	12
	Not sure	4	<u>10</u>	<u>20</u>	<u>30</u>	<u>12</u>	<u>20</u>	<u>19</u>	<u>39</u>	<u>26</u>
				124	121	245	100	75	78	153
7. How important do you consider their use in geography?	Essential	1	45	57	96	39	22	29	51	33
	Sometimes useful	2	69	55	124	50	38	35	73	46
	Of little use	3	5	2	7	3	4	-	4	3
	Not sure	4	<u>6</u>	<u>15</u>	<u>21</u>	<u>8</u>	<u>15</u>	<u>14</u>	<u>29</u>	<u>18</u>
				125	123	248	100	79	78	157

F. HYPOTHESIS-TESTING/PROBLEM-SOLVING involves (i) the formulation of a possible explanation for a geographic phenomenon or solution to a problem; (ii) the collection of data to evaluate this hypothesis; (iii) the evaluation of the data to see if it supports the explanation or hypothesis; and (iv) the tentative acceptance of the explanation or hypothesis if it does so; otherwise another explanation or hypothesis must be formulated, and then tested in a like manner.

			Ronk	Eng	Afr	Total	%
1.	Do you set your pupils geographic problems which may be solved in this way using an oral presentation?	Often	1	39	69	108	40
		Seldom	2	58	40	98	37
		Never	3	<u>37</u>	<u>24</u>	<u>61</u>	<u>23</u>
				134	133	267	100
2.	Do you set your pupils geographic problems to be solved using this method individually, alone?	Often	1	14	25	39	15
		Seldom	2	57	66	123	48
		Never	3	<u>54</u>	<u>39</u>	<u>93</u>	<u>37</u>
				125	130	255	100
3.	Do you set your pupils geographic problems to be solved using this method experimentally or out in the field?	Often	1	11	6	17	7
		Seldom	2	52	54	106	42
		Never	3	<u>60</u>	<u>67</u>	<u>127</u>	<u>51</u>
				123	127	250	100
4.	Can your pupils use the hypothesis-testing technique effectively?	Often	1	12	13	25	10
		Seldom	2	58	70	58	52
		Never	3	25	41	66	26
		Not sure	4	<u>28</u>	<u>1</u>	<u>29</u>	<u>12</u>
				123	125	248	100
5.	If they can, what percentage of your senior pupils can work effectively using it alone?	>75%	1	3	4	7	3
		50 - 74%	2	5	14	19	10
		25 - 49%	3	34	26	60	30
		<25%	4	<u>51</u>	<u>62</u>	<u>113</u>	<u>57</u>
				93	106	199	100
6.	How effective do you consider this method in geography teaching?	Very effective	1	18	20	38	15
		Fairly effective	2	54	61	115	47
		Not worth using	3	8	13	21	9
		Not sure	4	<u>44</u>	<u>29</u>	<u>73</u>	<u>29</u>
				121	123	247	100
7.	If you make only very limited use of statistical and quantitative methods is it because: (circle the reason(s) most applicable)	(a) I have not heard of such methods before	1	9	3	9	12
		(b) I have heard of them, but know little about their use	2	4	33	31	64
		(c) I do not know how to postulate a hypothesis	3	8	12	15	27
		(d) My school area does not lend itself to hypothesis-testing	4	7	22	22	44
		(e) There is difficulty in obtaining suitable texts for classes	5	3	35	32	67
		(f) There is insufficient suitable data available for application of these methods	6	5	27	27	54
		(g) The present syllabus does not lend itself to the use of these methods	7	6	29	22	51
		(h) There is insufficient time available	8	1	58	56	114
		(i) My classes are non-mathematical so do not understand the notation used	9	2	51	51	102
		(j) Other reasons (please specify) ....	10			3	3

VI. SYLLABUSES

1. Circle BOTH the FIVE aims from the list below which you consider  
A. should be most important in high school geography teaching, and  
B. are stressed most in the system in which you teach.

	Rank Eng Afr Total %						Rank Eng Afr Total %					
	<u>A</u>						<u>B</u>					
Good geography teaching aims:												
(a) To give a clear grasp of the body of important facts about the geography of the world	1	9	32	36	68	23	6	64	48	112	41	
(b) To give understanding of, and show the relevance of, the problems of a geographic nature facing the world towards the end of the 20th century, e.g. environmental pollution.	2	1	96	78	174	64	4	75	57	132	49	
(c) To explain and give an appreciation of the interrelationships between the human and physical phenomena comprising the study of geography and the way they are expressed spatially.	3	3	100	69	169	62	2	77	62	139	51	
(d) To teach the pupil an understanding of the basic geographic concepts, so he can appreciate and use them in later life.	4	1	83	91	174	64	1	80	82	162	60	
(e) To train the pupil in critical, logical, geographic thinking.	5	4	88	71	159	58	5	64	63	127	47	
(f) To equip pupils for self-inquiry and further study.	6	7	69	51	120	44	10	39	22	61	22	
(g) To cultivate a love of the subject.	7	6	49	73	122	45	8	27	55	82	30	
(h) To engender in the pupil an appreciation of, and interest in, his country and the world.	8	5	55	68	123	45	7	51	56	107	39	
(i) To lead the pupil to an appreciation of the vastness and wonder of creation.	9	8	24	52	76	28	9	20	52	72	26	
(j) To prepare the pupil to achieve the best examination results he/she is capable of.	10	10	21	28	49	18	3	71	70	137	50	
2. Indicate the syllabus you are teaching							1	1	29	39	68	24
	Cape						2	2	18	41	59	21
	Transvaal						3	4	4	21	25	9
	O.F.S.						4	3	44	8	52	19
	Natal						5	8	10	1	11	4
	J.M.B.						6	5	8	14	22	8
	National						7	5	8	14	22	8
	Coloured Affairs						8	9	3	-	3	1
	Bantu Affairs						9	7	16	-	16	6
	Indian Affairs						140 138 278 100					
Other (please specify): ...												
							Eng Afr			Eng Afr		
3. Indicate the standards with whose syllabuses you are familiar	standards						5	28	30	6	91	105
							7	107	118	8	130	120
							9	129	113	10	124	111
4. Are you familiar with the AIMS of the syllabuses you teach?	Yes						1	102	90	192	71	
	Fairly						2	30	45	75	28	
	No						3	3	-	3	1	
							135 135 270 100					

		Eng Afr Total %				Eng Afr Total %					
5.	Do you agree with the aims of the syllabuses you are teaching	Yes, fully	1				51	50	101	38	
		Partly only	2				76	85	161	60	
		Hardly at all	3				1	-	1	0	
		Not sure	4				<u>5</u>	<u>-</u>	<u>5</u>	<u>2</u>	
							133	135	268	100	
6.	Does the content you teach fulfill these aims?		<u>Stds 5 - 7</u>				<u>Stds 8 - 10</u>				
	Yes	1	26	30	56	29	40	39	79	34	
	Partly only	2	54	68	122	63	70	66	136	59	
	Hardly at all	3	6	4	10	5	3	1	4	2	
	Not sure	4	<u>6</u>	<u>1</u>	<u>7</u>	<u>3</u>	<u>10</u>	<u>1</u>	<u>11</u>	<u>5</u>	
			92	103	195	100	123	107	230	100	
7.	Have you enough teaching time to complete the syllabus?	Usually	1	48	40	88	44	66	53	119	50
		Seldom	2	30	48	78	39	41	53	94	39
		Never	3	<u>11</u>	<u>23</u>	<u>34</u>	<u>17</u>	<u>15</u>	<u>10</u>	<u>35</u>	<u>11</u>
				89	111	200	100	122	116	238	100
8.	Do you consider there should be greater differentiation in content and standard required between the present higher and standard grade syllabuses Stds 8 - 10?	Yes	1	72	62	134	52				
		No	2	46	45	91	36				
		Not sure	3	<u>13</u>	<u>17</u>	<u>30</u>	<u>12</u>				
				131	124	255	100				
9.	If so, circle the numbers of the following modifications you would like to see implemented in the STANDARD GRADE SYLLABUSES.		Rank	Eng	Afr	Total	%				
	(a) A shortened syllabus with less coverage allowing more time for the basics		1	1	57	55	112	61			
	(b) Less concentration on facts and more on a limited number of broad general geographic concepts		2	3	42	40	82	45			
	(c) A similar but shortened syllabus with, however, greater emphasis on the practical application of useful geographic techniques e.g. map- and photo-interpretation skills, model-making, problem-solving, simulation-gaming, fieldwork data collection and processing, etc.		3	2	46	40	86	47			
	(d) A completely different syllabus drawn up specifically for STANDARD GRADE pupils with the accent on current events and world problems (e.g. environmental pollution, population explosion, world peace) where content is subservient to the creation of attitudes and values and empathy for Third World difficulties.		4	4	32	36	68	37			
	(e) More concentration on regional geography giving greater world coverage.		5	5	19	15	34	18			
	(f) Other modifications (please specify) ....		6		6	5	11	6			
											(N = 184)
10.	Are you satisfied with the content of the HIGHER GRADE geography syllabuses for standards 8 to 10?	Yes	1	30	39	69	29				
		Fairly	2	91	64	155	64				
		Not at all	3	<u>9</u>	<u>9</u>	<u>18</u>	<u>7</u>				
				130	112	242	100				

		Rank	Eng	Afr	Total	%	
11.	If you would like to see the HIGHER GRADE syllabus modified, which of the following changes do you consider would improve it?						
	(a) Shortening, covering less, and allowing more time for the basics.	1	1	48	64	112	53
	(b) More concentration on regional geography thus including more countries.	2	5	19	11	30	14
	(c) Less concentration on facts and more concentration on a limited number of broad general geographic concepts and their application to the world.	3	3	44	35	79	38
	(d) A similar but shortened syllabus with however greater emphasis on the practical application of useful geographic techniques e.g. map-and photo-interpretation, model-making, problem-solving, simulation-gaming, fieldwork data collection and processing, etc.	4	2	62	45	107	51
	(e) A different syllabus concentrating attention on current events and world problems, where content is subservient to the creation of attitudes and values and empathy for Third World difficulties.	5	4	27	27	54	26
	(f) Other modifications (please specify) ....	6		8	4	12	6
	(N = 211)						
12.	Are you satisfied with the content of the standards 5 - 7 syllabuses?						
	Yes	1		25	43	68	29
	Fairly	2		80	62	142	61
	Not at all	3		8	16	24	10
				113	121	234	100
13.	If you would like to see modifications made to the standards 5 - 7 syllabuses, which of the following changes do you consider would improve it?						
	(a) A shortened syllabus leaving out such aspects as geomorphology, astronomical and mathematical geography, etc., allowing more time for the other basics.	1	4	27	22	49	25
	(b) Less concentration on regional geography some of which being replaced by case studies drawn from various regions	2	1	52	46	98	50
	(c) A completely re-designed 3 year course using modern techniques as exemplified in the <u>Oxford Geography Project</u> (O.U.P. 1974) which would concentrate on the local environment and S.A. in the first year; expand to looking at <u>European Patterns</u> in std 6; and examine the <u>Contrasts in Development</u> between developed and developing countries, bringing out their problems, in Std 7. The course would use the wide variety of geographic educational teaching strategies available today, thus laying a secure methodological foundation for the further study of geography, while at the same time providing a fair basic knowledge of world geography for early school-leavers.	3	2	44	36	80	41
	(d) A South African equivalent of the British "Geography for the Young School-leaver" Project in which all that is done is: (i) immediately interesting to pupils, (ii) is geographically sound, (iii) will be of relevance and use after schooling is completed. (See: Man, Land and Leisure - Nelson 1975)	4	3	32	26	58	29
	(e) Other modifications (please specify) ....	5		2	3	5	3
	(N = 197)						
14.	Do you consider the material included in your present syllabuses highly relevant to the needs of modern pupils?						
	Yes	1		13	19	32	13
	To a reasonable degree	2		79	103	182	72
	To a limited degree only	3		27	8	35	14
	Hardly at all	4		1	1	2	1
				120	131	251	100

VII FINAL EVALUATION

		Eng	Afr	Total	%	
1.	Are you as effective a geography teacher as you could be? Yes	1	44	20	64	24
	No	2	<u>87</u>	<u>112</u>	<u>199</u>	<u>76</u>
			131	132	263	100
2.	Circle all those of the following which you consider would aid you most in improving your geography teaching.					
	(a) I need a properly equipped geography room.	1	86	88	172	63
	(b) I need a great many more teaching aids.	2	85	99	184	68
	(c) I need a concentrated refresher course in geography teaching.	3	60	50	110	40
	(d) I need a period of study-leave to bring myself up to date in modern geography teaching methods used in many universities and overseas.	4	64	45	109	40
	(e) I need to be less involved in other school activities, e.g. administration, sport.	5	52	60	122	45
	(f) A change of syllabus is needed to enable me to teach geography as it should be taught.	6	19	29	48	18
	(g) Abolition of the external examination system is needed to enable me to teach geography as it should be taught.	7	36	49	85	31
	(h) Other factors: (please specify) ...	8	12	6	18	6
(N = 270)						
3.	How would you classify your teaching methods?					
	(a) Traditional/Conservative	1	9	12	21	7
	(b) Conventional, using some modern aids	2	81	91	172	58
	(c) Modern, with a diverse approach using pupil-centred as much as teacher-centred activities	3	46	32	78	26
	(d) Dynamic, experimenting and using most modern techniques mentioned in this survey	4	14	8	22	7
	(e) Other: (please specify) ....	5	<u>5</u>	<u>-</u>	<u>5</u>	<u>2</u>
			155	143	298	100
4.	Do you consider a survey such as this can serve any useful purpose?					
	No	1	-	-	-	-
	Perhaps	2	25	26	51	19
	Only to provide research material of academic interest	3	4	2	6	2
	Yes, particularly if changes based on the findings are made	4	<u>106</u>	<u>107</u>	<u>213</u>	<u>79</u>
			135	135	270	100

THANK YOU. YOUR EFFORT IS GREATLY APPRECIATED.

IF ANSWERING HAS AROUSED YOUR INTEREST, DETACH, KEEP AND USE NEXT PAGE!

RECOMMENDED READING.

For those interested in furthering their knowledge of geography teaching the following are excellent, essential and relatively inexpensive items. Most should be available in education departmental libraries.

1. The recently started (1975) periodical, TEACHING GEOGRAPHY published 4 times p.a. by Longmans for the Geographical Association. )
2. GEOGRAPHY, journal of the Geographical Association, 343 Fulwood Road, Sheffield, S10, 3BP. ) subscription for both together £7,50 p.a.
3. GEOGRAPHY IN SECONDARY EDUCATION by N J Graves published (1972) by the Geographical Association. 95 p.
4. NEW THINKING IN SCHOOL GEOGRAPHY, Education Pamphlet No. 59, published by Her Majesty's Stationery Office, London, 1972. 68 p.
5. GEOGRAPHY AND THE GEOGRAPHY TEACHER by David Hall, Unwin Educational Books, London, 1976. £2,95.
6. NEW MOVEMENTS IN THE STUDY AND TEACHING OF GEOGRAPHY edited by N J Graves, Temple Smith, London, 1972 £2,40.
7. THE SOCIAL SCIENCES AND GEOGRAPHIC EDUCATION: A READER edited by J M Ball et al, John Wiley and Sons, N.Y., 1971. R2.60
8. GAMES IN GEOGRAPHY by Rex Walford, Longman's Education To-day series, 1969, £1,20.
9. OXFORD GEOGRAPHY PROJECT by Ashley Kent, Clive Rowe, Neville Grenyer, John Rolfe and Rosemary Dearden, in 3 vols. each accompanied by Teachers' Guides.
  1. THE LOCAL FRAMEWORK
  2. EUROPEAN PATTERNS
  3. CONTRASTS IN DEVELOPMENT
 Oxford University Press, London, 1974, approx. £6.00 altogether.
10. WINDOW ON THE WORLD Books 2 - Std 6, and 3 - Std 7 by John Earle, Juta and Co., Cape Town, 1975, R3,85 each.
11. To set your mind wondering: TEACHING AS A SUBVERSIVE ACTIVITY by Neil Postman and Charles Weingartner, Penguin Education Specials, 1971, R2,00.