37

INTEGRATION OF TEACHING STRATEGIES AND RESOURCES IN A MULTICULTURAL SCHOOL ENVIRONMENT

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[STD. , B.Sc. , B.Ed.]

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BY

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STD, B.Sc, B.Ed.

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i. ABSTRACT

This research is an example of a multiple case study. It investigates the teaching strategies and resources currently being utilised in culturally diverse classrooms, ascertains the reasons for the use of such strategies and resources, and recommends strategies and resources that could be integrated and utilized in order to cater for a culturally diverse pupil population in the classroom.

The research was conducted in five purposely-selected secondary schools in the Verulam-Phoenix area. The schools selected were former predominantly Indian schools in order to facilitate the work of the researcher with regard to data collection. The schools also had a pupil population composed of different cultural groups (in terms of religion, race and language) since the study was concerned with an emerging multicultural school situation. The study focused on the teaching strategies and resources utilised in five subject areas - English, Mathematics, Biology, Geography and Accounting. The subjects selected gave the researcher a cross-curricular perspective of the strategies and resources used.

Data was collected primarily by engaging in non-participant and participant observation of school resource centres, teachers' centres, and actual teaching in the classrooms. The researcher also conducted structured and unstructured interviews with school principals, subject teachers, pupils, staff at school resource centres and teachers' centres, and also lecturers from universities and colleges of education. Questionnaires were used to supplement the data collected from teachers and pupils.

Data was then analysed qualitatively and quantitatively to determine the strategies and resources most commonly utilised by teachers. The data gathered was analysed in terms of the present education system and current thinking regarding teaching strategies and use of resources in teaching. The outcomes of this analysis formed the basis for the recommendations made at the end of the study.

ii. DECLARATION

I hereby state that this dissertation is my own work and also that it has not been submitted for any other degree at this or any other university.

V. MOONSAMY

iii. DEDICATION

I wish to dedicate this research to my late parents, Moonsamy and Muniamma Ponen.

I wish to acknowledge their support (financial and otherwise) and interest in my development and welfare during the formative years of my life.

iv. ACKNOWLEDGEMENT

1. I owe my sincere gratitude to my two supervisors, Dr G. Kistan and Mr B.R. Nel, for being so helpful and patient and, above all, for being my friends and confidants during the course of my research. The successful completion of this research would not have been possible without their professional advice, constant encouragement and genuine interest during my long and arduous "journey". I owe much to both of them for sacrificing many hours of their leisure time to be with me.

2. I also wish to express my appreciation to the following people who have influenced the completion of this dissertation.

2.1 the pupils, teachers, principals, lecturers and staff at school resource centres and teachers' centres for providing the necessary data for this study;

2.2 my principal, D.E. Bissessor, for being so generous in granting me leave from school;

2.3 my brother, M.M. Pillay, for helping to check the correctness of langauge usage in the original drafts; and

2.4 my friend (Masla Govender) for allowing me the use of all facilities at his office.

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3.1 the KwaZulu-Natal Department of Education and Culture for granting me six months study leave and also making it possible for me to visit schools under its control; and

3.2 the University of Durban-Westville for providing financial assistance.

4. Finally, I would like to thank my wife (Pushparani) and two daughters (Kamalini and Pavalini) for their tolerance and understanding and for allowing me the time to complete my work.

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CHAPTER ONE

1. INTRODUCTION TO THE STUDY

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CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 INTRODUCTION

The aim of this chapter is to provide a general introduction to the study. Included in the discussion are various issues pertaining to the study, namely,

* motivation for the study;
* purpose of the study;
* research approach and methods;
* key concepts used in the study;
* research audience; and
* limitations of the study.

The researcher believes that a discussion of the above aspects in an introductory chapter of this nature is particularly useful to the reader since it:

* gives an overall picture of the study;
* provides a preview of what could be expected in later chapters; and
* helps to generate interest and sustain focus in the study.

1.2 MOTIVATION FOR THE STUDY

This study is the outcome of the writer's personal interest in classroom teaching strategies and has been prompted by the many developments in education over the past decade. Roles of superintendents of education, curricula, promotion procedures for teachers, and evaluation and promotion requirements for pupils in certain grades have undergone major changes. The most significant occurrence to spur the writer to embark on this research has been the unrestricted access accorded to pupils to schools of their choice. This is a direct result of the political changes in the country. The issue of how best to educate culturally diverse and linguistically different pupils is now being openly discussed in school staff rooms, college lecture rooms, and at meetings, and conferences. The researcher's interest is therefore brought into sharp focus since the changes in pupil population at schools necessitates a revision of traditional teaching strategies and also current research in education challenges teachers to try new and alternative methods of instruction.

In South Africa large numbers of people are mainly illiterate. Some have never attended school at all while others have left school even before completing the primary phase of education. The provision of adequate education opportunities for all citizens is the responsibility of the government. According to the National Ministry of Education our system of education must 'open the gates of learning and culture to all, and ensure that ... human resources and potential are developed to the full.' (The White Paper, 1995, Vol.357, p.79). The government therefore faces a major challenge ... 'to facilitate equitable access to schooling and its benefits' for all its people. (The White Paper, 1995, Vol. 357, p.73).

A study of education in the apartheid era reveals a marked degree of inequality with regard to the provision of education (funding, resources, facilities, etc.) for the different racially-based education departments. For example, the average teacher/pupil ratio in the former Indian schools was fairly low (1:22) whereas the average teacher/pupil ratio for African pupils was exceptionally high (1:41). (Krige, Cairns, Makalima and Scott, 1994, p.66). The underprovision of basic requirements of education for African pupils is reflected in the observation made recently by Pigford and Ngcongo (1995, p.110):

> '... the pupils (sit on) the hard, wooden benches that serve as their desks. Three or four squeeze together to share a single book. Except for a small, pot-bellied, coal-burning stove in the middle of the classroom, there are no supplies or equipment.'

Notwithstanding differences in, for example, home language, religion and socio-economic status, pupils in former Indian schools have constituted a fairly homogeneous group. During the past three years (1995 - 1997) large numbers of African pupils have enrolled at former Indian schools. The main reason for this influx seems to be the prospect of a "better education" than that offered at former African schools. Some of these pupils show a tremendous degree of determination to avail themselves of the opportunities offered at former Indian schools inspite of severe constraints, for example, great travelling distances, family obligations and financial difficulties placed on them. The composition of the pupil population in former Indian schools has now changed and the teacher/pupil ratio has increased greatly to reach, and in some cases exceed, the suggested norm of 1:37. (Krige, Cairns, Makalima and Scott, 1994, p.1). These schools ...

> 'are compelled to grapple with the consequences of poor secondary education...(in former African schools)...,... the under-development of .... language skills, science and mathematics, and the narrow range, and often inappropriate combinations of subjects....'
> (The White Paper, 1995, Vol. 357, p.32).

The pupils in former Indian schools now differ greatly in their interests, methods of learning, socio-economic backgrounds and proficiency in English (the language of instruction at schools). The teachers at these schools are almost exclusively Indians. Most of them have had little or no interaction in the teaching-learning situation with pupils who are culturally different from them, as they themselves had attended schools and institutions of higher learning which were restricted to Indians only. According to Guillaume, Zuniga-Hill and Yee (1995, p.69),

> 'The majority of these teachers may lack the requisite knowledge to effectively work with children whose language, background and life experiences differ significantly from their own.'

The former Indian schools are, therefore, facing the challenges of successfully teaching an increasingly culturally diverse pupil population. (Ainscow, 1991, p.134).

In spite of the great changes in the education scenario very little has changed in the classrooms. There is still, to use the words of Cuban,`a stubborn continuity ... in teacher-centred instruction'. (Cuban, 1980, p.33). Teachers 'concentrate mostly on subject matter and academic skills, ... control what is taught, when it is taught, and under what conditions it is taught'. (Cuban, 1980, p.33). He maintains that teachers' questions are aimed at eliciting only factual information from pupils and

criticises the teachers' dependence on a single text book for background information. (Cuban, 1980, p.33).

As a secondary school teacher in former Indian schools for 25 years, and having served as a Head of Department of Science for 14 years, the writer has been fortunate in observing both colleagues and pupils work in their classrooms. Except for some improvements in the availability and use of resources, the classroom scene today is essentially the same as that observed by the researcher more than 20 years ago. There appears to be very little interaction between teachers and the pupils they teach. The following quotation illustrates very concisely what happens in a typical classroom when a teacher enters the room.

> '... a high school ... teacher, walks into his classroom ready to deliver his lesson. He is armed with his ... notes for that particular section ..., and his ready-made worksheets .... His teaching involves reading relevant parts out of the textbook, explaining some things with the use of an overhead projector or the chalkboard, asking, perhaps, a few questions, and then allowing the students (if there's time) to begin to answer the worksheet, the rest to be completed for homework'. (Davidoff and van den Berg, 1990, p.8).

It is clear that for most of the time pupils do not enter actively into the teaching-learning situation. Besides completing worksheets, copying notes and answering a few questions, pupils spend most of the time sitting and listening passively. The observation of Sotto (1994, p. 134), which has been adapted by the writer, provides an apt description:

> 'When (the teacher) speaks, the students sit and listen, take notes, finger pens, sit and listen, look at illustrations, look at the teacher, look at each other, look out of windows, take notes, and sit and listen'.

While teachers *talk*, pupils *sit, look, listen* and *take notes*.

The researcher has observed that many pupils (including large numbers of African pupils) are not achieving success. It seems that some of these pupils 'need better help than they are now receiving'. (Ainscow, 1991, p.135). This implies that teachers, especially those at former Indian schools, need to revise their teaching strategies in view of the change in circumstances (diverse pupil population; large classes; changes in educational thinking). It is imperative that teachers evaluate their strategies in the light of current research which emphasises co-operative group work. (Meyers and Jones, 1993; Slavin, 1995; Kutnick and Rogers (eds.), 1994; Johnson and Johnson, 1994). Also, they need to incorporate a variety of resources into their teaching programmes to ensure that the classroom is a lively environment which encourages active participation, including interactions between pupils from different cultural groups.

This study investigates the strategies and resources currently being utilized in culturally diverse classrooms. It also explores the reasons for the use of these strategies and resources, and the reasons for some pupils not achieving success. Furthermore, based on this investigation, the study will recommend an alternative integrated teaching approach in a multicultural school environment.

1.3 PURPOSE OF THE STUDY

Teaching is a complex and demanding task, especially for those who wish to do well in the classroom. Also, classroom teaching strategies and resources are central to the teaching process and active pupil participation is absolutely essential to promote learning. Given this understanding, the researcher sets out to determine the extent to which educators integrate teaching strategies, especially those that promote active pupil participation, and resources to cater for the emerging culturally diverse pupil population in schools.

The objectives of this study are:

i. to investigate the teaching strategies and resources that are utilized by educators in emerging culturally diverse classrooms;

ii. to explore the conditions that influence the choice of strategies and resources currently used in emerging culturally diverse classrooms; and

iii. to recommend strategies and resources that could be integrated and utilized in order to cater for a culturally diverse pupil population in the classroom.

In the pursuit of these objectives, the researcher addresses the following key questions in this research:

i. What teaching strategies are currently being utilized in the classroom?

ii. What use is made of available resources, especially those that promote active learning in the classroom?

iii. What conditions influence the choice of strategies and resources in the classroom?

iv. Why are some pupils achieving success and others not?

v. What strategies and resources could be integrated and utilized to promote an effective method of instruction in a new unitary education system?

These questions were considered to be pertinent and needed to be addressed in view of one of the ideals of the new National Department of Education:

> 'The curriculum, teaching methods and textbooks at all levels and in all programmes of education and training, should encourage *independent and critical thought*, the capacity to question, enquire, reason, weigh evidence and form judgements, achieve understanding, recognise the provisional and incomplete nature of most human knowledge, and communicate clearly.'
> (The White Paper, 1995, Vol. 357, p.22)

1.4 RESEARCH APPROACH AND METHODS

In anticipation of enrolling for a higher degree in 1995, the researcher spent much time (mostly afternoons) in 1994 reading books and journals on education at the library at the University of Durban-Westville. In March 1995, two lecturers (Mr B.R. Nel and Dr G. Kistan) at the University of Durban-Westville were approached with the request to supervise this study. After much discussion the lecturers supported the researcher's request for work in this area of study. A proposal (setting out the objectives, methodology, work plan and financial considerations) was submitted to the Faculty of Education (UDW) during the first week of September 1995. This proposal was approved (with minor changes) by the executive committee of the Faculty of Education (UDW) on 27 October 1995.

The KwaZulu-Natal Department of Education and Culture was contacted early in June 1995 (Appendix A1) to request permission to visit institutions (schools and colleges of education) under its control. The Department responded to this application on 24 July 1995, requesting the following:

i. completion of form: Application for conducting a research project in the KwaZulu-Natal Department of Education and Culture (Appendix A2);

ii. a letter from the University providing proof of registration as a student (Appendix A3);

iii. copies of questionnaires to be used in the study:
questionnaire for teachers (Appendix B1),
questionnaire for pupils (Appendix B2);

iv. statement of intent (copy for principals of schools) (Appendix A5).

The above documents, together with a copy of the researcher's statement of intent (copy for Director of Education) (Appendix A6), were submitted during the first week of October 1995. Finally, on 27 October 1995, a letter was received from Mr D.V. Bromley of the KwaZulu-Natal Department of Education and Culture (Appendix A4). Permission was granted to conduct this research. Several conditions were stipulated in the letter of approval:

i. prior arrangements were to be made with the principals concerned;

ii. teacher participation should be voluntary;

iii. written permission to be obtained from teachers whose lessons were to be observed (Appendix B3);

iv. administration of questionnaires should not affect the teaching programmes or transport arrangements of pupils;

v. all information obtained to be treated confidentially; and

vi. a copy of the letter of approval to be given to principals when visiting schools.

The researcher conducted a survey of selected educational literature on teaching strategies, resources, multicultural education and research methodology in order to prepare a theoretical

framework and context for this qualitative-naturalistic study. The aim of a qualitative-naturalist researcher is to 'focus on *natural settings*' (Sherman and Webb, 1988, p.5). The researcher was therefore concerned with investigating and reporting on real-life classroom settings without creating artificial conditions for the purpose of this research. Initially, a case study research design was considered useful for this investigation. However, a few lecturers (not the supervisors) in the Faculty of Education at the University of Durban-Westville expressed the opinion that a survey method of research was more appropriate in view of the large number of sites selected (5 schools) and the very large number of questionnaires administered (25 for teachers and 125 for pupils). After much thought the researcher decided that a sound and relevant methodology for this study was a combination of the two methods (survey and case study). The next two chapters provide a more thorough review of the relevant literature on the theory underpinning this study.

This research was conducted in five deliberatively-selected secondary schools in the Verulam-Phoenix area, which is located in the greater Durban metropolitan region. The schools selected were former Indian schools as the researcher was familiar with such schools and believed that this would facilitate the work of data collection. The schools had a pupil population composed of Indian and African pupils since the study was concerned with an emerging multicultural school situation. The researcher was fortunate in establishing a contact person (other than the principal) in each of the schools. This person facilitated initial contacts with members of staff and assisted in various ways, for example, arranging for the administering of pupils' questionnaires, distribution and collection of teachers' questionnaires, and negotiating with teachers for interviews and observing lessons. The main ethical issue considered was anonymity. The researcher envisaged the use of codes to denote the different institutions and various subjects in order to protect the identity of institutions and respondents (teachers, pupils, principals, lecturers and staff at resource centres).

The study focused on the teaching strategies and resources utilized in five subject areas, namely, English, Mathematics, Biology, Geography and Accounting. These subjects were selected to give the researcher a cross-curricular perspective of the strategies and resources used.

The following sources of data were used: classroom settings, teachers, pupils, principals, staff at school resource centres, and lecturers from universities and colleges of education. Data was collected primarily by engaging in:

i. non-participant observation of actual teaching in the classrooms; and

ii. participant observation of school resource centres and teachers' centres.

The researcher supplemented the data by conducting unstructured interviews with school principals, subject teachers, pupils, staff at school resource centres and teachers' centres, and lecturers from universities and colleges of education.

The data-collection instruments used in the study included:

i. questionnaires for teachers (5 per school) which explored the teaching strategies and resources utilized by teachers of the different subjects (Appendix B1);

ii. separate questionnaires for pupils (125 per school) which gave the researcher an insight into pupils' classroom activities and resources that they were exposed to (Appendix B2);

iii. classroom observation schedules (Appendix B4); and

iv. interview schedules for the following persons:

school principals (Appendix B5),

subject teachers (Appendix B6),

pupils (Appendix B7),

staff at resource centres and teachers' centres (Appendix B8),

and lecturers from universities and colleges of education (Appendix B9).

Data was analysed qualitatively and quantitatively to determine the strategies and resources most commonly utilized by educators. This analysis was done in terms of the present education system and current thinking regarding the use of strategies and resources in teaching. (See Chapters 3 and 4).

The authenticity of the data was assessed by cross-checking (triangulation). The researcher tried to enhance the reliability of the data by making use of inputs of a range of persons (pupils, teachers, principals, etc.) who provided different perspectives with regard to the data sought. Also, the use of different methods of data collection (observation, questionnaires, and interviews) assisted in the process of triangulation. The researcher attempted to eliminate bias by ensuring that teachers selected at each school constituted a representative sample in terms of sex, qualifications and experience. Unfortunately, practical difficulties were experienced in this regard (discussed in Chapter 4). The wide experience of the researcher in secondary school education was also advantageous in determining the validity of data collected.

The recommendations made in Chapter 5 are based on the outcomes of the analysis of the data collected.

1.5 KEY CONCEPTS USED IN THE STUDY

The researcher considered the inclusion of this section as essential to convey a proper understanding of the study. A brief description of some of the concepts used in the research is given below:

i. Teaching Strategies and Teaching Methods

A study of the literature reveals that there is no clarity with regard to the usage of these terms. Strategies and methods, together with other terms, for example, approaches, techniques and tactics, are used synonymously and no clear distinctions are made between them. The researcher's perception of the concepts correspond very closely with the views expressed by Ellington, Percival and Race. (1993, pp. 10-21).

For the purpose of this study, the term strategy is understood to mean the three broad categories of instruction - mass instruction, individualized instruction and group instruction. In this context, teaching methods are the various 'ways of communicating ... knowledge and skills' to pupils. (Alcorn, Kinder and Schunert, 1970, p.139). These "ways" or "methods" include, for example, the lecture method, discussion method, project method, and Socratic method. A detailed account of the

various methods utilized by educators is provided in Chapter 3.

When comparing the definitions of tactics ('mode of operation') and technique ('skill based on the application of accepted principles'), as explained in the Odhams Dictionary of the English language, the researcher has observed a subtle difference between them. These definitions imply that techniques in teaching are based on certain principles of education whereas tactics in teaching may or may not have such a basis. In this study the terms "technique" and "tactic" are used interchangeably to mean specific operations within a particular method. This means that tactics (or techniques) are peculiar to a chosen method of instruction. For example, educators using the Socratic method of instruction, would use techniques (or tactics) which differ from those techniques (or tactics) used by an educator utilizing the method of laboratory group exercises.

ii. Resources

Tucker (1987, p.13) defines a resource as 'an object of study or stimulus for the pupil ....' A wide range of items may be described as resources, for example, books, chalkboard, worksheets, pictures, maps, transparencies, slides, models, specimens and films. Resources contribute to the teaching-learning process by enabling educators to manage instruction more efficiently and helping to enhance learning by pupils. The reader is referred to Chapter 3 for details regarding the selection of resources when specific teaching strategies are utilized.

iii. Culture, Multicultural schools and Multicultural Education

Culture, according to Eggen and Kauchak (1994, p.165), *'refers to the attitudes, values, customs, and behavior patterns that characterize a social group.'* Other characteristics include, for example, language, geographic location, sex, religion, socio-economic class, racial identity, ethnicity and political affiliations. A group of pupils who differ in one or more of these aspects is described as culturally diverse or multicultural. A multicultural school is one which has a pupil population composed of culturally diverse groups. Very briefly, multicultural education may be defined as a school education programme which seeks to cater for pupils from diverse backgrounds. These aspects are discussed in greater detail in Chapter 3.

iv. Integration of Strategies and Resources

This refers to the utilization of certain teaching strategies together with the resources which are appropriate to that particular strategy. In the planning of instruction consideration ought to be given to the selection and utilization of one or more strategies together with suitable resources. Integration of strategies and resources involves the co-ordinated use of various strategies and resources.

1.6 RESEARCH AUDIENCE

According to Mouly (1978):

> 'Research is best conceived as the process of arriving at dependable solutions to problems through the planned and systematic collection, analysis, and interpretation of data. It is a most important tool for advancing knowledge, for promoting progress, and for enabling man to relate more effectively to his environment, to accomplish his purposes, and to resolve his conflicts'. (Mouly, as quoted by Cohen and Manion, 1994, p.40).

The above statement implies that researchers do not work in a vacuum. They have an obligation to study phenomena, record data and communicate their findings to those members of society who have an interest in the investigation.

The possible audiences for this study are:

i. researchers in the field of education;

ii. educators in schools and lecturers involved in teacher education at universities and colleges of education; and

iii. superintendents and policy makers in the Provincial and National Departments of Education.

In addition, this research is available to the public, to anyone who has an interest in education.

As mentioned earlier in this chapter, this study is concerned with the current multicultural school situation. It, therefore, has special significance to education departments (both provincial and national). The findings (Chapter 4) and recommendations (Chapter 5) may create an awareness and understanding of the present state of education and provide a catalyst for possible changes in the future.

Teachers play a critical role in the successes or failures of classroom teaching. It is for this reason that the researcher believes that this study is particularly relevant to in-service teachers, pre-service teachers and lecturers at institutions which are responsible for teacher education. Access to this report may contribute to some changes (or even improvements) in the planning and implementation of daily classroom activities.

1.7 LIMITATIONS OF THE STUDY

This research, like any other research, is bound to have limitations. However, the value of research is not diminished by the fact there are limitations, but actually enhanced by reporting such limitations. 'In the game of conducting and reporting research, there is no harm in having limitations but it is bad form not to admit them.' (Anderson, 1990, p.110). Although the researcher endeavoured to be open and honest and to engage in 'systematic and objective observation, recording and analysis' (Anderson, 1990, p.5), this study may have 'many flaws of omission and commission.' (Delamont, 1984, p.33).

The limitations imposed on the generalizability of this study may be derived from the research design and the research procedure.

a) Research Design

This research was confined to:

i. The Verulam-Phoenix area: This area was chosen for personal reasons. The schools in this area were relatively accessible to the researcher and within reasonable travelling distance from the researcher's home.

The selection of specific schools was based on their ease of accessibility (discussed in Section 4.2 of Chapter 4) and also on the fact that the composition of their pupil populations was more appropriate to this study.

ii. Secondary Schools: Teachers in secondary schools can be described as "subject-specialists" who have specialised knowledge (content, strategies, resources) pertaining to their subjects. Furthermore, the researcher believed that pupils in secondary schools would make a greater contribution with regard to data collection (interviews and questionnaires) than pupils in primary schools.

iii. Indian Schools: This research was concerned with the extent to which teachers in former Indian schools were able to cope with teaching the culturally diverse pupils in these schools. Furthermore, these schools were familiar to the researcher and readily accessible in terms of travelling distance.

iv. Five Schools: The collection of adequate data was the primary reason for including five schools in this study. As mentioned earlier, initially the researcher contemplated using a case study design in this study. Although one or two schools might have been

sufficient, the researcher preferred the inclusion of more schools for purposes of comparison. The researcher, however, was mindful of the fact that the inclusion of more schools would strip the research of its 'depth' and concentrate on its 'breadth'. (Mrwetyana, 1994, p.16). The methodology was subsequently modified to include two methods, namely, the case study and survey methods.

v. Five Subjects: The focus of this study was the utilization of strategies and resources in teaching. Ideally, the researcher should have investigated the strategies and resources utilized by teachers of all academic subjects taught at schools. In view of time constraints, this study was limited to five subjects. As mentioned before, the subjects selected were representative of the different fields of study (languages, science, social studies, commerce) so as to give the researcher a reasonable overall picture of strategies and resources used.

vi. Multicultural Schools: Section 1.4 of this chapter provides definitions of the terms "culture", "multicultural" and "multicultural schools". For a more comprehensive account of cultural differences and the implications of these differences for classroom teaching, the reader is referred to Chapter 3. The term "culture", as explained in Section 1.4, is an "umbrella" term which covers a wide range of issues. For the purpose of this study, the researcher has restricted the scope of the term "culture" to denote a particular racial group. This implies that a class of Indian and African pupils would constitute a multicultural group. In this context, the term "multicultural school" is used in this study to denote a school with a pupil population composed of Indian and African pupils.

b) Research Procedure

A research worker, with his or her own values and perspectives, may have a strong influence on the data collected. What is important to one researcher may seem irrelevant to another. One's preconceptions may colour the interpretation of data collected. The researcher, in acknowledging that it is impossible to observe and record everything that occurs in a classroom, agrees with Ball (1984, p.78) when he states that:

> 'For everything that is noticed a multitude of other things go unseen, for everything that is written down a multitude of other things are forgotten. Great parts of the real world experienced by the participant observer, probably the greater part, is *selected out*...'

Data furnished in questionnaires and interviews was treated with circumspection as the researcher was aware of the inclination of some respondents to create a favourable impression. The researcher also realised that the potential of the classroom setting as the main source of data could be diminished as the result of prior arrangements made with regard to classroom visits.

Moreover, the researcher was conscious of the fact that the teachers and pupils had 'considerable potential for sabotaging the attempt to research them'. (Jones, 1991, p.208). Attempts were therefore made to gain the trust and active co-operation (rather than the passive compliance) of all respondents by:

i. explaining the reasons for the study;

ii. stressing that they were free to decide for themselves whether they wished to participate in the study;

iii. assuring them that confidentially of data collected and identity of respondents will be respected;

iv. informing them that no evaluation of teachers or pupils was envisaged in this research; and

v. pointing out that the primary interest of the researcher was investigating and understanding the activities in the classroom.

The number of schools selected (probably too few for a survey but too many for a case study), the criteria used in their selection, and the "errors" derived from the researcher, respondents, and the instruments of data collection may contribute to the limitations, if any, on the generalizability of this research. Such limitations will, however, be offset by the possibility of triangulation offered as a result of the use of multiple sources of data, different methods of data collection and also multiple sites for data collection.

The researcher therefore believes that, inspite of any limitations, this research has the potential to make a worthwhile contribution to our knowledge of classroom teaching.

1.8 SUMMARY

The motivation for this study has been the many changes in the system of education which were ushered in by the advent of democracy in this country. Teachers in former Indian schools now have to teach large classes and also cope with large numbers of pupils who experience difficulty in using English as the medium of communication. The change in circumstances challenges teachers to evaluate their teaching practices and seek appropriate teaching strategies and resources to cater for the emerging diverse pupil populations in classrooms.

The researcher makes use of a case study design to investigate the teaching strategies and resources utilized by teachers at selected schools in the Verulam-Phoenix area. Three main methods are used to collect data, namely, observations, questionnaires and interviews. The data collected is analysed and evaluated, and then used as a basis for making recommendations.

The audiences for this study are identified as other researchers, educators in schools, lecturers at universities and colleges of education, superintendents of education and policy makers in both the provincial and national education departments. Certain key concepts, for example, teaching strategies, teaching methods, resources and culture are explained to enable the reader to understand their usage. The researcher, while acknowledging the possibility of limitations on the generalizability of findings due to research design and research procedure, believes that the triangulation of data contributes to making this study worthwhile.

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CHAPTER TWO

2. THE THEORETICAL FRAMEWORK: THE RESEARCH METHODOLOGY

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CHAPTER 2

THE THEORETICAL FRAMEWORK FOR THE STUDY

2.1 INTRODUCTION

This chapter provides a broad theoretical framework for the study and clarifies certain key issues in the research methodology. It begins with a discussion of the research approach and research strategy selected. The preliminary discussion is aimed at giving the reader an insight into the 'conditions' (Yin, 1984, p. 16) to be considered when selecting an appropriate research design. The contrasting features of qualitative and quantitative studies are explained to enable the reader to gain a better understanding of the research method utilized. A comprehensive account of case study research is then presented. Included in this account are, inter alia, the characteristics of case study research and aspects of its implementation. The reader's attention is also drawn to the three data-collection methods utilized in this study, namely, observations, interviews and questionnaires. This is followed by an explanation of some ethical considerations and issues related to the validity and reliability of the findings. These aspects are discussed in greater detail in Chapter 4.

The mode of analysis of data collected and the evaluation of findings are covered in the concluding sections of the chapter.

2.2 CHOOSING AN APPROPRIATE RESEARCH DESIGN

According to Merriam (1988, p. 6), a research design is 'a plan for assembling, organizing, and integrating information (data), and it results in a specific end product (research findings).' The choice of a relevant strategy depends on:

i. the nature of research questions posed;

ii. the degree of control an investigator desires on events to be studied; and

iii. the extent of focus on contemporary phenomena. (Yin, 1984, p. 16).

Each research study has an implicit or explicit research design. In some cases a choice of strategies exists. However, some research strategies are particularly attractive in certain situations.

In the present study the researcher is concerned with what teaching strategies and resources are currently being utilized by teachers in secondary school classrooms. Furthermore, an attempt is made to establish why certain strategies and resources are selected by teachers and to evaluate the merits or worth of these teaching strategies and resources in terms of the existing situation in schools.

In trying to capture the essence of a typical classroom the researcher did not manipulate events or participants during the process of gathering data. The researcher also exercised no control over classroom activities, teachers, or pupils. No attempt was made to alter the classroom situation for the purpose of research. The primary aim of the researcher was to describe and evaluate current

teaching practices (strategies and resources) in real-life settings by playing an active role in the use of various methods to obtain data directly from the sites studied.

The concerns of the researcher in the present study implied a case study approach or a survey design. Both of these research methods were initially considered by the researcher. According to Yin (1984, pp. 19-20):

> 'The case study is preferred in examining contemporary events, but when the relevant behaviors cannot be manipulated. Thus, the case study relies on many of the same techniques as a history, but it adds two sources of evidence not usually included in the historian's repertoire: direct observation and systematic interviewing. Again, although case studies and histories can overlap, the case study's unique strength is its ability to deal with a full variety of evidence - documents, artifacts, interviews, and observations. Moreover, in some situations, such as participant - observation, informal manipulation can occur.'

The relevance of direct observation and interviewing of participants in collecting data convinced the researcher that the case study method was more appropriate. Furthermore, case studies...

> ' get as close to the subject of interest as they possibly can, partly by means of direct observation in natural settings, partly by their access to subjective factors (thoughts, feelings, and desires), whereas... surveys often use convenient derivative data, e.g. test results, official records. Also, case- studies tend to spread the net for evidence widely, whereas... surveys usually have a narrow focus.' (Bromley, as quoted by Merriam, 1988, p. 29)

In addition to the researcher's concerns already mentioned, the identification of teaching strategies and resources utilized at a school as a 'bounded system' (Stake, 1980, p. 71) shifted the focus to a case study design. The nature of the questions raised and the researcher's interest characterised this research as an exploratory, explanatory and evaluative case study.

Although the case study design was chosen as the most appropriate research method, the researcher considered the use of a survey as also being relevant in canvassing the opinions of teachers and pupils at each of the schools. Yin (1984, p. 20) maintains that a study may utilize more than one research strategy. He goes further to explain that 'the various strategies are not mutually exclusive' (Yin, 1984, p. 20) and that it is possible to include, for example, 'a survey within a case study or a case study within a survey'. (Yin, 1984, p. 20). In this study the researcher incorporated a survey within the case study method. Five teacher-questionnaires and twenty five pupil-questionnaires were administered at each school. The data obtained via surveys contributed to the data built up for each school. This is explained in section 2.5.3 of the present chapter.

Referring to case study research, Merriam (1988, p. 16) states that 'the logic of this type of research derives from the worldview of qualitative research'. To clarify the case study approach and also to

give the reader a better understanding of the principles underlying this method, the researcher considered it appropriate to present an overview of the qualitative approach, its distinguishing characteristics, and the ways in which it differs from quantitative studies. The main features of qualitative and quantitative approaches are discussed in the next section.

2.3 QUALITATIVE VERSUS QUANTITATIVE STUDIES

According to Patton, qualitative research attempts ...

> 'to understand situations in their uniqueness as part of a particular context and the interactions there. This understanding is an end in itself, so that it is not attempting to predict what may happen in the future necessarily, but to understand the nature of that setting -what it means for participants to be in that setting, what their lives are like, what's going on for them, what their meanings are, what the world looks like in that particular setting - and in the analysis to be able to communicate that faithfully to others who are interested in that setting ...The analysis strives for depth of understanding.... (Patton, as quoted by Merriam, 1988, pp. 16-17).

In describing quantitative research, Skinner (1991, p. 215) states:

> 'Relative to qualitative research, the *design* of quantitative research can be more difficult in the sense that it requires more explicit prior specification of what data are to be collected, in terms of variable definitions and so forth.'

On a superficial level the differences between qualitative and quantitative studies concern the design, data-processing procedures and presentation of findings. The deep-seated differences in philosophical assumptions between the two approaches are explained below.

Firstly, in terms of the assumptions of the nature of reality, qualitative research is based on a 'naturalistic - phenomenological philosophy' (Mc Millan and Schumacher, 1993, p. 373) which acknowledges the existence of multiple realities due to human interaction and perceptions. Research methods are exploratory and emphasize processes rather than outcomes.

Quantitative studies, on the otherhand, are based on a positivist philosophy (Merriam, 1988, p. 18) which assumes the existence of a single, objective reality which is constant and independent of human beliefs and feelings. Research is directed towards observing or measuring this fixed reality.

Secondly, in terms of research purpose, qualitative investigators favour the anti-positivist or subjective approach which views social phenomena as human creations. This type of research is concerned primarily with understanding a social phenomenon by recording and analyzing the views of persons involved in the study.

Quantitative studies subscribe to the positivist or objective view that the social world is an objective reality which is external to the researcher. Research is directed at analyzing cause and effect relationships between selected variables. This type of study is closely linked with statistical methods of data analysis.

Thirdly, in terms of research methods and processes, qualitative researchers make use of an emergent design in which decisions regarding methods of gathering data are made during the course of the study. There is flexibility in the approaches to collecting and analyzing data.

In contrast, quantitative researchers are bound by a fixed set of procedures. These procedures and methods form part of a pre-established research design which is finalised before the data-collection process commences.

Fourthly, in terms of the researcher's role, the personal stance of a researcher in qualitative studies is quite different from that of a researcher using quantitative methods. Researchers using qualitative methods become "immersed" in the phenomena studied and seek more active involvement with their respondents. Quantitative researchers, on the other hand, are more detached from the situations or phenomena studied.

Finally, to a qualitative researcher the context or setting of a study is important. The perceptions of respondents are coloured by the context in which they are found. Allan (1991, p. 178) states that the participants' 'own frame of reference needs detailed investigation before their actions can be adequately interpreted and explained.' Qualitative research therefore builds 'context-bound' generalizations whereas quantitative research establishes universal 'context-free' generalizations. (Mc Millan and Schumacher, 1993, p. 15).

A study of the above account would enable the reader to understand the case study design which is explained in detail in the following sections of this chapter.

2.4 THE CASE STUDY METHOD

2.4.1 Definitions of Case Study

Several definitions of case study have been advanced by writers such as Wilson; MacDonald and Walker; Guba and Lincoln; and Becker. For the purpose of this study the following definition proposed by Yin (1984, p. 23) was decided on.

> 'A case study is an empirical inquiry that:
>
> * investigates a contemporary phenomenon within its real-life context; when
>
> * the boundaries between phenomenon and context are not clearly evident; and in which
>
> * multiple sources of evidence are used.'

The reason for choosing this definition is the emphasis on investigating "contemporary" phenomena in their "real-life" context.

Since the focus of this research is the integration of teaching strategies and resources in each of five different subjects in the schools selected, several units of analysis or 'bounded-systems' (Stake, 1980, p. 71) are involved. The main unit of analysis is the teaching

strategies and resources utilized at a particular school as a whole while the strategies and resources used in individual subjects within a school constitute smaller units.

2.4.2 Characteristics of a Case Study

The characteristic features of case study research (Merriam, 1988, pp. 11-13) are:

2.4.2.1 Particularistic

The uniqueness of the case study method is that it examines a particular event, situation or phenomenon which the researcher selects to understand in depth. Although the study focuses on a specific instance, it can illustrate a general problem or situation.

2.4.2.2 Descriptive

The end product of a case study is a rich, thick description of the phenomenon studied. The description is usually qualitative and makes use of prose and literary techniques instead of numerical data to describe and analyse phenomena and report findings. Case study reports can incorporate visual material, for example, photographs and newspaper articles, and also include statements which express the opinions of respondents in their own words.

2.4.2.3 Heuristic

Case studies contribute to a reader's understanding of complex social situations by discussing and providing insights into the problem under study. According to Merriam (1988, p. 13), 'They can bring about the discovery of new meaning, extend the reader's experience, or confirm what is known.' Case studies can also evaluate the worth of a project, establish the reasons for the success or failure of an innovation, and discuss, summarise and document the complexities of a problem.

2.4.2.4 Inductive

Qualitative case studies are based on inductive reasoning. Concepts, hypotheses and generalisations are derived from an examination and analysis of data collected. A characteristic feature of the nature of case studies is the discovery of new knowledge and understanding rather than the verification of hypotheses formulated before the commencement of the study.

Aspects of implementation of the case study method are discussed in the next section.

2.5 DESIGN OF THE CASE STUDY

2.5.1 Cases and Units of Analysis

A case study research may incorporate a single case or multiple case studies. While single case studies are relevant and more appropriate in circumstances where the object of research may be certain unique events or situations, the use of a multiple-case approach in the present research was considered more useful since it provides evidence which is considered 'more compelling' and makes the study 'more robust'. (Yin, 1984, p. 48). Five schools were selected for inclusion in this study. The rationale for selecting the particular schools has been explained in Chapter 1. This case study research therefore includes a total of five cases, each one concerned with the teaching strategies and resources utilized by teachers at a specific school.

2.5.2 Non-Probability Sampling of Sites and Participants

Two main types of sampling procedures are used in research, namely, probability and non-probability sampling. In probability sampling 'one can specify for each element of the population the probability that it will be included in the sample' but 'in non-probability sampling there is no way of estimating the probability that each element has of being included in the sample and no assurance that every element has *some* chance of being included'. (Chein, as quoted by Merriam, 1988, p. 47). Since the main purpose of this case study research was to investigate what teaching strategies and resources are being used by teachers and not to generalise across all schools, a non-probabilistic sampling procedure was considered appropriate. Purposive sampling, also called purposeful or criterion-based sampling by some writers, was

employed in selecting sites (schools) and participants (teachers, pupils, etc.). This sampling technique allowed the researcher to select schools according to established criteria for data-collection and to choose teachers and lecturers who were willing to participate in the study. The researcher exercised no control in the selection of pupils and personnel from school resource centres and teachers' centres. This aspect of the selection process is discussed in Chapter 4.

2.5.3 An Embedded Design

As discussed previously, a case study research is sometimes based on a single case and at other times on a number of cases. A case study may also be described as using a holistic or an embedded design. In a holistic design no subunits are identified and the researcher examines only the 'global nature of ... (a) program'. (Yin, 1984, p. 44). In contrast, an embedded design focuses on subunits as well as the larger unit of analysis. In general, four basic case study designs are used in research, namely, single holistic, single embedded, multiple holistic and multiple embedded design. (Yin, 1984, pp. 41-47). The researcher in the present study examined the teaching strategies and resources utilized by teachers in five different subjects in each of the five schools selected. The research design could therefore be most appropriately described as an embedded multi-case study. The study included several units of analysis. The main unit of analysis (or case) was the teaching strategies and resources utilized at a particular school as a whole. The smaller or minor units of analysis were the teaching strategies and resources used by individual teachers in different subjects within a school.

2.5.4 Replication Logic in Case Study

As in all multiple-case studies, the present study was based on the principle of replication rather than a sampling logic which characterises surveys. According to the sampling logic, data collected from respondents in a survey is assumed to represent the data that might have been collected from the entire pool of potential respondents. (Yin, 1984, p. 50). In explaining the replication logic, Yin (1984, p. 48) states:

> 'If similar results are obtained from all ...cases, (literal) replication is said to have taken place'.

If, however, cases produce 'contrary results but for predictable reasons' (Yin, 1984, p.49), theoretical replication is applicable.

A survey was conducted amongst teachers and pupils at each site to determine the teaching strategies and resources utilized by teachers. The data collected via surveys formed part of the findings for each particular school and not pooled across all schools. (Yin, 1984, p. 53).

2.5.5 A Flexible Method

One advantage of using a case study method is that it allows an investigator to modify, if necessary, the initial research design as the study progress. But Yin (1984, p. 54) issues a caution when he states that:

'the flexibility of case study designs is *in selecting cases different from those initially identified* ... but not in changing the purpose or objectives of the study to suit the case(s) that were found.'

In the present study, circumstances at schools necessitated a modification in the process of selecting schools and the researcher was compelled to identify new schools in place of the schools originally selected. The conditions that prompted the change in the original plan and the changes effected are discussed in section 4.2 of Chapter 4. Also, the use of groups of pupils in interviews was not originally intended, but emerged as a useful technique when the researcher visited sites for collecting data. Furthermore, the gathering of data from pupils was initially restricted to senior pupils (Grades 10, 11 and 12). The unavailability of the target pupils in some schools meant that junior pupils (Grades 8 and 9) were accommodated in some cases. These changes in the original plan were unavoidable but did not alter the objectives or focus of the study. For this reason the researcher cannot be accused of bias in the recording of data and reporting findings.

2.6 DATA COLLECTION

A case study worker is not bound by a rigid structure and any pre-determined data collection method. Although various methods are commonly used, a researcher is free to make intelligent decisions about the relevance of certain methods to specific situations.

The choice of different and appropriate methods of collecting data and the advantages of using multiple methods are highlighted by Clark and Causer (1991, p. 172).

> 'In a case ... where multiple research methods are chosen, it is important to make some preliminary decisions about the relative importance of the different methods, which ones are primary, which are secondary, and so forth. The crucial point is to choose methods according to how far they enable you to achieve your research objectives and to implement your particular research design. If it is practicable within your resource constraints the use of a number of different methods does have distinct advantages.'

The researcher employed three methods of data collection, namely, observations, questionnaires and interviews. However, the main emphasis of this study was placed on observations within schools. Observation of lessons enabled the researcher to gain a first-hand understanding of activities in classrooms. The data obtained was supplemented by administering questionnaires and conducting interviews. These different methods promoted cross-checking of data in order to establish its authenticity. This aspect is discussed in section 2.8 of this Chapter and section 4.7 of Chapter 4. Each of the methods used in this study is discussed below in greater detail.

2.6.1 USE OF QUESTIONNAIRES

Questionnaires are widely used as a means of collecting data. Generally, the use of questionnaires is preferred when responses are needed from large numbers of respondents. An advantage of using questionnaires is that they enable researchers to obtain reliable and valid data in a short space of time.

Questionnaire - construction can be time-consuming. Several critical steps must be taken by a researcher when using questionnaires. These steps (Anderson, 1993, pp. 207-221) are:

* ascertaining specific data to be collected.

  A clear understanding of data needs helps the researcher in identifying potential sources of data and also constructing research questions.

* identifying target groups to serve as sources of data.

  The persons chosen must be competent to provide the data sought by the researcher. For example, a researcher would be able to obtain more meaningful responses regarding pupils' classroom activities from subject teachers rather than from school secretaries.

* preparing questions

  A researcher needs to exercise care when constructing questions so as to elicit data that is absolutely essential. A variety of question types such as fill-in-the-blank, multiple choice, ranking and writing comments are generally used. Questions may be either open-ended or pre-coded. Vague and ambiguous words should be avoided to prevent confusion in respondents.

* sequencing of questions

  It is a good practice, especially in the case of long questionnaires, to group questions into sub-sections. Also, it is advisable to group together questions on the same topic and also questions of the same variety. Questions requiring much writing should be included at the end of a questionnaire.

The quality of questionnaires can be enhanced by, for example, making use of an attractive format and by pilot testing. A well-organised questionnaire will help in securing maximum co-operation from respondents. Mc Millan and Schumacher (1993, p. 242) provide a list of rules to assist researchers in improving the layout and organisation of questionnaires. In addition to a good layout, it is useful to include an introductory paragraph covering aspects such as confidentiality of responses, the need to answer all questions and the prompt return of questionnaires.

Pretesting of questionnaires helps to 'identify ambiguities in the instructions; ... clarify the wording of questions and... indicate omissions or previously unanticipated answers in multiple choice or ranking questions.' (Anderson, 1993, p. 217). The pilot test enables a researcher to identify weaknesses, modify questions and, in general,make the questionnaire more effective. Self-completion questionnaires may be hand-delivered or sent through the post. In the case of hand-delivered questionnaires the response rate is usually very good. However, a major disadvantage in this case is the possibility of bias being introduced by the researcher's presence. (Glastonbury and MacKean, 1991, p. 228).

2.6.2 USE OF INTERVIEWS

Interviews constitute an essential tool of data-collection and well-informed respondents can provide new and varied perspectives into a situation. According to Dexter:

> 'Interviewing is the preferred tactic of data collection when ... it will get *better* data or *more* data or data at *less cost* than other tactics!'
>
> (Dexter, as quoted by Merriam, 1988, p. 72)

Interviewing is the more desirable method of collecting data in certain cases. The purpose of interviewing is highlighted by Patton when he states that:

> 'We interview people to find out from them those things we cannot directly observe .... We cannot observe feelings, thoughts, and intentions. We cannot observe behaviors that took place at some previous point in time. We cannot observe situations that preclude the presence of an observer. We cannot observe how people have organised the world and the meanings they attach to what goes on in the world - we have to ask people questions about those things. The purpose of interviewing, then, is to allow us to enter into the other person's perspective'. (Patton, as quoted by Merriam, 1988, p. 72).

Interviewing has several advantages over other methods of collecting data. For example, the interviewer can interpret complex questions in order to obtain relevant responses, explain

instructions, probe for details and prompt whenever necessary. In spite of the wealth of data that interviews could provide, Yin (1988, p. 85) states that

> '... interviews should always be considered *verbal reports* only. As such, they are subject to the problems of bias, poor recall, and poor or inaccurate articulation. Again, a reasonable approach is to corroborate interview data with information from other sources.'

A major disadvantage is that interviews could be time-consuming and costly, especially when a large sample is involved.

2.6.3 USE OF OBSERVATIONS

Observation of selected sites helps investigators 'to discern ongoing behaviour as it occurs'. (Cohen and Manion, 1994, p. 110). Observation studies are sometimes used in conjunction with other methods of data collection, for example, questionnaires and interviews. However, unlike questionnaires and interviews, observation studies provide data based on first-hand experiences of investigators. Some writers believe that observation is a 'highly subjective and therefore unreliable nature of human perception' (Merriam, 1988, p. 88) but it is the best and most appropriate method when it becomes necessary 'to record behavior as it is happening'. (Merriam, 1988, p. 88).

There are basically two main methodological approaches or types of observations, namely, participant observation and non-participant observation. (Cohen and Manion, 1994, p.107). In

participant observation researches engage in the activities which they are investigating. A non-participant observer is essentially a concerned spectator, a passive observer who stands aloof from the activities being studied. (Cohen and Manion, 1994, p. 107). Each type of observation technique has advantages and drawbacks, and has special relevance to particular situations. As explained earlier in the case of interviews, there are varying degrees of structure in the case of observations as well.

The collection of data by observation involves hard work and concentration. This is illustrated by Patton in his comments on observation fieldwork.

> 'The dominant motifs in fieldwork are hard work, enormous discipline, and concentration on the mundane, often to the point of boredom .... Alas, let the truth be told: The gathering of field data involves very little glory and an abundance of nose-to-the-grindstone drudgery.' (Patton, as quoted by Merriam, 1988, p. 92).

2.7 ETHICS IN RESEARCH

Ethical issues create moral predicaments for all researchers.

According to Cavan, ethics is...

> ' a matter of principled sensitivity to the rights of others. Being ethical limits the choices we can make in the pursuit of truth. Ethics say that while truth is good, respect for human dignity is better, even if, in the extreme case, the respect of human nature leaves one ignorant of human nature.' (Cavan, as quoted by Cohen and Manion, 1994, p. 359)

An investigator has a responsibility to the audience for whom the study is intended and also to the subjects who provide the data required. The ethical dilemma faced by an investigator arises as a result of a conflict between...

> 'the right to research and acquire knowledge and the right of individual research participants to self-determination, privacy and dignity. A decision not to conduct a planned research project because it interferes with the participants' welfare is a limit on the first of these rights. A decision to conduct research despite an ethically questionable practice ... is a limit on the second right.' (Frankfort - Nachmias and Nachmias, as quoted by Cohen and Manion, 1994, pp. 364-365).

No two situations are identical in all respects and this means that the researcher has to adapt to changing circumstances. In conducting this research the researcher was guided by the advice offered by Diener and Crandall:

> 'There is simply no ethical alternative to being as nonbiased, accurate, honest as is humanly possible in all phases of research. In planning, conducting, analyzing, and reporting his work the scientist should strive for accuracy, and whenever possible, methodological controls should be built in to help .... Biases that cannot be controlled should be discussed in the written report. Where the data only partly support the predictions, the report should contain enough data to let readers draw their own conclusions'.
>
> (Diener and Crandall, as quoted by Merriam, 1988, p. 182).

2.8 VALIDITY AND RELIABILITY OF DATA

Traditional research normally uses well-established tests or criteria of internal validity, external validity and reliability to demonstrate the authenticity of findings. A brief review of these criteria is provided below.

2.8.1 Internal Validity

When used in the traditional sense internal validity is concerned with the accuracy in the portrayal of a fixed reality. The qualitative researcher's notion of reality is that it is ever-changing and a product of the human mind. This means that the internal validity of a qualitative study is based on the degree to which a researcher accommodates the views of participants.

2.8.2 External Validity

This refers to the generalizability of research findings to other settings. While this criteria finds wide application in traditional or quantitative studies, there is some uncertainty about its role in qualitative case study research. Some case study workers consider generalizations to be inappropriate since a single case is an example rather than a representative of a population. However, those investigators using a multi-case design, random sampling and specific procedures for data analysis support the traditional view of generalization.

The present researcher adopted the latter approach despite the fact that sites and participants were purposefully selected.

2.8.3 Reliability

This term refers to the extent to which a study can be replicated to yield the same results. The emergent design of qualitative research, coupled with the 'highly contextual' and 'multi-faceted' nature of data gathered makes true replication of qualitative studies impossible. (Merriam, 1988, p. 171). Some writers believe that in the case of qualitative studies one should interpret reliability in terms of the 'dependability' or 'consistency' of results based on the data collected and methods adopted. (Merriam, 1988, p. 172).

The trustworthiness of qualitative research is sometimes viewed with suspicion as it is considered to be 'impressionistic and non-verifiable'. (Allan, 1991, p. 180). Many writers, for example, Kirk, Miller, and Lincoln and Guba, believe that qualitative research, because of its 'different theoretical underpinnings and different views as to what counts as *valid* data' (Allan,

1991, p. 177), requires different criteria for determining the trustworthiness of findings. Lincoln and Guba, for example, proposed the terms *'truth value'*, *'transferability'*, and *'consistency'* for internal validity, external validity and reliability, respectively. (Merriam, 1988, p. 166).

Since a (qualitative) case study design was adopted in the present research, a discussion of the applicability of the above criteria to case study research was considered relevant. In spite of claims by some writers that case studies lack reliability, protagonists of this research method maintain that certain measures can be adopted to counter this criticism. The use of multiple sources of data and multiple methods of data-collection, together with a detailed account of the researcher's assumptions, criteria for selecting sites and participants, and method of analysis contribute to the reliability of data. Furthermore, case studies strive for internal validity by incorporating a 'chain of evidence'. (Yin, 1984, p. 96). This principle enables outsiders to study the data collected and the analysis presented to arrive at the conclusions recorded. The issue of external validity in case study research is more problematic. However, the use of a multiple case design and random sampling procedures do offer the potential to generalise to other settings and situations.

2.9 ANALYSIS OF DATA

The purpose of data analysis, according to Taylor and Bogdan, is 'to come up with reasonable conclusions and generalizations based on a preponderance of the data.' (as quoted by Merriam, 1988, p. 130). As has already been noted, each of the five cases selected includes embedded units of analysis. The embedded unit of analysis is the teaching strategies and resources utilized in a subject. The interpretation of data were therefore conducted at two levels:

i. an analysis of embedded units within each case in order to understand the case as a whole; and

ii. a cross-case analysis involving all five cases which is aimed at building generalisations across cases.

In trying to understand the utilization of teaching strategies and resources, the researcher spent many hours in sorting and making sense of the large volume of data gathered from all five sites.

The findings are presented as five individual case studies, each of which is comprehensive in itself and independent of the others. In describing and explaining each case the researcher has searched for regularities and differences among the teaching strategies and resources utilized in the five subjects selected at each site. This meant the pooling of results across the subjects selected and the grouping of teaching strategies and resources into categories according to their frequency of use. Analysis of the data in each of the five cases is based on a 'pattern-matching logic'. (Yin, 1984, p. 103). This mode of analysis involves comparing the teaching strategies and resources utilized with the pattern predicted in Chapter 1. In addition, the reasons for choosing and using certain teaching strategies and resources are explored. Furthermore, teacher constraints in teaching multicultural classes and the factors contributing to the poor performance of some pupils are discussed. The generalizations built up from the embedded units constitute the findings of a single case.

The next step in the processing of data were concerned with a cross-case analysis whose goal is the building of generalisations across all cases studied. The results of all five cases are compared with each other in order to identify similarities, differences and underlying patterns in the utilization of

teaching strategies and resources. The aim of this process is 'to build a general explanation that fits each of the individual cases, even though the cases ... vary in their details.' (Yin, 1984, p. 108). The analysis of data at this level also includes an evaluation of the teaching strategies and resources utilized by teachers.

2.10 EVALUATION OF FINDINGS

'Evaluation is the application of research skills to determine the worth of an educational practice.' (Mc Millan and Schumacher, 1993, p. 518). This field of activity has developed substantially in the last 30 years and now forms an integral part of education. The diversity of evaluation research is reflected in the large number of approaches or "models" that are currently being used. These approaches (or models) are classified as, for example, objectives-oriented; consumer-oriented; expertise-oriented; decision-oriented; adversary-oriented; and naturalistic and participant-oriented. (Mc Millan and Schumacher, 1993, p. 525). Each of these approaches has a different evaluation focus. The approach used in the present study may be described as naturalistic-participant since the researcher:

* makes use of class visits and direct observation in the collection of data;

* reports "portrayals" of participants;

* uses an emergent design;

* utilizes a multiplicity of data sources;

* recognises the significance of context in which evaluation is done;

* uses inductive reasoning; and

* recognises value pluralism by recording and reporting disparate views of participants.

The purpose of this evaluation is to assess the merits of teaching strategies and resources utilized in terms of the emerging multicultural pupil population in schools, and to make recommendations based on the findings. The evaluation of data also includes a discussion and appraisal of teachers' comments regarding pupils' classroom performance and other aspects of current classroom teaching (likes, dislikes, constraints, experiences and suggestions). The generalisations and conclusions drawn from the five cases studied become the overall generalisations and findings of the research study.

2.11 SUMMARY

This chapter has been devoted to a discussion of research methodology, including the collection and analysis of data and evaluation of findings.

The researcher argues in favour of the case study method, and outlines the philosophical assumptions of qualitative research before presenting a comprehensive account of the case study design, its characteristics and aspects of its implementation.

Three main methods, namely, observations, interviews and questionnaires are used in data-collection. The researcher highlights the importance of ethical considerations in research and also explores in detail the aspects of validity and reliability of findings. The concluding sections deal with the method of analysis used and the evaluation of research findings.

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CHAPTER THREE

3. THE THEORETICAL CONTEXT: A SURVEY OF CURRENT LITERATURE

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CHAPTER THREE

3.1 INTRODUCTION

Pupils' incentives to learn are influenced to a large extent by teachers' modes of classroom instruction. In spite of constantly seeking new ways to improve the learning of pupils teachers are often frustrated by large numbers of pupils who are reluctant to exert an adequate measure of effort to achieve success. Some pupils are indifferent to or even negativistic about schoolwork. The comments made by Barker (1995, p. 160) about pupils in American schools are equally relevant to the South African situation:

> The difficulty is that many students want compensation without commitment. Many students want easy success, the easy money, the easy "A" grade. As the saying goes, "Everyone wants to go to heaven, but no one is willing to die to get there."

Teachers play a crucial role in guiding the learning of all pupils. According to Purcell-Gates,

> '... If even one child does not learn what we believe we have taught, then we have not learned how to teach that child. The responsibility rests, ethically and pragmatically, on the shoulders of educators.'(as quoted by Clabaugh, 1995, p. 158.)

The above statement ignores the fact that learning requires both desire and effort. Teachers cannot make pupils learn but can create conditions to promote learning by judiciously selecting appropriate strategies and methods and making available adequate resources.

The researcher identifies and describes three main teaching strategies and a variety of teaching methods that could be used. The role of resources in the teaching-learning process is also stressed. The chapter concludes with an exposition of the terms culture, cultural diversity, multicultural schools and multicultural education.

3.2 TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES

3.2.1 INTRODUCTION

The terms teaching strategy, teaching method and teaching resource are explained in section 1.5 of Chapter 1. In this study the researcher has classified the strategies utilized by teachers as mass instruction, individualized instruction or group instruction. The teaching methods applicable to the different strategies are explained in detail. The researcher has characterised those teaching methods which emphasize active pupil participation as "active" and the others as "passive".

Since resources constitute an integral part of teaching and learning, the researcher has incorporated various resources, either explicitly or implicitly, in the discussion of teaching strategies and teaching methods. Also, since the role of resources depends on the teaching methods utilized, the researcher has provided a detailed discussion of different methods to enable the reader to gain a better understanding of the use of resources. Nonetheless, section 3.3 has been included to give the reader a summary of the various resources relevant to the different teaching strategies and methods.

3.2.2 MASS INSTRUCTION

Mass instruction is also known as whole-class instruction. This strategy involves imparting subject-matter knowledge to a class of pupils either directly by the teacher by means of, for example, a lecture or indirectly by means of educational broadcasts (television or radio) or films. The teacher assumes a dominant role in the teaching-learning situation, serving as both the source of information and the director/controller of the of the teaching-learning process. Pupils, on the other hand, are restricted to a largely passive role. Little or no attempt is made to cater for individual pupil differences, all pupils being forced to work at a common rate which is determined by the teacher. (Ellington and Race, 1993, p.15). The role of instructional materials in mass instruction is generally supportive since the teacher serves as the main vehicle of instruction.

Within the context of the mass instructional strategy a number of teaching methods are utilized. Some of the common teaching methods used are explained below. The first three methods may be described as "passive" whereas the others are "active".

3.2.2.1 THE LECTURE METHOD

This teaching method, although popular in tertiary institutions, is used in schools when the primary educational objective is to transfer knowledge or information about a topic. A lecture is commonly used to explain a problem, describe a process or introduce a topic to a group of pupils. In this method the teacher talks according to a preplanned scheme and pupils are expected to listen and make notes. Some educators use the lecture frequently since it is a quick way to present a large amount of material to pupils

in a short time. Other educators disregard the lecture as a useful instructional method. One of the strongest criticisms of this method is that it makes pupils passive. Furthermore, it is argued that generally pupils have a short attention span and cannot focus on a lecture for long periods of time. (Cangelosi, 1992, p. 168).

The effectiveness and usefulness of lectures could be improved by, for example:

* keeping lectures short to cater for pupils' short attention spans;
* planning and developing lectures in a logical fashion so that pupils can follow;
* integrating activities into lectures in order to stimulate interactions with pupils;
* encouraging pupil questions and frequently soliciting pupil reactions;
* providing for frequent breathing spaces and questions to check pupils' understanding and keep pupils alert;
* selecting and incorporating a variety of resources such as worksheets and tranparencies to help focus the attention of pupils;
* using incomplete outlines (partial handouts) that pupils complete during the lecture; and
* including a summary at the end of the lecture. (Callahan and Clark, 1988, pp. 179-182).

3.2.2.2 VIDEO PRESENTATION

While representing a separate and unique teaching method, a video presentation can be incorporated into other methods such as lectures and discussions. It can also be used as a substitute for a lecture presentation. The use of this method depends on the availability of expensive equipment. It is therefore rarely used at schools.

The most important advantage of video programmes, according to Ellington, Percival and Race (1993, p. 67), is that they 'can provide an impression of life outside the classroom which would otherwise be inconvenient or perhaps impossible to achieve'. This means that pupils gain "first-hand" knowledge of, for example,the lifestyles of people in foreign countries, scientific processes at a microscopic level and industrial processes.

Basic to the effective use of video presentations as a teaching method is the necessity of a preview of programmes in order to assess their relevance to the subjects and pupils taught. This exercise gives the teacher the prerequisite knowledge necessary to introduce programmes and also prepare pupils for the viewing. A drawback of video programmes is their misuse 'for convenience rather than for sound educational reasons'. (Ellington, Percival and Race, 1993,
pp.67- 68).

A video presentation is a useful teaching method which can also produce active learning if worksheets are utilized by teachers.

3.2.2.3 EDUCATIONAL BROADCASTING

Television and radio programmes can be used to teach individual pupils and also large numbers of pupils simultaneously. This method of teaching can therefore be classified as belonging to both individualized instruction and mass instruction.

Educational broadcasts, like video presentations, can be used in conjunction with other methods to add variety to classroom teaching practices. Radio and television programmes can be used as a supplement to (or even substitute for) other methods of instruction such as lectures and debates. (Ellington, Percival and Race, 1993, p.69). A major disadvantage of using educational broadcasts is that their timings are fixed, thus making their incorporation into class timetables difficult or even impossible. Furthermore, teachers are not afforded the opportunity to view programmes beforehand. However, these problems may be overcome by recording programmes and using video presentations when appropriate.

The high cost of equipment restricts the use of this teaching method in many schools, especially those in the rural areas.

3.2.2.4 DISCUSSION

This is one of the most commonly used teaching methods that promotes active pupil participation in lessons. The term discussion means ...

> '... (a) thoughtful consideration of the relationships involved in the topic or problem under study ... (whereby) relationships are analysed, compared, and evaluated, and conclusions may be drawn.'
>
> (Risk, 1958, p. 239).

The use of discussions implies classroom activities in which teachers and pupils work co-operatively to 'consider, examine or investigate the various sides of a question, topic, or problem'. (Alcorn, Kinder and Schunert, 1970, p. 159). This method assumes a willingness by pupils to share ideas in a classroom which is less teacher-centered than, for example, when the lecture method is used. According to Curzon (1990, p. 287) a discussion ...

> 'builds participants' understanding of the topic in question by supplementing each participant's information with information possessed by other members of the group, by stimulating different perspectives on the topic, by allowing conjectures on the subject matter and providing opportunities for criticism and refutation, by encouraging mutual adjustment of opinions.'

Discussions can be started by, for example, the presentation of facts, problems or demonstrations; a description of a situation or an explanation of an event, either by the teacher or the pupils. To initiate a discussion, a teacher should ask "how" and "why" questions (instead of "who", "what", "when" or "where" questions) relevant to the topic under discussion. (Blount and Klausmeier, 1968, p.263).

The quality of a discussion depends on the skill of the teacher in initiating and guiding it. Progress is assured if the teacher creates a supportive atmosphere in which all pupils feel free to think and interact with the teacher and fellow pupils 'without fear of embarrassment'. (Clark and Starr, 1991, p.240). The teacher's role, as noted by Blount and Klausmeier (1968, p. 262), is ...

> '...to create an atmosphere in which students can discuss freely, in which they can have an uninhibited interchange of ideas ... to help make areas of agreement and disagreement clear; to help students identify their own assumptions, stock responses, and prejudices; to help students realize alternative solutions; and to guide discussion(s) so that all major concepts are carefully considered.'

Furthermore, a teacher should not dominate discussions but encourage all pupils to participate, and also reward pupils for their efforts by, for example, making use of positive comments.

In some classes discussions may be used as the primary method of instruction during a class period. In such cases a thorough preparation by the teacher and an adequate prerequisite background knowledge of the discussion topic gained by pupils would ensure that effective participation takes place. Sometimes a discussion could be introduced at appropriate points during a class period. Lowman (1984, pp. 127-128.) states that ... 'Discussions generally should be planned, but... (simple discussions) can be introduced spontaneously when it seems needed.' For example, a teacher may

initiate a discussion in the midst of a lecture to elicit pupils' viewpoints on certain issues. (Lowman, 1984, p. 127). All discussions should conclude in a final summary. Pupils may serve a helpful role both in keeping a record of the discussion as it progresses and in drawing up the final summary.

The seating arrangement of pupils also contributes to the exchange of ideas amongst pupils. A discussion has a better chance of being successful if pupils sit in a face-to-face arrangement (a circular or horse-shoe arrangement) rather than a face-to-back arrangement as in a traditional classroom.

A discussion is useful since it promotes understanding, independent thinking, and an assimilation and retention of material. This is due to the opportunity afforded to pupils to develop and establish concepts instead of simply receiving and accepting ideas and facts transmitted by the teacher. (Hyman, 1974, p. 77). The face-to-face interaction between teachers and pupils helps to build positive interpersonal relationships. It also enhances pupil involvement and improves communication skills. Discussions may not be suitable for 'dispensing information' but extremely useful for 'clarifying information and concepts'. (Eble, 1976, p. 58). In addition, discussions help to develop 'individual skills of formulating and expressing ideas and opinions'. (Eble, 1976, p. 59). Discussions are particularly useful in revealing pupils' attitudes (Lowman, 1984, p. 122) and also demonstrating 'how knowledge may be evaluated'. (Lowman, 1984, p.123). The most important contribution, according to Clark and Starr (1991, p. 239), is...

'the opportunity they give students to practice thinking - to look at their own ideas, to formulate and apply principles, and to face up to immediate feedback from their peers'.

3.2.2.5 RECITATION

This method consists of the following three essential steps (Blount and Klausmeier, 1968, p. 267):

* the teacher assigns pupils some material (from either the textbook or other printed matter) to study;

* the pupils study the textual materials during a class period or at home; and

* the teacher questions pupils on the material studied.

A recitation has several advantages, for example:

* it provides opportunities for pupils to learn from one another;

* the question and answer sessions give pupils immediate feedback regarding the correctness or incorrectness of their responses;

* the expectation of having to answer questions in class provides motivation to learn.

The use of recitations is sometimes discouraged since the use of this method:

* creates an unfriendly feeling between teacher and pupils who regard the teacher as an inquisitor rather than a helper;

* produces anxiety and stress among pupils in attempting to give the correct answer and therefore gain the teacher's approval;

* does not promote oral discussion or improve listening habits;

* tends to discourage the development of higher mental processes since the questioning is based on simple cognitive memory; and

* helps to promote individualistic and competitive attitudes but is of little use in developing co-operative behaviour.

Recitation is an effective teaching method. It is generally used in conjunction with other methods. Recitations could be improved greatly by including thought-provoking questions in pupils' assignments. 'The emphasis on thought questions rather than memory questions shifts the focus away from rote memory to thinking, understanding and sharing of ideas amongst pupils. (Clark and Starr, 1991, p. 229).

3.2.2.6 THE SOCRATIC METHOD

This method, made famous by the Greek philosopher, Socrates, is essentially a method of teaching by question and answer. But the method of questioning employed is aimed at encouraging pupils to think. It can be described as ...

'...logically arranging questions and answers around a definite core or theme. They must range from basic, easy questions to more difficult questions and should gradually lead the pupil to a greater understanding of the learning content.' (Pitout, Smith and Windell, 1992, p. 92.).

The Socratic method involves much more than the use of questions in teaching. It consists of four steps, namely,

* asking the pupil to make an initial proposition in response to the teacher's question;

* using a series of probing questions to challenge the pupil's thinking and cause perplexity;

* getting the pupil to admit that he does not know whether the initial proposition is true; and, finally,

* guiding the pupil to formulate a correct response.(Hyman, 1974, p. 112).

The method, as used originally by Socrates, involved prolonged interactions between teacher and pupil.

> 'Socratic teaching demands relatively long interchanges between student and teacher. The student cannot be led into an evaluative or definitional inconsistency in one or two statements. The teacher must first establish what the student's position is, suggest exceptions through analogies or contradictory evidence, and counter the student's defense'. (Oliver and Shaver, as quoted by Hyman, 1974, p. 114).

In a class situation this may generate boredom in the majority of pupils since they are not directly involved. These pupils could disrupt class proceedings. The problem can be overcome by involving the whole class in the questioning. This technique, however, has shortcomings, as noted by Clark and Starr. 'When you spread the questions around the classroom, you may find it difficult to build up the desired sequence, and to keep all the students with the argument'. (Clark and Starr, 1991, p. 277).

The Socratic method is a demanding teaching method. Its successful execution requires total involvement and physical stamina. A teacher needs to be thoroughly prepared and alert at all times. Pupils, on the other hand, may experience discomfort as a result of the questioning. Teachers could assist by maintaining a friendly and supportive environment and not humiliating or discouraging pupils.

This method is hardly, if ever, used at school. Many teachers believe that they are

using the Socratic method. The teaching method utilized by teachers may be described more accurately as the question-and-answer method.

3.2.3 INDIVIDUALIZED INSTRUCTION

The characteristic feature of this strategy is the learner-centered nature of the approach in which pupils work at their own rates. The instructional methods utilized are designed to cope with the needs of individual pupils, their learning styles and pace of learning. The traditional role of the teacher as the presenter of information and controller of the learning process is decreased. Teachers assume the role of a producer or provider of learning resources and a guide to the learner. Pupils, on the other hand, have to accept greater responsibility for their own learning. The instructional materials constitute the vehicle of instruction.

True individualization involves formulating precise objectives, assigning appropriate learning tasks, developing specific learning materials and deciding on expected levels of performance for each pupil in a class. Classroom instruction is sometimes erroneously considered as being individualized when pupils work individually but complete a common task set for the whole class. It is therefore possible for pupils to work individually but not function in an individualized mode.

All methods of individualized instruction may be described as "active". A few of the teaching methods utilized by teachers are presented below.

3.2.3.1 DISCUSSION (ONE-TO-ONE)

Section 3.2.2.4 of this chapter contains a detailed explanation of the discussion method of mass instruction. Discussions could also be used as a teaching method in individualized instruction. However, when used as a method of individualized instruction, discussions are conducted on a 1:1 basis between teachers and individual pupils.

The reader is referred to section 3.2.2.4 for details regarding the use of this method.

3.2.3.2 INDIVIDUALIZED WORKSHEETS, PROJECTS AND READINGS

The use of individualized worksheets, projects and readings can be very effective in catering for individual pupil differences but requires much time and effort on the part of teachers. This explains the general apathy amongst teachers with regard to the use of these methods.

3.2.3.2.1 WORKSHEETS

A worksheet may be described as ....

> 'a sheet carrying instructions, information, etc relating to part of (or some aspect of) the work of an exercise; such sheets often incorporate spaces where information, answers, results, etc have to be filled in.' (Ellington, Percival and Race, 1993, p. 251).

Worksheets, like handouts, can be used in a wide range of teaching methods. They constitute an important element in directing pupils' classroom activities. Basically there are two types of worksheets - structured and open-ended. The former type structures the learning process in a systematic way. Pupil responses are predetermined by the teacher. The latter type is more pupil-controlled and flexible, and allows for divergent thinking.

Individualized worksheets are worksheets which are adapted to individual needs. Highly-structured worsheets are more appropriate for the academically less-able pupils. Open-ended worksheets are suitable for academically-talented pupils.

3.2.3.2.2 PROJECTS

The use of projects as an instructional method is appropriate for both individualistic and group teaching strategies. The procedure for implementation is the same whether the project is assigned to individual pupils or groups of pupils. However, teachers need to exercise greater circumspection in guiding individual pupils in the selection of suitable projects.

The reader is referred to section 3.2.4.1.2.3 for more details regarding the project method.

3.2.3.2.3 READINGS

The basic assumption of this method is that pupils acquire essentially the same information even though their reading materials (books, periodicals, journals, etc) are different. The teacher is responsible for providing a common assignment and directing pupils to appropriate reading materials. Although reading texts differ, all pupils are able to attain the same instructional objectives.

Assignment questions may be presented to pupils either orally or via study guides. Pupils use these study guides 'both to direct their study and as reference lists from which to select their readings'. (Clark and Starr, 1991, p. 344).

3.2.4 GROUP INSTRUCTION

The term group instruction as applied to classroom practice refers to the use of pupil groupings for pedagogical purposes. The characteristic feature of this teaching strategy is that pupils not only sit in groups but also work as groups. This leads to interactions and interdependence among pupils and provides opportunities for co-operation. As in the case of individualized instruction, instructional materials serve as the vehicle of instruction.

Group instruction has many educational advantages. This strategy promotes active learning by allowing pupils to engage in activities like talking, listening, reading and writing. Since the teacher is removed from the 'teaching spotlight' pupils assume greater responsibility for their learning. (Meyers and Jones, 1993, p. 59). Interactions among pupils provide 'alternate perspectives that challenge and shape ... (their) understanding' .(Kutnick and Rogers, 1994, p.5). Pupils also gain social and interpersonal skills through interactions with others. Teachers have more time available to assist individual pupils with problems.

Although all pupil groupings 'share common elements of active learning' (Meyers and Jones, 1993, p. 62), the researcher recognises the following two categories:

* INFORMAL SMALL GROUPS

Informal pupil groups are short-term (lasting for one or two class periods) groupings formed for specific learning tasks. There are no specific procedures to be followed either in the formation of groups or in the methods of teaching used. For the purposes of this study, pupil groups are restricted to include 2-8 members.

The success of this teaching and learning strategy depends to a large extent on the teacher's ability to 'design realistic goals, guide students' behavior, and create a positive atmosphere in which students ... share their ideas and learn from each other.' (Meyers and Jones 1993, p. 59). However, informal groups are relatively easy to use in the classroom

and could serve as a natural starting point for the inexperienced teacher who wishes to "get his feet wet" in the mode of group instruction.

* CO-OPERATIVE LEARNING GROUPS

Slavin (1995, p. 2), a renowned expert on co-operative learning, states that ...

> 'Cooperative learning refers to a variety of teaching methods in which students work in small groups to help one another learn academic content. In cooperative classrooms, students are expected to help each other, to discuss and argue with each other, to assess each other's current knowledge and fill in gaps in each other's understanding.'

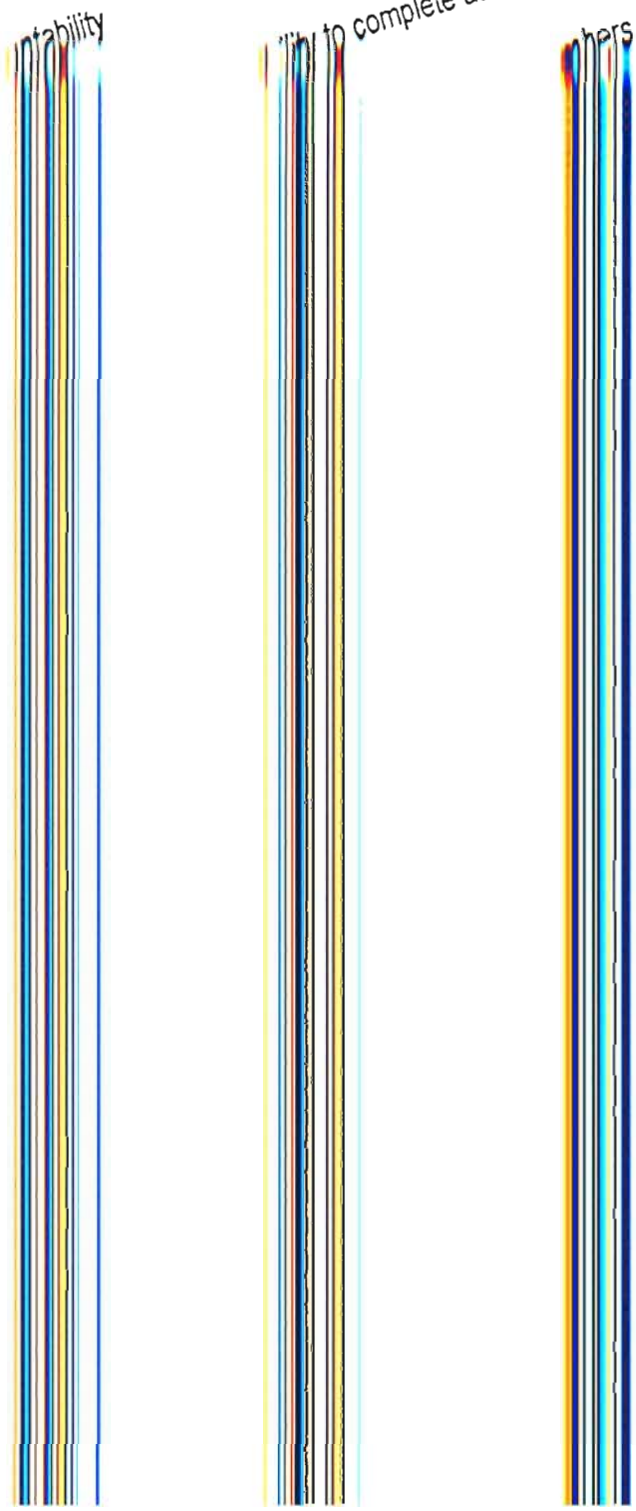
The identifying characteristics of this teaching strategy are:

* Positive interdependence

  Pupils in a co-operative group depend on one another in the pursuit of a common goal. Although group members may engage in different tasks or roles, the contribution of every member is essential to ensure a common group achievement.

* Promotive interaction

The clarifying process that pupils participate in during frequent face-to-face interactions is used to encourage and support team members. It also gives pupils an opportunity to analyse and clarify concepts and provide feedback to others in the group.



* Promotive interaction

The clarifying process that pupils participate in during frequent face-to-face interactions is used to encourage and support team members. It also gives pupils an opportunity to analyse and clarify concepts and provide feedback to others in the group.

* Individual accountability

Group members accept the responsibility to complete assignments, fulfil instructional objectives and ensure that all other group members complete their learning tasks.

* Interpersonal and small-group skills

Weiner (1986, p. 55) observes that..'Students put into groups are only students grouped and are not collaborators, unless a task that demands consensual learning unifies the group activity'.(as quoted by Meyers and Jones, 1993, p.77). Teachers therefore need to teach and ensure that pupils learn teamwork skills to help them co-ordinate their efforts and achieve common goals. It is important that team-members establish and maintain good working relationships, trust one another, communicate clearly, resolve conflicts amicably, encourage and support peer participation and respect differences of opinions. (Meyers and Jones, 1993, p.77; Johnson and Johnson, 1994, p.90).

* Group processing

  Group processing is defined as 'reflecting on a group session to ... describe what member actions were helpful and unhelpful and ... make decisions about what actions to continue or change.' (Johnson and Johnson, 1994, p.91). The purpose of group processing is to clarify and evaluate taskwork and teamwork with the view to improving group outcomes. It is therefore necessary for teachers to give each group regular feedback on work completed. In addition to group processing, teachers also conduct whole-class processing. Whole-class sessions are used to discuss teachers' observations and also to assess the progress of the whole class. Groups and classes which excell in subject-matter mastery and working co-operatively are identified and celebrated. (Johnson and Johnson, 1994, p. 93).

Unlike informal small groups, co-operative groups generally last longer (about a week or longer). Such groups are highly structured with regard to the selection of team members and work procedure and also more difficult to manage.

The teaching methods applicable to both informal small groups and co-operative learning groups are "active" methods. A selection of these methods is presented below.

3.2.4.1 INFORMAL SMALL GROUPS

3.2.4.1.1 DISCUSSION

A concise account of the discussion method is given in the section dealing with mass instruction. Various aspects of this method are considered, for example, the appropriate use and value of discussions and the teacher's role in initiating and developing discussions.

Although the whole class may be given a common emotional experience via demonstrations, readings, lectures and newspaper or magazine articles, the ensuing discussion can be restricted to groups of pupils. Such pupil group-discussions ensure that more pupils are actively involved in processing information than in the case of whole-class discussions. The most important feature of group discussions is that it involves more interaction among the pupils themselves. The teacher's role is to monitor the learning that occurs in individual groups. The insights gained in pupil groups forms the basis of a whole-class discussion.

The reader is referred to section 3.2.2.4 for more details regarding the use of this method of teaching.

3.2.4.1.2 EXPERIMENTAL METHODS

The experimental method, according to Fraser, Loubser and Van Rooy (1993, p.160), 'is about the discovery of reality by means of examples and the making of generalised statements based on the findings thereof.' This method of instruction is not confined to the teaching of science subjects as is generally believed. The characteristic feature of the experimental method is the emphasis on active pupil participation and the gaining of insight via direct observation of live specimens, maps, models and real objects, and also conducting investigations.

The following are examples of the experimental method of instruction.

3.2.4.1.2.1 EXPLORATORY GROUPS (SELF-DISCOVERY)

This method is characterised as being pupil-centered and demanding the active participation of pupils in the teaching-learning situation. The principal element of the discovery method is the direct involvement of pupils in seeking out information themselves, evaluating information ,discussing, and drawing conclusions and generalisations. This means that teachers have to make a variety of appropriate materials, for example, books, encyclopedias and documents available and ensure that pupils have easy access to them.' (Rogers, 1990, p. 3).

The discovery method must be well planned and effectively managed so that pupils are not confused or frustrated. Petty (1993, pp. 222-224) identifies the following considerations as important when using the self-discovery method:

* Pupils ought to have certain essential background knowledge and skills to pursue the necessary activities.

* Pupils must have a clear understanding of the objectives of the discovery activity and the role they are expected to play.

* The majority of the pupils must have the ability to cope with the activities envisaged.

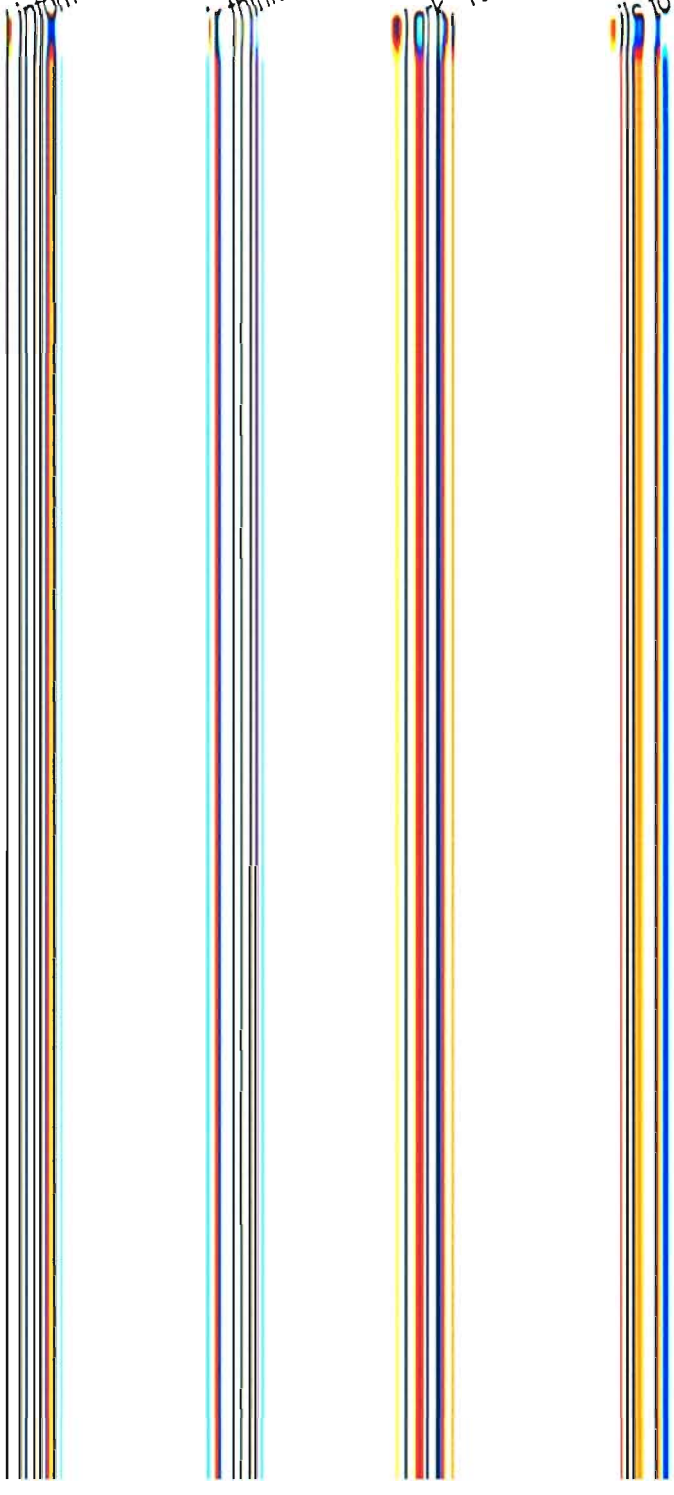
* Pupils' work must be continually monitored to provide guidance, to ensure that essential data is collected and that time is not wasted on frivolous activities.

* The topic chosen, even though familiar to some pupils, must not be of such a nature that pupils know the answers before the investigation.

* Sufficient time must be allowed for the pupils to complete the activity.

* A summary of the main points of the activity must be drawn up at the end of the lesson. This summary forms the basis of a class discussion.

The role of the teacher in discovery learning is to encourage and guide pupils as they information. Teachers may also assist pupils to 'clarify their problems, map out their r thinking, come to logical conclusions, and, finally, test and apply ork, 1988, p. 239). It is essential that teacher ils to find their own answers



* A summary of the main points of the activity must be drawn up at the end of the lesson. This summary forms the basis of a class discussion.

The role of the teacher in discovery learning is to encourage and guide pupils as they collect information. Teachers may also assist pupils to 'clarify their problems, map out their procedures, order their thinking, come to logical conclusions, and, finally, test and apply their conclusions.' (Callahan and Clark, 1988, p. 239). It is essential that teachers maintain a supportive classroom climate, encourage pupils to find their own answers and provide prompt and accurate feedback.

The discovery method promotes active learning. Pupils gain a deep understanding of the subject matter since knowledge is gained through personal experience. This method also helps to develop high-order thinking by 'developing cognitive skills such as the ability to reflect critically, to evaluate, analyse, to think creatively and to solve problems.' (Petty, 1993, p. 228). Despite the merits mentioned above, the discovery method has several limitations. It is time-consuming and requires great skill to implement. Furthermore, it 'is criticised for not providing enough guidance, and seen by the critics as confusing for learners.' (Petty, 1993, p. 226).

3.2.4.1.2.2 LABORATORY GROUP EXERCISES

The laboratory feature of instructional method is a characteristic of all subjects. This is evidenced by the presence of 'English laboratories, mathematics laboratories,

economic(s) laboratories, and so on'. (Alcorn, Kinder and Schunert, 1970, p. 187). However, the use of the laboratory, especially in former Indian secondary schools, has traditionally been associated with the teaching of Physical Science and Biology. In the context of this study, therefore, the discussion of laboratory group exercises is confined to the teaching of these two science subjects. Although the laboratory may be utilized when using all three teaching strategies identified earlier in this chapter, the present discussion focuses on its use in group instruction.

Fraser, Loubser and Van Rooy (1993, p. 160) state that laboratory activities are 'used in the natural sciences to show, tell and verify, to collect data, to explore and to exercise skills.' Examples of laboratory group exercises include groups of pupils performing experiments by recipes, pupil groups studying specimens in Biology, and groups devising and conducing investigations. The role of the teacher during these activities is to circulate about the room and provide help whenever needed. Teachers may help by clarifying assignments, suggesting alternative methods for solving problems, identifying errors and incorrect procedures and, in general, guiding pupils in accomplishing assigned tasks. (Clark and Starr, 1991, pp. 339-340).

3.2.4.1.2.3 GROUP PROJECTS

Callahan and Clark (1988, p. 242) define a project as 'any unit of activity, individual or group, involving the investigation and solution of problems, that is planned and carried to a conclusion by a pupil or pupils under the guidance of the teacher.' The project is therefore a form of independent study in which an individual or a group of pupils may be

involved. A group project is a problem-solving activity which helps to develop pupils' initiative and co-operative skills. According to Risk (1958, p. 299) projects can be classified into three main types:

* projects that result in a physical or material product;

* learning projects which are concerned with the acquisition of some activity, for example, learning to write a story; and

* intellectual or problem projects whose objective is the understanding of a problem.

A research project is an example of an intellectual or problem project. In this type of project, pupils investigate a problem and report on the findings and conclusions. This type of project is more demanding and is more suitable for academically-talented pupils.

Clark and Starr (1991, p. 283) identify the following four criteria for the selection of suitable projects:

* The project selected must result in real and worthwhile learning.

* The project must be relevant to the particular subject concerned.

* The learning benefits must be commensurate with the effort and time required for the completion of the project.

* The necessary materials and equipment must be readily available and the cost must not be prohibitive.

To gain maximum benefits from project work, pupils should select, plan, execute and evaluate the entire project on their own. However, teachers must be available at all times to help, guide and monitor the progress of pupils. It is important that pupils accept total responsibility for the selection and completion of their projects. Teachers therefore need to exercise restraint in their dealings with pupils and to guard against interfering unnecessarily.

The project method is an excellent active-learning method of instruction since it provides ample opportunities for self-activities such as experimentation and problem-solving. An added advantage is the promotion of socialization among members of a group.

3.2.4.1.3 PEER TUTORING

Peer tutoring is a form of co-operative learning. Well-planned use of pupils as tutors of other pupils can be very effective educationally. Pupils are more likely to seek assistance and also learn more readily from their peers than from their teachers. Teachers can take advantage of this fact by using pupils who have completed their work to teach other pupils who experience difficulty. Peer tutoring is usually incorporated into other methods of

classroom instruction. Pupils may tutor other pupils in various aspects, for example, clarifying concepts, interpreting questions and solving problems.

Peer tutoring gives teachers more time for individualized instruction of pupils who experience difficulty. Both the tutor and the tutored benefit from peer tutoring. Tutors profit from reviewing materials and from participating in the process of teaching. They gain a deeper understanding of the subject and the ability to articulate and communicate knowledge to other pupils. The tutored also gain a better understanding of the subject matter after receiving one-to-one coaching from a peer. Peer teaching also promotes positive social relationships between pupils.

3.2.4.1.4 ROLE-PLAYING

Role-playing involves pupils acting out an incident or situation. The incident or situation chosen for role playing may be either real or simulated. According to Callahan and Clark (1988, p. 259), role-playing is used to ...

> '...clarify attitudes and concepts; demonstrate attitudes and concepts; deepen understandings of social situations; prepare for real situations ...; plan and try out strategies for attacking problems; test out hypothetical solutions to problems; and practice leadership and other skills.'

Role-playing is useful for developing and improving the interpersonal skills of pupils. It is 'an effective way for the normally shy ... (pupil), who has said little or nothing in class,

to unblock in the new role and participate more readily in conventional discussions ....' (Frederick, 1986, p. 146). In spite of its virtues, role-playing has several limitations. For example, many pupils consider role-playing as a form of entertainment and do not take it seriously. Furthermore, role-playing is a time-consuming exercise. It therefore needs to be well-planned and executed to be effective as a method of instruction.

The selection of the cast should be done carefully, preferably from volunteers, to ensure that the pupils selected are capable of carrying out the roles assigned. Pupils should not be compelled to engage in role-playing. Frederick (1986, p. 146) maintains that pupils 'should have some choice in how much to participate, either by deciding whether or not to volunteer or by being part of a group large enough to reduce the pressures on any one individual.' The technique of selecting several casts and having several presentations simultaneously would help in 'reducing stage fright problems, involving the whole class, and giving every ... (pupil) practice in the skills.' (Petty, 1993, p. 187).

The situation to be role-played and the pupils' roles must be clearly defined during the planning stage. In the case of some types of role-playing, for example, dramatizations, it is essential that pupils are allowed sufficient time to prepare themselves for the presentation. The audience must also be prepared to understand the purpose of role-playing and to be receptive during the presentation.

The discussion which follows the role-play represents an important part of the activity. During this stage teachers and pupils (both players and observers) reflect on the role-playing, identifying both creditable aspects and weaknesses. The generalizations which

arise as a result of the discussion and analysis are used to build up a summary of the situation role-played.

A few examples of role-playing methods are explained below.

3.2.4.1.4.1 GAMES

Instructional games are fun. They are also valuable as an effective way of involving pupils in the teaching-learning process. Pupils engage in games either as individuals or in groups. Some of the games, for example, board games and crossword puzzles, may be purchased from business organisations. It is also possible for teachers to devise their own games or adapt games for teaching various subject areas.

Games are now widely used in education since teachers realise that learning and enjoyment are compatible. Games provide a suitable instructional alternative when pupils 'are not in the mood for regular classroom routines.' (Nordberg, Bradfield and Odell, 1962, p. 143). Quizzes, for example, are particularly useful in enlivening revision lessons. Other examples of educational games include "The Competition", "The Challenge", "Treasure Hunt" and "Ice-breakers". (Petty, 1993, pp. 182-186). The advantage of using educational games in classroom instruction is summed up by Petty (1993, p. 182) when he says that ...

'... the increase in interest and motivation produced by a short session of game-playing can produce positive feelings towards the subject (and the teacher) which last for weeks.'

3.2.4.1.4.2 SIMULATIONS

According to Callahan and Clark (1988, p. 260), a simulation is 'an enactment of a make-believe episode as much like the real thing as possible, but with some of the dangerous and complicating factors removed.' By assuming designated roles and acting out parts of the simulated activity, pupils gain an insight into and an understanding of the real situation.

Simulations are useful in helping pupils 'to develop skills without suffering the real-life consequences of their errors.' (Petty, 1993, p. 189). They also give pupils experiences which may otherwise be impossible and afford pupils opportunities 'to cope with situations that may lead to personal growth and self-confidence.' (Alcorn, Kinder and Schunert, 1970, p. 174). Examples of simulations are conducting mock trials and enacting various situations like interviews and meetings.

3.2.4.1.4.3 SOCIODRAMA

Hyman (1974, p. 234) states that the term sociodrama 'refers to group problem-solving that enables people to explore real-life situations through spontaneous enactments followed by guided discussion(s).' Sociodrama is an unrehearsed dramatization which

deals with social problems. It is a short, spontaneous presentation which does not require a script, rehearsal or memorizing of lines. (Blount and Klausmeier, 1968, p. 276).

The techniques of sociodrama can be adapted to any event or situation that occurs in daily life. For example, a pupil may want to visit the principal to query why he or she was not selected as a school prefect. The class teacher could use the impending interview with the principal as the basis of a sociodrama.

3.2.4.1.4.4 DRAMATIZATION

A dramatization is a form of role-playing in which pupils play out roles which are agreed upon in advance. It is a popular activity which brings to life past events and situations. The dramatic piece may be either extracted from a book or written by the pupils themselves.

Dramatizations are suitable particularly in the teaching of languages. Pupils provide insights into the interplay among people in a play by assuming different roles. According to Yaffe (1989, p. 32), dramatizations ...

> '...can effectively address and hone thinking skills, greatly enhance and increase comprehension of subject matter, substantially decrease the distance between the written word and the reader, and - last but not least - make learning a great deal of fun.'

3.2.4.1.5 CASE STUDY

A case study is essentially a form of the discussion method. This method of instruction 'is based upon *a participatory examination, analysis and diagnosis of a real or simulated problem so that general principles might emerge in a realistic fashion.*' (Curzon, 1990, p.295). It consists of a detailed study of a particular situation, institution or issue in order to draw conclusions concerning the type as a whole. (Clark and Starr, 1986, p. 282). A case study is designed in such a way that pupils become immersed in the situation under investigation and also identify with the persons involved.

This method of instruction includes the following steps (Callahan and Clark, 1988, pp. 247-248; Clark and Starr, 1991, p. 282):

* The topic or problem to be investigated is selected and defined. The problem may be real or simulated.

* Pupils are introduced to the problem. The teacher ensures that pupils understand the case under investigation and the procedures to be adopted.

* The material needed to study the case is identified and collected by the teacher and pupils. In addition to reading matter, other sources of material, for example, films, pictures and laboratory experiments may be found to be appropriate.

* Pupils study the case in detail, learn as much as possible and draw conclusions. The teacher may help pupils in their investigations by providing study guides.

* Finally, pupils share their findings and conclusions via free discussions. Various methods, for example, role-playing, panels, symposia and sociodrama, may be used to help pupils examine their thinking and conclusions. A summary of the findings and conclusions is then built up on the chalkboard.

3.2.4.2 CO-OPERATIVE LEARNING GROUPS

A large selection of co-operative learning methods is available to teachers. Most of these methods have been researched and developed in the United States of America and are currently being used widely in that country. The methods most extensively used are STAD, TGT and Jigsaw II. There is no evidence of their use in South Africa.

All co-operative group methods are based on the following common principles:

i. Classes are divided into small heterogeneous groups of 2-6 pupils;

ii. Pupil groups are given academic tasks to be completed by working co-operatively; and

iii. Teachers provide guidelines 'to foster cooperation and mutual interdependence within each group...'. (Davidson and O'Leary, 1990, p. 31).

Notwithstanding these common elements, the various teaching methods exhibit considerable diversity. However, all of them promote active pupil involvement in lessons.

Co-operative learning methods are generally very highly structured and teachers require training and practice in their use. Although the researcher acknowledges that much effort is needed (in terms of teacher education) to change from traditional methods to co-operative methods, the overwhelming support of research evidence in favour of co-operative learning suggests that the payoffs for this effort are great. For example, Slavin (1981, p. 656) quotes numerous research studies which show that the use of STAD, TGT and Jigsaw II produce significant gains in academic achievement. He states:

> 'The positive effects of cooperative learning methods on student achievement appear equally frequently in elementary and secondary schools, in urban, suburban, and rural schools, and in subjects as diverse as mathematics, language arts, social studies, and reading. There is a tendency for Blacks to gain outstandingly in achievement as a result of working cooperatively ... although Whites also achieve more as an outcome of cooperative learning.' (Slavin, 1981, p. 657)

Slavin (1981, p. 657) also cites several studies devoted to the effects of co-operative learning on intergroup relations. Studies conducted with STAD, TGT and Jigsaw II show a positive effect on improving relationships between pupils of different ethnicities. Teachers, too, report very enthusiastically about the successes achieved in their classrooms by using co-operative learning methods (Slavin, 1995 pp.18-139).

Some of the commonly used co-operative methods are explained in the following pages.

3.2.4.2.1 STUDENT TEAMS-ACHIEVEMENT DIVISIONS (STAD)

STAD is one of the simplest of all co-operative learning methods. It consists of five major components -class presentations, team study, quizzes, individual and team scores and team recognition. The basic requirements for this method are a worksheet, a worksheet answer sheet and a quiz for each unit of work.

3.2.4.2.1.1 CLASS PRESENTATION

The material to be learned is presented to the whole class by the teacher. This is done mostly by direct instruction or a lecture-discussion which may include the use of resources such as transparencies and video cassettes.

3.2.4.2.1.2 TEAMS

Pupils are assigned to teams of four or five in such a way as to ensure a mixture of ability levels, gender, race and other characteristics considered important by the teacher. The number of teams is determined by dividing the number of pupils in the class by four. (Appendix C1).

3.2.4.2.1.3 TEAM STUDY

After the teacher presentation (one or two class periods), the team members work together 'in a peer-tutoring format' (Kagan, 1985, p. 69) to study the material of the learning unit. This work involves studying worksheets, discussing pupils' problems, comparing answers and clarifying misconceptions. (Slavin, 1995, p. 71).

3.2.4.2.1.4 QUIZZES

Pupils take quizzes after one or two periods of teacher presentation and one or two periods of practice in teams. The purpose of the quiz is to assess the individual performance of pupils. Quiz sheets are marked and both individual improvement scores and team scores are then calculated.

3.2.4.2.1.5 INDIVIDUAL IMPROVEMENT SCORES

Each pupil is assigned a "base score" which is derived from the pupil's past performance. (Appendix C3). Individual improvement scores are determined by comparing pupils' quiz scores with their base scores. (See Table 1 - adapted from Slavin, 1995, p.80). The calculation of improvement points is illustrated in Appendix C4.

Pupils' base scores are not fixed. Teachers generally recompute pupil's average quiz scores at regular intervals and determine new base scores.

QUIZ SCORE	IMPROVEMENT POINTS
more than 10 points below base score	5
one point to 10 points below base score	10
base score to 10 points above base score	20
more than 10 points above base score but less than maximum	30
perfect score (regardless of base score)	40

TABLE 1: CALCULATION OF INDIVIDUAL IMPROVEMENT POINTS (STAD)

3.2.4.2.1.6 TEAM SCORES AND TEAM RECOGNITION

Team scores are based on individual improvement scores and not on raw scores. Each team member's improvement point is recorded in the team summary sheet (Appendix C2). The total improvement point for the team is then divided by the number of team members to obtain a team score. (Appendix C5).

Team accomplishments are recognised by giving awards to the three top teams. The criteria which may be used are reflected in Table 2 (adapted from Slavin, 1995, p. 80) and in Appendix C6 .

CRITERION (TEAM AVERAGE)	AWARD
20	GOOD TEAM
25	GREAT TEAM
35	SUPER TEAM

TABLE 2: TEAM RECOGNITION (STAD)

Teachers may decide on the nature of awards to be given. For example, certificates (Appendix C16) or ornaments of different sizes may be given to the three teams.

3.2.4.2.1.7 GENERAL

The use of team scores and improvement points makes it possible for comparing pupils' present performances with their past performances and does not force them to compete with other pupils. This ensures that all pupils can contribute maximum points to their teams irrespective of their past performances.

Teachers usually change the composition of teams after a period of five to six weeks. This gives all pupils, especially those in low-achieving teams, the opportunity to work with other classmates. Re-assigning pupils to different teams more frequently is not advisable since pupils would not

have had sufficient time to develop a solid working relationship with teammates.

3.2.4.2.2 TEAMS-GAMES-TOURNAMENTS (TGT)

3.2.4.2.2.1 OVERVIEW

TGT is identical to STAD. The only difference is that quizzes are replaced with academic game tournaments and individual improvement scores are replaced with a bumping system.

Curriculum materials for TGT are the same as for STAD. The STAD quizzes are used as games in TGT. In addition, teachers make use of a set of cards numbered from one to thirty for every three pupils in the class.

3.2.4.2.2.2 ACTIVITIES

TGT consists of the following activities:

i. Class Presentations

The procedure is the same as for STAD.

ii. Team Study

Pupils are assigned to teams as for STAD. They engage in team study in the same manner.

iii. Tournaments

The tournament is the structure in which games are played. These games are held after the teacher's class presentation and the pupils have practised with worksheets.

For the first tournament, the teacher makes a copy of the tournament table assignment sheet (Appendix C7) and ranks the pupils from top to bottom in terms of past performance. (Appendix C8). Pupils are then assigned to tournament tables on the basis of past academic performance. (Appendix C9). Each team is given one game sheet, one answer sheet, one deck of numbered cards and one game score sheet (Appendix C10; Appendix C12). Pupils play games at three-person tables with members of other teams. The games are based on academic material presented by the teacher and practised in teams. Pupils follow simple game rules to answer questions and earn points for their teams. (Appendix C11).

3.2.4.2.2.3 TEAM SCORES AND TEAM RECOGNITION

Each pupil's tournament points are transferred to the summary sheet for his or her team. The team members' scores are added and the total is divided by the number of team members present to obtain an average score for the team. The sample team summary sheet in Appendix C14 illustrates the calculation of team scores. In the case of a three-person contest with no ties, the top scorer receives 60 points, the second scorer 40 points, and the third scorer 20 points. (Appendix C13).

As in STAD, average team scores are used to determine three levels of awards. (Appendix C15). Team certificates (Appendix C16) may be given to the teams.

3.2.4.2.2.4 BUMPING

Bumping, or reassigning pupils to new tournament tables, is done for each new tournament. This process ensures that:

i. pupils compete with other pupils of comparable ability levels;

ii. all pupils have an equal opportunity to earn points for their teams; and

iii. pupils do not remain at the same tournament tables for all tournaments.

The process of bumping is illustrated in Appendix C17. The sample tournament table assignment sheet illustrated in Appendix C18 explains the use of the bumping system in assigning new tournament tables to pupils at the end of a tournament.

3.2.4.2.3 JIGSAW I

3.2.4.2.3.1 OVERVIEW

Jigsaw 1 was developed to place pupils in situations of extreme interdependence. Pupils read sections which are different from those of their teammates but are evaluated on the whole unit. Each member of a team possesses information which is unique and invaluable to the other teammates. The benefit of this practice is that each member of a team values highly the contribution of every other member.

3.2.4.2.3.2 SPECIALLY DESIGNED CURRICULUM MATERIALS

The most difficult part of Jigsaw 1 is that existing materials cannot be used. Curriculum materials have to be rewritten so that each member has a source which is unique and comprehensible by itself without

reference to other sources. Books are not suitable since sections or topics are integrated and cannot be studied without reference to other sections or topics.

3.2.4.2.3.3 TEAM-BUILDING AND COMMUNICATION TRAINING

Co-operation among team members is an essential part of Jigsaw 1. Special team-building and communication-training activities are therefore emphasised before and during the use of this method.

3.2.4.2.3.4 PUPIL GROUP LEADERS

Teachers select group leaders to help co-ordinate the work efforts of a group and to help resolve conflicts. These group leaders are given special training by using discussions and role-playing activities.

3.2.4.2.3.5 TEAMS

Pupils are assigned to five- or six-member teams. Teachers use their knowledge and intuition to form teams that are heterogeneous with regard to ability levels, race, sex and personality factors such as assertiveness.

3.2.4.2.3.6 EXPERT GROUPS

Each team member is assigned to an expert group which is composed of members of other teams who have been assigned the same topic. Pupils discuss and exchange information in these expert groups. The purpose of this discussion is to enable pupils to understand the material so that they are able to explain to teammates when they return to their original teams.

3.2.4.2.3.7 INDIVIDUAL ASSESSMENT AND REWARD

Pupils take individual tests or quizzes covering all the material of the learning unit. Teachers do not use team scores, improvement scores, or other rewards. Pupils are given individual grades.

3.2.4.2.4 JIGSAW II

3.2.4.2.4.1 OVERVIEW

Jigsaw II, a modified form of the original Jigsaw method, uses existing curriculum materials. It is most appropriate for use when the learning material is in written narrative form and the learning goals are concepts rather than skills. The instructional material for Jigsaw II is usually a chapter, story, biography or any descriptive material.

Pupils are assigned to work in heterogeneous teams (as in STAD and TGT). They are given reading material and sheets which contain different topics for each of the team members. On completion of the reading assignments, pupils from different teams but with the same topic meet in an expert team to discuss their specific topic. They return to their original teams and take turns to teach their teammates about their topics.

Pupils then take assessment tests which cover all topics. As in STAD, an individual pupil's contribution to the overall team score is based on the improvement score system. Pupils on high-scoring teams are given certificates or other recognition. This motivates pupils to work hard so that their teams do well.

3.2.4.2.4.2 MATERIALS REQUIRED

These include:

i. learning material, for example, one or more chapters in a textbook.

ii. an expert sheet for each pupil.
This sheet identifies the four central topics of each unit and informs each pupil what he or she has to concentrate on.

iii. a quiz or essay test for each unit.

iv. a discussion outline.

Sometimes, a discussion outline is prepared to guide pupils' discussion in expert groups. Such an outline gives pupils a list of points to consider when discussing their topics.

3.2.4.2.4.3 ASSIGNMENT OF PUPILS TO TEAMS

As in STAD, pupils are assigned to four- or five-member heterogeneous teams. The names of the team members are entered on the team summary sheets. (Appendix C2).

3.2.4.2.4.4 ASSIGNMENT OF PUPILS TO EXPERT GROUPS

Teachers allocate pupils to expert groups in such a manner so as to ensure that expert teams are composed of pupils of different ability levels. The maximum number of pupils in an expert group is six. Therefore, in classes with more than 24 pupils, two expert groups investigate the same topic.

3.2.4.2.4.5 DETERMINATION OF BASE SCORES

Each pupil is assigned an initial base score in exactly the same way as for STAD. These scores are recorded on a quiz score sheet. (Appendix C4).

3.2.4.2.4.6. ACTIVITIES

Jigsaw 11 consists of the following activities :

3.2.4.2.4.6.1 READING

Each team member is given a sheet containing four expert topics, together with texts and other material on which the expert topics are based. The teacher assigns a topic (and discussion outline if used) to each pupil in a team. Team members then read the material in class or at home.

3.2.4.2.4.6.2. EXPERT GROUP DISCUSSION

Pupils with the same topic meet in expert groups to discuss and master their topics. The teacher appoints a discussion leader in each group.

Group members discuss, exchange and share information. They may also take notes on all matters discussed. The teacher's role during the

discussion period is to move around in the class, answering questions and resolving misunderstandings among pupils.

3.2.4.2.4.6.3 TEAM REPORT

Pupils return from the expert groups to their original groups to teach their topics to other team members. Each member of the team has a responsibility to make certain that all other team members learn his or her material and are ready for the quiz. These "expert" pupils also question their teammates to test their understanding of the material presented.

3.2.4.2.4.6.4 TEST

Each pupil is given a quiz and sufficient time is allowed for its completion. Quiz sheets are collected and marked by the teacher.

3.2.4.2.4.6.5 TEAM RECOGNITON

The procedure for scoring Jigsaw 11 is the same as for STAD. Furthermore, as in the case of STAD, certificates and other rewards are given to successful teams.

3.2.4.2.5 TEAM - ASSISTED INDIVIDUALIZATION (TAI)

3.2.4.2.5.1 OVERVIEW

Team-Assisted Individualization or Team-Accelerated Instruction, as it is currently known, is a programme that combines co-operative learning and individualized instruction for teaching mathematics.

3.2.4.2.5.2. PROGRAMME ELEMENTS

The use of TAI depends on a set of instructional materials and implementation guides prepared specifically for this purpose.

3.2.4.2.5.3 TEAMS

As in the case of STAD or TGT, pupils are assigned to four - or five - member teams. Teams are heterogeneous with regard to academic ability (high, average and low achievers), sex, race and ethnicity. Pupils are re-assigned to new teams once in every four weeks.

3.2.4.2.5.4. PLACEMENT TESTS

A pre-test is conducted at the beginning of the programme to determine the proficiency of pupils in mathematical operations. The performance

on these placement tests (pre-tests) is used as the basis for placing pupils at appropriate points in the individualized programme.

3.2.4.2.5.5 CURRICULUM MATERIALS

Pupils work on individualized curriculum materials which cover various topics, for example, addition, subtraction, multiplication, division, numeration, fraction, decimals, ratio, percentage, statistics and algebra. Each unit consists of the following parts:

i. an instruction sheet explaining the skill or concept to be mastered and giving a step - by - step method of solving the problem.

ii. several skill - practice sheets, each consisting of 16 - 20 problems. Each skill - practice page introduces a subskill that leads to the final mastery of the entire skill.

iii. a checkout or formative test which consisting of 2 parallel sets of ten items.

iv. a final 15-item unit test.

v. answer sheets for the skill sheets, formative tests, and the final unit tests.

3.2.4.2.5.6 TEAM STUDY

After the placement test, pupils are given a starting place in the individualized mathematics units. They work on their units in their teams. The following steps are followed:

i. Pupils form into pairs or triads within their teams.

ii. Pupils read the instruction sheets and, if necessary, ask their teammates or the teacher for help. They then begin with the first skill practice in their unit.

iii. Each pupil works the first four problems in his or her own skill practice sheet. A teammate then checks the answers against the answer sheet.

iv. When a pupil gets a set of four problems correct on a skill sheet, he or she takes formative test A
(checkout A). Pupils work alone on the formative tests until they complete the tests. A teammate scores the test. If a pupil gets 8 or more problems correct, the teammate signs the test to indicate that the pupil may take the final unit test. If a pupil does not get at least 8 correct, the teacher may ask the pupil to work again on certain skill - practice items. The pupil may then take formative test B which is comparable to formative test A in content and difficulty.

v. Pupils take the signed formative tests to a pupil monitor from a different team to get the appropriate unit test. On completion, the monitor scores the test.

3.2.4.2.5.7 TEAM SCORES AND TEAM RECOGNITION

The teacher computes a team score at the end of each week. This score is based on the average number of units completed by each team member and the scores on the unit tests.

Criteria are established for assessing team performance. A high criterion is set for a team to qualify as a 'Superteam', a moderate criterion for a 'Greatteam' and a low criterion for a 'Goodteam'. Those teams which meet the criteria for 'Superteam' or 'Greatteam' are awarded certificates. (Slavin, 1995, p.104).

3.2.4.2.5.8 TEACHING GROUPS

Every day the teacher works for 5 - 15 minutes with each of two or three small groups of pupils. The pupils are drawn form the heterogeneous teams who are at about the same point in the curriculum. The teacher makes use of specific concept lessons provided with the programme. The purpose of these teaching sessions is to explain major concepts to pupils.

3.2.4.2.5.9 FACTS TEST

Pupils take 3 - minute facts tests (usually on multiplication and division) twice a week. Facts sheets are given to pupils to study at home and prepare for these tests.

3.2.4.2.5.10 WHOLE - CLASS UNITS

The individualized programme is allowed to run for three weeks. The teacher spends the fourth week teaching the entire class special skills such as problem -solving techniques.

3.2.4.2.6. Co-op Co -op

3.2.4.2.6.1. OVERVIEW

The essence of this method is structuring the classroom in such a way that pupils work in small co-operative teams towards a goal that will benefit themselves and other pupils in the class. This method is designed to be simple and flexible and can be adapted for use in any classroom. The inclusion of ten specific steps in the procedure ensures a greater probability of success of this method.

3.2.4.2.6.2 PROCEDURE

Step 1 : Pupil-Centred Class Discussion

Before Co-op Co-op is used in any class unit, pupils are encouraged to discover and express their own interests in the subject to be covered. Readings, lectures and outside experiences can be used to stimulate

and generate pupil curiosity. A pupil-centred class discussion is then conducted to increase the involvement of the pupils in the topic selected.

Step 2 : Selection of Pupil Learning Teams

Pupils are allowed to form their own teams or sometimes assigned to teams by the teacher. The use of the one or the other method of team selection depends on the goals of the class. If, for example, the goal is to foster cross-ability level peer tutoring and positive inter-ethnic relations, teachers themselves would have to assign pupils to teams to maximise heterogeneity. The method used to accomplish this is the same as that used in STAD.

Step 3 : Team Building

Pupils need to be trained in how to work in groups before they begin co-operative learning activities. Co-op Co-op cannot proceed successfully unless pupils express a willingness to work together in teams. The purpose of team building activities is to increase within-team co-operation.

Several team building exercises, for example, Interview and Roundtable Brainstorming, have been developed to overcome pupil resistance to identifying and working with other pupils. Pupils are made to realise that a positive team identity and mutual interdependence are essential elements of any co-operative interaction.

Step 4 : Team Topic Selection

Team members are allowed to select topics for their teams. Teachers use handouts, chalkboard or other means to remind pupils of the topic of interest selected by the class as a whole. Team members are encouraged to discuss the topic amongst themselves in order to reach consensus on the topic for study. The team topics selected are based on the interests of not only all teammates but also the class as a whole. The teacher plays a crucial role during this process, circulating among the teams and acting as a facilitator.

Step 5 : Minitopic Selection

Each team divides its topic among the pupils within the team. Individual pupils select a minitopic which covers an important aspect of the team topic. Each pupil makes a unique contribution to the team effort. Teammates are encouraged to assist each other and share resources. 'It is acceptable and natural for some... (pupils) to make a larger contribution than others to the total team effort because of differences in abilities and interests among ...(pupils), but all members need to make an important contribution.' (Kagan, 1985, p. 443). Teachers ensure that each pupil makes a unique and worthwhile contribution to the group effort by :

* monitoring each pupil's contribution;

* asking each pupil to prepare a paper or project on his or her minitopic; and

* allowing pupils to evaluate the work of their teammates.

Step 6 : Minitopic Preparation

Once minitopics have been selected, pupils become individually responsible for an important aspect of the team topic. The preparation includes :

i. library research;

ii. collection of data via interviews and experimentation;

iii. individual projects;

iv. writing;

v. painting;

vi. constructing models; and

vii. designing investigations.

Each pupil attempts to learn as much as possible about his or her minitopic to guarantee maximum contribution to the team presentation.

Step 7 : Minitopic Presentation

When all pupils in a team complete their preparation, each member presents what he or she has learnt (or created) to the whole team. This is a formal procedure in which each member is allotted a fixed time. At this stage teammates are afforded the opportunity to share in the knowledge and experiences of other pupils. After the presentations, team members engage in a lively discussion of all aspects of the team

topic so as to ensure that the team effort constitutes a coherent whole when presented to the entire class.

Step 8 : Preparation of Team Presentation

Pupils synthesize and integrate all minitopic material to produce a team effort. This step requires the active participation of all team members during the discussion process so that the team presentation becomes an integrated whole rather than a mere collection of several minitopics. The form of the team presentation is also discussed. Team members are informed of the duration of the presentation and encouraged to use a wide variety of resources to make the presentation informative and interesting.

Step 9 : Team Presentations

During this stage teams are given complete control of the classroom. Team members are encouraged to use all available resources and, if necessary, change the seating arrangement of pupils.

Some teams include a period for questions and answers and also comments and evaluation at the end of the presentation.

Step 10 : Evaluation

Evaluation of Co-op Co-op programmes occurs at several different levels. This includes :

* teacher and pupil evaluation of individual contributions to the team effort;
* teacher evaluation of a pupil's project or paper on his or her minitopic;
* teacher and class evaluations of team presentations; and
* teacher and class evaluations of the Co-op Co-op unit after all teams have completed their presentations.

Evaluation can be done either formally or informally. Formal evaluation is done in writing.

Unlike TAI and Jigsaw 1, which require special curriculum materials and guidelines, the other methods described above could be implemented by using teacher - made materials. As in the case of schools in the USA, teachers in South Africa may find the use of STAD, TGT and Jigsaw 11 particularly useful.

3.3. INTEGRATION OF TEACHING RESOURCES WITH TEACHING STRATEGIES AND TEACHING METHODS - A SUMMARY

The discussion of teaching strategies and teaching methods in section 3.2 includes various resources. This section provides some general comments on the use of resources and also a summary of various resources applicable to the different teaching strategies and methods.

The effectiveness of teaching strategies and teaching methods depends on the resources utilized. Teachers should therefore consider resources as central, and not adjunct, to teaching strategies and

teaching methods. If well-selected and effectively used, resources could 'be a valuable partner for teachers and learners.' (Meyers and Jones, 1993, p. 142).

Resources include printed and duplicated materials, display materials and audio and visual materials. (Ellington and Race, 1993, p. 24). In planning classroom instructional strategies, teachers have to decide which of these resources they require to improve the effectiveness of their lessons. Furthermore, they need to select suitable resources from those available at their schools and also design materials to cater for their unique situations. In some cases, when several resources are chosen for a particular lesson, teachers have to ensure that lessons are planned in such a way that resources are suitably co - ordinated.

An important aspect in the selection of resources is a consideration of the potential active - learning benefits to be derived by pupils from the use of such resources. Meyers and Jones (1993, p. 123) state that resources should be stimulating and 'help ignite our students' thinking and intellectual curiosity....' The integrated use of printed and duplicated material, together with aural and visual resources, provides an effective means of communication in classrooms. Lectures and video presentations, for example, are effective teaching methods in certain circumstances. The judicious use of worksheets containing study questions could transform both lectures and video presentations into active learning experiences. The relatively familiar and readily available resources such as the overhead projector and slide projector also offer excellent possibilities for encouraging active learning in classrooms. Transparencies could be incorporated into discussions and used to develop problem - solving skills in subjects such as Mathematics and Physical Science. Slides, too, are useful in promoting active learning in certain subjects, for example, Geography and Biology. The use of computers in various subjects (Mathematics,

Physical Science, English, Geography) also helps to make pupils active learners. However, the cost of equipment and software restricts the use of this resource.

Table 3 represents various resources generally available at schools and the strategies to which each is relevant. A summary of the different teaching methods and resources applicable to each of the three teaching strategies is provided in Figure 1A and Figure 1B.

RESOURCES	TEACHING STRATEGY TO WHICH MOST SUITABLE
1. textbooks	All Strategies
2. worksheets	All Strategies
3. chalkboard	Mass and Group Instruction
4. various types of boards (felt, marker, hook-and-loop, magnetic)	Mass and Group Instruction
5. charts	Mass and Group Instruction
6. photographs	Mass and Group Instruction
7. pictures and posters	Mass and Group Instruction
8. flip charts	Mass and Group Instruction
9. models (e.g. eye)	All Strategies
10. realia (e.g. rock samples)	All Strategies
11. biological specimens	All Strategies
12. handouts	All Strategies
13. partial handouts	All Strategies
14. filmstrips and filmstrip projector	All Strategies
15. slides and slide projector	All Strategies
16. transparencies and overhead projector	Mass and Group Instruction
17. opaque projector(episcope)	Mass and Group Instruction
18. films and film projector	All Strategies
19. video cassette and video cassette recorder	All Strategies
20. audio cassette and tape recorder	All Strategies
21. record and compact disc player	All Strategies
22. television	All Strategies
23. computer	Individualized Instruction
24. "environmental" items (e.g. bottles, cans and other waste material)	All Strategies

TABLE 3 : TEACHING RESOURCES AND RELEVANT TEACHING STRATEGIES

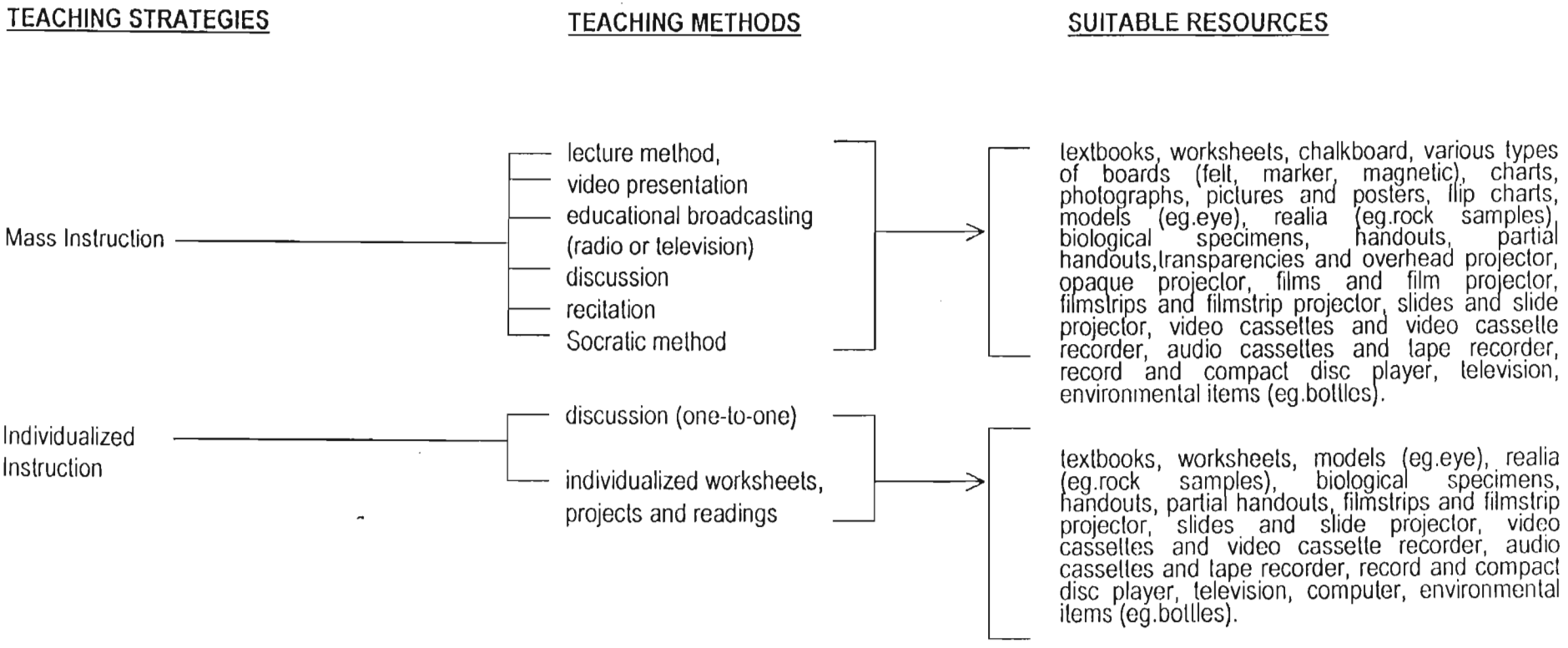


Figure 1A: **SUMMARY OF TEACHING STRATEGIES , TEACHING METHODS AND RESOURCES**

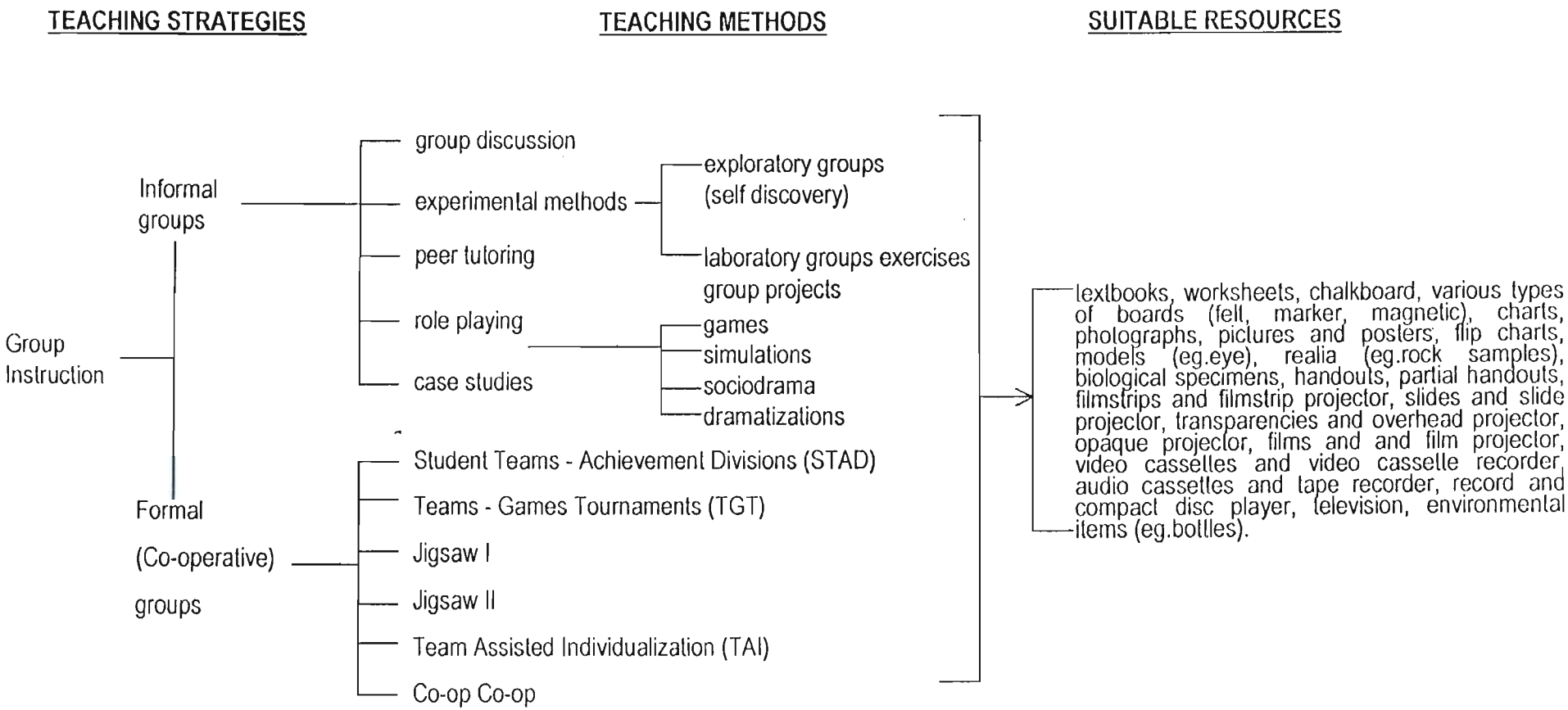


Figure 1B: **SUMMARY OF TEACHING STRATEGIES , TEACHING METHODS AND RESOURCES**

3.4 MULTICULTURAL EDUCATION

3.4.1. INTRODUCTION

Political and demographic changes in South Africa place new demands on schools - especially former Indian and White schools - in this country. A growing human diversity in schools offers additional challenges to school administrators and teachers. Pupils, who have hitherto been restricted to racially segregated schools, are now called upon to review and reassess their perceptions of pupils who are culturally different from them. Despite this diversity in respect of educational and cultural backgrounds, schools are expected to provide meaningful learning experiences that will enable all pupils to develop to their maximum potentials. This is borne out by the vision expressed by the Minister of National Education, Professor S.M.E Bengu :

> 'It is essential for us to build a system of education and training with which all our people can identify because it serves their needs and interests. Such a system must be founded on equity and non-discrimination, it must respect diversity, it must honour learning and strive for excellence, it must be owned and cared for by the communities and stakeholders it serves, and it must use all the resources available to it in the most effective manner possible.'
> (The White Paper, 1995, Vol.357, p. 5.)

3.4.2. CULTURE, CULTURAL DIVERSITY, MULTICULTURAL SCHOOLS AND MULTICULTURAL EDUCATION.

The term culture describes all aspects of human existence. According to Holmes (1977 - 78, p. 84), cultural variants include

'language, customs, traditions, beliefs, religions, art, technology, national origin, political persuasion, racial identity, ethnic heritage, sex, age group, socio-economic level, geographic location, and other characteristics or attributes that define and constitute group aggregates.'

Some of these characteristics, for example, attitudes, values and beliefs, are implicit and are not easily recognisable. Other aspects such as dress, food and language are explicit and are clearly discernible. (Lemmer and Squelch, 1993, p. 11).

In the present study cultural diversity is limited by one characteristic only, namely, racial identity. Pupils are classified into broad cultural groups on the basis of race only. Indian, African, Coloured and White pupils are therefore considered to constitute four distinct cultural groups.

A multicultural school is one which accommodates pupils belonging to different cultural backgrounds. In the context of this study former Indian schools are classified as multicultural if their pupils are derived from two or more racial groups.

The term "multicultural education" assumes different meanings and purposes to different people. (Ryan, 1993, p. 135). It is not a subject (for example, Biology) to be studied but an approach to education which acknowledges and appreciates differences amongst pupils and seeks to ...

'create equal educational opportunities for all students by ensuring that the total school environment reflects the diversity of groups in classrooms, schools, and the society as a whole.' (Banks, 1994, p. 4).

The relevance of and necessity for multicultural education is highlighted by Sleeter (1992, p. 8). She states...

> 'Some argue that multicultural education is divisive. To me, multicultural education means listening to and taking seriously what diverse...(pupils) are saying about themselves and the conditions of their lives, then acting on what we learn, to build a better system for us all. Failure to do so is divisive.'

An educational system that ignores the cultural variants of its pupils is therefore doomed to failure.

3.4.3. CHARACTERISTICS OF MULTICULTURAL EDUCATION

Multicultural education is an approach to education which has several generally accepted features. (Lemmer and Squelch, 1993, p. 4). Amongst others, it :

* recognises and accepts the existence of different cultural groups;
* provides for various aspects of human diversity such as race, language, religion and customs;
* acknowledges the claim made by different cultural groups to equal rights in society;
* seeks to promote interaction and co-operation amongst pupils of different cultural groups;

* advocates equal educational opportunities for all pupils;
* recommends the use of a variety of teaching strategies and teaching methods to cater for the diverse learning styles and backgrounds of pupils; and
* regards the cultural diversity of pupils as an asset and not as a handicap.

The virtue of pupil diversity is emphasized by Fullinwider when he states...

> 'The different languages, religious beliefs, national origins, and intellectual traditions students bring to the school are potential sources of cross-fertilization and mutual learning. Encountering a diversity of views and perceptions lets students stretch their imaginations and expand their horizons. It makes them more cosmopolitan and less parochial, more thoughtful and less close - minded.... Thus, the school should welcome the kind of diversity that lets students grow and learn from one another.' (as quoted by Knutson, 1993, p. 114).

3.4.4. AIMS OF MULTICULTURAL EDUCATION

The main aims of multicultural education, according to Lemmer and Squelch (1993, p.5) are to:

* increase a pupil's awareness of his or her own culture and also the cultures of other pupils;
* develop in pupils positive attitudes towards pupils of other cultural groups;
* encourage the building of cross - cultural ties between pupils;

* promote the development of co-operative skills during interactions between different cultural groups;
* reduce and try to eliminate cultural prejudice and also the use of stereotypes;
* inculcate in pupils a feeling of cultural tolerance, respect and trust for members of other cultural groups; and
* recognise and value greatly the contributions made to society by other cultural groups.

3.4.5. APPROACHES TO MULTICULTURAL EDUCATION

Sleeter (1992, pp. 4-8) outlines five approaches to multicultural education. These are:

i. Teaching the Exceptional and Culturally Different Approach

The primary objective of this approach is to assist culturally diverse pupils in acquiring knowledge, skills and attitudes. This approach does not advocate changes to the existing curriculum but recognises the need for different techniques to help pupils to achieve well at schools.

ii. Human Relations Approach

This attempts to eliminate misunderstandings and promote positive interpersonal relationships among pupils within

diverse groups. Co-operative learning is used to develop and strengthen pupil - pupil relationships.

iii. Single - Group Studies Approach

This approach recognises all cultural groups as equal. It seeks to highlight a particular group by focusing on the history, culture and contributions of that group.

iv. Multicultural Approach

Unlike others, this approach advocates major changes with regard to curriculum content, staffing of schools and educational practices such as teaching methods and medium of instruction.

v. Education that is Multicultural and Social Reconstructionist Approach.

This alternative strives for equity and justice in the social system. It builds on the other approaches mentioned above. Pupils are taught to analyse inequalities in contemporary issues, for example, religious freedom, and to take appropriate action such as organising protests.

Similarly, Banks (1994, pp. 4-8), another prominent multicultural educator, identifies five so - called dimensions of multicultural education. These dimensions are referred to as the:

i. content integration dimension,

ii. knowledge construction dimension,

iii. prejudice reduction dimension,

iv. equitable pedagogy dimension, and

v. empowering school culture and social structure dimension.

The approaches suggested by Sleeter and the dimensions advocated by Banks are essentially the same.

3.4.6. RESEARCHER'S APPROACH TO MULTICULTURAL EDUCATION

Schools are rapidly becoming culturally more diverse. There is now an urgent need for changes in the teaching - learning situation so that it relates to a more diverse pupil population. Cushner warns that...

> 'we must begin to prepare the youth in our charge with the perspectives, attitudes, knowledge, and skills which will enable them to interact effectively, satisfy their own needs, as well as work with others to solve the common problems which face a global, interdependent society.' (as quoted by Ryan, 1993, p. 135).

According to Sleeter (1992, p. 4), 'Simply teaching a diverse class of students does not, in and of itself, constitute multicultural education.' She goes further to emphasize that the implementation of multicultural education involves a 'reworking' of current

educational curricula and practices in order to accommodate culturally - diverse pupils. (Sleeter, 1992, p. 4).

In the context of this study, the researcher proposes an approach, referred to as an *interim* approach, which should be implemented immediately at schools. This approach encompasses certain key aspects which are explained below.

i. Changes in teaching staff at schools.

The appointment of African teachers at former Indian schools would change the cultural composition of teachers so as to correspond with the change in the cultural composition of the pupil populations.The interactions between African and Indian teachers would enable them to develop a better understanding of pupils belonging to different cultural groups.

ii. Selection of more appropriate teaching strategies and teaching methods.

The use of different strategies and a variety of teaching methods would cater for the disparate learning styles of pupils.

iii. A greater use of co-operative group teaching methods.

These methods would help to develop positive interpersonal relationships, especially between pupils of different cultural groups.

iv. The introduction of Zulu into the school curriculum.

Unlike the majority of Indian pupils, who speak English at home, African pupils are mainly Zulu - speaking. The incorporation of Zulu into the curriculum would help particularly African pupils to cope with their classwork and also enable Indian pupils to develop a greater understanding of their newly-arrived classmates.

v. A revision of the promotion requirements for pupils.

Although continuous evaluation now forms an important component in the promotion of pupils, certain practices of the apartheid era still continue. Appendix D1 illustrates the case of an African pupil in a former Indian school who has failed Grade 11 because of the rigid application of past promotion requirements. (Refer to the researcher's comment in Appendix D1).This case highlights the need for changes to be made in the minimum requirements for passing examinations in secondary schools.

The approach outlined above should serve adequately as a temporary measure to address diversity issues in schools. However, other aspects need to be considered in developing an approach for the future. These include :

i. changes in the curricula to cater for the diversity of pupils' interests and to equip pupils adequately for job opportunities; and

ii. rewriting of textbooks to eliminate racial biases and correct misconceptions of the past.

3.5. SUMMARY

Teaching strategies may be classified as mass instruction, individualized instruction or group instruction. Mass instruction, or whole - class teaching as it is sometimes called, generally regards the pupil 'as a passive receiver of knowledge'. (Ajose and Joyner, 1990, p. 198). Individualized instruction is used to address the needs of individual pupils. Despite its advantages, the preparation and implementation of individualized programmes becomes difficult, especially in the case of large classes. Group instruction, particularly co-operative group instruction, is found to be a very effective teaching strategy. (Slavin, 1995; Meyers and Jones, 1993; Johnson and Johnson, 1994; Ajose and Joyner, 1990, pp. 197 - 201).

Each of these teaching strategies incorporates a variety of teaching methods. In the case of mass instruction, the teaching methods include the lecture method, recitation, discussion and the Socratic method. Examples of individualized teaching methods are one - to-one discussions and individualized projects. Teachers utilizing the group teaching strategy make use of methods such as group discussions, group projects, peer tutoring and role playing. A few well - known examples of co - operative learning methods are STAD, TGT, TAI and Jigsaw 11.

Resources facilitate both teaching and learning. Besides providing visual and aural stimulation, resources help teachers in communicating with pupils. The effective co-ordination of several resources and the integration of these resources with the teaching strategies utilized ensure maximum benefits for both teachers and pupils.

The change in the cultural composition of school pupils poses additional demands to the classroom teacher. It has now become necessary to provide appropriate learning experiences for pupils who differ widely in terms of, for example, learning styles, interests and proficiency in English.

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CHAPTER FOUR

4. THE CASE STUDY

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THE CASE STUDY

4.1 Introduction

This chapter focuses on five case studies. It begins with a discussion of the procedures adopted in the selection of a sample of schools and participants. Key features in the process of negotiating for access to sites and persons are explained. The process of data-collection by means of observations, questionnaires and interviews is described in detail.

The five cases are examined and documented separately. This is followed by a cross-case analysis involving all five cases. The salient features of ethics are explored and specific ways used to redress the researcher's concerns are presented. The issues of validity and reliability of findings are dealt with in the concluding sections of the chapter.

4.2 Selection of sites and cases

The selection of sites and cases for this study was an important step, but proved to be problematic in some instances. As explained in Chapter 1, this investigation was confined to secondary schools in the Verulam - Phoenix area. An important consideration that the researcher bore in mind was the need to have access to schools with a pupil population composed of Indian and African pupils.

Initially the researcher considered the possibility of preparing a list of all former Indian secondary schools in the Verulam - Phoenix area and then selecting any five schools from this list in a random manner. However, subsequent discussions with colleagues and management personnel in some of the schools revealed that this was not feasible in view of the apathy displayed by some teachers towards research in general. The researcher then undertook visits to a few secondary schools (Bluebell, Aster, Croton, Violet, Marigold and Tulip) and engaged in informal discussions with principals and teachers to assess their views on the proposed research project and to enlist their support for this study. In general, principals of schools were co-operative and willing to assist. However, the principal of Marigold Secondary objected strongly to accepting the researcher during the last term of the school year. Furthermore, he insisted that questionnaires should be given to teachers after school hours to ensure that questionnaires were not completed at school. A similar situation was encountered by the researcher at Aster Secondary. Here the researcher engaged in a discussion with two teachers (male and female) to elicit their views on the proposed research. The male teacher was very vociferous about his rights as a professional and, together with his female colleague, objected vigorously to any form of classroom observation. Both teachers were willing to fill in questionnaires but were adamant that class visits would not be allowed under any circumstances. The researcher then visited Tulip Secondary. The principal was very willing to assist but expressed reservations with regard to the co-operation of certain teachers in the subjects chosen for the study. The experiences of the researcher at the above-mentioned schools convinced him that data-collection at some schools would be difficult, if not impossible.

In such circumstances it became necessary to abandon the original selection design and adopt a different approach in selecting schools. The researcher identified five secondary schools in the Verulam-Phoenix area for inclusion in the study. The following five schools were selected: Zinnia,

Violet, Croton, Bluebell and Hibiscus. These schools were deliberately chosen. In addition to the reasons mentioned in Chapter 1, an important consideration in the selection of the above-mentioned schools was the fact the researcher was familiar with the principals (or deputy principals) of the schools. The researcher was therefore confident of securing their assistance in gathering data.

The primary objective of the researcher was to investigate what teaching strategies and resources were utilized in five selected subjects, namely, English, Mathematics, Biology, Geography and Accounting. It was, therefore, necessary to identify teachers who would provide data in respect of each of the five subjects.

A few problems arose at Hibiscus Secondary with regard to teacher participation but these were quickly resolved by the intervention of the principal. The researcher considered selecting a representative sample of teachers in terms of qualifications, experience and sex. This proved to be extremely difficult in all schools. Various factors, for example, the unwillingness of some teachers to participate in the research, a greater proportion of female teachers than male teachers at most schools and fewer teachers in certain subject areas, restricted the researcher in the selection process.

4.3 Gaining Access to Sites and Participants

The researcher, like other researchers involved in the study of social situations, faced the dilemma of how to gain access to those schools and persons selected for the study. The following advice offered by Walker guided the researcher in negotiating access to schools and participants :

'To gain access to the school you need to first approach the ... (Department of Education); to gain access to the staff, you need to approach the ... (principal); to gain access to the pupils you need to approach the staff. Each fieldwork contact is thus sponsored by someone in authority over those you wish to study.' (Walker, as quoted by Burgess, 1984, p.258)

The KwaZulu-Natal Department of Education and Culture, the authority responsible for the administration of the schools selected, was contacted by means of a letter to seek permission to visit schools. As discussed in Chapter 1, the Department responded by asking for more information concerning the proposed research. A reply was forwarded to the Department, together with all the relevant documents requested. Permission was finally granted to visit schools subject to certain conditions. These conditions which are outlined in Chapter 1, were:

i. all information gleaned from the research was to be regarded as confidential;

ii. prior arrangements were to be made with the relevant principals;

iii. teacher participation in the research was to be treated as voluntary;

iv. the researcher's workplan should not affect the teaching programmes of schools or the transport arrangements of pupils;

v. written consent was to be obtained from teachers to observe their lessons;and

vi. a copy of the letter from the Department was to be presented to the principals upon arrival at schools.

Upon receipt of the letter of approval from the KwaZulu-Natal Department of Education and Culture, the researcher visited each school to talk to the principals personally. The general strategy for gaining access to a school was to approach the principal with a formal request to be allowed to work in his or her school. None of the principals of the schools selected objected to the research taking place. They were very co-operative, unlike secretaries at some schools, for example, Bluebell and Hibiscus, who were more difficult to approach. A copy of the letter of approval from the Department, together with a copy of the researcher's statement of intent was given to each Principal. The researcher then explained as simply, directly and as honestly as possible what he was planning to do. The principals of two schools (Bluebell and Hibiscus) expressed concerns over certain aspects of the research methodology, namely:

i. class visits to observe lessons; and

ii. possible disruption of lessons when questionnaires were administered to pupils.

None of the principals asked the researcher to submit questionnaires or any other research material for his or her approval. The principal of Hibiscus Secondary requested the researcher to explain the research project to the school's management staff during a tea break. Although the researcher tried to give a simple and accurate explanation of what the research entailed, and appealed for co-operation, some members of the staff did not appreciate the value of the project and were opposed to the research being conducted at that school. Some members of the staff suggested that the researcher should modify the research methodology by dropping observation of lessons as a method of collecting data. This was not feasible, as explained in a later section, and teachers were informed accordingly. The principal, being more sympathetic to the researcher's request, interceded and was able eventually to persuade a few teachers to co-operate in this project. The head of Croton Secondary was particularly helpful in granting free and unhindered access to both teachers and pupils.

All principals were given the assurance that access to lessons would be negotiated with the teachers concerned and that the researcher would not push to go into lessons where teachers showed reluctance. Also, it would not be necessary to alter the normal routine of the school to enable the researcher to carry out this research. This meant that:

i. teachers would complete questionnaires at home or during non-teaching periods at schools;

ii.. teacher interviews would be conducted during breaks or "free" periods;

iii. pupils would be interviewed during breaks or before school hours; and

iv. pupil questionnaires would be administered during breaks.

Furthermore, it was stressed that no evaluation of teachers' work was envisaged in this study. The researcher was primarily concerned with describing and explaining what was happening during teacher-pupil interactions in classrooms.

The subject teachers involved in the study at three schools (Croton, Bluebell and Hibiscus) were chosen by the principals of the schools concerned. The selection of teachers at Zinnia Secondary was done by the researcher. At Violet Secondary the contact person assisted the researcher in the selection process. Although the sex of teachers was considered in selecting teachers at four schools (Croton, Zinnia, Bluebell and Violet), this was not possible at Hibiscus Secondary. The main criteria used in the selection process was the willingness of teachers to co-operate in the study. Limitations on access therefore made it impossible to obtain a truly representative sample of teachers as was originally intended. In three schools (Croton, Bluebell and Violet) principals delegated a member of staff specifically to introduce the researcher to subject teachers. This teacher later became the researcher's contact person in two schools (Bluebell and Violet). Subject teachers at the remaining two schools (Zinnia and Hibiscus) were approached directly by the researcher. Discussions were held with individual teachers to make arrangements for the completion of questionnaires, interviews and classroom visits. In general, most teachers were willing to co-operate in the completion of questionnaires but were reluctant to engage in interviews or allow the researcher to visit their classrooms.

An issue that troubled the researcher was the disregard shown for the rights of pupils involved in the research. The researcher was concerned that pupils were 'seen to be docile and available' (Burgess, 1984, p259) and no attempt was made to canvass either their or their parents ' permission. Even the Department of Education and Culture did not specify parental permission when granting permission to the researcher. Parental permission for involving pupils in interviews and filling in of questionnaires is essential since these activities 'could not be regarded as a normal and expected part of a pupil's attendance at school'. (Fuller, 1984, p.107). The researcher discussed this issue with several teachers but received no support and the idea was dropped. However, it was emphasised to those pupils who came in for interviews and completion of questionnaires that their participation was voluntary and that they were free to decide whether to continue or leave.(Burgess, 1984,p.259). Except for a few pupils (at Bluebell) all pupils selected agreed to complete questionnaires and to be interviewed.

4.4 Collection of Data

Being 'in a largely uncharted ocean' (Merriam, 1988, p.37), a case study researcher needs to exercise discretion in making meaningful decisions in the selection and implementation of data collection methods. The researcher in the present study used direct observations, interviews and questionnaires to collect data. Each of these methods is discussed below, together with the experiences of the researcher during this stage of the research.

4.4.1 Use of Questionnaires

Two different forms of questionnaires were prepared, one for teachers and the other for pupils. Each type of questionnaire was composed of both pre-coded and open-ended questions. Five teacher questionnaires and 25 pupil questionnaires were administered at each of the 5 schools

selected. All questionnaires were coded to protect the identity of schools and respondents. The procedure involved the use of letters A-E to represent each of the five schools and numbers 1-5 to denote each of the five subjects. For example, a code A5 referred to Accounting in the first school whereas E2 referred to Mathematics in the fifth school. The procedures adopted for coding teachers' questionaires and pupils' questionaires were the same.(Appendix B10).

4.4.1.1 Teacher Questionnaires

This questionnaire was designed to determine the strategies and resources utilized by teachers. The latter part of the questionnaire gave teachers the opportunity to make comments on several school-related issues.

Questionnaires were given to the five subject teachers at their initial meeting with the researcher. Teachers were given a brief account of the project during this meeting. Each subject teacher was requested to complete a questionnaire in respect of his/her subject, namely, English, Mathematics, Biology, Geography and Accounting. Teachers were allowed sufficient time (about a week) to complete and return questionnaires.

Questionnaires were collected personally by the researcher, except at Violet Secondary, where the contact person assisted in this process. In general, teachers were prompt in submitting completed questionnaires. There were, however, one or two cases in all schools where teachers required constant reminders and extended deadlines to submit returns. A total of 5 questionnaires

were collected at each school.

4.4.1.2 Pupil Questionnaires

Pupil questionnaires were structured to ascertain the classroom activities that pupils engaged in and also the resources that they were familiar with. The main idea was to elicit information regarding teachers' utilization of classroom strategies and resources with a view to determining whether there was any correspondence with the data furnished by teachers. As in the case of teachers' questionnaires, the latter part of pupils' questionnaires also contained questions of the open-ended variety which afforded pupils the opportunity to express their opinions on various school-related matters.

Initial arrangements were made with the principals (or contact persons) and the teachers concerned with regard to the most convenient day and time for pupils to complete questionnaires. At each school each of the five subject teachers was requested to provide five pupils to fill in questionnaires in respect of his or her subject. Teachers were required to consider ability levels and sex of pupils in the selection process to ensure that the sample of pupils included both boys and girls of various abilities. The researcher was not directly involved in the selection of pupils.

A total of 25 pupils completed questionnaires at each school. This sample was composed of 5 groups of 5 pupils each; each group of pupils provided data

relevant to a particular subject. Although the data collection process was initially confined to pupils in Grades 10, 11 and 12, circumstances in certain schools compelled the researcher to involve Grade 8 pupils in certain subjects, for example, Mathematics in Violet Secondary and Bluebell Secondary.

Co-operation from both teachers and contact persons enabled the researcher to administer questionnaires to the entire group of 25 pupils in one session at each of the five schools. The researcher commenced each session by providing a brief preliminary explanation of the contents and purpose of the questionnaire to the respondents. This was considered to be important to allay feelings of suspicion, motivate respondents and provide guidelines to facilitate data-giving. Pupils were allowed about 35 to 45 minutes to complete questionnaires. All questionnaires were then collected and coded by the researcher.

The researcher did not treat the data obtained from both teacher and pupil questionnaires as conclusive findings but as valuable pointers to a pattern of teaching strategies and resources that could be investigated further during classroom observations and interviews.

4.4.2 Use of Observations

Direct observation served as the researcher's principal method of data collection since this study was specifically directed at the daily classroom practices of teachers. The main emphasis of observation was therefore placed on school

classrooms and school resource centres in order to obtain reliable information about teaching strategies and resources currently utilized by teachers. This formed the primary concern of the researcher's observation study. However, other aspects of school work also occupied the researcher's field of vision, for example, responses of pupils, especially African pupils, during lesson time and mixing of Indian and African pupils in and out of classrooms. It was for this reason that the researcher chose to work in multicultural schools. The focus during class visits was therefore on both teachers and pupils, concentrating not so much on *what* work they were doing but *how* they were doing their work. Observations of classrooms were more structured since aspects of interest were established and observation schedules were prepared beforehand. A less structured and informal approach was adopted when observing school resource centres.

Initially a non-participant mode of observation was considered to be the most appropriate for this study. It was envisaged that the researcher would play a minimal and unobtrusive role in the classroom, sitting in the corner at the back or side of the classroom away from the pupils. In 'the ordinary, largely silent classroom', a non-participant or 'fly-on-the-wall' technique was adopted. (Delamont, 1984, p.23). Due to the particular circumstances within the classroom at one school, the researcher engaged in both types of observational roles. At Violet Secondary, during one of the visits, it was found that pupils worked in groups and were free to move around in the classroom and discuss amongst themselves. The situation was such that the researcher was able to circulate amongst the pupils and talk to them about the work they were doing. Conditions changed when the

teacher addressed the pupils. At such times the pupils' attention was focused on the teacher and the researcher reverted to a non-participant role. (Delamont, 1984, p.24).

The main method of recording data was to make direct notes on prepared sheets, one for each lesson attended. These sheets served as a prop for the researcher and provided a convenient way of recording data. Observation sheets were taken home and checked for accuracy and omissions, and filling in of details of relevant events. The researcher's teaching experience and familiarity with classroom situations was advantageous during this stage of the study. But there are problems with observing familiar settings, which are highlighted by Becker as follows:

> 'We may have understated a little the difficulty of observing contemporary classrooms. It is not just the survey method of educational testing or any of those things that keeps people from seeing what is going on. I think, instead, that it is first and foremost a matter of it being so familiar that it becomes impossible to single out events that occur in the classroom as things that have occurred, even when they happen right in front of you.' (Becker, as quoted by Atkinson, 1984, p.170).

4.4.3. Use of Interviews

In this study interviews were employed to supplement and corroborate data obtained by using other methods. Data was collected by conducting interviews with a wide range of persons, namely, pupils, teachers, school principals, staff at school resource centres and teachers' centres, and lecturers from universities and colleges of education. Interviews were conducted with teachers who were selected originally to complete questionnaires. However, in some schools informal interviews were engaged in with a few teachers who were not included in the original sample. In the case of pupil- interviews, in a few cases, some of the participants involved in completing questionnaires were not available due to absenteeism or other commitments. This necessitated the selection of other pupils for interview purposes. The inclusion of more pupils in the data-collection process was beneficial to the study since the data collected represented the views of a bigger sample. Teachers were interviewed individually after questionnaires were completed and in some cases, where circumstances permitted, after lessons were observed. Pupil interviews were also conducted after questionnaires were administered. Interviews with pupils, teachers and principals of schools were highly focused. The purpose of interviewing these persons was to corroborate data already established by questionnaires and observations during class visits. Interviews with staff at resource centres and teachers' centres were designed to obtain data regarding teachers' use of available resources while those involving lecturers from universities and colleges of education gave the researcher an insight into aspects of teaching methodology which formed part of the teacher-education

programmes of pre-service teachers.

The researcher used a combination of highly structured, semi-structured and unstructured interview formats when gathering data. Interviews with pupils and teachers were totally unstructured. Although aspects to be covered during the interview were established beforehand, questions and the order of questioning were not determined ahead of time. This mode of interviewing was chosen to give respondents an opportunity to elaborate on their responses to questions in the questionnaire, and also to give them the freedom to express their views on school-related matters without being restricted by a predetermined set of questions. Both highly-structured and semi-structured formats were used when interviewing principals of schools, personnel at resource centres and teachers' centres, and lecturers from universities and colleges of education. The use of these modes of interviewing was considered helpful in ensuring that all relevant questions were covered in the interview, especially in the case of school principals and lecturers from universities and colleges of education since the interview formed the only method of obtaining data from these persons. In these cases the 'highly structured questionnaire-driven interviews' served as 'an oral form of the written survey'. (Merrian, 1988, p,73). The inclusion of some open-ended questions in the schedule gave respondents the opportunity to express personal viewpoints and provide fresh insights into particular areas of interest.

Unlike data-collection by means of questionnaires, interviewing involves a close and direct interpersonal interaction between the interviewer and key respondents.

The success of such an interaction in providing authentic data depends to a large extent on the ability of the interviewer to gain the confidence and trust of all those persons involved in the study. The researcher took cognizance of this and, in addition, was aware that interviewees, especially young pupils, would be reluctant to talk with and respond readily to questions posed by strangers. It was for these reasons that the objectives of the study and the role of participants were explained briefly at the beginning of interviews. The willingness of pupils to be interviewed was also confirmed at this stage. Furthermore, the researcher's professional responsibility to be confidential about participants, data and schools was stressed. In attempting to gain the willing co-operation of interviewees the researcher was mindful of the advice proffered by Stenhouse (1984, p.222):

> 'As an interviewer I try to be polite, attentive, sensitive, thoughtful, considerate, but not familiar - rather respectful. I feel it is part of my job to give people the feeling not merely that they have my ear, my mind and my thoughts concentrated on them but that they want to give an account of themselves because they see the interview as in some way an opportunity: an opportunity of telling someone how they see the world.'

Interviews with pupils were more informal and based on groups of 5-6 pupils. The technique of group interviewing was found to be cost effective in terms of time and resources and provided rich and worthwhile data. In addition, the use of groups

rather than individual pupils in interviews had distinct advantages. This is highlighted by Woods (1979):

> '...The company of like-minded fellows helped to put the children at their ease. The bond between them and the way it was allowed to surface shifted the power balance in the discussion in their direction. As long as my interventions were not too intrusive, it might facilitate the establishment of norms, and I might become privy to their culture, albeit in a rather rigged way. Other advantages were that they acted as checks, balances and prompts to each other. Inaccuracies were corrected, incidents and reactions recalled and analyzed. Many of the conversations became ... part of their experience rather than a commentary on it.' (Woods, as quoted by Pollard, 1985, p.229).

Pupils were fascinated by the experience of being interviewed and were also flattered by the interest shown in them. They engaged in lively discussions while formulating responses to questions posed by the researcher. All pupil responses were discussed by the members of the groups; some were confirmed and verified while others were rejected before pupils presented a group viewpoint to the researcher. The invaluable data obtained as a result of the interactions with pupils during the interviews convinced the researcher(and also supported Woods' view) that interviewing groups of pupils rather than individual pupils facilitates the process of interviewing and also contributes to a greater degree of authenticity of interview data.

Data gathered by the researcher was recorded by taking notes during the interviews. Interview schedules were designed to provide sufficient blank spaces to ensure quick and systematic recording of participants' responses. During the course of interviews the researcher provided feedback to participants in an attempt to verify data and make amendments, if necessary. Being rather inexperienced in the process of interviewing, the researcher did not use any particular seating arrangement when conducting interviews initially. Some time had elapsed after the fieldwork had started when a survey of the literature revealed an article by Stenhouse (1984,p.222) in which he explains his personal style of interviewing as follows:

> 'I am rather keen not to sit facing the interviewee, but rather side by side or angled towards each other. This allows me to seek or to avoid eye contact. I explain to interviewees that I prefer to sit beside them and look out at the world with them, sharing their view.'

The method suggested by Stenhouse had been used, although unintentionally, in all pupil interviews and a few interviews involving teachers. The merits of Stenhouse's interview technique were recognised by the researcher and his ideas were incorporated in all subsequent interviews.

4.5 ANALYSIS OF FINDINGS

4.5.1 Introduction

A review of the key research questions (Chapter 1) and the case study method (Chapter 2) is recommended to enable the reader to gain a better understanding of the sequence followed in the presentation of findings.

The five cases are discussed separately. In each case all five research questions are addressed. The teaching strategies, methods and resources utilized (research questions 1 and 2) are presented in tabular form. The first five table represent the strategies, methods and resources utilized in each of the five subjects selected. These strategies, methods and resources are incorporated in compiling a final table for each of the five schools. An attempt has been made to highlight the strategies, methods and resources that are most commonly used by placing them at the beginning in the arrangements. The next two tables are included to give the reader some information regarding subject teachers (gender, teaching experience, qualifications) and the classes they teach (size, composition, seating of pupils). Research questions 3,4 and 5 are dealt with in the following sections. Although question 4 appears to refer to the general school population, the researcher's focus has been directed to the performances of particularly African pupils in former Indian schools. The discussions include original statements made by teachers and pupils. The researcher believes that the inclusion of these quotations would give the reader an insight into the actual views and feelings of pupils and teachers as reported by the pupils and teachers themselves.

The five cases are followed by a cross-case analysis involving all five cases. In this section the findings of the fives cases are compared and a summary of the overall findings is developed.

4.5.2 CASES

4.5.2.1 CASE ONE: ZINNIA SECONDARY

4.5.2.1.1 TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED BY TEACHERS IN DIFFERENT SUBJECTS

* ENGLISH

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks,worksheets, chalkboard, handouts.
	1.2 discussion	textbooks, worksheets, handouts.
2. Group Instruction	peer tutoring	handouts

TABLE 4 CASE ONE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILISED IN ENGLISH

* MATHEMATICS

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks,worksheets, chalkboard.
	1.2 discussion	textbooks,worksheets, chalkboard, charts, models.
2. Individualized Instruction	discussion (one-to-one)	textbook,worksheets, chalkboard.
3. Group Instruction	peer tutoring	textbooks.

TABLE 5: CASE ONE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN MATHEMATICS

* BIOLOGY

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks,worksheets, chalkboard,biological specimens, transparencies and overhead projector, slides and slide projector.
	1.2 discussion	textbooks,worksheets, biological specimens.
2. Group Instruction	2.1 group discussion	textbooks, worksheets.
	2.2 experimental method: exploratory groups (self-discovery)	models, biological specimens.
	2.3 experimental method : laboratory group exercises	models, biological specimens.

TABLE 6 CASE ONE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILISED IN BIOLOGY

* GEOGRAPHY

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks,worksheets, chalkboard, photographs, pictures and posters, handouts.
	1.2 discussion	charts, photographs, pictures and posters, handouts, transparencies and overhead projector.
	1.3 video presentation	worksheets, video cassettes and recorder.
2. Individualized Instruction	discussion (one-to-one)	textbooks, worksheets.

TABLE 7 CASE ONE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILISED IN GEOGRAPHY

* ACCOUNTING

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks,worksheets, chalkboard.
	1.2 discussion	textbooks,worksheets, chalkboard.
2. Individualized Instruction	discussion (one-to-one)	textbook, worksheets.

TABLE 8 CASE ONE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN ACCOUNTING

4.5.2.1.2 SUMMARY OF TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture 1.2 discussion 1.3 video presentation	textbooks,worksheets, chalkboard, handouts, photographs, pictures and posters, charts, models, transparencies and overhead projectors, video cassettes and video cassette recorder, television.
2. Individualized Instruction	2.1 discussion(one - to- one)	textbooks, chalkboard, worksheets.
3. Group Instruction	3.1 group discussion 3.2 peer tutoring 3.3 experimental method: exploratory groups (self - discovery) 3.4 experimental method: laboratory group exercises	textbooks, worksheets, handouts, models, biological specimens.

TABLE 9 CASE ONE : SUMMARY OF TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED

4.5.2.1.3 TEACHER CHARACTERISTICS

TEACHER	SUBJECT TAUGHT	GENDER	TEACHING EXPERIENCE (YEARS)	ACADEMIC QUALIFICATIONS IN SUBJECT	PROFESSIONAL QUALIFICATIONS
1	ENGLISH	FEMALE	11-15	UNIVERSITY: 3 YEARS	UNIVERSITY
2	MATHEMATICS	MALE	16-20	UNIVERSITY: 1 YEAR	UNIVERSITY
3	BIOLOGY	FEMALE	11-15	COLLEGE OF EDUCATION SPECIALISATION COURSE	COLLEGE OF EDUCATION
4	GEOGRAPHY	FEMALE	6-10	UNIVERSITY: 3 YEARS	UNIVERSITY
5	ACCOUNTING	MALE	16-20	UNIVERSITY: 3 YEARS	UNIVERSITY

TABLE 10 CASE ONE: TEACHER CHARACTERISTICS

4.5.2.1.4 CLASS CHARACTERISTICS

SUBJECT	AVERAGE SIZE OF CLASSES	COMPOSITION OF CLASSES	SEATING OF PUPILS
ENGLISH	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX, NOT BY RACE
MATHEMATICS	31-40	50% INDIAN, 50% AFRICAN	MIXED BY SEX AND BY RACE
BIOLOGY	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX AND BY RACE
GEOGRAPHY	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX AND BY RACE
ACCOUNTING	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX, NOT BY RACE

TABLE 11 CASE ONE : CLASS CHARACTERISTICS

4.5.2.1.5 TEACHERS' REASONS FOR USING TEACHING STRATEGIES AND METHODS SELECTED

The main reason for using whole-class teaching is the high pupil-teacher ratio.

TEACHER ON TEACHING

Why do you utilize the strategies and methods you have selected? Comment briefly.

Considering that the average teacher - student ratio is approx. 1 : 35, whole class teaching and group instruction is more productive and efficient bearing in mind that time, resources, staff and available space are limited.

TEACHER X

Although the lecture is the most commonly used teaching method, some teachers utilize discussions in attempting to involve all pupils in lessons. The use of discussions is supported by the following statements.

TEACHER ON TEACHING

Why do you utilize the strategies and methods you have selected? Comment briefly.

It is a method that involves all pupils. All pupils have the chance of contributing to the lesson.

TEACHER Y

TEACHER ON TEACHING

Why do you utilize the strategies and methods you have selected? Comment briefly.

The discussion method forces pupils to read the work in advance so that can participate in the lesson.

TEACHER Z

4.5.2.1.6 CLASSROOM ACTIVITIES PUPILS LIKE TO ENGAGE IN

Pupils prefer a more active involvement in lessons and identify group work, discussions, debates, plays, games, projects and practical work as their favourite activities.

PUPIL ON LEARNING

What classroom activities would you like to engage in?

I would like to engage in group talks or discussions.

Give reasons for your answer.

It is easier to communicate with your classmates than the teacher. You feel at ease with your classmates and a willingness to learn is felt.

PUPIL A

PUPIL ON LEARNING

What classroom activities would you like to engage in?

- working on assignments & projects which differ for different pupils.
- writing down my own thoughts & ideas
- engaging in study of textbooks & other resource books
- Sitting & listening to a video presentation or an educational broadcast.

Give reasons for your answer.

- Often I tend to get bored in Biology class because we are not given a brain teaser but something that everyone in class can do (which is fairly simple).
- I think I can understand better by watching now & again an educational broadcast other than reading the same textbook throughout the year.

PUPIL B

4.5.2.1.7 TEACHERS' REASONS FOR USING RESOURCES SELECTED

Teachers report that the resources that they utilize are readily available at their school and also appropriate to their work.

TEACHER ON TEACHING

Why do you utilize the resources you have selected? Comment briefly.

These resources are easily available (eg textbooks, worksheets etc) and are more appropriate for the type of strategy that I generally use. Also, shortage of various other media apparatus makes it necessary to rely heavily on the chosen / selected resources.

TEACHER X

TEACHER ON TEACHING

Why do you utilize the resources you have selected? Comment briefly.

Most accessible; best understood & easy to understand; facilities available on hand.

TEACHER Y

4.5.2.1.8 RESOURCES PUPILS PREFER

Pupils advocate a greater use of resources. The most common resources pupils like are television, video cassettes and video cassette recorder, radio, overhead projector, pictures and posters, charts, audio cassettes and tape recorder, films, excursions, models, computer, photographs, realia (cheques, bank statement, rock samples), worksheets and handouts.

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?

Slides, Film shows, Charts explaining everything in detail.

Give reasons for your answer.

Slides and Film shows make the lesson interesting. It is different from the usual monotonous way of teaching and therefore the pupil is eager to pay attension or learn something.

PUPIL A

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?

MODELS, VIDEO CASSETTE AND VCR, MODELS ETC
PHOTOGRAPHS AND GRAPHS

Give reasons for your answer.

SO WE FULLY UNDERSTAND THE SECTION AND WE REFER TO THE MODELS IN OUR HEAD WE CAN UNDERSTAND. AND MAKE OUR SUBJECT MORE INTERESTI BECAUSE MOST OF THE TIME WE HATE THE SUBJECT BECAUSE ITS THE SAME OLD BORING SUBJECT WITH NO FUN AT ALL. ITS ALL TALK AND TALK AND NOTHING ELSE.

PUPIL B

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?

Chalkboard, charts, pictures and posters, models, handouts, video cassette and video cassette recorder, computer, audio cassette and tape recorder.

Give reasons for your answer.

It would be different from everyday work. It would not be boring, pupils would be more inthusiatic to learn, rather than looking at the some old text book everyday and the chalkboard.

PUPIL C

4.5.2.1.9 CLASSROOM PERFORMANCE OF AFRICAN PUPILS IN FORMER INDIAN SCHOOLS

In general, teachers state that African pupils are not able to cope with classwork in the same way as Indian pupils. The main reason given for the poor performance of many African pupils is their lack of competence in the use of the English language.

TEACHER ON TEACHING

In general, are African pupils able to cope adequately with the daily classwork in the same way as Indian pupils?

No. They are disadvantaged in the sense that English is a second language i.e. they do not have good command and good / effective communication skills.

If not, give reasons for these pupils not achieving success.

They come mainly from disadvantaged communities where textbooks, stationery and adequate facilities were lacking. Also, the majority of teachers in black schools are poorly qualified and lack the necessary skills, experience and resource to provide effective teaching.

TEACHER X

TEACHER ON TEACHING

In general, are African pupils able to cope adequately with the daily classwork in the same way as Indian pupils?

No.

If not, give reasons for these pupils not achieving success.

Most pupils cannot express themselves because they are not fluent in English. Although some of them understand what is happening they are at a disadvantage because of the language problem.

TEACHER Y

4.5.2.1.10 TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES THAT TEACHERS ADVOCATE TO CATER FOR THE DIVERSE PUPIL POPULATION IN SCHOOLS

Teachers consider the teaching strategies, methods and resources that are used to be inappropriate for the diverse pupils in their classrooms. The need for individualized instruction to cater for differences amongst pupils is stressed by many teachers.

TEACHER ON TEACHING

Do you think that your strategies, methods and resources cater adequately for the diverse pupil population in your classroom?

To a certain extent (considering the large numbers of pupils per class) yes, however there is considerable room for improvement with regard to improving the lot of the BC

If not, what strategies, methods and resources do you think would be appropriate for your classroom?

Individualized instruction, which caters for individual differences between pupils who come from diverse cultural backgrounds, would be the ideal strategy to implement. With regard to resources, individualized worksheets, projects and discussion on a one-to-one basis would be ideal. Thus the teacher can adjust his programme to suit changing pupil needs. The teacher will also be given the opportunity to get to know the pupils minds well.

TEACHER X

TEACHER ON TEACHING

Do you think that your strategies, methods and resources cater adequately for the diverse pupil population in your classroom?

No. It is impossible with the time constraints & syllabus coverage

If not, what strategies, methods and resources do you think would be appropriate for your classroom?

Have separate tutorial classes within a particular class catering for group ability. These tutorial classes would be tutored separately from the entire class.

TEACHER Y

TEACHER ON TEACHING

Do you think that your strategies, methods and resources cater adequately for the diverse pupil population in your classroom?

Not really.

If not, what strategies, methods and resources do you think would be appropriate for your classroom?

More group instruction must be used but with large classes and little room and inadequate facilities it is difficult to use this strategy

TEACHER Z

4.5.4.2. CASE TWO: VIOLET SECONDARY

4.5.2.2.1 TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED BY TEACHERS IN DIFFERENT SUBJECTS

* ENGLISH

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks, worksheets, chalkboard.
	1.2 discussion	textbooks, worksheets, chalkboard.
	1.3 video presentation	video cassettes and video cassette recorder, television, worksheets.
2. Group Instruction	2.1 group discussion	worksheets.
	2.2 peer tutoring	textbooks, worksheets

TABLE 12 CASE TWO: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN ENGLISH

* MATHEMATICS

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	lecture	textbooks, worksheets, chalkboard, charts.
2. Individualized Instruction	discussion (one - to one)	worksheets.
3. Group Instruction	3.1 group discussion	textbooks, worksheets.
	3.2 peer tutoring	textbooks, worksheets.

TABLE 13 CASE TWO: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN MATHEMATICS

* BIOLOGY

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	chalkboard, biological specimens, models, transparencies and overhead projector.
	1.2 discussion	chalkboard, biological specimens, transparencies and overhead projector, charts, pictures and posters, models, worksheets, textbooks, slides and slide projector.
2. Individualized Instruction	discussion (one-to-one)	worksheets, textbooks, microscope.
3. Group Instruction	3.1 group discussion	chalkboard, textbooks, worksheets, charts, pictures and posters, models, biological specimens, slides and slide projector, transparencies and overhead projector, films and film projector.
	3.2 experimental methods: exploratory groups (self-discovery)	chalkboard, textbooks, worksheets, charts, pictures and posters, models, biological speciments, slide and slide projector, transparencies and overhead projector, films and film projector.
	3.3 experimental methods: group projects	chalkboard, textbooks, worksheets, charts, pictures and posters, models, biological specimens, slides and slide projector, transparencies and overhead projector, films and film projector

TABLE 14 CASE TWO: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILISED IN BIOLOGY

* GEOGRAPHY

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	chalkboard, textbooks, worksheets, maps, charts, pictures and posters, realia (rock samples).
	1.2 discussion	chalkboard, textbooks, worksheets, maps, charts, pictures and posters, realia (rock samples).
2. Individualized Instruction	discussion (one-to-one)	textbooks, worksheets.

TABLE 15 CASE TWO: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN GEOGRAPHY

* ACCOUNTING

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks, worksheets, chalkboard, charts, handouts, transparencies and overhead projector.
	1.2 discussion	textbooks, worksheets, chalkboard, charts, handouts, transparencies and overhead projectors.
2. Individualized Instruction	discussion (one-to-one)	textbooks, worksheets.
3. Group Instruction	3.1 experimental method: group projects	textbooks, worksheets, chalkboard, charts.
	3.2 peer tutoring	textbooks, worksheets, chalkboard, charts.

TABLE 16 CASE TWO: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN ACCOUNTING

4.5.2.2.2 SUMMARY OF TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture 1.2 discussion 1.3 video presentation	textbooks, worksheets,chalkboard, charts,handouts, transparencies and overhead projector, pictures and posters, models, biological specimens, video cassettes and video cassette recorder, television, realia(e.g. rock samples).
2. Individualized Instruction	discussion (one-to-one)	worksheets,textbooks, microscope.
3. Group Instruction	3.1 peer tutoring 3.2 group discussion 3.3 experimental method: group projects 3.4 experimental method exploratory groups (self - discovery)	textbooks, worksheets, chalkboard, charts, transparenices and overhead projector, pictures and posters,models, biological specimens, slides and slide projector, films and film projector

TABLE 17 CASE TWO: SUMMARY OF TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED

4.5.2.2.3 TEACHER CHARACTERISTICS

TEACHER	SUBJECT TAUGHT	GENDER	TEACHING EXPERIENCE (YEARS)	ACADEMIC QUALIFICATIONS IN SUBJECT	PROFESSIONAL QUALIFICATIONS
1	ENGLISH	MALE	11-15	UNIVERSITY: 3 YEARS	UNIVERSITY
2	MATHEMATICS	FEMALE	6-10	UNIVERSITY: 2 YEARS	UNIVERSITY
3	BIOLOGY	FEMALE	16-20	UNIVERSITY: 3 YEARS	UNIVERSITY
4	GEOGRAPHY	FEMALE	11-15	UNIVERSITY: 3 YEARS	UNIVERSITY
5	ACCOUNTING	MALE	11-15	UNIVERSITY: 2 YEARS	COLLEGE OF EDUCATION SPECIALIZATION COURSE

TABLE 18 CASE TWO: TEACHER CHARACTERISTICS

4.5.2.2.4 CLASS CHARACTERISTICS

SUBJECT	AVERAGE SIZE OF CLASSES	COMPOSITION OF CLASSES	SEATING OF PUPILS
ENGLISH	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX, NOT BY RACE
MATHEMATICS	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX AND BY RACE
BIOLOGY	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX AND BY RACE
GEOGRAPHY	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX AND BY RACE
ACCOUNTING	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX AND BY RACE

TABLE 19 CASE TWO: CLASS CHARACTERISTICS

4.5.2.2.5 TEACHERS' REASONS FOR USING TEACHING STRATEGIES AND METHODS SELECTED

Teachers believe that the teaching strategies and methods that they are utilizing are relevant and appropriate in teaching large classes. Some teachers recognize the need for pupils to get actively involved in lessons and make use of the self-discovery method occasionally.

TEACHER ON TEACHING

Why do you utilize the strategies and methods you have selected? Comment briefly.

I find these strategies useful and effective.

TEACHER X

TEACHER ON TEACHING

Why do you utilize the strategies and methods you have selected? Comment briefly.

Peer/Team Teaching - I find this to be a useful way to ensure that my lessons are pupil directed/orientated. Through this method the pupil's and teacher prepare the lessons beforehand to conduct in class. Likewise the test is the c pupils are advised to prepare themselves so that they participate meaningfully in the class lesson.

TEACHER Y

4.5.2.2.6 CLASSROOM ACTIVITIES PUPILS LIKE TO ENGAGE IN

Pupils express a preference for group work. They show a distinct liking for activities such as discussions, role-playing, and peer tutoring.

PUPIL ON LEARNING

What classroom activities would you like to engage in?

Playing games
To Do more practical work in groups or individually
Having more closs discussions
Using the television

Give reasons for your answer.

You could thus make the lessons more interesting and lively.
It will also make pupils interested and thus participate in the lessons.

PUPIL A

PUPIL ON LEARNING

What classroom activities would you like to engage in?

Engaging in math disscussions, debates, speeches and games.
Small or individual study of problems & concepts that were dissaussed in the classroom.

Give reasons for your answer.

You learn more about the subject.
It is exciting & interesting.
It is very enjoyable.

PUPIL B

PUPIL ON LEARNING

What classroom activities would you like to engage in?

Participating in role-plays etc.
being able to air my views concisely and without
any objection from teacher as long as it's my opinion.
To be able to view video cassettes during a lesson
to get understanding of a particular section.

Give reasons for your answer.

The lesson would be more lively and pupils feel
comfortable and not afraid to learn the language.
Pupils will not become bored. There will be a better
response from a class as a whole.

PUPIL C

4.5.2.2.7 TEACHERS' REASONS FOR USING RESOURCES SELECTED

Teachers' comments imply that the resources they have selected are suitable and effective and adequately serve the needs of their subjects.

TEACHER ON TEACHING

Why do you utilize the resources you have selected? Comment briefly.

They are available at all time. Save time for both teacher + pupil.

TEACHER X

TEACHER ON TEACHING

Why do you utilize the resources you have selected? Comment briefly.

I find these resources very useful and very effective for teaching. We do not use other resources because we do not have the necessary equipment in each classroom.

TEACHER Y

4.5.2.2.8 RESOURCES PUPILS PREFER

Pupils suggest that teachers should utilize a greater variety of resources in their daily work. They would like teachers to use television, video cassettes and video cassette recorders, films, models, pictures and posters, photographs, realia, charts, worksheets, audio cassettes and tape recorders, and excursions.

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?

Videos cassettes, recorders, Television, pictures, models

Give reasons for your answer.

Much easier to understand/remember if we see for ourselves, on videos, models, pictures. It helps to make a mental picture of what you are learning about.

PUPIL A

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?

Television

Photographs

'Environmental' Items

Tape Recorder

Give reasons for your answer.

To make lessons interesting and lively so pupils will thus want to take a part in lessons.

PUPIL B

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?

Photographs, television, cassettes eg. on the set-works we are studying.
Pictures and posters eg. flow charts ~~and~~ which highlighting important themes.

Give reasons for your answer.

Pupils tend to react better when they are able to get away from the ordinary, monotonous way of teaching. It would be more interesting and I believe that once we experience something first hand eg. watching a drama instead of just reading, we tend to remember it better.

PUPIL C

4.5.2.2.9 CLASSROOM PERFORMANCE OF AFRICAN PUPILS IN FORMER INDIAN SCHOOLS

The general impression amongst teachers is that African pupils experience difficulties in coping with their daily classwork. Poor attendance and deficiencies in the use of the English language appear to be responsible for the poor performance.

TEACHER ON TEACHING

In general, are African pupils able to cope adequately with the daily classwork in the same way as Indian pupils?

NO

If not, give reasons for these pupils not achieving success.

1. DIFFICULTY WITH COMMUNICATION
2. LACK OF INTEREST
3. POOR ATTENDANCE

TEACHER X

TEACHER ON TEACHING

In general, are African pupils able to cope adequately with the daily classwork in the same way as Indian pupils?

NO

If not, give reasons for these pupils not achieving success.

Some of these pupils do not understand English too well.
Also some of these pupils are very slow.

TEACHER Y

4.5.2.2.10 TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES THAT TEACHERS ADVOCATE TO CATER FOR THE DIVERSE PUPIL POPULATION IN SCHOOLS

Except for one teacher, all others generally consider their teaching strategies, methods and resources to be inappropriate in catering for the diverse pupils in their classrooms. Some of the teachers suggest the use of individualized instruction to provide for differences amongst pupils.

TEACHER ON TEACHING

Do you think that your strategies, methods and resources cater adequately for the diverse pupil population in your classroom?

NO

If not, what strategies, methods and resources do you think would be appropriate for your classroom?

INDIVIDUALIZE INSTRUCTION, MORE PUPIL - BASED LESSONS.
EXPERIMENTAL METHODS - MORE PUPIL INVOLVEMENT.

TEACHER X

TEACHER ON TEACHING

Do you think that your strategies, methods and resources cater adequately for the diverse pupil population in your classroom?

Quite frankly, I believe that we teachers are not adequately equipped to teach the new 'breed' of pupils in our classrooms. I feel that workshops should be conducted where we could be taught new ~~the~~ strategies to handle the new classroom situation.

If not, what strategies, methods and resources do you think would be appropriate for your classroom?

Firstly there should be a loosening of demands placed on a teacher - such as keeping a meticulous records which is time consuming and frustrating. Instead, the time spent on these activities could be utilised in preparing charts, conducting field excursions, and other ~~use~~ visual aids which I feel would benefit the weaker pupil, and assist the African pupil, ~~who~~ in particular, experiences difficulty in understanding his lessons conducted in English.

TEACHER Y

TEACHER ON TEACHING

Do you think that your strategies, methods and resources cater adequately for the diverse pupil population in your classroom?

NO

If not, what strategies, methods and resources do you think would be appropriate for your classroom?

The African pupils should be put in one classroom - so that they can be taught differently - otherwise - these pupils should be taught in their language - or have an interpreter in the classroom - to translate for these pupils.

TEACHER Z

4.5.2.3 CASE THREE: CROTON SECONDARY

4.5.2.3.1 TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED BY TEACHERS IN DIFFERENT SUBJECTS

* ENGLISH

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks, worksheets, chalkboard,handouts, video cassettes and video cassette recorder, audio cassettes and tape recorder, transparencies and overhead projector.
	1.2 discussion	textbooks, worksheets, chalkboard, handouts,video cassettes and video cassette recorder,audio cassettes and tape recorder, transparencies and overhead projector.
2. Individualized Instruction	discussion (one-to-one)	textbooks. worksheets.
3. Group Instruction	3.1 group discussion	textbooks, worksheets.
	3.2 experimental method: group projects	textbooks, worksheets, handouts.
	3.3 peer tutoring	textbooks, worksheets.
	3.4 role playing: dramatization	audio cassettes and tape recorder.

TABLE 20 CASE THREE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILISED IN ENGLISH

* MATHEMATICS

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	lecture	textbooks, worksheets, chalkboard.
2. Individualized Instruction	discussion (one-to-one)	worksheets.
3. Group Instruction	experimental method: group projects	textbooks, worksheets.

TABLE 21 CASE THREE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILISED IN MATHEMATICS

* BIOLOGY

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	chalkboard, textbooks, models, transparencies and overhead projector, charts, slides and slide projector, pictures and posters.
	1.2 discussion	textbooks, worksheets, chalkboard, charts, models, slides and slide projector, transparencies and overhead projector, partial handouts.
2. Individualized instruction	individualized projects	textbooks, worksheets, handouts, partial handouts, environmental items.
3. Group Instruction	3.1 discussion	textbooks, worksheets, chalkboard, charts, models, realia (eg. soil samples), biological specimens, slides and slide projector, transparencies and overhead projector.
	3.2 experimental method: exploratory groups (self-discovery)	worksheets, models, biological specimens, environmental items.
	3.3 experimental method: laboratory group exercises	textbooks, worksheets, biological specimens, handouts
	3.4 experimental method: group projects	textbooks, handouts, partial handouts, environmental items.

TABLE 22 CASE THREE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN BIOLOGY

* GEOGRAPHY

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks, handouts, chalkboard, charts, models, pictures and posters, photographs, realia (eg. rock samples), transparencies and overhead projector.
	1.2 discussion	textbooks, chalkboard, charts.
2. Group Instruction	experimental method: exploratory groups (self-discovery)	textbooks, maps.

TABLE 23 CASE THREE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILISED IN GEOGRAPHY

* ACCOUNTING

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks, worksheets, chalkboard, transparencies and overhead projector.
	1.2 discussion	textbooks, worksheets, chalkboard, transparencies and overhead projector.
2. Group Instruction	experimental method: groups projects	textbooks, chalkboard, worksheets

TABLE 24 CASE THREE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN ACCOUNTING

4.5.2.3.2 SUMMARY OF TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture 1.2 discussion	textbooks, worksheets chalkboard,handouts,partial handouts, transparencies and overhead projector, charts, pictures and posters, models, photographs, slides and slide projector, video cassettes and video cassette recorder, audio cassettes and tape recorder.
2.Individualized Instruction	discussion (one-to-one)	textbooks, worksheets, handouts, partial, handouts, environmental items.
3. Group Instruction	3.1 experimental method: group projets 3.2 group discussion 3.3 experimental method: exploratory groups (self discovery) 3.4 peer tutoring 3.5 experimental method: laboratory group exercises 3.6 role playing: dramatization	textbooks, worksheets, handouts, chalkboard, charts, transparencies and overhead projector,models, realia (eg. soil samples), maps,biological specimens, slides and slide projector, audio cassettes and tape recorder, environmental items.

TABLE 25 : CASE THREE: SUMMARY OF TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED

4.5.2.3.3 TEACHER CHARACTERISTICS

TEACHER	SUBJECT TAUGHT	GENDER	TEACHING EXPERIENCE (YEARS)	ACADEMIC QUALIFICATIONS IN SUBJECTS	PROFESSIONAL QUALIFICATIONS
1	ENGLISH	MALE	6-10	UNIVERSITY: 3 YEARS	UNIVERSITY
2	MATHEMATICS	MALE	11-15	COLLEGE OF EDUCATION SPECIALIZATION COURSE	COLLEGE OF EDUCATION
3	BIOLOGY	FEMALE	11-15	COLLEGE OF EDUCATION SPECIALIZATION COURSE	COLLEGE OF EDUCATION
4	GEOGRAPHY	FEMALE	0-5	UNIVERSITY: 3 YEARS	UNIVERSITY
5	ACCOUNTING	FEMALE	6-10	UNIVERSITY: 1 YEAR	COLLEGE OF EDUCATION

TABLE 26 CASE THREE: TEACHER CHARACTERISTICS

4.5.2.3.4 CLASS CHARACTERISTICS

SUBJECT	AVERAGE SIZE OF CLASSES	COMPOSITION OF CLASSES	SEATING OF PUPILS
ENGLISH	31-40	PREDOMINANTLY INDIAN	NOT MIXED BY SEX OR RACE
MATHEMATICS	31-40	PREDOMINANTLY INDIAN	NOT MIXED BY SEX OR RACE
BIOLOGY	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX AND RACE
GEOGRAPHY	31-40	PREDOMINANTLY INDIAN	NOT MIXED BY SEX OR RACE
ACCOUNTING	31-40	PREDOMINANTLY INDIAN	NOT MIXED BY SEX OR RACE

TABLE 27 CASE THREE: CLASS CHARACTERISTICS

4.5.2.3.5 TEACHERS' REASONS FOR USING TEACHING STRATEGIES AND METHODS SELECTED

The large numbers of pupils in classrooms is cited by teachers as the main reason for using the mass instructional strategy and the lecture method of teaching. Teachers are incorporating discussions and questions in their daily classwork in order to encourage pupil participation in lessons. Individualized instruction via one-to-one discussions between teachers and pupils is utilized to a limited extent to cater for differences in pupil abilities.

TEACHER ON TEACHING

Why do you utilize the strategies and methods you have selected? Comment briefly.

With the large numbers of pupils per class there are more pupils with different ability levels and with the use of these methods and the limited time available at least the basic concepts, methods and principles are brought to the attention of pupils.

TEACHER X

TEACHER ON TEACHING

Why do you utilize the strategies and methods you have selected? Comment briefly.

Time is a limiting factor. Owing to large numbers in class, it becomes virtually impossible to provide individual instruction which is desperately needed among the slower pupils.

TEACHER Y

4.5.2.3.6 CLASSROOM ACTIVITIES PUPILS LIKE TO ENGAGE IN

Pupils generally advocate a greater involvement in lessons. They prefer group activities such as dramatizations, discussions, peer tutoring, games, laboratory group exercises and debates.

PUPIL ON LEARNING

What classroom activities would you like to engage in?

LESSONS OUTSIDE THE CLASSROOM. MORE GROUP WORK.

Give reasons for your answer.

CHILDREN TEND TO GET BORED IN THE CLASSROOM. OUTDOOR LESSONS WOULD PROBABLY INTEREST THEM ALOT MORE. GROUP WORK ENSURES PARTICIPATION OF ALL STUDENTS IN THE LESSON.

PUPIL A

PUPIL ON LEARNING

What classroom activities would you like to engage in?

I would like to engage in plays, having group discussions, making models, doing group work, having discussions with the teacher, debates.

Give reasons for your answer.

It makes the lesson more enjoyable and interesting. You get to hear different views and suggestions.

PUPIL B

4.5.2.3.7 TEACHERS' REASONS FOR USING RESOURCES SELECTED

Teachers state that the resources that they are using are appropriate to the lessons that they teach and are also easily available at their school.

TEACHER ON TEACHING

Why do you utilize the resources you have selected? Comment briefly.
They are easily available. Worksheets are useful for deducing formulas via examples. Not all pupils have textbooks - examples are run out on worksheets.

TEACHER X

TEACHER ON TEACHING

Why do you utilize the resources you have selected? Comment briefly.
In the teaching of Accounting these resources are the most valuable tools and they make the task of the pupils and myself lighter.

TEACHER Y

4.5.2.3.8 RESOURCES PUPILS REFER

Pupils would like teachers to use more resources in their lessons. Resources considered disirable include charts, models, video cassettes and video cassette recorder, audio cassettes and tape recorder, television, computers, realia, slides and slide projector, pictures and posters, worksheets, photographs and excursions.

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?
various objects and materials of real significance to the subject. Its all very well using worksheets but more importantly the real stuff like rock samples etc. - models as well

Give reasons for your answer in 3 above.
It makes better learning and makes the subject more lively and nothing is better than the actual things. models make one understand certain things more easily.

PUPIL A

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?
VIDEO CASSETTE AND VIDEO CASSETTE RECORDER; SLIDES AND SLIDE PROJECTOR ETC.

Give reasons for your answer in 3 above.
IT WILL MAKE THE LESSONS A LOT MORE INTERESTING THAN IT IS AT PRESENT.

PUPIL B

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?

Films and Film projecter; Pictures and Photographs and Computers.

Give reasons for your answer in 3 above.

I believe that we absorb information by watching something for eg: If we watch a film we will be able to remember what we watched.

PUPIL C

4.5.2.3.9 CLASSROOM PERFORMANCE OF AFRICAN PUPILS IN FORMER INDIAN SCHOOLS

All teachers report that the standard of work produced by African pupils is generally low.. The main reason given for the poor performance is their inability to understand and communicate effectively in the English language.

TEACHER ON TEACHING

In general, are African pupils able to cope adequately with the daily classwork in the same way as Indian pupils?

No.

If not, give reasons for these pupils not achieving success.

African pupils have difficulty in understanding terms/concepts - because of their language problem. They also find it difficult to express themselves. They are generally slower because they come from township schools where their background knowledge is poor. Class sizes are relatively large.

TEACHER X

TEACHER ON TEACHING

In general, are African pupils able to cope adequately with the daily classwork in the same way as Indian pupils?

No

If not, give reasons for these pupils not achieving success.

They have a language problem. If they were able to comprehend the English language, new instruction and success rate levels definitely improve.

TEACHER Y

TEACHER ON TEACHING

In general, are African pupils able to cope adequately with the daily classwork in the same way as Indian pupils?

African pupils are not able to cope in the same way because most of them have a problem with communication via the English language.

If not, give reasons for these pupils not achieving success.

While some African pupils experience genuine difficulties in the home environment like lack of proper facilities, etc. which contributes to their inability to perform successfully, there are others who are lazy and are not prepared to do the work. There are some of them who also have an attitude problem.

TEACHER Z

4.5.2.3.10 TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES THAT TEACHERS ADVOCATE TO CATER FOR THE DIVERSE PUPIL POPULATION IN SCHOOLS

All teachers agree that the teaching strategies, methods and resources that are utilized are not suitable for the present situation in schools. Most of the teachers emphasize the need for individualized instruction to cater for differences in pupils' abilities. In addition, they suggest a greater use of group instructional methods such as peer tutoring, group discussions and games.

In general, teachers prefer the use of resources such as television, films, video cassettes and radio to help pupils to improve their comprehension skills.

TEACHER ON TEACHING

Do you think that your strategies, methods and resources cater adequately for the diverse pupil population in your classroom?

No

If not, what strategies, methods and resources do you think would be appropriate for your classroom?

If time was available and classroom numbers reduced, per individual instruction would definitely assist the underprivileged pupil. Pupils learn better using their visual senses, therefore media like television, film, slide projectors, video cassette recorder would definitely help to improve comprehension.

TEACHER X

TEACHER ON TEACHING

Do you think that your strategies, methods and resources cater adequately for the diverse pupil population in your classroom?

Yes / No

If not, what strategies, methods and resources do you think would be appropriate for your classroom?

Yes in the sense that most pupils are catered for and no in the sense that there are those few pupils who require the individual attention to be motivated to work, however because of the time constraints and the large nos. of pupils this is not possible.

TEACHER Y

4.5.2.4 CASE FOUR: BLUEBELL SECONDARY

4.5.2.1.1 TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED BY TEACHERS IN DIFFERENT SUBJECTS

* ENGLISH

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks, chalkboard, worksheets, pictures and posters.
	1.2 discussion	textbooks, chalkboard, worksheets, pictures and posters.
2. Individualized Instruction	discussion (one-to-one)	textbooks.
3. Group instruction	3.1 group discussion	textbooks, chalkboard, charts, video cassettes and video cassette recorder, television.
	3.2 experimental method : exploratory groups (self- discovery)	realia, handouts.
	3.3 experimental method : group projects	textbooks, worksheets, charts, photographs, pictures and posters.
	3.4 peer tutoring	textbooks, worksheets, handouts.

TABLE 28 CASE FOUR: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN ENGLISH

* MATHEMATICS

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks, chalkboard, worksheets.
	1.2 discussion	textbooks, chalkboard, worksheets.
2. Individualized Instruction	discussion (one-to-one)	textbooks.
3. Group Instruction	group discussion	worksheets, textbooks.

TABLE 29 CASE FOUR: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN MATHEMATICS

* BIOLOGY

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	worksheets, chalkboard, charts, models, realia, slides and slide projector, transparencies and overhead projector.
	1.2 discussion	worksheets, chalkboard, charts, models, realia, slides and slide projector, transparencies and overhead projector.
2.Group Instruction	2.1 group discussion	textbooks, worksheets, chalkboard, slides and slide projector, transparencies and overhead projector.
	2.2 experimental method: exploratory groups (self-discovery)	textbooks, worksheets, chalkboard, biological specimens, environmental items.
	2.3 experimental method: laboratory group exercises	textbooks, worksheets, chalkboard, models, realia.
	2.4 experimental method: group projects	textbooks, worksheets, chalkboard, models, realia, slides and slide projector, transparencies and overhead projector.

TABLE 30 CASE FOUR: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN BIOLOGY

* GEOGRAPHY

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks, chalkboard, transparencies and overhead projector.
	1.2 discussion	textbooks, charts, maps, realia, chalkboard.
2. Individualized Instruction	discussion (one-to-one)	worksheets.

TABLE 31 CASE FOUR : TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN GEOGRAPHY

* ACCOUNTING

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks, chalkboard, charts, pictures and posters.
	1.2 discussion	chalkboard,pictures and posters, handouts, charts.
2. Individualized Instruction	discussion(one-to-one)	worksheets.
3. Group Instruction	group discussion	textbooks.

TABLE 32 CASE FOUR: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN ACCOUNTING

4.5.2.4.2 SUMMARY OF TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture 1.2 discussion	textbooks, chalkboard, worksheets, charts, pictures and posters, handouts, transparencies and overhead projector, models, realia, slides and slide projector, maps.
2.Individualized Instruction	discussion(one-to-one)	textbooks, worksheets.
3. Group Instruction	3.1 group discussion 3.2 experimental method: exploratory groups (self-discovery) 3.3 experimental method: group projects 3.4 peer tutoring 3.5 experimental method: laboratory group exercises	textbooks, chalkboard, worksheets, handouts,charts, realia, pictures and posters, photographs, video casssettes and video cassette recorder, biological specimens, slides and slide projector, transparencies and overhead projector, models, environmental items.

TABLE 33 CASE FOUR: SUMMARY OF TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED

4.5.2.4.3 TEACHER CHARACTERISTICS

TEACHER	SUBJECT TAUGHT	GENDER	TEACHING EXPERIENCE (YEARS)	ACADEMIC QUALIFICATIONS IN SUBJECT	PROFESSIONAL QUALIFICATIONS
1	ENGLISH	FEMALE	6-10	UNIVERSITY: 3 YEARS	UNIVERSITY
2	MATHEMATICS	MALE	6-10	COLLEGE OF EDUCATION SPECIALIZATION COURSE	COLLEGE OF EDUCATION
3	BIOLOGY	FEMALE	11-15	UNIVERSITY: 1 YEAR	COLLEGE OF EDUCATION
4	GEOGRAPHY	MALE	0-5	UNIVERSITY: 3 YEARS	UNIVERSITY
5	ACCOUNTING	MALE	11-15	UNIVERSITY: 3 YEARS	UNIVERSITY

TABLE 34 CASE FOUR: TEACHER CHARACTERISTICS

4.5.2.4.4 CLASS CHARACTERISTICS

SUBJECT	AVERAGE SIZE OF CLASSES	COMPOSITION OF CLASSES	SEATING OF PUPILS
ENGLISH	31-40	PREDOMINANTLY INDIAN	NOT MIXED BY SEX OR RACE
MATHEMATICS	31-40	PREDOMINANTLY INDIAN	NOT MIXED BY SEX OR RACE
BIOLOGY	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX AND RACE
GEOGRAPHY	31-40	PREDOMINANTLY INDIAN	NOT MIXED BY SEX OR RACE
ACCOUNTING	21-30	PREDOMINANTLY INDIAN	MIXED BY SEX, NOT BY RACE

TABLE 35 CASE FOUR: CLASS CHARACTERISTICS

4.5.2.4.5 TEACHERS' REASONS FOR USING TEACHING STRATEGIES AND METHODS SELECTED

Teachers maintain that the large numbers of pupils in classrooms is the primary reason for choosing the mass instructional strategy and associated teaching methods.

TEACHER ON TEACHING

Why do you utilize the strategies and methods you have selected? Comment briefly.
These strategies & methods are the most effective way of teaching the content of my subject. With the large no. of pupils the use of the textbook and the chalkboard and in the question method & discussion method. These method are most effective way of solving problem areas.

TEACHER X

TEACHER ON TEACHING

Why do you utilize the strategies and methods you have selected? Comment briefly.
- understood by all
- easier because of large numbers

TEACHER Y

4.5.2.4.6 CLASSROOM ACTIVITIES PUPILS LIKE TO ENGAGE IN

Pupils prefer educational broadcasts (radio or television) and also show a distinct liking for small group activities like discussions, games, dramatizations and practical work. Some pupils suggest that teachers should use more individualized methods of instruction.

PUPIL ON LEARNING

What classroom activities would you like to engage in?

Sitting and listening to a radio broadcast or a television presentation.
To let other famous authors or people to come and talk to us about our set book or maybe act out a play for us.

Give reasons for your answer.

At this moment in class, we do the usual and that is talking to the teacher and writing notes we need something more stimulating and exciting something we can enjoy and at the same time learn.

PUPIL A

PUPIL ON LEARNING

What classroom activities would you like to engage in?

1) Sitting + listening to a video presentation.
2) More dramatical representations in class.
3) Teachers should engage in group discussions with pupils - he/she should allow students to express their difficulties in these discussions without being scared

Give reasons for your answer.

A video presentation is fun - it allows a pupil to understand and visualize - they are able to remember what happened + how it happened. Students are scared to approach a teacher alone with their problems - group discussions make pupils feel comfortable and they are able to express their views.

PUPIL B

4.5.2.4.7 TEACHERS' REASONS FOR USING RESOURCES SELECTED

The responses from teachers indicate that the chief reason for selecting and using certain resources is their availability and easy accessibility at school. Also, they find these resources helpful in their teaching.

TEACHER ON TEACHING

Why do you utilize the resources you have selected? Comment briefly.

- available
- convenient - visible by entire class
- others - either not available - not convenient to use in class - cannot use in 1 lesson.

TEACHER X

TEACHER ON TEACHING

Why do you utilize the resources you have selected? Comment briefly.

These resources, mostly the chalkboard & textbook, are most effective when teaching maths, where the thinking of the pupils is directed towards the end result.

TEACHER Y

4.5.2.4.8 RESOURCES PUPILS REFER

The main resources selected by pupils include television, computers, slides and slide projector, audio cassettes and tape recorder, video cassettes and recorder, transparencies and overhead projector, and films and film projector. Some pupils also suggest that teachers should make greater use of models and specimens, arrange educational excursions and invite outside persons to deliver talks.

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?

1) Realia
2) films and film projector
3) video cassette and video cassette recorder.
4) record + compact disc player.

Give reasons for your answer.

1) Rock samples are interesting - pupils then know what diff. rocks look like.
2) Visual aids help pupils remember.
3) different sounds that are heard are amusing and can be remembered.

PUPIL A

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?

VARIOUS TYPES OF BOARDS, PHOTOGRAPHS, FILM PROJECTORS AND FILMSTRIPS, OPAQUE PROJECTOR, VIDEO CASSETTE AND VIDEO CASSETTE RECORDER, COMPUTER TELEVISION RECORD AND COMPACT DISC PLAYER, AUDIO CASSETTE AND TAPE RECORDER.

Give reasons for your answer.

THESE ITEMS WOULD MAKE THE LESSON MORE EXCITING AND FUNFILLED. IN THIS WAY PUPILS WILL WAIT TO HAVE THE LESSON KNOWING THAT IT WOULD BE FUN INSTEAD OF A SAME BORING ROUTINE OVER AND OVER AGAIN. THIS WOULD URGE THEM TO PAY ATTENTION AND THEY WOULDN'T HAVE TIME TO GET UP TO MISCHIEF.

PUPIL B

4.5.2.4.9 CLASSROOM PERFORMANCE OF AFRICAN PUPILS IN FORMER INDIAN SCHOOLS

Teachers report that the majority of African pupils experience great difficulties in coping with their daily classwork. They mention inadequacies in comprehending and using the English language as the primary cause of failure.

TEACHER ON TEACHING

In general, are African pupils able to cope adequately with the daily classwork in the same way as Indian pupils?

No

If not, give reasons for these pupils not achieving success.

Most of these pupils understand the subject matter when it is taught but consolidation and review (in the form of homework) is usually not done. This leads to difficulties since pupils copy their work and hence problem areas can not be identified and resolved.

TEACHER X

TEACHER ON TEACHING

In general, are African pupils able to cope adequately with the daily classwork in the same way as Indian pupils?

No

If not, give reasons for these pupils not achieving success.

Many do not understand English properly. Words that we take for granted when speaking to Indian pupils must be carefully explained to African pupils. They are afraid to let teacher know that they do not understand what is being taught.

TEACHER Y

4.5.2.4.10 TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES THAT TEACHERS ADVOCATE TO CATER FOR THE DIVERSE PUPIL POPULATION IN SCHOOLS

The majority of teachers consider the teaching strategies, teaching methods and resources currently being used as not completely suitable for the present situation at schools. Some teachers regard individualized instruction and group instruction as being more appropriate. Furthermore, teachers suggest the use of more resources, especially those that provide visual stimulation.

TEACHER ON TEACHING

Do you think that your strategies, methods and resources cater adequately for the diverse pupil population in your classroom?

To a certain extent

If not, what strategies, methods and resources do you think would be appropriate for your classroom?

More visual stimulus.
African cultural stimulus

TEACHER X

TEACHER ON TEACHING

Do you think that your strategies, methods and resources cater adequately for the diverse pupil population in your classroom?

Not yet - possibly in future.

If not, what strategies, methods and resources do you think would be appropriate for your classroom?

more individual attention, group work,

TEACHER Y

4.5.2.5 CASE FIVE: HIBISCUS SECONDARY

4.5.2.5.1 TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED BY TEACHERS IN DIFFERENT SUBJECTS

* ENGLISH

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks, chalkboard, worksheets, charts, transparencies and overhead projector.
	1.2 discussion	textbooks, chalkboard, worksheets, charts, transparencies and overhead projector.
	1.3 recitation	textbooks, chalkboard, worksheets, charts, transparencies and overhead projector.
2. Individualized Instruction	discussion (one-to-one)	textbooks, worksheets, chalkboard.
3. Group Instruction	3.1 group discussion	textbooks, worksheets.
	3.2 peer tutoring	worksheets.

TABLE 36 CASE FIVE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN ENGLISH

* MATHEMATICS

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass instruction	lecture	textbooks, chalkboard.
2. Individualized Instruction	discussion(one-to-one)	textbooks.
3. Group Instruction	experimental method: exploratory groups (self-discovery)	textbooks.
	peer tutoring	textbooks.

TABLE 37 CASE FIVE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN MATHEMATICS

* BIOLOGY

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks, worksheets, chalkboard, charts, pictures and posters, models, biological specimens, slides and slide projector, transparencies and overhead projector
	1.2 discussion	textbooks, worksheets, chalkboard, charts, pictures and posters, models, biological specimens, slides and slide projector, transparencies and overhead projector.
2. Individualized Instruction	discussion (one-to-one)	worksheets, charts, handouts, textbooks.
3. Group Instruction	3.1 group discussion	textbooks, worksheets, chalkboard, pictures and posters, models, biological specimens, handouts, slides and slide projector, transparencies and overhead projector, environmental items.
	3.2 experimental method: exploratory groups (self-discovery)	textbooks, biological specimens, environmental items.
	3.3 experimental method: laboratory group exercises	textbooks, biological specimens, environmental items.
	3.4 experimental method: group projects	textbooks, biological specimens, environmental items.
	3.5 peer tutoring	textbooks, biological specimens, environmental items.

TABLE 38 CASE FIVE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN BIOLOGY

* GEOGRAPHY

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks, worksheets, chalkboard, photographs, pictures and posters, models, handouts.
	1.2 discussion	textbooks, worksheets, chalkboard, photographs, pictures and posters, models, handouts.
2. Individualized Instruction	discussion (one-to-one)	textbooks, worksheets, photographs, pictures and posters, models, handouts.
3. Group instruction	3.1 group discussion	worksheets,handouts, textbooks.
	3.2 experimental method: group projects	worksheets, handouts.
	3.3 case studies	worksheets,photographs, pictures and posters,handouts.

TABLE 39 CASE FIVE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN GEOGRAPHY

* ACCOUNTING

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture	textbooks, chalkboard, charts.
	1.2 discussion	textbooks, chalkboard, charts.
2. Individualized Instruction	discussion (one-to-one)	textbooks.

TABLE 40 CASE FIVE: TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED IN ACCOUNTING

4.5.2.5.2 SUMMARY OF TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED

TEACHING STRATEGY	TEACHING METHOS	RESOURCES
1. Mass Instruction	1.1 lecture 1.2 discussion 1.3 recitation	textbooks, chalkboard, worksheets, charts, transparencies and overhead projector, pictures and posters, models, handouts, photographs, biological specimens, slides and slide projector.
2. Individualized Instruction	discussion (one-to-one)	textbooks,worksheets,chalkboard, handouts, charts, photographs, pictures and posters, models.
3. Group Instruction	3.1 peer tutoring 3.2 group discussion 3.3 experimental method: exploratory groups (self-discovery) 3.4 experimental method: group projects 3.5 experimental method: laboratory group exercises	textbooks,worksheets, handouts, chalkboard, models, pictures and posters, photographs, biological specimens, slides and slide projector, transparencies and overhead projector, environmental items.

TABLE 41 CASE FIVE: SUMMARY OF TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED

4.5.2.5.3 TEACHER CHARACTERISTICS

TEACHER	SUBJECT TAUGHT	GENDER	TEACHING EXPERIENCE (YEARS)	ACADEMIC QUALIFICATIONS IN SUBJECT	PROFESSIONAL QUALIFICATIONS
1	ENGLISH	MALE	21-25	UNIVERSITY: 3 YEARS	UNIVERSITY
2	MATHEMATICS	MALE	11-15	UNIVERSITY: 2 YEARS	COLLEGE OF EDUCATION
3	BIOLOGY	FEMALE	6-10	COLLEGE OF EDUCATION SPECIALIZATION COURSE	COLLEGE OF EDUCATION
4	GEOGRAPHY	MALE	11-15	UNIVERSITY: 3 YEARS	UNIVERSITY
5	ACCOUNTING	MALE	16-20	UNIVERSITY: 3 YEARS	UNIVERSITY

TABLE 42 CASE FIVE: TEACHER CHARACTERISTICS

4.5.2.5.4 CLASS CHARACTERISTICS

SUBJECT	AVERAGE SIZE OF CLASSES	COMPOSITION OF CLASSES	SEATING OF PUPILS
ENGLISH	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX AND RACE
MATHEMATICS	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX AND RACE
BIOLOGY	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX AND RACE
GEOGRAPHY	31-40	PREDOMINANTLY INDIAN	MIXED BY SEX, NOT BY RACE
ACCOUNTING	21-30	PREDOMINANTLY INDIAN	MIXED BY SEX AND RACE

TABLE 43 CASE FIVE: CLASS CHARACTERISTICS

4.5.2.5.5 TEACHERS' REASONS FOR USING TEACHING STRATEGIES AND METHODS SELECTED

The comments made by teachers indicate that the teaching strategies and methods utilized have been selected for their effectiveness. Although the advantages of using certain types of teaching methods, for example, discussions and the Socratic method, are mentioned, there is little evidence to suggest that these methods are emphasised in daily teaching programmes.

TEACHER ON TEACHING

Why do you utilize the strategies and methods you have selected? Comment briefly.

To facilitate teaching process to cater for varied levels of ability in the class.

TEACHER X

TEACHER ON TEACHING

Why do you utilize the strategies and methods you have selected? Comment briefly.

In mathematics it is best to use probing questions to get to from the known to the unknown. Pupils will be able to relate the section to previous knowledge.

TEACHER Y

4.5.2.5.6 CLASSROOM ACTIVITIES PUPILS LIKE TO ENGAGE IN

Pupils prefer to be more actively involved in lessons. They would like teachers to make greater use of activities such as group discussions, dramatizations, games, projects, debates and quizzes. Some pupils suggest that teachers should use individualized methods of teaching, video presentations and educational broadcasts.

PUPIL ON LEARNING

What classroom activities would you like to engage in?

We should be given more projects and assignments. We should also have more drama sketches.

Give reasons for your answer .

When pupils are researching these topics they learn alot. When we are given sketches to do it gives us alot of self confidence.

PUPIL A

PUPIL ON LEARNING

What classroom activities would you like to engage in?

EDUCATIONAL GAMES: SITTING AND LISTENING TO A VIDEO PRESENTATION OF EDUCATIONAL BROADCAST FUN ASSIGNMENT.

Give reasons for your answer ,.

BECAUSE SOMETIMES WE DO THE SAME THING OVER AND OVER AGAIN AND IT IS VERY BORING.

PUPIL B

PUPIL ON LEARNING

What classroom activities would you like to engage in?

I would like to engage in plays and sketches and I would like the teacher in my class to try to get films on the setbook if possible.

Give reasons for your answer.

To engage in plays and sketches it will help to boost our marks and the films will help us understand the book better.

PUPIL C

4.5.2.5.7 TEACHERS' REASONS FOR USING RESOURCES SELECTED

The availability of resources appears to be the most important factor in determining the selection and use of resources. In some cases, however, no specific reasons are provided for choosing certain resources.

TEACHER ON TEACHING

Why do you utilize the resources you have selected? Comment briefly.

- Transparencies and slides are easily available.
- Do not have to leave the classroom - convenience
- Pupils can relate to the resources

TEACHER X

TEACHER ON TEACHING

Why do you utilize the resources you have selected? Comment briefly.
Application is an important part of Mathematics. Textbooks provide graded exercises which can be worked out by pupils. Worksheets are used in Geometry where diagrams are involved and pupils have to discover properties eg of a parallelogram by measurement. Chalkboard has to be used to show pupils how questions are to be worked out. Charts are used to enhance a concept.

TEACHER Y

4.5.2.5.8 RESOURCES PUPILS PREFER

The most common resources selected by pupils are television and video cassettes. Other desirable resources include radio, transparencies, photographs, pictures and posters, charts, worksheets, realia, handouts, outside persons and excursions.

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?
I would like to use things like photographs, specimens, pictures and posters, films, video cassettes, television, environmental items.

Give reasons for your answer.
It allow the pupil to be physically involved in the lesson and not just sit and wonder. Pupil will be excited to work. They would be encouraged more to learn. They would not just stare at the teacher when he is talking.

PUPIL A

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?
Teacher should make use of charts, photographs, models and also should be able to show a video cassette.

Give reasons for your answer.
It make us want to learn more. It makes the lesson more interesting and it will give us a better understanding of what is being taught.

PUPIL B

PUPIL ON LEARNING

What resources would you like your teacher to utilize in the classroom?
SITTING AND LISTENING TO A VIDEO PRESENTATION OR EDUCATIONAL BROADCAST.

Give reasons for your answer.
BECAUSE IT IS VERY BOEING. LIKE I WROTE WE DO THE SAME THING OVER AND OVER AGAIN.

PUPIL C

4.5.2.5.9 CLASSROOM PERFORMANCE OF AFRICAN PUPILS IN FORMER INDIAN SCHOOLS

Most of the teachers concur that African pupils are not able to cope adequately with their daily classwork. The problem of communicating effectively in the English language seems to be the most significant factor affecting African pupils.

TEACHER ON TEACHING

In general, are African pupils able to cope adequately with the daily classwork in the same way as Indian pupils?

Very few pupils cope.

If not, give reasons for these pupils not achieving success.

1. Pupils do not have the background knowledge. ie they have not learnt the previous years syllabus.
2. Very poor language skill. – Pupils are unable to understand English as well as the Indian pupil.

TEACHER X

TEACHER ON TEACHING

In general, are African pupils able to cope adequately with the daily classwork in the same way as Indian pupils?

No.

If not, give reasons for these pupils not achieving success.

- The language barrier is the greatest problem.
- Communication is hampered. Pupils do not understand what is being taught.
- Apathy – many simply not interested
- Poor socio – economic background
- Poor or weak foundation

TEACHER Y

4.5.2.5.10 TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES THAT TEACHERS ADVOCATE TO CATER FOR THE DIVERSE PUPIL POPULATION IN SCHOOLS.

All teachers claim that the teaching strategies, methods and resources that are used cater adequately for the pupils they teach. However, some teachers suggest the inclusion of individualized methods of instruction in the teaching programmes to cater for differences amongst pupils.

TEACHER ON TEACHING

Do you think that your strategies, methods and resources cater adequately for the diverse pupil population in your classroom?

I should think so.

If not, what strategies, methods and resources do you think would be appropriate for your classroom?

N/A.

TEACHER X

TEACHER ON TEACHING

Do you think that your strategies, methods and resources cater adequately for the diverse pupil population in your classroom?

Yes, otherwise the time constraint can be negative.

If not, what strategies, methods and resources do you think would be appropriate for your classroom?

More time to handle personal needs of pupil regarding to the subject

TEACHER Y

4.5.3 CROSS-CASE ANALYSIS

A comparative study of the five cases was used by the researcher to develop a summary of the teaching strategies, teaching methods and resources utilized by teachers. The findings are reflected in Table 44.

The dominant teaching strategy utilized in all five cases is mass instruction. This confirms the prediction made in Chapter 1. The main reason given by teachers for the use of this strategy is the high pupil-teacher ratio. (Refer to teachers' comments given earlier). Generally, classes are large (see Tables 11, 19, 27, 35 and 43) and this might have influenced teachers in the selection of this strategy. Also, a teacher is influenced by his or her own school experience and generally chooses those strategies that seem 'logical to him (or her), and with which he (or she) feels at home'. (Alcorn, Kinder and Schunert, 1970, p.140). In addition, Ellington and Race (1993, p. 15) support this view by stating that..

> 'First, it is the method with which the great majority of teachers ... are most familiar and feel most comfortable, probably because they are 'in control' and do not have their authority challenged. Second,it is generally popular with students ...probably because they, too, are familiar with the method and feel comfortable and 'secure' with it ; most students, after all, are perfectly happy to be placed in a passive role that makes no great demands on them. Third, it can be extremely cost-effective (at least in purely logistical terms) enabling large numbers of students ... to be taught by a single teacher .... Fourth, it makes timetabling relatively simple and straightforward....'

SUMMARY OF TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED

TEACHING STRATEGY	TEACHING METHODS	RESOURCES
1. Mass Instruction	1.1 lecture 1.2 discussion 1.3 recitation 1.4 video presentation	textbooks, worksheets, chalkboard, handouts, charts, pictures and posters,transparencies and overhead projector,models,photographs, biological specimens, slides and slide projector, realia, maps, television, video cassettes and recorder, audio cassettes and tape recorder.
2. Individualized Instruction	discussion (one-to-one)	textbooks, worksheets, handouts, chalkboard, partial handouts, microscope, photographs, charts, pictures and posters, models, environmental items.
3. Group Instruction	3.1 group discussion 3.2 peer tutoring 3.3 experimental method: exploratory groups (self-discovery) 3.4 experimental method: group projects 3.5 experimental method: laboratory group exercises 3.6 role-playing: dramatization	textbooks, worksheets, chalkboard, handouts, transparencies and overhead projector, charts, models, pictures and posters, photographs, biological specimens, video cassettes and recorder, slides and slide projector, realia, environmental items, films and film projector.

TABLE 44: CASES ONE - FIVE: SUMMMARY OF TEACHING STRATEGIES, TEACHING METHODS AND RESOURCES UTILIZED

The lecture is still the most commonly used teaching method. Although some teachers express concerns with regard to the methods used, most of the teachers continue as they have done before. The dilemma faced by many teachers is described by Mullan (1995, pp. 387-388) when she states that ...

> 'I felt that.. the syllabus would not be covered... if I digressed too far into active learning strategies ....The major issue for me was that fewer topics can be covered by fully heuristic methods than by instruction. Examination pressures dictate that a wide variety of topics must be taught, and while I wished to develop better critical and analytical skills in my pupils, I also needed to ensure that the subject content was adequately covered . ... I felt under pressure to concentrate on examination results, so I was often forced to adopt a more content-centred approach, where the pupils learned mainly by memorisation rather than by investigation for understanding. The time factor also resulted in a tendency to provide answers, when the learning process seemed to be too slow. The inclination was to hurry and adopt a more didactic approach, letting the pupil become a passive rather than an active recipient.'

Lectures are being made more interactive by the incorporation of discussions, recitations and the frequent use of questions. Video presentation are very seldom, if ever, used.

It has been observed that very little appropriate differentiation of instruction for academically and culturally diverse pupils occurs in classrooms. (Tomlinson, 1995, p.166). The only method of individualized instruction encountered by the researcher is the one-to-one discussion between teachers and pupils. This usually occurs during class time when other pupils are engaged in written work, at the end of lessons, or sometimes during breaks and teachers' "free" time. This lack of differentiation in the classroom may be due to many factors, for example, ...

> '...our own long histories as students in one-size-fits-all classrooms, our own experiences as practitoners of one-size-fits-all instruction, our general lack of preservice and inservice preparation in teaching academically (and culturally) diverse learners, teach-to-the-test mandates that cause us to drag all learners through the same content, over-dependence on text-driven curricula,(and) discouraging student-teacher ratios ....'(Tomlinson, 1995, p.166)

Group Instruction is used to a very limited extent. It is utilized on a relatively more regular basis in Biology than the other subjects investigated. The shortage of equipment, especially in the laboratory, might have forced teachers to use pupil groups. Several useful methods of group instruction, for example, peer tutoring, group discussion, group projects, experimental methods (self-discovery) and role-playing are being used occasionally. An interesting example of peer tutoring encountered at Zinnia Secondary is the use of African pupils to explain concepts in Mathematics to fellow African pupils via the Zulu language. Except for a few isolated examples (Croton Secondary - English, Violet Secondary - English), group work is generally not well organised and implemented. Co-operative learning is not being emphasised. Teachers display a lack of knowledge of the formal co-operative learning methods mentioned in Chapter 3. It is doubtful whether pupils are gaining maximum benefits from their interactions in pupil groups.

Discussions with lectures at universities and colleges of education helped to conform that pre-service teachers are familiar with the various teaching strategies identified by the researcher. However, it appears that some lecturers are not emphasizing group work to the same extent as others.

All teachers claim that the resources that they utilize are "effective" and "appropriate". (Refer to teachers'comments given earlier in section 4.5.2).The tables in section 4.5.2 show that a variety of resources is used in English, Geography and particularly, Biology. The range of resources used in Mathematics and Accounting is generally limited. Although much emphasis is placed on teaching resources during pre-service courses (revealed during discussion with lecturers), many teachers are confining themselves to a few basic essentials. The resources most commonly used are the chalkboard, textbooks and worksheets. In Bluebell Secondary, for example, these three resources are the only ones used in teaching Mathematics.

In general, it is found that school resource centres are not being adequately utilized by teachers. Pupils, on the other hand, are making maximum use of books and magazines available at resource centres. Staff at teachers' centres and school resource centres suggest that teachers should make greater use of the facilities provided.

Pupils' responses in questionnaires and during interviews emphasise that teachers should make greater use of resources in lessons.Furthermore, a greater variety of resources is desired. Pupils show a preference for resources such as television, computers, films, video cassettes, realia and excursions. Analysis of data collected from pupils regarding ideal classroom activities reveals that most pupils prefer group discussions, debates, role playing (games and dramatizations) and group projects. A few instances of pupils' requests for individualized work have been noted. In general, pupils stress that lessons should include different types of activities and also allow for more pupil engagement. Common words used by pupils in describing desirable classroom activities include *interesting, exciting, fun, enjoyable, stimulating and amusing*.

In all five cases teachers report that African pupils are experiencing difficulties in coping with their daily classwork. The main reason given for their poor performance is the lack of proficiency in understanding and communicating in the English language. The biggest challenge facing schools is, therefore, to develop and implement programmes aimed at assisting African pupils in general to acquire a functional literacy in English.

Teachers in the first four cases (Zinnia, Violet, Croton and Bluebell) consider their resources to be adequate but the teaching strategies and teaching methods as being not completely appropriate in catering for the diverse pupil populations found presently in former Indian schools. In the fifth case (Hibiscus Secondary) teachers maintain that their teaching strategies, teaching methods and resources are adequate and appropriate to the present situation at schools. (Refer to teachers' comments in section 4.5.2). In spite of this difference, teachers in all five cases agree that more individualized instruction is required to help African pupils in particular. Some teachers suggest the use of group instruction as an additional strategy. One teacher (Croton Secondary) states that resources that appeal to the visual sense and those that are relevant to the culture of African pupils would be useful in teaching these pupils.

A study of Tables 10, 18, 26, 34 and 42 reveal that all teachers have the necessary academic and professional qualifications to enable them to select and utilize appropriate teaching strategies and resources. Although teachers recognise and accept the changes in education as inevitable, no significant adjustments have been made in the classrooms. No changes have been made in the use of teaching strategies and teaching methods or in the selection and use of resources. An attempt has been made at two schools (Zinnia and Croton Secondary) to assist African pupils in Grade 9 by providing differentiated instruction in English. Alternative textbooks have been used and separate question papers have been set for examinations. In some cases, additional instruction in English has been provided. However, principals have been forced to abandon such initiatives due to "rationalisation" in education.

4.6 ETHICAL DILEMMAS FACED DURING DATA-COLLECTION

Ethical concerns were encountered in various stages of the research process, namely, gaining access to sites, collection of data and writing of the research report.

According to established etiquette permission to visit schools to carry out this research was first obtained from the Natal-KwaZulu Department of Education and Culture. It was only after a favourable reply was received that principals of selected schools were approached with a formal request to observe, interview and give out questionnaires. The consent of the Department was not used in any way to coerce school principals, teachers or even pupils to participate in this study. Such a practice would have been improper and unethical and unfair to the persons concerned. The initial visit to schools was used as an opportunity to explain various aspects of the research. This was desirable to give principals a total picture of what this research entailed. With this in mind, the researcher identified and explained the objectives of the research; the methods of data-collection to be used; the nature and size of samples; activities to be observed; people to be interviewed; degree of disruption of normal school activities; arrangements for ensuring confidentiality of school participants and data; writing of research report and the overall timetable within which the project was to be concluded. (Cohen and Manion, 1994, pp.356-359). Subsequent visits were used to negotiate access to teachers and pupils.

Participation of subjects in the research was based on the principle of informed consent. According to Diener and Crandall, informed consent refers to 'the procedures in which individuals choose whether to participate in an investigation after being informed of facts that would be likely to influence their decisions'. (Diener and Crandall, as quoted by Cohen and Manion, 1994, p.350). The researcher therefore ensured that participants fully understood the nature of the research project before they decided voluntarily to participate or not. Discussions with principals, teachers, pupils and other persons

were conducted in a friendly but straight-forward manner, giving all persons an accurate and meaningful explanation of the precise nature and scope of the intended research project.

With regard to the collection of data, Kelman maintains that 'serious ethical problems arise only when respondents agree to provide information for one purpose and the data are then used for a clearly different purpose'. (Kelman, as quoted by Merriam, 1988, p.182). The researcher was particularly sensitive to the issues of deception and betrayal and therefore ensured that participants were adequately informed about the true purpose of the research. (Cohen and Manion, 1994, p369). Also, it was stressed that subjects were free to decide whether they wished to participate in the process of collecting data. All teachers agreed to co-operate in filling in of questionnaires but some considered interviews and the observation of lessons to be problematic. A few teachers even suggested a change in research methodology, dropping classroom observation as a method of data collection. (Refer to section 4.3). In such circumstances Cohen and Manion advise that:

> 'Researchers should never lose sight of the obligations they owe to those who are helping, and should constantly be on the alert for alternative techniques should the ones they are employing at the time prove controversial.' (Cohen and Manion, 1994, p.361).

In spite of the researcher's support for the views expressed in the above quotation, it was not possible to abandon the use of observation since it constituted the principal method of collecting data in this study. Discussions with teachers revealed that some were loathe to having strangers in their classrooms. This necessitated emphasising the appropriateness of classroom observations in this study and also reassuring those who felt threatened by this technique. Moreover, observations were conducted with the awareness and consent of those observed.

The question of anonymity was addressed in two ways:

i. All instruments used in collecting data (questionnaires, interview schedules, observation schedules) were coded to protect the identities of participants. (Refer to Appendix B 10).

ii. Schools were also given protective pseudonyms to prevent their identification. Names of well-known flowers, for example, Violet, Bluebell, Croton, Zinnia and Hibiscus, were used to represent schools.

In spite of all attempts to ensure anonymity, the researcher could at most promise only confidentiality since codes and pseudonyms were used as a means of identification. Complete anonymity would have been achieved if codes and pseudonyms were ommitted in questionnaires, interview schedules and observation schedules. The researcher considered secret recording of interview and observation data as unethical. To dispel notions of mystery with regard to the gathering and recording of data, and also to give participants an opportunity to interact with the researcher in compiling data, the researcher commenced the filling of interview schedules during the course of interviews. Additions, deletions and alterations were made later. Similarly, in the case of observations, schedules were filled during class visits and elaborations were added later. Entries were made in a casual manner so as to avoid giving pupils the impression that teachers were being evaluated.

An issue that troubled the researcher concerned parental permission for pupil participation in this study. Neither the Department of Education and Culture nor school principals requested that the researcher should seek the approval of parents. The researcher believed that since pupils were participating in certain activities, for example, filling in of questionnaires and engaging in interviews which were not part of the normal school programme, parents' consent was necessary. This idea was abandoned due to a lack of support from teachers. Nevertheless, this aspect needs to be addressed when research projects

are undertaken in future.

4.7 MEASURES ADOPTED TO ENSURE VALIDITY AND RELIABILITY OF DATA

The success of a study depends to a large extent on the ability of a researcher to elicit the desired information from respondents. Researchers must therefore gain the confidence of participants before the data-gathering process commences so as to secure their co-operation in providing the data required. It is important that researchers do not betray the confidences of participants even after the fieldwork is completed since they are 'privileged with confession, the otherwise unsaid, the heart-felt and the bitter.' (Ball, 1984, p.83).

The researcher in the present study ensured that all participants, especially teachers and pupils who were the key respondents, were fully informed of what the study involved. Also, they were encouraged to express their views without fear since anonymity was guaranteed. In practice, remarks made by pupils during interviews were not transmitted to fellow pupils or teachers. Similarly, teachers' comments were not conveyed to pupils or other teachers. Furthermore, the names of schools were disguised and participants were not identified by names throughout the study. These procedures were adopted to protect the rights of participants and to uphold the promise of confidentiality conveyed to them.

In addition to obtaining the trust of participants, a researcher has a responsibility to the research audience to produce a study that is trustworthy. The measures outlined by Yin (1984, pp.55-145) and Merriam (1988, pp.163-184) guided the present researcher in formulating and adopting certain procedures to address issues of validity and reliability. The close link between the terms internal validity and reliability is explained by Guba and Lincoln (as quoted by Merriam, 1988, p.171) as follows:

> 'Since it is impossible to have internal validity without reliability, a demonstration of internal validity amounts to a simultaneous demonstration of reliability'.

In attending to the problems of internal validity and reliability, the researcher's assumptions regarding the utilization of teaching strategies and resources are set out in detail in the introduction to the study. Also, the procedures to be followed in the selection of participants, the criteria used for the selection of sites (schools), the data - collection methods used and the mode of data-analysis are explained. (Refer to Chapters 1 and 2). In addition, the inclusion of five schools (5 cases) in a multiple case design provided data which could be described as more convincing than if one school (single case) were studied.

The researcher adopted 'a strategy of multiple triangulation' (Rose, 1991, p.199), using multiple methods, multiple sources of data and a multiple level of analysis. The use of a number of different methods of data-collection as well as multiple sources of data does have distinct advantages. This technique allows the triangulation or cross-checking of data and therefore enhances the internal validity and reliability of findings. With regard to multiple methods, Denzin (as quoted by Merriam, 1988, p.69) states:

> 'The rationale for this strategy is that the flaws of one method are often the strengths of another, and by combining methods, observers can achieve the best of each, while overcoming their unique deficiencies'.

By combining multiple sources of data and multiple methods of data collection, the researcher tried to overcome the biases that are inherent in single source and single-method studies. In the present study cross-checks were conducted within a particular method and also between different methods. In within - method triangulation the researcher asked a large variety of questions when using a particular method (interviews or questionnaires). For example, in the case of pupil questionnaires, the researcher included

a range of questions on pupils' classroom activities. There were some questions based on the mass instruction strategy, a few questions illustrating the individualized instruction strategy and there were other questions which were linked to group methods of instruction. These questions were aimed at identifying the principal teaching methods and teaching strategies utilized by teachers in the classrooms.

Between - method triangulation was accomplished by using three principal methods of data collection, namely, classroom observations, questionnaires and interviews. These methods of data-collection were discussed in great detail in earlier sections of the present chapter. The use of these contrasting methods allowed the researcher to refute possible allegations that the consistent results were due to similarities in methods of data-collection. Although classroom observation was the primary method of data-gathering, interviews and questionnaires were used to supplement the data collected. The researcher also used observations and interviews to verify the teaching strategies and resources that respondents had mentioned in questionnaires which were filled in at the beginning of the data-collection process.

The researcher ensured that data was collected from a full range of key respondents. Questionnaires were administered to teachers and pupils, and interviews were conducted with teachers, pupils, principals, personnel at teachers' centres and school resource centres, and lecturers from colleges of education and universities. Every effort was made to cover the same topic in similar detail with all members of a particular group of respondents (teachers, pupils, principals, etc.). The researcher visited sites several times during the latter half of 1995 and again during 1996 and 1997 to talk to teachers and pupils and confirm the original findings. During these visits the researcher was fortunate to be afforded the opportunity to engage in casual discussions with teachers not involved in the study. These discussions with "outsiders" provided opportunities for informal validation of data. These measures of data-collection helped to eliminate possible biases in the reporting of findings.

Interview data provided by respondents and the researcher's interpretations thereof were recorded in interview schedules as the interviews progressed. These responses were read out to respondents during the course of the interviews in order to obtain feedback on the plausibility of findings. The comments made by teachers and pupils during this stage of the interviews helped to correct minor inaccuracies in the recording of data. In the case of pupil interviews it was found that sometimes the recollections and responses of some pupils were incomplete or even unreliable. To compensate for these deficiencies the researcher made use of pupil groups during interviews. As mentioned in an earlier section of this chapter, pupil groups were sources of valuable data. On some occasions pupils differed greatly in their views on the teaching strategies and resources used by the teacher. This led to a lively discussion during which misconceptions were corrected and a common group response was formulated to the researcher's question. The data collected from these pupil groups were thus subjected to within-group validation and provided the researcher with a useful check on data collected from other sources.

Qualitative research, because of its 'apparently subjective nature' (McCormick and James, as quoted by Cohen and Manion, 1994, p.241), is sometimes considered as being not trustworthy. Furthermore, the researcher acknowledges the fact that an investigator's 'perspective' colours what is perceived, recorded and reported. (Allan, 1991, p.182). But, in spite of this, the researcher is confident that the procedures adopted during the research process have helped to yield data which could be described as valid and reliable.

4.5.4 SUMMARY

This chapter forms the core of the present study. The success of a research is determined to a large extent by the quality of data collected. In the present study the collection of data proved to be problematic as some teachers were unwilling to co -operate with the researcher. This necessitated amendments in the original plan devised for the selection of sites and participants.

The three methods of data-collection used (observations, interviews and questionnaires) are explained in detail. Included in this discussion are the personal experiences of the researcher at the various sites. The five cases are described separately. The key research questions (listed in Chapter 1) guided the researcher in planning the presentation of data. A large number of quotations are incorporated into this report to give the reader access to the original statements made by teachers and pupils. The five case study reports are then used to compile a cross-case analysis. The data contained in this analysis constitutes the overall findings of this study.

The importance of ethical considerations in research is highlighted and the steps taken by the researcher to address this issue are outlined. The aspects of validity and reliability of findings are explored and the measures adopted by the researcher to obtain valid and reliable data are also discussed.

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CHAPTER FIVE

5. EVALUATION OF FINDINGS AND RECOMMENDATIONS

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CHAPTER FIVE

EVALUATION OF FINDINGS AND RECOMMENDATIONS

5.1 INTRODUCTION

In this chapter the researcher provides an evaluation of the research findings presented in Chapter 4. The utilization of teaching strategies, teaching methods and resources is evaluated in terms of the current situation at schools. This discussion forms the basis for the recommendations provided at the end of this chapter.

It is hoped that both the evaluation of findings and the recommendations made would result in some improvement in the quality of instruction provided at schools in the future.

5.2 EVALUATION OF FINDINGS

5.2.1 TEACHING STRATEGIES AND TEACHING METHODS

As noted in the previous chapter, the predominant teaching strategy utilized by teachers is mass instruction. In addition, both individualized instruction and group instruction are used, but to a very limited extent.

The use of mass instruction can be justified 'in terms of efficiency and economy'. (Blount and Klausmeier, 1968, p. 261). Pupil-teacher ratios in classes are generally high. (Refer to Tables 11, 19,27,35 and 43). The major task facing all teachers appears to be the completion of a given

syllabus in a prescribed time. The use of this strategy therefore allows teachers to transmit large volumes of information to pupils in a relatively short time. Although the lecture method is commonly used, it is not used exclusively. Lectures are being made more interactive by incorporating discussions, recitations and the use of questioning. The inclusion of these methods has a beneficial effect in making at least some of the pupils more active in lessons. However, many pupils continue to be essentially passive.

The major disadvantage of mass instruction is that all pupils are treated alike and individual differences are ignored. Data collected reveals that no provision is made to cater for pupil differences, except for the occasional use of one-to-one discussions. The paucity of such activities is due largely to the large classes and time constraints. The use of more individualized methods of instruction would be relevant particularly at present in order to assist especially African pupils to cope with their classwork. (Refer to Chapter 4 for teachers' comments regarding pupils' classwork). Furthermore, the promotion of individualized activities would enable pupils to learn to work independently.

Both mass instruction and individualized instruction have distinct advantages. But teachers need to utilize group instruction as well. The use of this strategy is supported by writers such as Slavin (1995); Johnson and Johnson (1994); Meyers and Jones (1993); and Ellington and Race (1993). The last two authors argue that ...

> 'While mass instruction and individualized instruction can be used to overtake a wide range of educational and training objectives, there are, in fact, a number of definite limitations to both approaches. For example, neither is suitable for achieving the full range of higher cognitive objectives that are coming to be regarded as so important in today's education, and neither can be used to develop the various communication and interpersonal skills that a person needs in order to function effectively as part of a group.' (Ellington and Race, 1993, p. 20).

Co-operative learning is not being encouraged although research indicates its effectiveness in many different subjects. (Ajose and Joyner, 1990, p. 198). Also, 'a growing body of literature supports the use of cooperative - learning ... (methods) for teaching culturally diverse students.' (Meyers and Jones, 1993, p. 78). The general lack of understanding of co-operative learning methods by teachers needs to be addressed before teachers and pupils can reap the benefits of this 'potent teaching strategy'. (Ajose and Joyner, 1990, p. 197).

5.2.2 RESOURCES

Resources are used mainly to provide aural and visual stimulation. The range of resources used is wide in some subjects (eg. Biology) and limited in subjects such as Mathematics and Accounting. The use of a few basic resources such as the chalkboard and textbook in some subjects provides little motivation to pupils. The need for teachers to make greater use of resources is expressed very clearly in the pupils' comments presented in Chapter 4. A greater variety of resources would also ensure that the classroom atmosphere is inviting and learning becomes more interesting.

Furthermore, it is important that resources should be considered as `a valuable partner for teachers and learners' and not as a replacement for the classroom teacher. (Meyers and Jones, 1993, p. 142).

All pupils have 'a natural attraction to visual cues and pictorial forms of learning.' (Meyers and Jones, 1994, p. 144). Bransford (1979, p. 190) goes further and adds that...

> 'pictures are better remembered than words, and words that can be imagined are easier to retain than less imaginable words. Imagery therefore seems to have powerful effects in learning and retention tasks'. (as quoted by Meyers and Jones, 1993, p. 144)

Teachers could make lessons more effective by including more visual learning from resources such as realia, pictures, transparencies and biological specimens.

The use of visual and aural stimuli does not in itself guarantee learning. Resources should not be used as pure entertainment but to 'provide opportunities for students to process and ponder information ....' (Meyers and Jones, 1993, p. 145). It is critical for teachers to integrate resources with their teaching strategies and methods and to create conditions for pupils to get actively involved in the lesson content. The focus in teaching with resources should be the promotion of active pupil learning. This could be enhanced by the:

* careful selection of the most appropriate resources;

* prior preparation of pupils in the case of resources such as films;

* use of study questions to make pupils attentive; and

* use of small-group discussions to consolidate learning.

5.2.3 MULTICULTURAL ISSUES

School classrooms reflect a greater cultural diversity today than ever before in the history of this country. While the cultural composition of the pupil population is changing rapidly, no changes are observed in:

i. the curricula provided at schools;

ii. syllabi and textbooks;

iii. teaching strategies and methods utilized by teachers;

iv. nature of resources used by teachers; and

v. the cultural composition of the teaching staff.

There has, however, been some changes in:

* the procedures for the promotion of pupils with the introduction of continuous assessment in 1995; and

* the requirements for the promotion of pupils in the junior secondary phase (Grades 7, 8 and 9).

The changing demographics of our schools demands that pupils of different cultural groups develop an awareness of the cultures of other groups. Except for some mixing with Indian pupils on school playgrounds, African pupils in general sit together and work together in classrooms. Lecturers report a similar situation at universities and colleges of education. It is essential that teachers become more proactive in initiating interactions between Indian and African pupils. Several methods of group instruction, for example, peer tutoring, dramatizations and games, may be useful in this regard.

The responses from teachers with regard to the performance of African pupils in the classroom (Chapter 4) suggest that most of the African pupils are not coping adequately at school. The main reason given for this is the pupils' inability to communicate effectively in English. This is supported by many teachers and principals and also by the researcher's personal experience. This means that large numbers of African pupils sit in classrooms unable to either understand what the teachers say or participate in the classroom activities. These pupils could be assisted by:

i. developing and implementing programmes aimed at improving their competence in the use of the English language; and

ii. providing them with teachers who understood their culture, spoke their language and shared their life experiences.

The use of individualized instruction to help African pupils (suggestion made by teachers in interviews and questionnaires) is not practical in the present circumstances. A high pupil-teacher ratio allows teachers few opportunities to work with pupils individually. It may be more profitable to make greater use of group instruction. The use of this strategy would not only result in a more active pupil involvement in lessons but also help to increase interactions between pupils of different cultural groups.

5.3 RECOMMENDATIONS

Based on the findings presented in Chapter 4, the researcher makes the following recommendations in an effort to improve the teaching-learning situation in schools.

5.3.1. TEACHING STRATEGIES AND TEACHING METHODS

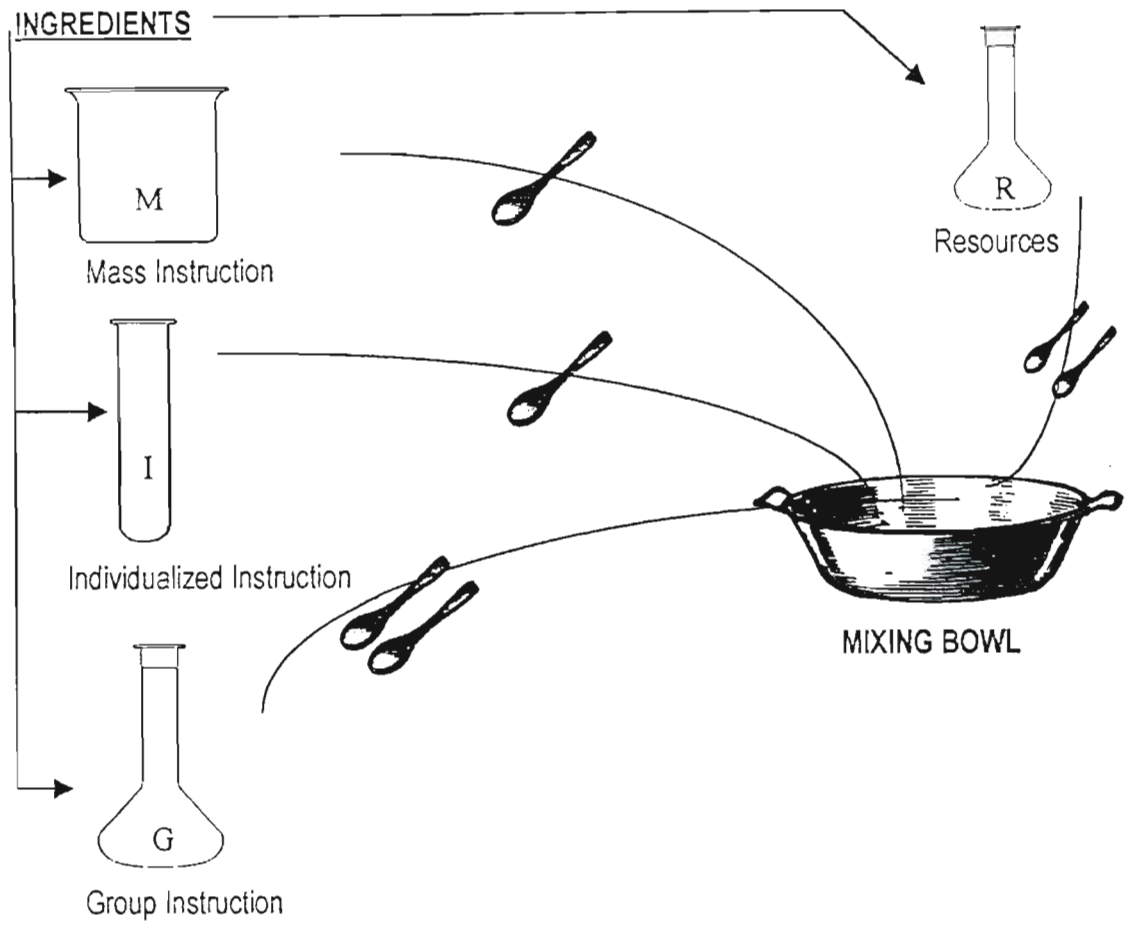
Pupils should be provided with a greater variety of classroom activities such as projects, discussions, dramatizations, and games. This will 'assure that students find comfort in certain curricular experiences and are exposed to other models with which they can gain confidence and experience.' (Mariaskin and Sofo, 1992, p. 23). Also, pupil activities should be multi-sensory and aimed at developing skills in reading, writing, oratory, self-discovery and physical work. The learning experiences given to pupils should also develop thinking rather than foster rote learning. Classroom activities such as discussions, problem solving, analysing situations and self-discovery are effective in promoting thinking

skills and in-depth understanding of subject content. The focus in teaching should therefore be on developing a deeper understanding of what is taught rather than attempting to cover as much content as possible.

There is a clear need for teachers to become more aware of advances in educational research. A review of current literature will give teachers an insight into recent developments in education and help to refine their instructional techniques. For example. lectures could be made even more interactive in nature by incorporating a variety of methods such as small-group discussions, recitations and the Socratic method. The inclusion of these methods will result in greater pupil participation in lectures. Furthermore, teachers should not use one particular teaching method for all types of work. It is a questionable practice to adhere strictly to any particular teaching method. (Risk, 1958, p. 243). Teachers must be willing to try new methods and also adapt existing methods to the needs of their pupils.

Co-operative group learning should be utilized on a much greater scale in schools. The use of this strategy would promote active learning and also help to improve interpersonal relationships between pupils. Lecturers at colleges of education and universities are providing pre-service teachers with a basic knowledge of group work. But many teachers are ignoring the use of this strategy at schools. A thorough study of the formal methods of co-operative learning would enable teachers (and lecturers) to plan and implement group work effectively. Furthermore, the integrated use of all three strategies is strongly advised. The three strategies could be blended by allowing pupils sometimes to work individually, sometimes in groups and sometimes as a whole class. (Sotto, 1994, p. 129).

The following recipe (adapted from Johnson and Johnson, 1994, p. 5) in provided to serve as a guide.



NOTE: Ingredients M,I,G and R may be mixed in any proportion according to individual teacher preferences

FIGURE 2: RECIPE FOR A WELL STRUCTURED LESSON

5.3.2 RESOURCES

There is a general need for a greater variety of resources to be utilized in lessons. The over-dependence on basics such as the chalkboard and textbooks makes lessons boring and uninteresting. Also, resources must be utilized consistently. Teachers should consider resources to be an integral part of the teaching-learning process. Furthermore, a greater use of visual resources is preferred. In addition to providing classroom stimulation, the use of such resources would help teachers in dealing with pupils who lack the necessary skills in communicating in English.

Teachers should utilize resources as a mechanism for promoting active learning by pupils. Pupils must be made to realize that resources serve a far more important purpose than as merely entertainment. Therefore, teachers need to exercise care in the selection of resources so that those chosen are the most appropriate for the lesson to be taught.

It has recently been noted by the researcher that the National Department of Education intends promoting the use of technology to enhance learning in all schools. (Technology Enhanced Learning Investigation in South Africa. A Discussion Document, 1996.). This document emphasises the role of technology and resources in improving the quality of education and also helping to develop new teaching and learning methods. It also recommends the use of newer technologies like the CD-ROM and the Internet in addition to resources such as textbooks and broadcast media. In general, pupils show a preference for using computers but it was observed by the researcher that many pupils are denied access due to the shortage of this resource.

The researcher welcomes the recommendations made in the above-mentioned document. However, the effective use of technology, especially in the rural areas, will be limited by the under-development of the infrastructure (provision of power, development of roads and installation of telephone lines.). Although the document emphasises the contributions of resources and technology in education, no progress has been made since its release.

5.3.3 MULTICULTURAL ISSUES

Teachers have a major role in ensuring the success of all classroom activities. Breault (1995, p. 271) notes that ...

> 'Given the deeply rooted, systemic inequities in our school system, there is a need for teachers who not only value diversity, but who are also "prepared, willing and committed to making the society more just and education more equitable" (King and Ladson - Billings 1990. 16).'

It is, therefore, imperative that teachers re-examine (and change, if necessary) their beliefs and attitudes if they are to make a meaningful contribution in educating culturally diverse pupils. Teachers in former Indian schools need to make African pupils feel 'important' and 'included' in the school system. (Baker, 1993, p. 45). This could be done by:

* incorporating into lessons stories, poems and names of people and places from the culture of African pupils;

* using culturally familiar examples to explain new concepts;

* making use of both Indian and African pupils to perform classroom tasks;

* encouraging African pupils in particular to participate in all classroom activities such as discussions and dramatizations; and

* providing praise and other appropriate forms of reinforcement, especially to African pupils.

Moreover, teachers must be mindful of the differences between pupils. According to Tomlinson (1995, p. 163),...

> 'The real problem has never been so much that ... school teachers believe that some kids *can't* learn. The real problem is that ... we've exhibited for decades a belief that all kids can learn the same things, in the same way, over the same time span.'

Although the high pupil-teacher ratio is a limiting factor, all teachers should make an attempt to accommodate the diverse needs of at least some of the pupils by using, for example, individualized projects and one-to-one discussions.

Coupled with the quality of instruction, teachers' expectations influence greatly the performances of pupils. Pang and Nieto (1992, p. 25) state that ...

> 'Teachers may unconsciously limit development by not expecting the best from each child. If a child comes to school with a primary language other than English, has a physical limitation, or lives in an inner-city neighborhood, teachers may feel these conditions limit what that child can do.'

Furthermore, making generalisations about a pupil's potential on the basis of skin colour, race, gender, parents' occupation or residential area can be destructive. Teachers are urged to be conscious of the possible existence of such misconceptions and to uphold high expectations for all pupils.

There is a general need for more English language instruction. It should be a national goal that all pupils, especially African pupils, become completely proficient in English. This is a priority for both the Provincial and National Departments of Education. Schools could extend instructional times for English to foster fluency in that language. It may even be necessary to develop special programmes to teach English and to integrate such programmes with learning in other subject areas so that all teachers share in the responsibility to provide competency in the English language.

Avery and Walker stress that ...

> 'preservice teachers who have not had the opportunity to develop

> their awareness, knowledge, and skills at working with diverse populations will be inadequately prepared to meet the classrooms of a diverse society'. (as quoted by Guillaume, Zuniga-Hill and Yee, 1995, p. 69).

It is, therefore, essential that universities and colleges of education engaged in the preparation of teachers include multicultural education in the curriculum of pre-service teachers. Discussions with lecturers indicate that efforts are being made to address this need. For example, group work is being emphasized in order to promote interaction between pupils of different cultures. Also, a study of the Zulu language has been made compulsory for all pre-service teachers at one college of education. In-service teachers, on the other hand, seem to be largely neglected. The following response in a teacher-questionnaire (Case Study 2) highlights the concerns of teachers.

> *'Quite frankly, I believe that we teachers are not adequately equipped to teach the new 'breed' of pupils in our classrooms. I feel that workshops should be conducted where we could be taught new strategies to handle the new classroom situation.'*

Tertiary institutions, together with teachers' centres should play a more crucial role in the development of inservice teachers by devising and implementing courses designed to improve teaching skills, especially in diverse settings. Guidelines could be provided in handouts to assist teachers in dealing with aspects of diversity. Superintendents of education and principals of schools also have a role to play in encouraging teachers to commit themselves voluntarily to professional development courses dealing with issues

of diversity.

5.4 SUMMARY

An evaluation of the teaching strategies, teaching methods and resources currently being utilized by teachers reveals that the mass instructional strategy and its associated teaching methods is being used almost exclusively. This cannot be justified totally in terms of both usefulness and relevance in the current situation at schools. Both individualized instruction and group instruction are also useful. Current literature supports the use of the latter teaching strategy in particular.

Resources play a vital role in teaching and learning. Although pupils clamour for a greater variety of resources, some teachers adopt a limited approach to the use of resources. The value of resources in promoting active pupil learning needs to be explored by all teachers.

The reseacher closes the chapter with several recommendations which relate to:

* the utilization of teaching strategies and teaching methods;
* the selection and use of resources in lessons;
* the measures needed to accommodate different cultural groups in schools;
* the role of universities and colleges of education in teacher education; and
* the challenges facing teachers at schools.

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CHAPTER SIX

6. CONCLUSION TO THE STUDY

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CHAPTER SIX

CONCLUSION TO THE STUDY

6.1 CONCLUSION

The researcher's concerns referred to in the introduction to this study are described very succinctly by Fosnot (1989). She observes that ...

> 'These problems are endemic to all institutions of education, regardless of level. Children sit for 12 years in classrooms where the implicit goal is to listen to the teacher and memorize the information in order to regurgitate it on a test. Little or no attention is paid to the learning process, even though much research exists documenting that real understanding is a case of active restructuring on the part of the learner. Restructuring occurs through engagement in problem posing as well as problem solving, inference making and investigation, resolving of contradictions, and reflecting. These processes all mandate far more active learners, as well as a different model of education than the one subscribed to at present by most institutions. Rather than being powerless and dependent on the institution, learners need to be empowered to think and learn for themselves. Thus, learning needs to be conceived of as something a learner does, not something that is done to a learner.' (as quoted by Johnson and Johnson, 1994, p.24)

An additional "problem" that has arisen in former Indian schools results from the great changes in the pupil populations. The growing diversity in pupils poses new challenges for teachers. For the first time teachers are faced with the responsibility of teaching and managing pupils of different cultural groups. The need to provide and guide the learning experiences of these pupils makes additional demands on the time and expertise of teachers. (Lemmer and Squelch, 1993, pp.10-17. These concerns or "problems" helped to determine the focus and set the parameters of this study.

For the purposes of this research, the researcher found it convenient to identify teaching strategies as mass instruction, individualized instruction or group instruction. Each of these strategies has advantages and disadvantages. Of the three options, mass instruction is being used almost exclusively in schools. The other two are used minimally. The infusion of co-operation into traditional small-group instruction during the past 25-30 years has transformed it into a very effective teaching strategy. (Ajose and Joyner, 1990, p.197). Although much research has been done in co-operative group learning, current classroom practices do not reflect its use. The potential benefits of this strategy in promoting active learning and developing thinking, communication and interpersonal skills make its use relevant particularly in contemporary classrooms.

The researcher has also stressed the use of resources in the teaching-learning situation. Resources provide pupils with the necessary stimulation and motivation. Technology and resources can contribute significantly in diversifying the learning environment. Pupils could use computers to access information, write essays and store information. The use of resources such as films, pictures, realia and television can change a dull and boring presentation into a lively and exciting classroom experience. Pupils' responses during the data-collection process indicate a strong need for the use of a greater variety of resources. Although the contributions of technology -enhanced

learning have been highlighted in the document referred to on page 292, it is doubtful whether any meaningful developments will ensue in the future due to budgetary constraints.

On the basis of data collected, the researcher recommends that a careful balance of mass instruction, individualized instruction and co-operative group instruction, combined with a selection of the most appropriate teaching resources could provide teachers with a suitable alternative to the teacher-centered, mass instructional teaching strategy that is currently prevalent in schools.

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APPENDICES

Appendix A1 Letter to the Department of Education and Culture requesting permission to conduct research at schools

PHOENIX SECONDARY SCHOOL

Clayfield Drive
Precinct C
Clayfield
Phoenix

P.O. Box 205
Mount Edgecombe
4300
TEL: 591790

File/Ref. No. _____ 6 JUNE 1995

FOR ATTENTION: SUPERINTENDENT OF EDUCATION - MR R MAHARAJ

The Chief Executive Director
DEPARTMENT OF EDUCATION & CULTURE
Private Bag X54323
DURBAN
4000

Sir

PERMISSION TO CONDUCT RESEARCH AT SCHOOLS

I, presently teaching at the Phoenix Secondary School, have enrolled for a Masters Degree in Education at the University of Durban-Westville. My topic is **"An integrated teaching approach in a multi-cultural school environment"**. The research will take the form of a short interview and a questionnaire, the purpose of which is to determine the teaching techniques currently employed in schools with a view to assessing their effectiveness.

I wish to select five schools in the Verulam/Phoenix area which I intend visiting in August to conduct research in the following Subjects: English, Mathematics, Biology, History/Geography and Economics. I require the assistance of five teachers per school.

I hereby seek your permission to visit schools during the course of my research.

V MOONSAMY

PERSAL NO.: 10927093
REG. NO. : 6802713

PRINCIPAL

Appendix A2 Application form for conducting a research project in the KwaZulu-Natal Department of Education

APPLICATION FOR CONDUCTING A RESEARCH PROJECT IN THE KWAZULU-NATAL DEPARTMENT OF EDUCATION AND CULTURE

Approval for conducting a research project which involves the KwaZulu-Natal Department of Education and Culture or any office or teaching institution under the jurisdiction of this Department, will only be considered once the following details have been supplied.

PLEASE COMPLETE THE FOLLOWING
(To be completed by applicant)

NOTE: Approval is normally given only for research which is being conducted for degree/diploma purposes.

1. SURNAME: MOONSAMY TITLE: MR
2. FULL NAMES: VADIVELOO
3. ADDRESS: 33 HIGH STREET
   VERULAM
   4340.

   CODE: 4340
4. TEL. NO. (W) 031 - 591790 (CODE) 031
   TEL. NO. (H) 0322 - 334546 (CODE) 0322
5. I.D. NO.: 4812155107083
6. OCCUPATION: SCHOOL TEACHER
7. EMPLOYER: EX - HOUSE OF DELEGATES
8. DEGREE/DIPLOMA/OTHER for which the research project is being conducted. e.g. (M.Ed Psych)
   M.Ed.
9. TITLE of the paper/dissertation/thesis
   INTEGRATION OF TEACHING STRATEGIES AND RESOURCES IN A MULTI-CULTURAL SCHOOL ENVIRONMENT.

Appendix A2

10. PURPOSE of the research project

(i) To investigate the teaching strategies and resources that are utilized by educators in the classroom.

(ii) To recommend strategies and resources that could be integrated and utilized in order to cater for an emerging culturally diverse pupil population in the classroom.

11. Name and address of the University/College where you are registered as a student

Name: University of Durban-Westville.

Address: Private Bag X54001
Durban
4000

12. Name, address and telephone number of your supervisor/promotor

Name: Dr G. Kistan

Address: Faculty of Education
University of Durban-Westville
Private Bag X54001
Durban 4000

Tel. No. (W) 031-820-2595 Tel. No. (H) 0322-331-597

13. Which methods of research do you intend using when conducting the research?

(a) A questionnaire ✓
(b) Interviewing
(c) Action Research
(d) An educational experiment
(e) Study of departmental documents
(f) Other (specify) Observation of classroom teaching. ✓

14. Should you avail yourself of method(s) 13(a) or (b), a copy of the questionnaire/questions should be attached.
Should you plan to use methods 13(c) and/or (f), a comprehensive yet succinct exposition of the method should be given.

Please ensure that you provide sufficient details regarding the methodology to be used.

Appendix A2

15. Which persons constitute the target group for the application of your method of research?

- Rectors ..... Teachers ✓
- Lecturers (UNIVERSITY) (COLL. OF EDUCATION) ✓ ..... Pupils ✓
- Students ..... Departmental officials .....
- Principals ✓
- Other (specify) STAFF AT SCHOOL RESOURCE CENTRES AND TEACHERS' CENTRE.

16. Are you planning to apply the research method(s) mentioned in 13(a-f)

- During a specific period .....
- During a school break ✓
- After school hours ✓
- At any other time (specify) .....

17. Which schools or institutions of the Department do you intend visiting or involving in your research?

	Name of schools / institutions	Address and Tel. number	Date/month of proposed visit
1.	PHOENIX SECONDARY	CLAYFIELD DR. PHOENIX 031 - 591790	OCT/NOV 1995
2.	MOUNT VIEW SECONDARY	1 RUSSOM ST. VERULAM 0322 - 332887	
3.	VERULAM SECONDARY	131 MOSS ST, VERULAM. 0322 - 331431	
4.	CRYSTAL POINT SEC.	NEOLEN ROAD, LENHAM PHOENIX 031 - 5076305	
5.	SOLVISTA SECONDARY	SUNFORD DRIVE, CANESIDE PHOENIX 031 - 5052896	
6.	AVONFORD SECONDARY	AVONFORD CRESCENT SUNFORD PHOENIX 031 - 5075430	
7.	EASTBURY SECONDARY	SOUTHBURY AVENUE, EASTBURY PHOENIX 031 - 591256.	
8.	HAVENPARK SECONDARY	DIPSIDE ROAD, CANESIDE PHOENIX 031 - 5051495	

NOTA BENE:

The Department requires written confirmation of your proposed research project from your supervisor/promotor on an official letterhead of the Institution concerned. This letter must accompany your application. The following particulars are required:

- *Full name and student number of the applicant*
- *Degree/diploma enrolled for*
- *Title of paper/dissertation/thesis*
- *Brief motivation for the proposed research project*

9.	TEMPLE VALLEY SEC,	PACKO STREET, LOTUSVILLE VERULAM 0322 - 331734	OCT/NOV 1995
10.			

Appendix A3 Letter from the University of Durban-Westville providing proof of registration as student

University of
Durban-Westville

PRIVATE BAG X54001 DURBAN
4000 SOUTH AFRICA
TELEGRAMS: 'UDWEST'
TELEX: 6-23228 SA
FAX: (031)820-2383
☎ (031)820-9111

FACULTY OF EDUCATION
Department of Applied Curriculum Studies
Direct line: (031) 820-2602

23 June 1995

TO WHOM IT MAY CONCERN

This is to certify that Vadiveloo Moonsamy (Reg. No.: 6802713) is registered for the M.Ed degree in the Faculty of Education at the University of Durban Westville this year.

This letter also confirms that the person named herein is scheduled to visit schools and administer questionnaires as part of his research during the duration of his study.

Thank you for supporting our students in their studies.

Yours faithfully

.....

DR G. KISTAN
Deputy Dean and
Supervisor of Research
Faculty of Education

Appendix A4 Letter from Mr D.V. Bromley(KwaZulu-Natal Department of Education and Culture) granting permission to conduct research

DEPARTMENT OF EDUCATION AND CULTURE
UMNYANGO WEMFUNDO NAMASIKO
DEPARTEMENT VAN ONDERWYS EN KULTUUR

Province of KwaZulu-Natal / Isifundazwe saKwaZulu-Natal / Provinsie KwaZulu-Natal

Street Address/Ikheli ohlala kulo/Straatadres:
228 Pietermaritz Street, Pietermaritzburg

Telephone/Ucingo/Telefoon: (0331) 552111

Postal Address/Ikheli lokuposa/Posadres:
Private Bag 9044, Pietermaritzburg 3200

Fax/Isikhahlamezi/Faks: (0331) 943808

Enquiries : Mr D V Bromley
Reference : 2/12/2/3
Tel: (0331) 552111 x 2335

Mr V Moonsamy
33 High Street
VERULAM
4340

FAX NO. 0322-331124

25 October 1995

Dear Sir

REQUEST FOR PERMISSION TO CONDUCT RESEARCH ON THE TOPIC "INTEGRATION OF TEACHING STRATEGIES AND RESOURCES IN A MULTICULTURAL SCHOOL ENVIRONMENT"

Your letter and documentation received 2 October 1995 have reference.

1. Permission is hereby granted to you to conduct your research at the sample of secondary schools indicated provided that:

1.1 prior arrangements are made with the principals concerned;

1.2 participation in the research is on a voluntary basis; written permission is required from teachers whose lessons are observed;

1.3 the administration of questionnaires does not affect the teaching programme or pupil transport arrangements;

1.4 all information gleaned is treated confidentially and used for academic purposes only.

2. Kindly produce a copy of this letter when visiting the schools.

3. The Department wishes you every success in your research and looks forward to receiving a copy of the findings.

ACTING SUPERINTENDENT GENERAL

Appendix A5 Statement of intent (copy for principals of schools)

STATEMENT OF INTENT

COPY FOR PRINCIPALS OF SCHOOLS

I, V Moonsamy, hereby state that I wish to conduct a case study research at your school in the Verulam-Phoenix area. The aim of this study is to investigate the teaching strategies, methods and resources that are currently being utilized by teachers and to recommend an integrated teaching approach to cater for the emerging culturally diverse pupil population in schools.

Permission to visit schools is being obtained from the Department of Education and Culture. Teachers and pupils will be approached via you to obtain their support and co-operation. However, you, your teachers and pupils are under no obligation to assist in any aspect of this research. Your participation in this study will be on a purely voluntary basis.

Data will be collected via questionnaires (teachers and pupils), interviews with you, teachers, pupils, lecturers from Universities and Colleges of Education, and also from observation of classroom teaching. I would endeavour to cause the least possible disturbance in the normal school programme. Teachers will be advised to complete their questionnaires during "free" times or at home. Questionnaires for pupils will be administered during breaks. Interviews will be conducted during breaks or after school hours. Classroom observation will be engaged in only with your prior approval and with the consent of the subject teachers concerned. Care will be taken to ensure that teachers and pupils are not subjected to undue pressure or interference.

Data collected will be treated as strictly confidential with the clear understanding that it is to be used only for the purposes of this research. Questionnaries are completely anonymous. The information will be analysed and then used as a basis for making recommendations for the future.

My supervisors, Mr B R Nel and Dr G Kistan, at the University of Durban-Westville, will be kept fully informed of all activities at every step of the investigation. A close monitoring of the study is essential to ensure a fair and accurate assessment of information and to make certain that pertinent issues are not ignored during the course of the research.

Thank you for your co-operation.

V. MOONSAMY

Appendix A6 Statement of intent (copy for Director of Education)

STATEMENT OF INTENT

COPY FOR THE DIRECTOR OF EDUCATION

DEPARTMENT OF EDUCATION AND CULTURE

I, V Moonsamy, hereby state that I wish to conduct a case study research at five secondary schools in the Verulam-Phoenix area. The aim of the study is to investigate the teaching strategies, methods and resources that are currently being utilized by teachers and to recommend an integrated teaching approach to cater for the emerging culturally diverse pupil population in schools.

Principals of schools will be contacted timeously and informed of the nature of this study and my programme of work. Teachers and pupils will be approached via the Principal to obtain their support and co-operation. Principals, as well as teachers and pupils will be informed that their participation in this research project is on a purely voluntary basis and that they are under no obligation to assist in any aspect of this study.

Data will be collected via questionnaires (teacher and pupils), interviews with Principals, teachers, pupils, staff at school resource centres and Teachers' Centres, lecturers from Universities and Colleges of Education and also from observation of classroom teaching. I would endeavour to cause the least possible disturbance in the normal school programme. Teachers will be advised to complete their questionnaires during "free" times or at home. Questionnaires for pupils will be administered during breaks. Interviews will be conducted during breaks or after school hours. Classroom observations will be engaged in only with the prior permission of Principals and subject teachers concerned. Care will be taken to ensure that teachers and pupils are not subjected to undue pressure or interference.

Data collected will be treated as strictly confidential with the clear understanding that it is to be used only for the purposes of this research. Questionnaires are completely anonymous. The information will be analysed and then used as a basis for making recommendations for the future.

My supervisors, Mr B R Nel and Dr G Kistan, at the University of Durban-Westville, will be kept fully informed of all activities at every step of the investigation. A close monitoring of the study is essential to ensure a fair and accurate assessment of information and to make certain that pertinent issues are not ignored during the course of the research.

On completion, a copy of my thesis will be forwarded to you in appreciation.

Thank you for your co-operation.

Appendix B1 Questionnaire for teachers

QUESTIONNAIRE FOR TEACHERS

Reference Number

(Leave blank)

Kindly respond to the following questions in a manner that will reflect your private and honest opinion.

There are no right or wrong answers.

Your response will be treated with strict confidentiality.

Please answer all questions.

Thank you

Appendix B1

SECTION A : GENERAL INFORMATION

Place a 'X' in the appropriate block.

1. Sex of educator

male	
female	

2. Nature of appointment:

permanent	
temporary	

3. Actual teaching experience (years)

0-5	6-10	11-15	16-20	21-25	26+

4. Subject taught:

English	
Mathematics	
Biology	
Geography	
Accounting	

5. Academic qualification in subject taught:

University course:	3 years or more	
	2 years	
	1 year	
College of education: Specialisation course		
Subject studied up to matriculation level		
Subject not studied up to matriculation level		

Appendix B1

6. Professional qualifications:

University	
College of Education	
No professional qualification	

7. Did your professional training include guidance in the use of various teaching strategies and methods?

yes	
no	
not applicable	

8. Did your professional training include guidance in the use of resources?

yes	
no	
not applicable	

9. Average size of classes you teach:

up to 20	
21 - 30	
31 - 40	
more than 40	

10. Composition of classes you teach:

Indian only	
African only	
Predominantly Indian (few African)	
Predominantly African (few Indian)	
Other (Specify)	

11. Do your pupils generally sit mixed by race?

yes	
no	

Appendix B1

12. Do your pupils generally sit mixed by sex?

yes	
no	

13. Do you allow pupils to sit anywhere they choose?

yes	
no	

14. Do you regularly read journals of education, education bulletins, periodicals, magazines, etc.?

yes	
no	

15. Do you attend orientation courses, conferences, meetings, workshops voluntarily?

yes	
no	

16. Does the Teachers' Centre in your area play an active role in arranging meetings, workshops, seminars, etc. to assist teachers?

yes	
no	

Appendix B1

SECTION B : TEACHING STRATEGIES

Teaching strategies may be classified into three broad categories:

Mass instruction:	whole class teaching
Individualized instruction:	directed teaching i.e. catering for individual differences
Group instruction:	teaching of groups of pupils by means of exercises and projects, etc.

Which of the following teaching strategies do you utilize in the classroom?

Place a 'X' in the appropriate block

1. Mass instruction:

1.1	lecture method	
1.2	video presentation	
1.3	educational broadcasting (radio or television)	
1.4	recitation (discussion)	
1.5	Socratic method (use of probing question)	
1.6	Other (Specify)	

2. Individualized instruction:

2.1	discussion (one-to-one basis)	
2.2	individualized worksheets, projects, readings	
2.3	Other (Specify)	

Appendix B1

3. Group instruction:

3.1	group discussion			
3.2	experimental methods	3.2.1	exploratory groups (self-discovery)	
		3.2.2	laboratory group exercises	
		3.2.3	group projects	
3.3	peer tutoring			
3.4	role playing	3.4.1	games	
		3.4.2	simulations	
		3.4.3	sociodrama	
		3.4.4	dramatisation	
3.5	case studies			
3.6	other (Specify)			

Appendix B1

SECTION C : RESOURCES

1. The following is a list of resources that you could utilize in the classroom. Use the key provided and indicate which of the resources you utilize in the classroom.

KEY:

√√	used often
√	used sometimes
X	not used

1.	textbooks	
2.	worksheets	
3.	chalkboard	
4.	various types of boards (felt, marker, hook-and-loop, magnetic)	
5.	charts	
6.	photographs	
7.	pictures and posters	
8.	flip charts	
9.	models (e.g. eye)	
10.	realia (e.g. rock samples)	
11.	biological specimens	
12.	handouts	
13.	partial handouts	
14.	filmstrips and filmstrip projector	
15.	slides and slide projector	
16.	transparencies and overhead projector	
17.	opaque projector (episcope)	
18.	films and film projector	
19.	video cassette and video cassette recorder	
20.	audio cassette and tape recorder	
21.	record and compact disc player	

Appendix B1

22.	television	
23.	computer	
24.	'environmental' items (e.g. bottles, cans and other waste material)	
25.	other (Specify)	

2. Do you take pupils on educational tours?

yes	
no	

3. Do you invite outside persons to address your pupils on topics of interest?

yes	
no	

Appendix B1

SECTION D : INTEGRATION OF TEACHING STRATEGIES AND RESOURCES

Please complete the following table by writing down the resources that you utilize when engaging in a particular teaching strategy (see Section B).

Write down only the numbers that correspond with the resources listed in Section C.

Strategies/Methods		Resources (numbers only)
1.	**Mass instruction**	
1.1	lecture method	
1.2	video presentation	
1.3	educational broadcasting (radio or television)	
1.4	recitation (discussion)	
1.5	Socratic method (use of probing questions)	
1.6	Other (Specify)	
2.	**Individualized instruction**	
2.1	discussion (one-to-one-basis)	
2.2	individualized worksheets, projects, readings	
2.3	Other (Specify)	
3.	**Group instruction**	
3.1	group discussion	
3.2	experimental methods	
3.2.1	exploratory groups (self-discovery)	
3.2.2	laboratory group exercises	
3.2.3	group projects	
3.3	peer tutoring	
3.4	role playing	
3.4.1	games	
3.4.2	simulations	
3.4.3	sociodrama	
3.4.4	dramatisations	
3.5	case studies	
3.6	other (Specify)	

Appendix B1

SECTION E

1. REFER TO SECTION B

Why do you utilize the strategies and methods you have selected? Comment briefly.

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2. REFER TO SECTION C

Why do you utilize the resources you have selected? Comment briefly.

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3.

3.1 In general, are African pupils able to cope adequately with the daily classwork in the same way as Indian pupils?

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.....

3.2 If not, give reasons for these pupils not achieving success.

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4.

4.1 Do you think that your strategies, methods and resources cater adequately for the diverse pupil population in your classroom?

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4.2 If not, what strategies, methods and resources do you think would be appropriate for your classroom?

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Appendix B1

5. Comment on the difficulties/problems/constraints, if any, that you experience in your daily teaching.

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Thank you for your co-operation.

V. MOONSAMY

Appendix B2 Questionnaire for pupils

QUESTIONNAIRE FOR PUPILS

Reference Number

(Leave blank)

Kindly respond to the following questions in a manner that will reflect your private and honest opinion.

There are no right or wrong answers.

Your response will be treated with strict confidentiality.

Please answer all questions.

Thank you

Appendix B2

SECTION A : GENERAL INFORMATION

Please a 'X' in the appropriate block.

1. Standard

Std. 8	
Std. 9	
Std. 10	

2. Sex of pupil

male	
female	

3. Subject:

English	
Mathematics	
Biology	
Geography	
Accounting	

Appendix B2

SECTION B : CLASSROOM ACTIVITIES

The table below gives a list of classroom activities that pupils may engage in. Indicate the activities YOU participate in during a normal class period. Use the following key:

KEY:

most of the time	√√
sometimes	√
not applicable	X

1.	sitting passively and listening to the teacher	
2.	sitting and listening to a video presentation or educational broadcast (radio or television)	
3.	thinking about what your mother will be preparing for supper or what you will be doing in the afternoon	
4.	copying down notes, diagrams, etc. from chalkboard or screen	
5.	writing down in jotters/scrapbooks what teacher says in the classroom	
6.	writing down your own thoughts and ideas	
7.	answering questions posed by teacher	
8.	working individually on assignments and projects set for the whole class	
9.	asking yourself questions and writing them down so that you can research and answer them later	
10.	engaging in discussions with the teacher	
11.	asking the teacher questions to clarify concepts	
12.	doing calculations, solving problems, answering questions individually but using a common exercise set for the whole class	
13.	engaging in self-study of textbooks and other resource books	
14.	doing practical work individually	
15.	working individually and doing calculations, solving problems, answering question which differ for different pupils	
16.	staring at the teacher, the chalkboard or the walls	
17.	discussing with other pupils when directed to do so by the teacher	
18.	working on assignments and projects which differ for different pupils	
19.	assisting other pupils (in groups of 2 or 3) to understand concepts, solve problems and clarify ideas	

Appendix B2

20.	doing calculations, solving problems and answering questions in small groups	
21.	working in small groups on assignments and projects	
22.	engaging in study of textbooks and other resource books in small groups	
23.	doing practical work in small groups	
24.	engaging in role-playing group activities (games, plays, drama)	
25.	engaging in a detailed study of a particular event or situation to gain understanding of issues involved	
26.	yawning, shuffling, fidgeting, muttering to yourself, watching other pupils or looking out through the window	
27.	other (Specify)	

Appendix B2

SECTION C

The following is a list of resources that teachers could use in the classroom to make lessons lively and interesting and to promote pupil understanding. Indicate your personal opinion with regard to the use of resources by making use of the key provided:

KEY

very effective	√√
not effective	√
not applicable (not used)	X

1.	textbooks	
2.	worksheets	
3.	chalkboard	
4.	various types of boards (felt, marker, hook-and-loop, magnetic)	
5.	charts	
6.	photographs	
7.	pictures and posters	
8.	flip charts	
9.	models (e.g. eye)	
10.	realia (e.g. rock samples)	
11.	biological specimens	
12.	handouts	
13.	partial handouts	
14.	filmstrips and filmstrip projector	
15.	slides and slide projector	
16.	transparencies and overhead projector	
17.	opaque projector (episcope)	
18.	films and film projector	
19.	video cassette and video cassette recorder	

Appendix B2

20.	audio cassette and tape recorder	
21.	record and compact disc player	
22.	television	
23.	computer	
24.	'environmental' items (bottles, cans and other waste material)	
25.	other (Specify)	

SECTION D

REFER TO SECTION B (CLASSROOM ACTIVITIES)

1. What classroom activities would you like to engage in?

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2. Give reasons for your answer in 1 above.

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Appendix B2

REFER TO SECTION C (RESOURCES)

3. What resources would you like your teacher to utilize in the classroom?

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4. Give reasons for your answer in 3 above.

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5. Assume that you are an official of the Department of Education.

What changes/suggestions/recommendations would you make with regard to improving the teaching-learning situation in the classroom?

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Thank you for your co-operation.

V. MOONSAMY

Appendix B3 Letter of consent from subject teachers whose lessons were observed

CONSENT TO PARTICIPATE IN RESEARCH CONDUCTED BY V.MOONSAMY

I, _____ , hereby:

* agree voluntarily to participate in the above – mentioned research ; and also
* grant the researcher permission to observe my lessons.

_____ _____

SIGNATURE **DATE**

Appendix B4 Classroom Observation Schedule

OBSERVATION OF CLASSROOM TEACHING

Reference Number

Date: .....

Subject: .....

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1. Teaching strategies and methods utilized

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2. Resources used

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3. Pupil activities

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4. Additional comments

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Thank you for your co-operation.

Appendix B5 Interview Schedule for school principals

INTERVIEW WITH PRINCIPALS OF SCHOOLS

Reference Number

Date: .....

SECTION A : TEACHING STRATEGIES

Teaching strategies may be classified into three broad categories:

Mass instruction: whole class teaching

Individualized instruction: directed teaching i.e. catering for individual differences

Group instruction: teaching of groups of pupils by means of exercises and projects, etc.

Which of the following teaching strategies do teachers utilize in the classroom?

Place a 'X' in the appropriate block

1. Mass instruction:

1.1	lecture method	
1.2	video presentation	
1.3	educational broadcasting (radio or television)	
1.4	recitation (discussion)	
1.5	Socratic method (use of probing question)	
1.6	Other (Specify)	

Appendix B5

2. Individualized instruction:

2.1	discussion (one-to-one basis)	
2.2	individualized worksheets, projects, readings	
2.3	Other (Specify)	

3. Group instruction:

3.1	group discussion		
3.2	experimental methods	3.2.1 exploratory groups (self-discovery)	
		3.2.2 laboratory group exercises	
		3.2.3 group projects	
3.3	peer tutoring		
3.4	role playing	3.4.1 games	
		3.4.2 simulations	
		3.4.3 sociodrama	
		3.4.4 dramatisation	
3.5	case studies		
3.6	other (Specify)		

Appendix B5

SECTION B : RESOURCES

1. The following is a list of resources that teachers could utilize in the classroom. Use the key provided and indicate which of the resources your teachers utilize in the classroom.

KEY:

√√	used often
√	used sometimes
X	not used

1.	textbooks	
2.	worksheets	
3.	chalkboard	
4.	various types of boards (felt, marker, hook-and-loop, magnetic)	
5.	charts	
6.	photographs	
7.	pictures and posters	
8.	flip charts	
9.	models (e.g. eye)	
10.	realia (e.g. rock samples)	
11.	biological specimens	
12.	handouts	
13.	partial handouts	
14.	filmstrips and filmstrip projector	
15.	slides and slide projector	
16.	transparencies and overhead projector	
17.	opaque projector (episcope)	
18.	films and film projector	
19.	video cassette and video cassette recorder	
20.	audio cassette and tape recorder	

Appendix B5

21.	record and compact disc player	
22.	television	
23.	computer	
24.	'environmental' items (e.g. bottles, cans and other waste material)	
25.	other (Specify)	

2. Do teachers take pupils on educational tours?

yes	
no	

3. Do teachers invite outside persons to address pupils on topics of interest?

yes	
no	

Appendix B5

SECTION C : GENERAL INFORMATION

1. Roll of school

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2. Composition of school population (different cultural groups)

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3. Average size of classes : Std. 8-10.

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4. Composition of classes (different cultural groups) : Std. 8-10.

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5. -

5.1 In general, are African pupils able to cope adequately with the daily classwork in the same way as Indian pupils?

.....

.....

5.2 If not, give reasons for these pupils not achieving success.

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6.

6.1 Do you think that teachers' strategies, methods and resources cater adequately for the diverse pupil population in your school?

.....

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6.2 If not, what strategies, methods and resources do you think would be appropriate for your school?

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Appendix B5

7. Comment on the difficulties/problems/constraints, if any, that your teachers experience in their daily teaching.

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8. What changes/suggestions/recommendations would you like to make with regard to improving the teaching-learning situation in schools?

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Thank you for your co-operation.

V. MOONSAMY

Appendix B6 Interview Schedule for subject teachers

INTERVIEW WITH SUBJECT TEACHERS
(Based on Questionnaire)

Reference Number

Date: .....

Subject: .....

SECTION A : General Information

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SECTION B : Teaching Strategies

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SECTION C : Resources

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SECTION D : Integration of Teaching Strategies and Resources

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Appendix B6

SECTION E : Additional Comments

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Thank you for your co-operation.

V. MOONSAMY

Appendix B7 Interview Schedule for pupils

INTERVIEW WITH PUPILS
(Based on Questionnaire)

Reference Number

Date: .....

Subject: .....

1. Classroom Activities

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2. Resources

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3. Additional Comments

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Thank you for your co-operation.

Appendix B8 Interview Schedule for staff at resource centres and teachers' centres

INTERVIEW WITH STAFF AT RESOURCE CENTRES OR TEACHERS' CENTRES

Reference Number

Date: .....

1. The following is a list of resources that teachers could utilize in the classroom. Use the key provided and indicate which of the resources are available/not available and used/not used by teachers

KEY:

√	available or used
X	not available or not used

		available or not available	**used or not used**
1.	textbooks		
2.	worksheets		
3.	chalkboard		
4.	various types of boards (felt, marker, hook-and-loop, magnetic)		
5.	charts		
6.	photographs		
7.	pictures and posters		
8.	flip charts		
9.	models (e.g. eye)		
10.	realia (e.g. rock samples)		
11.	biological specimens		
12.	handouts		
13.	partial handouts		

Appendix B8

		available or not available	used or not used
14.	filmstrips and filmstrip projector		
15.	slides and slide projector		
16.	transparencies and overhead projector		
17.	opaque projector (episcope)		
18.	films and film projector		
19.	video cassette and video cassette recorder		
20.	audio cassette and tape recorder		
21.	record and compact disc player		
22.	television		
23.	computer		
24.	'environmental' items (e.g. bottles, cans and other waste material)		
25.	other (Specify)		

2. Comment on teachers' use of resource centres/teachers' centre.

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Appendix B8

3. What suggestions/recommendations would you like to make with regard to the use of resource centres/teachers' centre?

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4. Additional comments:

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Thank you for your co-operation.

V. MOONSAMY

Appendix B9 Interview Schedule for lecturers from universities and colleges of education

INTERVIEW WITH LECTURERS (UNIVERSITY AND COLLEGE OF EDUCATION)

SECTION A : TEACHING STRATEGIES

Teaching strategies may be classified into three broad categories:

Mass instruction:	whole class teaching
Individualized instruction:	directed teaching i.e. catering for individual differences
Group instruction:	teaching of groups of pupils by means of exercises and projects, etc.

Does the professional education programme of trainee teachers include guidance in the use of the following teaching strategies?

Place a 'X' in the appropriate block

1. Mass instruction:

1.1	lecture method	
1.2	video presentation	
1.3	educational broadcasting (radio or television)	
1.4	recitation (discussion)	
1.5	Socratic method (use of probing question)	
1.6	Other (Specify)	

Appendix B9

2. Individualized instruction:

2.1	discussion (one-to-one basis)	
2.2	individualized worksheets, projects, readings	
2.3	Other (Specify)	

3. Group instruction:

3.1	group discussion			
3.2	experimental methods	3.2.1	exploratory groups (self-discovery)	
		3.2.2	laboratory group exercises	
		3.2.3	group projects	
3.3	peer tutoring			
3.4	role playing	3.4.1	games	
		3.4.2	simulations	
		3.4.3	sociodrama	
		3.4.4	dramatisation	
3.5	case studies			
3.6	other (Specify)			

Appendix B9

SECTION B : RESOURCES

Does the professional education programme of trainee teachers include guidance in the use of the following resources?

Place 'X' in the appropriate block

1.	textbooks	
2.	worksheets	
3.	chalkboard	
4.	various types of boards (felt, marker, hook-and-loop, magnetic)	
5.	charts	
6.	photographs	
7.	pictures and posters	
8.	flip charts	
9.	models (e.g. eye)	
10.	realia (e.g. rock samples)	
11.	biological specimens	
12.	handouts	
13.	partial handouts	
14.	filmstrips and filmstrip projector	
15.	slides and slide projector	
16.	transparencies and overhead projector	
17.	opaque projector (episcope)	
18.	films and film projector	
19.	video cassette and video cassette recorder	
20.	audio cassette and tape recorder	
21.	record and compact disc player	
22.	television	
23.	computer	

Appendix B9

24.	'environmental' items (e.g. bottles, cans and other waste material)	
25.	other (Specify)	

Appendix B9

SECTION C : GENERAL

1. Comment on the difficulties/problems/constraints, if any, that teachers experience in their daily teaching.

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2. What changes/suggestions/recommendations would you like to make with regard to improving the teaching-learning situation in schools?

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Thank you for your co-operation.

V. MOONSAMY

Appendix B10 List of codes used during data collection

LIST OF CODES USED DURING DATA COLLECTION

		CODES USED				
DATA COLLECTING INSTRUMENTS	SUBJECT	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5
TEACHER: QUESTIONNAIRE INTERVIEW SCHEDULE CLASSROOM OBSERVATIONS SCHEDULE PUPIL: QUESTIONNAIRE INTERVIEW SCHEDULE	ENGLISH MATHS BIOLOGY GEOGRAPHY ACCOUNTING	A1 A2 A3 A4 A5	B1 B2 B3 B4 B5	C1 C2 C3 C4 C5	D1 D2 D3 D4 D5	E1 E2 E3 E4 E5
PRINCIPAL : INTERVIEW SCHEDULE		A	B	C	D	E
RESOURCE CENTRE : OBSERVATIONS SCHEDULE		A	B	C	D	E

NO CODES WERE USED IN THE CASE OF LECTURERS AND STAFF FROM TEACHERS' CENTRES.

Appendix C1 Table illustrating the assignment of pupils to teams (STAD)

TABLE 4–1 Assigning Students to Teams

	Rank	*Team Name*
High-Performing Students	1	A
	2	B
	3	C
	4	D
	5	E
	6	F
	7	G
	8	H
Average-Performing Students	9	H
	10	G
	11	F
	12	E
	13	D
	14	C
	15	B
	16	A
	17	
	18	
	19	A
	20	B
	21	C
	22	D
	23	E
	24	F
	25	G
	26	H
Students	27	H
	28	G
	29	F
	30	E
	31	D
	32	C
	33	B
	34	A

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice.(2nd.ed.). Boston : Allyn and Bacon. p.76.

Appendix C2 Team Summary Sheet (STAD)

2

APPENDIX

Team Summary Sheet

Name _____

Team Members								*Totals*
Total Team Score								
Team Average								
Team Award								

Team Average = Total Team Score ÷ Number of Team Members

IMPROVEMENT POINT CRITERIA

If a quiz score is . . .	*a student earns . . .*
a perfect paper regardless of base scores	30 improvement points
more than ten points above base score	30 improvement points
base score to ten points above base score	20 improvement points
ten points below to one point below base score	10 improvement points
more than ten points below base score	5 improvement points

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.178.

Appendix C3 Table illustrating the calculation of initial base scores (STAD)

TABLE 4–2 Determining Initial Base Scores

Last Year's Grade	*Initial Base Score*
A	90
A–/B+	85
B	80
B–/C+	75
C	70
C–/D+	65
D	60
F	55
	Average Three Test Scores
Sara's Scores	90
	84
	87
	261 ÷ 3 = 87
Sara's Base Score =	87

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.77.

Appendix C4 Quiz Score Sheet (STAD and Jigsaw II)

	Date: May 23			Date:			Date:		
	Quiz: Addition With Regrouping			Quiz:			Quiz:		
Student	Base Score	Quiz Score	Improvement Points	Base Score	Quiz Score	Improvement Points	Base Score	Quiz Score	Improvement Points
Sara A.	90	100	30						
Tom B.	90	100	30						
Ursula C.	90	82	10						
Danielle D.	85	74	10						
Eddie E.	85	98	30						
Natasha F.	85	82	10						
Travis G.	80	67	0						
Tammy H.	80	91	30						
Edgar I.	75	79	20						
Andy J.	75	76	20						
Mary K.	70	91	30						
Stan L.	65	82	30						
Alvin M.	65	70	20						
Carol N.	60	62	20						
Harold S.	55	46	10						
Jack E.	55	40	0						

FIGURE 4.1 Quiz Score Sheet (STAD and Jigsaw II).

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.81.

Appendix C5 Team Summary Sheet (with scores)

STAD and TGT

TEAM NAME Fantastic Four

TEAM MEMBERS	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Sara A.	30													
Eddia E.	30													
Edgar I.	20													
Carol N.	20													
TOTAL TEAM SCORE	100													
TEAM AVERAGE	25													
TEAM AWARD	Super Team													

*Team Average = Total Team Score ÷ Number of Team Members

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.82.

Appendix C6 Sheet illustrating the criteria used for team recognition (STAD)

Recognizing Team Accomplishments

Three levels of awards are given. These are based on average team scores, as follows:

Criterion (Team Average)	*Award*
15	GOODTEAM
20	GREATTEAM
25	SUPERTEAM

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.80.

Appendix C7 Tournament Table Assignment Sheet (TGT)

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APPENDIX

TOURNAMENT TABLE ASSIGNMENT SHEET

		TGT												
Student	*Team*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.183.

Appendix C8 Tournament Table Assignment Sheet (TGT) (with table assignments)

STUDENT	TEAM	Tournament Number 1	2	3	4	5	6	7	8	9	10	11	12	13
Sam	Orioles	1												
Sarah	Cougars	1												
Tyrone	Whiz Kids	1												
Maria	Geniuses	1												
Liz	Orioles	2												
John T.	Cougars	2												
Sylvia	Whiz Kids	2												
Tom	Geniuses	2												
John F.	Orioles	3												
Tanya	Whiz Kids	3												
Carla	Orioles	3												
Kim	Cougars	4												
Carlos	Geniuses	4												
Shirley	Whiz Kids	4												
Ralph	Cougars	5												
Ruth	Geniuses	5												
Zoe	Whiz Kids	5												

FIGURE 4.4 Tournament Table Assignment Sheet.

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.87.

Appendix C9 Sheet illustrating the assignment of pupils to Tournament Tables (TGT)

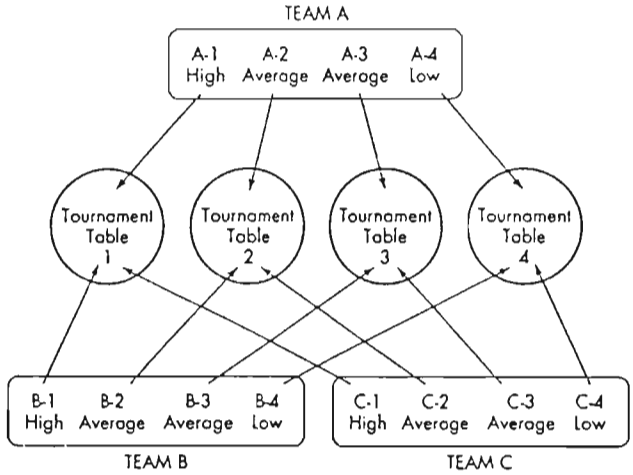

FIGURE 4.3 Assignment to Tournament Tables.

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.86.

Appendix C10 Game Score Sheet (TGT)

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APPENDIX

Game Score Sheet (TGT)

le # ____ **Game Score Sheet (TGT)** **Round # ____**

Player	*Team*	*Game 1*	*Game 2*	*Game 3*	*Day's Total*	*Tournament Points*

Table # ____ **Game Score Sheet (TGT)** **Round # ____**

Player	*Team*	*Game 1*	*Game 2*	*Game 3*	*Day's Total*	*Tournament Points*

Table # ____ **Game Score Sheet (TGT)** **Round # ____**

Player	*Team*	*Game 1*	*Game 2*	*Game 3*	*Day's Total*	*Tournament Points*

184

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.184.

Appendix C11 Sheet explaining the game rules for TGT

Reader
1. Picks a numbered card and finds the corresponding question on the game sheet.
2. Reads the question out loud.
3. Tries to answer.

1st Challenger
Challenges if he or she wants to (and gives a different answer), or passes.

2nd Challenger
Challenges if 1st challenger passes, if he or she wants to. When all have challenged or passed, 2nd challenger checks the answer sheet. Whoever was *right* keeps the card. If the *reader* was wrong, there is no penality, but if either challenger was wrong, he or she must put a previously won card, if any, back in the deck.

FIGURE 4.5 Game Rules (TGT).

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.89.

Appendix C12 Game Score Sheet for TGT (with scores)

TABLE # _____ GAME SCORE SHEET (TGT) ROUND # _____

PLAYER	TEAM	Game 1	Game 2	Game 3	DAY'S TOTAL	TOURNAMENT POINTS
Eric	Giants	5	7		12	20
Lisa A.	Geniuses	14	10		24	60
Darryl	B. Bombs	11	12		23	40

FIGURE 4.6 Sample Game.

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.89.

Appendix C13 Sheet illustrating the calculation of tournament points for TGT

TABLE 4–3 Calculating Tournament Points

For a Four-Player Game

Player	*No Ties*	*Tie for Top*	*Tie for Middle*	*Tie for Low*	*3-Way Tie for Top*	*3-Way Tie for Low*	*4-Way Tie*	*Tie for Low and High*
Top Scorer	60 points	50	60	60	50	60	40	50
High Middle Scorer	40 points	50	40	40	50	30	40	50
Low Middle Scorer	30 points	30	40	30	50	30	40	30
Low Scorer	20 points	20	20	30	20	30	40	30

For a Three-Player Game

Player	*No Ties*	*Tie for Top Score*	*Tie for Low Score*	*3-Way Tie*
Top Scorer	60 points	50	60	40
Middle Scorer	40 points	50	30	40
Low Scorer	20 points	20	30	40

For a Two-Player Game

Player	*No Ties*	*Tied*
Top Scorer	60 points	40
Low Scorer	20 points	40

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.90.

Appendix C14 Sheet explaining the use of the Team Summary Sheet (TGT)

TEAM SUMMARY SHEET

TEAM NAME GENIUSES

TEAM MEMBERS	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Mark	60	20	20	40										
Kevin	40	40	20	60										
Lisa A.	50	20	40	60										
John F.	60	60	20	40										
Dewanda	40	40	60	20										
TOTAL TEAM SCORE	250	180	160	220										
TEAM AVERAGE	50	36	32	44										
TEAM AWARD	Super Team			Good Team										

FIGURE 4.7 Sample Team Summary Sheet.

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.91.

Appendix C15 Sheet illustrating the criteria used for Team Recognition (TGT)

Recognizing Team Accomplishments

As in STAD, three levels of awards are given, based on average team scores:

Criterion (Team Average)	*Award*
40	Goodteam
45	Greatteam
50	Superteam

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.90.

Appendix C16 Examples of Certificates

Congratulations to a

SUPERTEAM

In recognition of a successful effort!

A Successful Cooperative Learning Team

Team Member's Name

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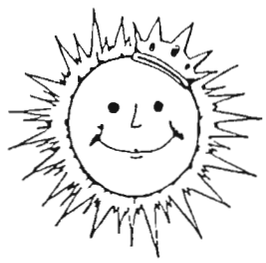
Appendix C16

Congratulations to a

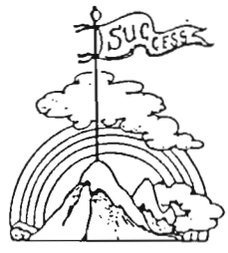
GOOD
TEAM



Team Member's Name

Congratulations to a

GOOD
TEAM



Team Member's Name

Appendix C16

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. pp.180 - 182.

Appendix C17 Sheet explaining the process of of Bumping

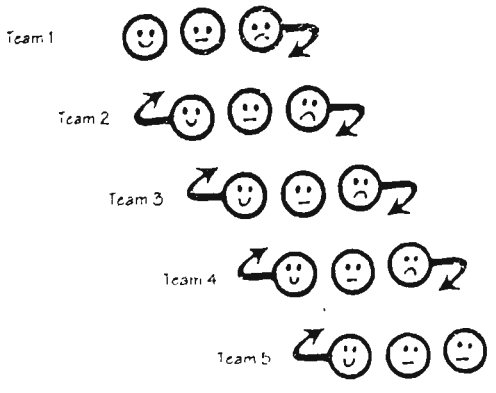


FIGURE 4.8 Bumping.

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.91.

Appendix C18 Tournament Table Assignment Sheet for TGT (illustrating bumping)

(Five Tournament Tables)
TOURNAMENT TABLE ASSIGNMENT SHEET (TGT)
Tournament Number

STUDENT	TEAM	1	2	3	4	5	6	7	8	9	10	11	12	13
Sam	Orioles	1	1	2										
Sarah	Cougars	1	2	2										
Tyrone	Whiz Kids	(1)	(1)	1										
Maria	Geniuses	(2)	1	1										
Liz	Orioles	2	(2)	1										
John J.	Cougars	2	(3)	2										
Sylvia	Whiz Kids	3	3	4										
Tom	Geniuses	(3)	2	3										
John F.	Orioles	3	4	5										
Tanya	Whiz Kids	4	(4)	3										
Carla	Orioles	(4)	3	3										
Kim	Cougars	4	5	5										
Carlos	Geniuses	4	4	4										
Shirley	Whiz Kids	5	5	5										
Ralph	Cougars	(5)	4	4										
Ruth	Geniuses	5	(5)	4										

Results of Most Recent Tournament

Tournament Table Assignment for Next Tournament

Note:
(3) indicates high scorer at Table 3
3 indicates middle scorer at Table 3
3 indicates low score at Table 3

from : Slavin, R.E. 1995. Cooperative Learning. Theory, Research, and Practice. (2nd.ed.). Boston : Allyn and Bacon. p.92.

Appendix D1 Extract from a Report issued to an African pupil in a former Indian School

STATEMENT OF RESULTS

DATE: 97/12/04

NAME OF STUDENT:

GRADE: 11 | NO. OF DAYS ABSENT:

SUBJECT	GRADE	MAX-MARK	PUPIL'S MARK	REMARKS
ENGLISH	SG	300	108	Satisfactory.
AFRIKAANS	SG	300	82	Weak. Must improve
BIOLOGY	SG	300	116	Must work harder!
HISTORY	SG	300	121	Can do better!
SPEECH AND DRAMA	SG	300	131	Fair
HOME ECONOMICS	SG	300	88	Can do better.
AGGREGATE		1800	646	

RESULT: FAILED

Researcher's Comment : The pupil obtained a pass in all six subjects but did not achieve the minimum aggregate of 720 marks.