An analysis of factors influencing Grade 12 results

by

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submitted in partial fulfilment of the requirements for the degree of

PHILOSOPHIAE DOCTOR

in the

DEPARTMENT OF CURRICULUM STUDIES
FACULTY OF EDUCATION
UNIVERSITY OF PRETORIA

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DECLARATION

I, Humbulani Nancy Mutshaeni (student number: 99235430) hereby declare that all the resources that were consulted [for *AN ANALYSIS OF FACTORS INFLUENCING GRADE 12 RESULTS*] are included in the reference list and that this study is my original work and has not been submitted before for any other degree or examination at any other university.

Humbulani Nancy Mutshaeni

Date: .....

Acknowledgements

I wish to express my sincere appreciation to the following people and organizations whose assistance made this research possible:

- Prof J.G. Maree, my supervisor, for his enthusiasm, his inspiration, professional guidance and his great efforts to explain things clearly and simply. I would have been lost without him.

- Prof J. Engelbrecht, my co-supervisor, for his encouragement and sound advice.

- I am indebted to Dr Peta Jones for initially editing my work and giving academic advice.

- Mr A.K. Welman for editing the language of the final thesis.

- Mrs Marianne Driescher for typesetting my thesis.

- Ms Judy Coetsee and Ms Jacqui Sommerville for statistical analysis of data.

- The NRF and the University of Venda: Department of Research and Publication for their financial support.

- The library staff of the University of Pretoria; especially Ms. Clarisse Venter.

- Mr M.N. Mphaphuli, my Grade 6 teacher, who inspired me from such a tender age.

- Principals and teachers who participated in the study and who so graciously made time available during which I learnt a great deal.

- My HOD, Dr M.P. Mulaudzi, Dr A.P. Kutame and colleagues at the University of Venda, Department of Teacher Education, for providing a stimulating and fun environment in which I could learn and grow.

- Prof. T.S. Tshivhase-Phendla and Dr D.T. Ngobeli, who were my personal angels. Thank you for your encouragement.

- Friends and relatives, particularly Grace Cibi, Tshilidzi Ligege, Germina Phaswana, Mercy Singo, Mamotena Mpeta, Tshilidzi Netshitangani and Mazwale Olga Mulaudzi for their interest in my work.

- Bishop J.T. and Mrs. R.T. Mutshaeni, my brothers and sisters-in-law for their love and support.

- I am grateful to my sisters and their families, Joyce, Martha, Kate, Tendani and my brother Elvis, for their encouragement.

- I am forever grateful to my beloved mother who prays for her children, offers counsel and unconditional support at each turn of the road. "**I LOVE YOU MOM.**"

- My children Mbulu, Tshilidzi and Didi for their understanding, endless patience and encouragement when it was most required.

- I cannot end without thanking my husband, Fhedzisani, on whose encouragement and love I have relied throughout my life. He makes life bearable. For this and much more I am forever indebted to you.

- Lastly, blessed be God, who has not turned away my prayer, nor denied me His mercy.

DEDICATION

This study is dedicated to the following important people:

- My late father, Philip Mutheiwana Mavhungu, and my mother, Francinah Ndalambi Mavhungu for their unflagging support throughout my life. They gave me life, raised, supported and loved me.

- My husband, Fhedzisani for his endless love and encouragement throughout this entire journey.

- My two sons and only daughter for the trust they have in me. “I LOVE YOU GUYS.”

Blessed be God, who has not turned away my prayer, nor His mercy from me.

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KEY WORDS

GRADE TWELVE RESULTS
HIGH-PERFORMING SCHOOLS
POORLY-PERFORMING SCHOOLS
TEACHER FACTORS
SCHOOL FACTORS
PARENTAL INVOLVEMENT
INTERPERSONAL RELATIONSHIPS
STAFF MEETINGS
MANAGEMENT STYLE
FUNDING AND FACILITIES

ABSTRACT

Of the nine South African provinces, Limpopo Province has produced the worst Grade 12 results in the ten years between 1996 and 2006. Yet Thohoyandou and Mutale districts in that province performed outstandingly well from 1994 to 2006.

This study aimed to find out what influential factors made the difference within these two districts between high-performing and poorly performing schools, by comparing those that performed well with those that performed badly.

Data were gathered by means of questionnaires completed by a total of 87 teachers, and structured interviews were conducted with principals. The sample of 24 schools was divided into two types, 'high performing' and 'poorly performing'. By means of the questionnaires, a total of 114 variables were explored, encompassing a number of different factors, from which a total of 18 hypotheses were derived: three concerning teacher factors (qualifications, home language), 10 concerning school factors (locality, number of classrooms, assembly hall, library etc. and teacher-generated problems), one concerning parental involvement, two concerning teacher motivation and management (frequency and scheduling of staff meetings), and two concerning learner motivation and management (including performance with notes and summaries).

The data from both groups of schools were compared in order to test the 18 hypotheses on the influence of different variables upon Grade 12 results, the null hypothesis being, of course, that there was no influence. Before this was done, pairs of variables were also compared and subjected to chi-square testing for each of the two groups of schools to see which of the factors might be related to one another in some way, thus impacting on interpretation of the results of the hypothesis testing.

For each of the two groups of schools, results from the questionnaires were analyzed by means of:

- Frequency analyses and descriptive statistics extracted from the tables of results where they were of possible interest. Variables such as the gender of teachers were, for example, included.
- Contingency tables with chi-square analysis testing the independence of the variables where possible relationships between the variables could emerge.
- Contingency tables with chi-square analysis where the connection was not significant and independence of the variables from each other could therefore be assumed.

The chi-square analysis tested the difference between the variables at a 0.5% level of significance.

Results of the various analyses were not particularly conclusive. Those with the most reliable levels of significance suggested that the most important variables were those relating to interpersonal relationships, specifically those involving different types of contact. Where staff meetings were scheduled and not particularly frequent, Grade 12 results were better. These results were also better where there was frequent contact between parents and teachers.

The results of this study and in this sample area suggest that a school's management style is more important to Grade 12 performance than the provision of funding and facilities. Further investigation is needed before these conclusions can be generalized to other districts and provinces.

CHAPTER 1

INTRODUCTION

1.1 Background

There is general agreement that education is a basic tool of development. As recently as April 2004 the then Minister of Education was reported as saying:

> *The need for a competent, dedicated and caring workforce, whose interests lie in the overall long-term of development of the country's resources is vitally important … Teachers are the initial sowers of the nation's human resources capital* (Mabasa 2004:3).

Educational standards are thus of universal concern, but there is nothing particularly universal about the standards themselves – although in Europe, for instance, the new economic unity is imposing some kind of unity of educational standards, expressed unequivocally in terms of economics (Tulasiewicz & Brock 1994:7). In the United States of America reference is made to "the general deterioration of standards which has by now become systemic" (Murchland 1990:1). What emerges from both these studies is that there is a growing divergence between the ultimate aims of education, and the ways in which educational performance is measured. This is expressed by McKenna (1994:8) as follows:

> *What do we want kids to know and be able to do at various stages in their education? And how do we measure if kids have mastered content and performance expectations so defined?*

The arguments imply that if performance measures are keyed to aims which have become outdated, it cannot be expected that current learners will meet the standards set if they and their teachers subscribe to new aims. It becomes very important to examine standards in a way that directly relates to aims.

The growth of information technology has ensured that matching performance to aims has become more complex. Originally in the United States of America entry to tertiary institutions was the accepted measure of performance

success (McKenna 1994:8). More recently the California Department of Education (2001), for example, has called on a variety of indicators to assess performance, over and beyond the usual scholastic assessment test (SAT) scores, including dropout rates and college attendance figures. Something similar is also reported for Florida, where course choice, race and gender were also added into the equation (Roth, Crans, Carter, Ariet & Resnick 2001). Elsewhere the measurement of reading skills is seen as a prime indicator of educational achievement (Terrance 1997:311). Science and mathematics, however, might seem as if not covered by this. A large project in Jamaica again looked at five 'integrated science process skills' and found that this kind of performance very clearly related to school type (Beaumont-Walters & Soyibo 2001).

The underlying message seems to be that in measuring performance, one must carefully consider aims, and that these may substantively differ from time to time and from place to place. It is possible however to generalize that in considering performance, the overriding requirement is to consider to what extent performance measures reflect new or current curricula.

From year to year there is considerable debate in South Africa over both appropriate curricula and levels of performance, which are supposed to interconnect. The question is whether they do and also whether they did in the past. In this regard one needs to consider whether matriculation endorsement as the requirement for university entrance sufficiently predicts success at university level.

Of the nine South African provinces, the Limpopo Province produced the worst Grade 12 results between 1994 and 2006. A spokesperson for the Limpopo Province Education Department (Lediga 1997), acknowledging this, indicated that the Limpopo Province needed extraordinary measures to deal with an extraordinary situation. Such a poor record of Grade 12 results, averaging around 35, 9 per cent between 1996 and 1999, was substantially below what could be countenanced. The next lowest performers were found in the Eastern Cape and Free State Provinces, averaging 45,1 per cent and

44,8 per cent respectively over the same period. However between 2002 and 2006 the lowest performers were Eastern Cape, Mpumalanga and Limpopo as seen on Table no. 1.1.

Table 1.1: Grade 12 Examination Results According to Provinces 2002-2006

PROVINCE	*2002*	*2003*	*2004*	*2005*	*2006*	***Average***
Western Cape	86.5	87.1	85	84.4	86.7	**85.90**
Northern Cape	89.9	90.7	83.4	78.9	76.8	**83.94**
North West	67.8	70.5	64.9	63	67	**66.60**
Mpumalanga	55.8	58.2	61.8	58.6	65.3	**59.90**
Limpopo	69.5	70	70.6	64.9	55.7	**66.10**
Kwazulu Natal	70.8	77.2	74	70.5	65.7	**71.60**
Gauteng	78.1	81.5	83.7	74.9	78.4	**79.30**
Free State	70.7	80	78.7	77.8	72.2	**75.80**
Eastern Cape	51.8	60	53.5	56.7	59.3	**56.20**

(Adapted from DoE (2008))

Mukwevho (1997:16) maintains that the high failure rate in the Limpopo Province may be attributed to factors such as lack of resources, teacher morale, rationalisation and redeployment. Mkandawire (1999:43) concludes that a high failure rate is attributable to factors such as high pupil-teacher ratio, underqualified teachers and poor provision of facilities. This was echoed by Professor Kader Asmal, then Minister of Education, in his "Call to action: mobilizing citizens to build a South African Education and Training system for the 21st Century" (1999). The Minister indicated that the morale of teachers in all communities is low, mostly because of the uncertainty and distress of rationalization and redeployment. Lack of basic facilities is another factor frequently focused on by the press (Bro 2004:3), and although this is not unique to the province, Limpopo Province has its share of under-resourced schools.

Nonetheless, it must be said that, despite the poor Grade 12 results in the Limpopo Province, statistics reveal that, amongst the thirty-one districts which constitute the Limpopo Province, District Six (Thohoyandou) in Vhembe performed outstandingly well from 1994 to 2006.

The appearance of such good results in Region Three District Six (Thohoyandou and Mutale Districts) against a background of poor ones suggests that it would be appropriate to conduct an investigation into the factors contributing to the particularly good pass rates. Success factors thus revealed may be of assistance to other regions, districts, areas and schools in improving their academic success rates.

1.2 Statement of the Problem

Arising from the foregoing, the primary research question to be posed is: Why do Grade 12 learners in the Thohoyandou and Mutale districts of Limpopo Province perform better than Grade 12 learners in other districts of the province?

This study aims to critically examine this phenomenon for the period 2002 to 2006, in order to isolate key factors which may contribute to Grade 12 results. The presence or absence of the identified factors may be verified by comparison with schools in other districts with comparable performances.

1.2.1 Research objectives

This research aims at investigating and analyzing the factors influencing Grade 12 results from 2002 to 2006 in District Six, Region Three of the Limpopo Province.

The study is directed at the following secondary objectives:

- Assessing the influence of an established culture of teaching and learning in schools as a factor contributing to academic success.

- Assessing the influence of time management by both teachers and learners on academic success.
- Comparing the assessment strategies and practices of the schools that performed well, with those that performed poorly.
- Developing a framework of indicator behaviours leading to academic success and testing the prediction value of such indicators by means of a pilot study.

1.3 Research Approach and Methods

1.3.1 Research approach

The study will be based on a quantitative non-experimental *ex post facto* research design, which is to say it will aim to process, quantitatively, information relating to Grade 12 examination results which are already known, namely performance in the matriculation exams in the years 2002 to 2006. Specifically, data will be processed in order to arrive at frequencies that relate to such qualitative information as home environment and motivation.

McMillan and Schumacher (1993:285) make the following statement in connection with *ex post facto* research:

> *The purpose of* ex post facto *research is to investigate whether one or more preexisting conditions have possibly caused subsequent differences in the groups of subjects. In other words, the researcher looks to conditions that had already occurred (ex post facto is Latin for 'after the fact') and then collects data to investigate the relationship of these varying conditions to subsequent behavior.*

Accordingly, this study will seek to examine the data mostly by means of administering questionnaires to teachers where schools and family backgrounds of learners in District Six, Region Three of the Limpopo Province may predict their ultimate achievement in Grade 12. The factors that the

researcher will examine will be selected on the basis of their theoretically presumed relevance as well as their measurability, and correlative tests will be carried out on the data.

This research design will include ethnographic research designed to give qualitative substantiation to factors influencing the same Grade 12 results.

The schools sampled will be selected from the cohort of successful and less successful schools in districts from Region Three as well as in other regions.

1.3.2 Research methods

It is planned to use the following methods to arrive at the objectives described above:

- Questionnaire survey, observations, interviews and an analysis of Grade 12 results in order to identify the factors leading to academic success in District Six of Region Three in the Limpopo Province.
- Interviews, observations and an analysis of official documents in order to identify the culture of teaching and learning in each school.
- Analysis and evaluation of the influence of time management of successful and unsuccessful schools in which questionnaires, interviews and observations may be used.
- Analysis of documents to assess internal policies and practices of schools, in addition to interviews and observations, in order to identify assessment strategies.

1.3.3 Definition of terms

In the context of the Ministry of Education Planning (2000), certain terms have specific meanings.

Region

A province is divided into regions. For example the Limpopo Province is made up of seven regions, namely

- Western (Region 1)
- Central (Region 2)
- Northern (Region 3)
- North East (Region 4)
- East (Region 5)
- Southern (Region 6)
- Bushbuckridge (Region 7)

all of which were established in 2000 (Limpopo Province Department of Education, 2000).

Districts

Each region is made up of districts. For instance the Western Region consists of four districts, the Central Region of six districts, the Northern Region of six districts and District Six known as Thohoyandou. The North-East Region consists of two districts, the Eastern Region of four districts, the Southern Region of six districts and Bushbuckridge, which is Region Seven, consists of three districts.

Area

Each district is made up of areas, each one consisting of a different number of schools.

Culture of Teaching

It is difficult to find a single term that covers an attitude to teaching as well as features of its practice, and the literature generally seems to have arrived at the term 'culture'. For purposes of this research, the term 'culture of teaching' will here be arbitrarily defined as 'a high level of commitment, willingness, preparedness and determination of educators to perform their duties'. A teacher's level of commitment may be difficult to define, but is seen as referring to leadership, strategic planning, customer-first focus, empowerment, commitment to teamwork and continuous improvement, as well as to quality and training (Steyn 2000:269). It is also closely related to a teacher's perception of self-efficacy and ability to maintain academic focus, reduce inappropriate behaviour and assign grading work (Selaledi 2000:259-60). That this has an effect on student performance is well recognized in the literature (Masutha & Ackermann 1999:246, Selaledi 1999:266. These attributes are further discussed in Chapter 2 under the headings of 'school factors' and 'teacher factors'.

The 'culture of teaching' has a close connection with the 'school culture', as will be discussed more fully in Chapter 2. Steyn and Van Wyk (1999:39) for instance, consider the following as important factors in teacher job satisfaction, and therefore impacting on the culture of teaching:

- physical working conditions,
- support by the educational authorities,
- job security and teachers' salaries;
- interpersonal relations,
- appreciation/recognition,
- school culture,
- environmental factors,
- nature of work and workload, and

- physical and emotional effects of all these on teachers – finding that the socio-economic environment in which teachers work and particularly the absence of telephones can have a profound effect.

One could even extend the definition of the culture of teaching to include the ability of a teacher to innovate and improvise in the absence of more standard resources (Van Rooyen 2000), given the background of disadvantage suffered by most schools in South Africa.

Culture of Learning

Likewise, for the purposes of this study, the term 'culture of learning' will be defined to mean a high level of commitment, willingness, preparedness and determination of learners to learn, including their willingness and preparedness and determination to be taught. As discussed in succeeding chapters, especially Chapter 2, this relates to a whole constellation of pupil-related factors, such as intelligence and verbal skills, language, motivation, background culture, gender, parental involvement, home environment, type of early education, expectations, self-assessment, participation, and study skills. Discipline is also often an issue, needing to deal with attention-seeking, a desire for power, revenge and a display of inadequacy on the part of individual learners (Mabeba & Prinsloo 2000:35), all of which interfere with the culture of learning in a school.

Democratic Education System

According to Dekker and Van Schalkwyk (1995:457):

> *The democratic era commenced with the democratic elections of April 1994 when a non-racial education system based on equality was instituted.*

The idea was to revolutionize the entire school system in post-apartheid South Africa, in the light of the fact that so many people were being disadvantaged

by what they saw as an outdated, cruel and inhumane system, dramatically expressed in Soweto on 16 June 1976 (Mkandawire 1999).

In the context of the current study, a democratic education system will imply the newly established Education Department which was constituted after the democratic elections of 27 April 1994, but it should not be supposed that earlier systems do not still have any effect on the performance of learners as well as on teachers. This is made very clear in the issues explored by Van Rooyen (2000; see also Mosoge & Van der Westhuizen 1997).

The School Management Team

In this report the term ''the school management team' refers to the manager (principal), deputy manager and the heads of departments. It is this team that must collaborate in achieving the total quality management considered to be a vital part of the culture of teaching and of the school (Steyn 2000:47). Apart from anything else, it is considered that if teachers do not have access to the school's decision-making process, their feelings of disempowerment may impact on the whole school (Mosoge & Van der Westhuizen 1997).

1.4 Structure of the Report

The research will be reported in six chapters which will be presented as follows:

Chapter 1

This chapter contains an exposition of the background to the research problem, statement of the problem, research objectives, research approach, methods and structure of the research.

Chapter 2

In Chapter 2 a review of the research literature relating to the cultural and historical background, and school and teacher factors influencing Grade 12 results will be undertaken in order to establish a theoretical understanding of and a basis for developing research instruments.

Chapter 3

In Chapter 3 a review of the research literature relating to the learner factors such as language, motivation, family background influencing Grade 12 results will be undertaken in order to establish a theoretical understanding of, and a basis for developing research instruments.

Chapter 4

In Chapter 4 there will be a discussion and rationale for the research design and methodology.

Chapter 5

Chapter 5 will indicate data presentation and statistical analyses of the results.

Chapter 6

Chapter 6 will summarize the research and the conclusions to be drawn, and make recommendations for further research and, where applicable, future policy on Grade 12 education.

Appendices

Research instrumentation
Results
Other informative documents.

CHAPTER 2

RESEARCH RELATING TO CULTURAL AND HISTORICAL BACKGROUND, SCHOOL AND TEACHER FACTORS ASSOCIATED WITH ACADEMIC SUCCESS IN SCHOOLS

2.1 Introduction

Education is

> *not about empty minds waiting to be filled, nor about flatulent teachers discharging hot air. It's about the opposition of teacher and student. It's about what gets rubbed off between the persistence of the one and the resistance of the other* (Swift 1983:221).

In considering the factors which successfully influence Grade 12 results in the area and time-frame covered by the current study, it would obviously be best to consult research and related literature that deal specifically with (a) success factors in schools and (b) South African schools.

It would seem, however, that not much research has been done that overlaps both these areas. The most relevant would seem to be the research by Dlangalala (2000), Madolo (1995), Mostert (1998), Myburgh, Grobler and Niehaus (1999), Ramashala (1999) and Semenya (1997). Relevant work was also done by Chetty (1996) and Zangqa (1999), further discussed below, although the work of both suffers from the disadvantage of a small sample size and consequently the reliability of their conclusions, which seem rather trite. Mabeba and Prinsloo (2000) utilized a large sample and considered many important variables, but related these to the exercise of discipline rather than to academic performance, and in a similar way Heystek and Louw (1999) limited their conclusions to levels of parental participation and not to results.

It should be noted that where South African research is concerned, the emphasis seems to be on accounting for poor performance, and not identifying the factors which account for success. This different approach may well have the effect of directing attention away from what might be most helpful to learners themselves.

Sometimes suggestions can arise from the criticisms of course. In a minor study conducted in three schools in a more distant district – Zebediela – of the same province being considered by this study, the findings were summarized as follows:

Reasons for poor Grade 12 results

- Lack of discipline
- Lack of culture of hard work
- Late supply of textbooks
- Condonement: pass one, pass all
- Abolishment of corporal punishment
- Lack of commitment by teachers and learners
- Shortage of teachers
- Lack of parental involvement
- Overcrowding in the classrooms
- Shortage of facilities
- Unavailability of syllabi
- Inefficiency of inspectors
- Underqualified teachers
- Lack of motivation by teachers and learners

(Ramashala 1999:46-47)

Similar findings emerged from a study of eight sample schools in the Free State (Mostert 1998).

The most accessible literature seems to deal with American research. It is not strictly applicable in the South African context – especially not the context of recent years of transformation in South Africa – but it does give some indication of the different elements contributing to academic success. Since these elements are usually dealt with separately in the range of studies reviewed here, it would seem sensible to consider them under the related headings of school factors, teacher factors and learner factors.

These, obviously, can be further subdivided for more detailed consideration, and this is the strategy followed here, with the recognition that learner factors are the most numerous, and dealt with in the next chapter separately. It is also recognized that in looking for overall trends, it is not always appropriate to look at factors that are specific only to individuals and not to groups. This study is concerned with group behaviour.

2.2 The Historical and Social Context

This study is also specifically concerned with a particular region of the Limpopo Province. It can be assumed that the history of the region would have some bearing on attitudes to and outcomes of the various approaches to education. Thus it is worth considering, first of all, what elements of the history and social context would have such a bearing.

2.2.1 Language and culture

The majority of the people in this region call themselves 'Vhavenda', and almost all are fluent in the Tshivenda language even when they do not consider it their mother tongue. Other language groups, in order of importance, are Shangaan (XiTsonga), SePedi and SiNdebele – with very diverse origins and so not readily seen as easily coming together. For children whose first language is one of these four, their second and even third language would be others from the same group of four. English and Afrikaans would seldom be encountered outside school except in the context of employment. These two languages, then, would not be encountered by school children except inasmuch as they may have grown up on white-owned farms. In such cases Afrikaans would dominate as the next language after the more domestic languages.

2.2.2 Vhavenda history

The predominant history of the region is that of the people who today call themselves Vhavenda and whose language is very clearly related to that of

the Shona people of Zimbabwe. The Limpopo River was obviously never much of a barrier to movement, especially considering that, today, it runs 7-9 months of the year flowing only beneath its sandy bed and not above it. Archaeologists have established that rich settlements around Mapungubwe in the 10th and 11th centuries of the Christian era had close economic and cultural relationships with the contemporary civilization recognizable at Great Zimbabwe some 400 km away. The following centuries brought down traditions that have more to do with conquest than with simple movement of peoples. It is known that probably some time in the 17th century when the pressure of Arab and Portuguese slaving was at its height in the eastern parts of Africa, ambitious war-lords crossed the Limpopo to establish new kingdoms among the local people (Möller-Malan 1953). The royal lineages then established are still influential among the Vhavenda today, having been little disturbed by the 150 years or so of upheaval since their first encounters with the traders, missionaries, farmers and – more disastrously – Boer commandos who began to see the southern area enclosed by the Limpopo River as ripe with opportunity for themselves. The Vhavenda were well protected, not only by their experience in military strategy, but also by their environment of swampy lowlands plagued by malaria and high mountain vantage places which they fortified with stone.

The pride and independence resulting from such a history still has its effect. Although a minority people where the South African totality is concerned, the Vhavenda are concerned to see themselves as second to none, and to prove it. It is no coincidence that other African language groups that have moved into the area have generally been concerned to ally themselves with the Vhavenda, to intermarry and, where feasible, to adopt Venda names and words into their own languages.

In this context a striving for academic achievement is not wholly surprising. What mainly would discourage such a striving is the more recent history of political suspicion and questioning where education policies are concerned.

2.2.3 The effect of apartheid

The systematic discrimination against African-language native language speakers (Troup 1976) hardly needs describing here. It was the blatantly stated policy of the architects of apartheid to provide learners only with as much education as would enable them to be good and obedient workers, and nothing more (Troup 1976:21). That this was an objective virtually impossible to achieve – because literacy alone can open up a world of information and thus grounds for protest – was something that posed serious problems for policy-makers, and caused many convolutions in thinking (Steyn 1999).

The effect of such policies on teaching practice as well as school results has been described by Jarvis, Meek and Shepherd (1995)(see also Van Rooyen 2000), and touches on both teacher motivation as well as the differential funding of schools that continues to this day.

This being said, the very fact that differential education was being offered to learners in the region here considered, among other regions, was reason for the whole notion of formal education to be regarded with suspicion, not least by parents who themselves had received a formal education in rather different circumstances, such as under Christian missionary auspices. Such parents would have been aware of the increasing inferiority of the education on offer; less educated parents would have seen more clearly the alienation from traditions that were being encouraged, and resisted formal education on those grounds. This can also have a carry-over effect on learners themselves, accounting for poorer results (Ainsworth-Darnell & Downey 1998).

2.3 School Factors

2.3.1 Locality

The differences between urban and rural schools are discernible and can be important anywhere. Rural schools, almost by definition, have access to fewer resources (Madolo 1995:2; Nash 1980:40). Learners have to undertake longer and more difficult journeys to reach them. Perhaps most important of all, they present difficulties for the teachers: accommodation and transport are limited, and even where shops are available, prices are high and choices absent. For teachers, rural schools on the whole mean discomfort, expense, and separation from their families. That this is a problem common to most South Africans does not make it any less serious for teachers or for schools in general if it impacts on teacher motivation. However, as will be shown when the geographical area in this study is discussed (see Chapter 5, section 5.7.1. on the respondents) in South Africa it is not always easy to define rural and urban.

In the studies conducted by UNESCO,

> *pupils in rural schools have received lower scores on achievement tests. This can be explained by a number of factors, including lower parental income and educational levels, poorer school infrastructure and facilities, poorly-trained and less experienced teachers and lower expectations on the part of teachers and parents* (Chinapah 1997:75).

One of the things missing or in low supply is also apparently sexual knowledge – surprising because teenagers show so much interest in sex – resulting in a higher rate of teenage pregnancies in rural schools, at least in South Africa (Mokgalabone 1999). Even the switch of interest from academic work to sex would negatively affect results. It is also arguable that rural girls are not expected to complete school, being more needed in the home in their

productive as well as reproductive capacity, given the labour-intensive nature of tropical agriculture.

On the other hand urban schools have their own problems, such as violence, which can impact on teacher morale as well as learner performance (Steyn & Van Wyk 1999:41).

It is of interest here that it has been found, for primary schools, that levels of parent participation are greater in rural schools in South Africa than in urban schools (Russell & Elder 1997), and that rural parents, particularly those in the lower socioeconomic brackets, have greater faith in the ability of schools to improve standards of living for their children. In secondary schools the situation is otherwise: urban parents participate more, perhaps because they have fewer transport problems and more children still in school (Heystek & Louw 1999:27), presumably because there is no other work waiting for their children, in contrast with the rural situation.

2.3.2 School culture

Any school with some history of its own will have developed a culture of its own which may relate to the culture of the broader society which it serves, but which has its own dynamic determined, usually, by its principal (Evans 1999:19; Leithwood 1992:95; Steyn & Van Wyk 1999:42) and to a lesser extent its teachers and learners (Steyn 2000). There can be extreme examples, where violence and extortion characterize school culture, particularly in countries like the United States of America. One should not, however, think that South Africa is free of such things, as evidenced by television series such as 'Yizo Yizo' (Selaledi 2000:258; Steyn & Van Wyk 1999:41). The negative impact of such a culture is clear enough:

> *One of the worst things that can happen to a school is having a reputation as a place where drugs and weapons exist. It frightens students, parents, and the community. It reduces the degree of*

> *support for a school. Teachers become discouraged and lose their enthusiasm for their students …* (Rosen 1997:91),

Substance abuse, in particular, in adolescents has the effect of creating depressive symptoms which can impact negatively upon their work (Blore 2002:93). At the same time, such problems can be very difficult to control (Yarnold 1999).

The extent to which part of a school's culture is the involvement of parents (Bastiani 1989) can make a large difference. Not to be forgotten should also be the matter of the involvement of the learners themselves as well as teachers in school policy-making (Beckmann & Blom 2000; Duffield, Turner & Morris 2000; Mosoge & van der Westhuizen 1997; Scales, Blyth, Berkas & Kielsmeier 2000; Steyn 2000). As has been pointed out, new legislation, in the form of the South African Schools Act 84 of 1996, "brought about a major reform in education administration by decentralising school governance to local school communities" (Squelch 2000:309; similarly Heystek & Louw 1999:21). The particular culture of different schools may be considered thereby reinforced. Constitutional and legislative changes, however, also make a difference to the rights and duties of learners within the system, requiring in turn, among other things, "the need for strong support of firm discipline in the schools (or the implementing of school rules)" (Van Staden 2000:302). That this may not be difficult to achieve is suggested by the findings of the study conducted by Mabeba and Prinsloo (2000:37), who found that learners and parents had similar views on discipline, difrering only on matters of expulsion and suspension.

Some caution must be exercised here; in the small study of three schools conducted by Ramashala (1999) in Zebediela – a part of Limpopo Province some distance from the one being studied here – there was a distinct tendency for each element of the school hierarchy to blame the other for poor performance. Area inspectors blamed the principals, teachers and parents; school principals blamed policy, teachers and parents; teachers blamed policy, area inspectors, principals, parents, learners; parents blamed teachers

and learners; and learners largely blamed government policy and parents (Ramashala 1999:29-42). It is interesting, in the latter case, that they did not blame their teachers, as is so often reported by teachers themselves.

In so far as school culture makes a difference to individual results (Bryant 1998; Hawkins 1997; Haynes Emmons & Ben-Avie 1997; Newmann 1998; Wang, Haertel & Walberg 1997), this clearly relates to the component of a teacher's classroom management (discussed below) which to some extent will reflect the broader school culture, and where the culture has an adverse effect on results, therapies are available (Finnan 1994).

The matter of schoolwide discipline (Rosen 1997; Van Staden 2000) is still relevant here, as rules and codes of conduct may be determinants of the school culture, and discipline generally is a notion that is important to parents and politicians as something they expect of school administrators. As a result the reasons for exercising discipline are not always as straightforward as one might suppose:

> *Schools suspend students not so much to improve the behaviour of the students who do not follow the rules as to reinforce the norms for proper behaviour set forth by the adult community … If students are to transfer their school experience to living in adult society, they must learn to live with rules and laws* (Rosen 1997:5; see also Mabeba & Prinsloo 2000:37).

For schools themselves, there are various indicators of what constitutes good rules, but it is significant in the light of the above that a model code of conduct for learners (Rosen 1997:15-22) does not only consider bad behaviour, but is required to include –

- Student responsibilities
- Student rights
- Student privileges

with a list of violations and consequences (not punishments) – also mentioning the possibility of positive rewards for outstandingly good behaviour.

A school's ability to keep good records (Rosen 1997:32) is a crucial aspect of this and other aspects of school culture.

2.3.3 Funding

Although there are a number of current examples of poorly resourced schools that are attaining virtual miracles of achievement, in the long term and on a day-to-day basis, lack of adequate funding can have a disastrous effect on achievement because it makes everything much more difficult and thus demoralizing (Zangqa 1999:96). A science teacher without a laboratory can teach a great deal of science, but has difficulty preparing learners for examinations where equipment is a given. A school without a library (and a good librarian to run it) cannot honestly encourage independent enquiry among learners who are hardly likely to have a good collection of informative books and magazines in their own homes. These days the use of computers must be added to the necessary skills.

In the study conducted by Van der Westhuizen, Mentz, Mosoge, Nieuwoudt, Steyn, Legotlo, Maaga and Sebego (1999:318), "Lack of resources … features very strongly as a cause for the poor Grade 12 results … (and) seems to be the greatest factor in poor and average schools".

In this respect private schools are bound to have an advantage (Chinapah 1997:76), since their resources are fees-related, and their fees high enough to pay good teachers. They would not dare to allow their schools to be underresourced.

2.4 Teacher Factors

Teachers do not function on their own; they are part of the school culture however difficult that is to describe. Their interaction with learners, determines their behaviour and vice versa.

If teachers are suffering from lack of self-confidence, this can have a very negative impact. In a small two-school study conducted in KwaZulu Natal, the frustration engendered in teachers by uncertainties concerning the future was seen as the main contributor to failure. The high incidence of HIV & AIDS among teachers was seen as one of the sources of uncertainty, although it may be going too far to say: “Most of the educators and learners in the area are AIDS victims” (Dlangalala 2000:45).

It remains true, however, that teacher self-esteem may be a very important factor and is based on various platforms, such as the skills and background of each teacher.

2.4.1 Training

As in the case of location and funding, so does the level up to which teachers are trained, have its effect on the efficacy of teaching. Learners are very quick to spot inadequacies in their teachers, and will constantly challenge levels of knowledge in their teachers. Both learners and teachers need to be confident that these challenges can be met, and yet the history of teacher shortages over the years, whatever the cause, has resulted in policies of hiring teachers without proper qualifications for their task.

At the same time it must be recognized that the training a teacher receives may not always be relevant to the situation that teachers may have to face, in terms of school or classroom (Steyn & Van Wyk 1999:41). What a teacher learns in college may be so different from the knowledge and experience of fellow teachers, especially the senior teachers and school principal, that the

new teacher is made to feel isolated in ignorance (Aitken & Mildon 1992:32; Tickle 1994:3), thus impacting on motivation, as described below. At the other extreme, trained and experienced senior teachers may find themselves isolated and at sea by changes in school or national policy regarding curricula and discipline (Sikes 1992:49).

Teacher training does not only take place in colleges, but also as a result of teaching experience, which is often most valuable because it is the most relevant. Teacher development may be in the hands of a school principal or some other supervising professional acting as counsellor or broker (Steyn, 1999a:209; Tickle, 1994:163)

It has also been argued that one shortcoming in teacher training programmes has been the essential issue of discipline, regarded by teachers themselves as very important (Mabeba & Prinsloo 2000; Steyn & Van Wyk 1999:41).

2.4.2 Classroom management

The management of classroom space and activity has only recently become recognized as a key factor in school learning, and has not yet been given much attention in the curricula of teacher training, and much of the research and reporting so far seem to relate to situations outside South Africa (Bryant 1998), although the use of audiovisual materials is a well researched subject (Van Rooyen & Hartell 2000). It does relate very closely to teacher efficacy (Selaledi 2000:261), and is discussed further under motivation of teachers (section 2.4.3.). For some individuals the necessary skills may come intuitively, but obviously it would be more reliable to ensure that they are taught, although it is no more than common sense to say that “if the situation in which one is placed conveys the positive perception of a feeling of

belonging, where one has a meaningful function, then it results in a feeling of self-worth which promotes academic achievement" (Chetty 1996:181).

> *Classroom learning activities should not be so low-level that they provide insufficient challenge. Naturally, they also should not be so difficult that students never experience success* (Heacox 1991:21).

In training textbooks on the subject (Weinstein 1996:89; see also Hauser & Thompson 1995), the strategy clearly also relates to pupil motivation, discussed further in section 2.5.3. Appropriate classroom management can, among other things, enable learners to interact with each other and also respond in active ways, thus contributing to motivation (Weinstein 1996:89), and even to the curriculum (Koshewa 1999: 211).

The exercise of discipline within the classroom and its effect on individual learners comes under this heading, although it is closely related to the matter of school culture (section 2.3.2.). Recent changes in the law require that discipline in schools now conforms much more closely to the national constitution in terms of fairness and reasonableness, but more specifically requires -

- Hearing and notice
- Impartial tribunal
- Right to information
- Right to representation
- Reasons for the decision
- Right to appeal

(Squelch 2000; also Van Staden 2000).

Such changes may be seen as creating difficulties for schools and teachers, in that :

> *An educational climate which places emphasis only on rights without equal emphasis on responsibilities would seem to be incompatible with the term 'education', and would therefore prove to be disadvantageous to the disciplined climate required for such education to occur. The danger exists that an authentic relationship between educators and learners could simply slide to one of distance and non-involvement, a problem already experienced in many parts of the world* (Van Staden 2000:302).

Teachers themselves, of course, must have responsibilities as well as rights (Beckmann & Blom 2000:4; Koshewa 1999; Van Staden & Alston 2000), although a teacher's ability to feel in control of a classroom can have a bearing on all the rest (Steyn 2000:269).

Discipline, however, varies and leads to different outcomes (Rogers 1998):

> *When the underlying motivation of discipline is control and punishment rather than an opportunity for learning, little will be accomplished* (Nelsen *et al*. 1993:10),

and this is reinforced by the perception of parents and learners that

> *when teachers prepare their lessons thoroughly and present them meaningfully, this increases pupils' participation in class and their commitment to learning, thereby minimizing discipline problems* (Mabeba & Prinsloo 2000:37)

while "Teachers regard the ability to control a class as a matter of prime importance" (Mabeba & Prinsloo 2000:37).

One possible form of discipline is 'positive discipline' where self-discipline is promoted through empowerment techniques such as class meetings that encourage a number of skills (Nelsen, Lott & Glenn 1993: 4), including:

- Intrapersonal skills which seek to understand personal emotions,
- Interpersonal skills which seek to listen, communicate, co-operate, negotiate, share and empathize with others,
- Strategic skills which seek to use responsibility, adaptability, flexibility and integrity in responding to the limits and consequences of everyday life,
- Judgement skills which seek to use wisdom and appropriate values in evaluating situations.

All of these, as can be seen, have to do with conflict resolution in one way or another, and are life skills. A related approach is to see the matter as one of contracts actually to be signed between school and learner (Rosen 1997:38-40), in which, presumably, the teacher would serve as judge/ mediator/ arbitrator, as "different students disobey school rules for different reasons and may therefore need different consequences" (Rosen 1997:30; similarly Rogers 1994: Ch. 3 & 6).

A teacher's own behaviour is most potent when seen by learners as embracing respect and care for learners (Koshewa 1999:25; Nelsen *et al*. 1993:13) and may be conceived as a question of balance between dominance and submission, opposition and co-operation, the appropriate mix being different for every subject, as would be the arrangement of space (Weinstein 1996:73). It is hardly surprising that the co-operation dimension is the one most associated with positive learner attitudes (Weinstein 1996:74). "There is a big difference between punishment and holding kids accountable with dignity and respect" (Nelsen *et al.* 1993:87), and the 'logical consequences' of any unwanted behaviour are explored. This ensures that both teachers and learners are part of the process of solution.

This relates to the notion of teamwork (Koshewa 1999; Steyn 2000), which involves such things as shared decision-making and trust-building with the teacher, and is not at all the same thing as the more familiar group work.

The expectations of teachers concerning their learners can have very direct effects on the learners:

> *Inaccurate expectations often are not corrected because teachers create situations in which only confirming evidence is possible. For instance, teachers sometimes develop strong 'theories' about students and structure the learning environment in a way that does not allow information that is contrary to their theory to emerge …. Students' opportunities can be limited severely by teachers' unchallenged assumptions (*Stipek 1988:207).

Teachers will often treat high achievers – and also girls – very differently (Stipek 1988:215), and this differential treatment can be expected to have differential effects. If more is expected of high achievers, such learners will respond with better results.

Rathvon (1999:11) sees the problem of classroom management in ecological terms:

> *An environmentally based approach that views student problems as arising from student-environment mismatches not only expands the analysis of factors that may be contributing to those problems but also yields a broader range of targets for classroom-based interventions.*

and thus a pro-active classroom approach is recommended (see also Koshewa 1999; Rogers 1994).

2.4.3 Teacher motivation

Worldwide, shortage of teachers is a worry (Menter, Hutchings & Ross 2002):

> *The recruitment and retention of teachers is a problem for many nations today. With education playing such a central part in economic and social development, shortages of teachers can create a major political threat to governments* (Menter 2002:1).

That this may be cyclical in its manifestation and related to economic prosperity may only make matters worse, and countries badly affected by the HIV/AIDS epidemic have an even more serious problem. The recruitment of teachers into training or even back from retirement is closely related to what incentives are possible – in other words, to motivation.

> *Motivation is a condition, or the creation of a condition, that encompasses all of those factors that determine the degree of inclination towards engagement in an activity* (Evans 1999:7).

The motivation of teachers has already been touched on, especially with respect to school culture and locality in sections 2.3.1. and 2.3.2. It is not enough that an individual be motivated to adopt teaching as a profession; the motivation to be an effective teacher can be an additional factor. It can aptly be stated that having knowledge of a subject is very far from the ability to convey that knowledge or to motivate others to acquire it. It follows that a teacher lacking in motivation will, in turn, fail to motivate learners, to the detriment of their learning.

It is hardly surprising that job satisfaction has a role here, and dimensions of this may be the following: (Evans 1999; Mosoge & Van der Westhuizen 1997; Steyn & van Wyk 1999; van Zyl & Pietersen 1999) –

- Physical working conditions
- Support by the educational authorities
- Job security and salary
- Interpersonal relations
- Appreciation/recognition
- School culture
- Environmental factors (such as home environment of learners)
- Nature of work and workload

To some extent a teacher's own culture is operative here. Burnout in Afrikaans-speaking women teachers seemed to occur because of the "problems and uncertainties" connected with the "present period of transition and transformation in education" (Van der Linde, Van der Westhuizen & Wissing 1999:196; similarly Steyn 2000), which, it seems, has not only been affecting white teachers (Rigsby, Bennet & Boshoff 1996; Zangqa 1999:95), where stress is experienced at greater levels by teachers who are women and who are married (Van Zyl & Pietersen 1999:76-77). It may also relate to the effectiveness or otherwise of classroom management (Selaledi 2000:261).

Various definitions of teacher efficacy exist: the extent to which teachers believe that they have the capacity to affect student performance, teacher's beliefs about the general relationship between teaching and learning, or the individual teacher's assessment of his/her own teaching competence (Selaledi 1999:266). In fact Selaledi (1999:268-9) found that "primary school teachers obtained significantly higher self-efficacy scores than the secondary school teachers", seemingly because of greater time spent with their learners, enabling them to form better relationships. In general, teacher efficacy correlates with teaching experience and classroom management (Selaledi 2000:261).

In recent years much attention has been paid to COLTS (Culture of Learning, Teaching and Service) as something that should be promoted in schools in order to bring about improvement, and it could be argued that this relates directly to teacher motivation. Van der Westhuizen *et al*. (1999:318) go so far as to cite "lack of a culture of teaching …as one of the main causes of the high failure rate in Grade 12". Conclusions like these would be more useful, perhaps, if they were more specific about what the culture of teaching should really be.

Related to this is the way in which learners see their teachers, and the differences in culture between learners and teachers (Sanacore 2000). Masutha and Ackermann (1999:247) conclude from their study that "the teacher plays a major role as a significant other in the lives of learners, particularly those in disadvantaged communities." Furthermore, "the teacher should act as and be perceived by learners as a major source of support and as a facilitator of learning and development, in contrast with the traditional approach of the teacher as being primarily an 'instructor'" (*Ibid*.: 247). Following this line of thought, it can be seen from the results extracted by Selaledi (1999:269) that in this respect primary schools have an advantage over secondary schools because in the former the teacher plays more of a parental role, and so teachers adapt more easily to facilitation as a replacement for instruction.

In secondary schools, by contrast, it is perhaps more true that teacher motivation can be strongly affected by school culture and, particularly, the attitude and experience of the school principal (Leithwood 1992), and the extent to which teachers themselves can participate in the management of the school (Mosoge & Van der Westhuizen 1997).

2.4.4 Language

Teachers may be handicapped by their own language or at least an inadequate range of vocabulary when their own language is not English, given

that the medium of instruction usually needs to be English (Mostert 1998:127). At the same time it should be borne in mind that language is a reflection of culture, and in the case of those teachers whose home language is TshiVenda, it can be expected that the positive attitudes to learning found among the VhaVenda would outweigh the difficulties of teaching in a second or third language. This therefore is another way in which school culture will have an effect.

2.5 Conclusions

To account for academic success anywhere, it is evident that certain factors can be core indicators. Some are more measurable than others, and in an investigation such as this one, it is only sensible to use those that are measurable. Bearing in mind (as argued in Chapter 4) that the chief respondents in this investigation are to be teachers, and using the subdivisions employed in this chapter, some indicators considered to be useful are listed as subheadings in this section.

It will be seen that some of the factors already discussed will be ignored. These factors cannot be measured sufficiently well through the methods and instruments that are to be used for this investigation. Further limitations are discussed in Chapter 4, although the object is to range as widely as possible over the factors in order to find meaningful correlations with the performance levels of learners in the area of study.

2.5.1 Locality of school

It needs to be known whether the school is rural or urban. In South Africa determining this can be a little problematic, as many rural areas are populated densely enough to seem urban in all but their infrastructures – and the infrastructures are changing fast (Silistshena 1990). Teachers and learners both might vary a great deal in whether they see the school as rural or urban, depending on their own definitions of these terms. A more objective measure may be the distances that learners have to travel to school: rural populations

being so much more scattered would mean that a greater number of learners would travel long distances.

2.5.2 School culture

Quantifiable measures of school culture would obviously be difficult to obtain, but the presence or absence of some kind of code of conduct, especially if written, would be one such measure, as would the presence or absence of a council or committee of teachers or learners. A school's ability to keep good records would be another measure, perhaps reflected in the presence or absence of an administration block. Another might be the origins of the motivation of teachers irrespective of whether they feel supported or not. It is also not difficult to elicit quantifiable information on what are perceived to be the most common problems affecting the school.

2.5.3 School funding

As school finances have a direct effect on the resources enjoyed by a school, some quantification of them can be attempted, in terms of number of classrooms, laboratory and also the equipping of such rooms. The presence or absence of a library is another indicator, as is the state of its bookstock. The presence or absence of a good librarian would also indicate level of funding, but impact, too, on the literacy of the learners. It also impacts on the abilities of the teachers to encourage independent learning, and their classroom management (section 2.5.5.).

2.5.4 Teacher training

The level of formal teacher training is easy to quantify, provided that teachers are honest about this.

2.5.5 Classroom management

Although the matter of classroom management is difficult to define, certain aspects have been mentioned, and these can be measured: the use or otherwise of visual aids; whether or not learners have the opportunity for discussion with each other as well as the teacher; whether or not their time is structured. Where discipline is concerned, it may be determined whether or not and to what extent there is learner participation in the decision-making where both culpability and punishment are decided.

2.5.6 Teacher motivation

Teacher motivation would be even more difficult to measure. A teacher's relationship with learners could be one measure: the establishment of whether or not the teacher feels well liked and accepted. Also relevant is the question of support from fellow educators, and whether or not any praise or rewards are available. Physical working conditions are subsumed under the measures Adapted for funding (see section 2.5.3.), but also operate here.

2.6 Summary

To separate a school, its teachers and its learners is not always easy, particularly when looking for factors that may affect academic performance. Leaving the matter of learners to the next chapter, from this one it may be concluded that the schools under study (i.e. in the Vhembe District of the Limpopo Province), the locality of the schools may be important, if it can be determined whether they are rural or urban. School culture, inasmuch as that can be defined, can also be expected to have an effect, and this may also relate to the home language of the teachers, since language and culture are closely related and school culture is not wholly separate from the culture of its source population, which will affect school policies, discipline and the like. The funding level of the schools, in that resources are affected, can also be expected to have some impact.

Where the teachers themselves are concerned, it is argued the level of their training will impact on learner performance, and to some extent this would be reflected in classroom management. However, teacher motivation may have an even greater impact, and again this may relate to the home language and culture of the teachers concerned. Teacher motivation would be even more difficult to measure. A teacher's relationship with learners could be one measure: the establishment of whether or not the teacher feels well liked and accepted. Also relevant is the question of support from fellow educators, and whether or not any praise or rewards are available. Physical working conditions are subsumed under the measures Adapted for funding, section 2.6.3, but also operate here.

CHAPTER 3

RESEARCH RELATING TO LEARNER FACTORS ASSOCIATED WITH ACADEMIC SUCCESS IN SCHOOLS

3.1 Introduction

Although not easy to separate from those connected with school and teacher, certain factors can be assumed to be peculiar to learners themselves, and thus, in the case of every individual, to have some influence on their performance. To some extent personality factors must clearly influence performance: the way in which learners respond to the situation in which they find themselves.

One South African-based study encompassing 10 secondary schools in a particular administrative area (Semenya 1997) concluded that poor examination performance was strongly related to the high level of stress among candidates, although the cause of the stress was not possible to identify (Semenya 1997:81), it being assumed that both culture and history played a role in creating stress among black learners in secondary school. This is one instance of school and possibly teacher factors eliciting a response among learners. In this chapter the aim will be to look at factors which may be both measurable and independent of school and teacher factors.

3.2 Learner Factors Influencing Academic Performance

3.2.1 Intelligence and/or verbal skills

The notion of Intelligence Quotient or IQ comes and goes according to fashion, and it has long been recognized as culture and context-dependent (see arguments presented by Madolo 1995:25). Nonetheless, as a predictor of achievement, it has its uses.

After pointing out that “one of the strongest characteristics of most IQ tests is that the verbal skills of a person are being measured”, Myburgh *et al.* (1999:168) found that the measured IQ of learners accounted for as much as 32% of the variance in learners’ scholastic achievement in a fairly large cross-

cultural study conducted in the Roodepoort area (Myburgh *et al.* 1999:173). Although this study covered three language groups and the schools catering for them, and language was included as a variable, it turned out to have a minimal effect (Myburgh *et al.* 1999:177), suggesting that verbal skills are, to all intents and purposes, independent of language as a predictor.

It could reasonably be said that language is more closely related to culture than to intelligence, as it is generally agreed to be a cultural artefact. More than that, language has been defined as –

- A part of culture
- An index of culture
- Symbolic of culture.

> *Most human behaviours are language-embedded, thus language is an inevitable part of culture. …But such complex cultural areas as socialization, education, barter and negotiation are also entirely awash in language. Language is, therefore, not only a part of culture but a major and crucial part* (Fishman 1985:444).

It is, however, useful to treat language separately for purposes of argument here.

3.2.2 Language

That language can have an effect on learning is certainly believed by the respondents in the study conducted by Malan, Ackerman, Cilliers and Smit (1996:59,61), it being seen as "causing inadequate understanding of subject matter" related to reading and comprehension skills, when the learner's mother tongue is different to the language in which learning is required (see also Mostert 1998:127). Perhaps supporting the dimension of comprehension, research from the Americas (Slavin & Madden 2001) suggests that some

teaching in the mother-tongue actually improves performance in the second language.

3.2.3 Learner motivation

> *One interesting aspect of the typical teacher description of good students is the relatively little emphasis given to intelligence. While intelligence may be a desirable quality, motivation is more so* (Spaulding 1992:3)

The motivation of learners is a complex issue consisting of many components, some of which are subheadings here, such as home environment (2.5.7.), expectations (2.5.9.), participation (2.5.11) and the like.

Cultural differences in motivation may exist, as has been found between China (where the strategic use of effort is emphasized) and England (where motivation arises from concern with ability) (Rogers 1998).

As already mentioned in the previous chapter (sections 2.4.; 2.4.3.), the expectations of teachers can have a profound effect on learner motivation (Bester & Swanepoel 2000:258; Stipek 1988:207), which has been defined as "a multi-staged process encompassing needs, values, goals and behaviour where each stage amplifies inter-individual differences" (Keeling, Jones, Botteril & Gray 1998:155; similarly Dembo & Eaton 2000). As with teacher motivation discussed in section 2.4.3., definition of learner motivation is difficult.

Weinstein (1996:89) cites a definition of motivation as:

Expectation of success x value = motivation

In such a definition the expectations component as described in section 3.2.9 below would be a major dimension, leaving the value component to be determined variously by society, school and teacher, but broadly definable in

terms of culture as being the area where all these come together. The rewards to be obtained by achievement are primarily those defined by the culture in which a learner is embedded, and perceptions regarding their value can even vary with gender (Chetty 1996:182).

Entwistle (1998:17) distinguishes between extrinsic and intrinsic motivation, as well as achievement motivation, arguing that each is differentially related to any approach to learning Adapted by a student. Motivation can also correlate positively with student autonomy (Cock & Halvari 1999) and participation, while at the same time learners who are assisted in managing their time effectively, can also show increased levels of motivation (Spaulding 1992:121-2).

3.2.4 Background culture

Culture is another dimension that is multistranded and difficult to define. The relationship between culture and language has already been described (section 2.5.1.). Collins Shorter English Dictionary defines culture as “the total of the inherited ideas, beliefs, values and knowledge which constitute the shared bases of social action”.

Both the goals and rewards for which learners will be aiming when achievement is at issue (Rogers 1998) fall within this definition. In addition, cultures can have specific attitudes towards education (Asakawa & Csikszentmihalyi 1998) which may in any case define goals and rewards differently.

A definition of culture should also include language, since each language provides a clear expression of the norms of its culture, and the learning of a language, whether by children or adults, also involves the assimilation of culture.

In the United States of America, where many cultures co-exist but learning usually has to take place in the hitherto dominant, WASP (white, Anglo-

Saxon, protestant) culture – so not very different in this respect from the South African situation – learners from minority cultures can attain different levels of achievement which may be related to their background culture first and foremost (Calderon 1998; Clarke 1997; Rigsby, Stull & Morse-Kelley 1997; Sanacore 2000; Wang, Haertel & Walberg 1997). Thus, the performance of Asian Americans who obtain higher than average results particularly in quantitative subjects (Hsia & Peng 1998; see also Chao 2000), contrasted with the systematic poorer results of African Americans who see academic success as being in conflict with their cultural identity (Cook & Ludwig 1998), which discourages anything which involves standing out from the crowd.

In South African studies of behaviours in school, race is often considered to be a variable (Badenhorst, Forster & Lea 1990; see also Rigsby *et al.* 1997), but by now it should be clear that the issue is much more complicated than a simple one of skin colour. Differences between population groups are based much more profoundly in the different cultures.

It has already been pointed out that other elements of culture, specifically the historical and social context of the region under study (section 2.2.2.), could have positive effects on achievement, and this relates to the broad culture of the region. Where any individual learner is concerned, however, there are more particular definitions of culture: the culture of the peer group, the culture of the circle of friends, the culture of the classroom. All these have an effect on attitude and by extension on attitude to learning and achievement.

Under this heading, too, should perhaps be considered the notion of self-concept as explored by Myburgh *et al.* (1999). They see this as being composed of academic self and social self, of which the former turned out to be more important. Since academic self is defined as “students’ … conceptions of their academic competence” (*Ibid.*:174; see also Bester & Swanepoel 2000:258), it can be argued that this relates more to expectations and self-assessment as discussed in sections 3.2.9. and 3.2.10. below.

In the matter of the social self, however, it is clear that the background culture would be a major determinant, as already theorized for the particular culture under consideration here (section 2.2.2.).

Concepts of gender are cultural concepts, too (Mokgalabone 1999), and operate in much the same way, but may be considered separately here.

3.2.5 Gender

Gender, although a cultural issue, is a very a particular one (Hay, Ashman, & Van Kraayenoord 1998; Rigsby *et al.* 1997). Almost all cultures distinguish between male and female roles, and between the behaviours expected of each. Where, however, particular behaviours are encouraged or discouraged – not just not expected, but actively eliminated – then it is necessary to know which of them have a bearing on educational achievement. For instance, Holland (1998) speculates on the effect of a stereotype that discourages boys from working hard in school, which is perhaps related to disruptive and inattentive behaviours as found among boys in New Zealand (Fergusson & Horwood 1997), whereas Malan *et al*. (1996:59) identify as a gender disadvantage the fact that "female students refrain from asking questions".

In the UNESCO studies, it was found that:

> *girls tend to do better than boys in the earlier grades, especially in literacy skills. Later on, for any number of socio-economic reasons – decreasing expectations, early marriage and pregnancy, work outside the home taking precedence – girls' performance begins to lag (Chinapah 1997:75).*

All these are also true of South Africa, except that boys, if anything are more subject to dropping out due to employment opportunities and economic pressure, especially in rural areas (Gaganakis 1999:149), which rather contradicts the conclusions of Mokgalabone (1999), that girls are more likely than boys to drop out of secondary education. On the other hand, if

motherhood is going to disqualify a girl from education, then girls can be seriously disadvantaged.

In some ways, girls may be positively advantaged. It should not be forgotten that verbal skills are usually better developed in girls, even though they may not ask questions, and this gives them an advantage in measurements of intelligence (Myburgh *et al*. 1999: 168). Also to be considered is the fact that because parents of educated girls can claim a higher dowry from prospective husbands, they may have a vested interest in keeping their girls in school (Gaganakis 1999:149), but changing curricula can have an even greater effect, as do perceptions of the labour market (Gaganakis 1999:149,151). Girls in particular have to balance the need for self-sufficiency and independence against the need to be responsive to the needs of others, and this can have an effect on academic achievement (Gaganakis 1999:152; similarly Scales *et al*. 2000), though it is not always a negative one (Chetty 1996:182). It has been found (McGrath & Repetti 2000) that girls respond more positively to encouragement from their fathers rather than from their mothers, but that boys received less encouragement from either parent.

One of the more persistent problems affecting the differential performance of learners according to gender can be the perception among parents, teachers and learners themselves that different subjects are suitable for particular genders (Beyer 1999).

Where it is found that teachers treat girls differently to boys, there is no firm conclusion as to the effects of this (Stipek 1988:215). Much of the response of girls in school is in fact governed by their expectations about what they are to do *after* they leave school (Rayman 1997; Sullivan 1997), but this also relates to girls' own perceptions of themselves (Chetty 1996:182).

3.2.6 Parental involvement

The recognition of the effect of parents on the achievements of their schoolgoing children (Chetty 1996:181; DeGarmo, Forgatch & Martinez 1999;

McConkey 1985; McEwan 1998; Marjoribanks 2001; Miliotis, Sesma & Masten 1999; Shaver & Walls 1998; Stright *et al.* 2001; Vondra 1999; Yan 1999; Zangqa 1999) has a long history (Berger 2000:88-9).

Parents are their child's first educators and, as such, are responsible for the child's survival and for providing an environment that facilitates brain development and attachment in their child (Berger 2000:37).

Morrison and Cooney (2002) define five dimensions of parenting:

- Quality of the learning environment
- Parental warmth and responsiveness
- Parental control and discipline strategies
- Parental beliefs about childrearing and qualities necessary in children for success
- Parental organization and traditions.

In addition there are studies to show that the way in which parents structure their children's learning behaviour in the home can have a major influence on the way in which the same children will behave in a classroom (Stright *et al.* 2001).

That having being said, what should be referred to here is not just home environment (dealt with in section 2.5.7.), but the active interaction between parents and their child's teacher, school, and schoolwork (Asakawa & Csikszentmihalyi 1998; Heacox 1991; McConkey 1985; McEwan 1998), also called home-school relations (Bastiani 1989; see also Vondra 1999) which can take different forms according to the specific culture of the parents (Chao 2000). Parents who themselves have a reasonably high level of education tend to be more aware of the importance of this than uneducated parents, and would also be able to be much more realistic in their expectations, an important element of their involvement (Bester & Swanepoel 2000:258), as would also seem to be – according to parents themselves as well as school

psychologists – their ability to provide information on how schools function (Christenson, Hurley, Sheridan & Fernstermarcher 1997).

Indeed there is good evidence to show that parents' involvement in a child's education before that child even starts school can be as important as any other kind of involvement (Madolo 1995:20, Winter & McDonald 1997), and has much to do with a child's level of literacy (Lauren & Allen 1999).

It is worth noting that mothers' involvement may turn out to be more important than fathers' (Bogenschneider 1997). In the study conducted by Myburgh *et al.* (1999:176), it was the mother's level of education rather than the father's that was the more significant, so the occurrence of teenage motherhood is a cause for concern (Barbour, Richardson & Bubenzer 1993), especially if it results in the mother's loss of education. Furthermore, depending on the context (whether rural or urban, for instance) and other factors such as culture, there may be different types of families. Madolo (1995:20) identifies three different types of the South African family:

- The extended family,
- the nuclear family,
- the single-headed families – that are caused by either divorce, death, employment of one of the parents, and unmarried mothers.

For the more urban environments of the United States of America, Berger (2000:97) distinguishes between two-parent families, father-child families and mother-child families, this third category being further subdivided into divorced, separated and never married. Oddly enough, widowed does not seem to be a category. It is also conceived that there may be different parenting styles, such as authoritative, authoritarian, *laissez-faire*, and dysfunctional (Berger 2000: 99), each one of which would have its effect on the learning environment of children as well as determining to what extent the parents would involve themselves in their children's education. Interactions

between different types of parents should also be considered (McCall, Evahn & Kratzer 1992:29; similarly Elder & Russell 1996).

Sometimes it is hard to know the particular role that family may play. For instance, in the study conducted by Van der Westhuizen, Mentz, Mosoge, Nieuwoudt, Steyn, Legotlo, Maaga, & Sebego (1999), family-related issues only accounted for two of the seventy questions, and were not specified in any further detail. Yet, "all groups cite parental involvement as a most important single reason for the high failure rate in the Grade 12 results", although the researchers quoted see this as more probably reflecting the 'blame-it-on-someone-else syndrome', parents not having been one of the responding groups (Van der Westhuizen *et al*.318). See similar results brought to the fore by Malan, Ackerman, Cilliers & Smit (1996:59,61; see also Chetty 1996; Zangqa 1999) should also perhaps be seen in this light. It is even suggested that special training to enable them to participate in their children's education should be provided for parents (Mostert 1998:130). South Africa still has some way to go before it can be argued that parents have the power entirely to change schools (McEwan 1998), but such a thing is implicit in the new drive to involve parents in the education of their children.

When there is parent-teacher interaction, in the form of one-to-one informal contact rather than structured meetings, this can often be as a result of a particular problem teachers are experiencing with a particular learner. The difficulty then is to ensure that such interaction should not have negative consequences arising from parents being cornered into a defensive position (Rosen 1997:31), whereupon they may either punish their children or side with them. Neither response is likely to solve the original problem.

3.2.7 Home environment

The UNESCO report on monitoring learning achievement found that

> *importance of the home environment on the learning achievement of children has not been adequately analysed in school survey studies.*

> *Policy-makers, very often, are keen to know only about the importance of school inputs on learning outcomes and neglect the role played by the child's home environment. With the exception of the life skills' domain,… Differences in learning outcomes are strongly associated with differences in the level of the socio-economic status, parental educational and professional backgrounds, family size and family income … In other words, children from better-off families. They outperform children from poorer home environments. It is important to note that children with married parents outperformed children with divorced and/or single parents* (Chinapah 1997:91).

These conclusions mostly derive from a study conducted in Mauritius, but recognized the generalizability of the results. Not only must the home environment be emotionally close (DeGarmo, Forgatch & Martinez 1999; Miliotis, Sesma & Masten 1999) as well as sympathetic towards the learning process in an intellectual way (Crooks 1997; Fuligni 1997; Stright *et al.* 2001), but there are physical aspects to be considered as well, such as space for study, time and peace. Intellectual support may be present when the other aspects are absent through sheer economic pressure. Moreover, as has been found in South Africa, there may be considerations of health and nutrition of the children (Madolo 1995:14), although these might have less effect than other family factors and attitudes towards education (Crooks 1997).

Home environment, in its turn, is to some extent determined by the environment in which the home itself exists – such as rural or urban, slum or suburb, each of which will provide different activities and pressures for the learner when not in school, and these can make a great difference (Goldenberg 1996). Both groups of respondents (teachers and learners) to the study conducted by Malan *et al.* (1996:59-61) identified "negative home conditions, including being disturbed by other people, home duties and inadequate physical facilities" as being high on the list of factors which caused problems. As long ago as 1966, the concern was expressed in Europe that

changing family structures there, particularly the changing role of women, would impact negatively on the education of children (Musgrove 1966: 51,55).

Madolo's (1995) study of socio-economic background has relevance here, as it was found that among 195 learners from six different schools in the Eastern Cape

> *the occupation of the parents, the educational level of parents and the frequency of borrowing books from the library correlated positively with the pupil's standard ten June marks* (Madolo 1995:69),

somewhat contradicting the findings of studies conducted in other countries (Bogenschneider 1997; DeGarmo *et al*. 1999; Madolo 1995:23).

The time that parents are able to spend with their children may also be determined by socio-economic status irrespective of (whether or not both of them work; what their working hours are, etc.), so that even where the quality of parental involvement may be high, its volume may be limited. High-income parents can be just as easily affected by this as low-income parents. In New Zealand, however, it was found that working mothers produced higher-performing children (Horwood & Fergusson 1999), reflecting perhaps better income and better-educated mothers.

3.2.8 Foundation

Where secondary level learners are concerned, the idea of foundation refers to an individual's early learning experience, mainly to the type of education provided and the achievements reached in primary school. It should be borne in mind that learning behaviours may be established even before that (Madolo 1995:17; Winter & McDonald 1997). Literacy, particularly the establishment of recreational reading habits, is an important component of foundational learning (Lauren & Allen 1999). It is no great leap to reason that, if early learning has not been successful, then later achievements will be that much more difficult (Barnett 1998; Brossard & Magendie 1994; Stipek 2001). The

importance of establishing at an early stage the motivation to learn, should be kept in mind since this motivation can decline from an early high (Gottfried & Fleming 2001).

Strategies to deal with the foundation problems of primary learning have been embodied in the Headstart programme initiated recently in South Africa by the Ministry of Education, Arts and Culture, and the importance of the principles was reflected in a recent discussion on the merits and otherwise of 'better late than never' which was aired on SAfm with the Director General of Education, Mr Mseleku, being interviewed on the Tim Modise show early in 2002.

In the United States of America similar programmes have been found to be effective (Barnett, Young & Schweinhart 1998; Campbell, Helms, Sparling & Ramey 1998) and have had the greatest impact on children who suffered from the disadvantage of having to learn in a language which was not their mother tongue (Slavin, Madden, Dolan, Wasik, Ross, Smith & Dianda 1998). The role of parents is very important here as well (Morrison & Cooney 2002).

The practice, particularly in primary schools, of allowing learners to advance through grades regardless of their performance in those grades, not unexpectedly has an adverse effect on later learning because earlier learning is incomplete. The effects of this have been quantified by Gamaroff (1999) at Mmabatho High School, where learners coming from DET (Department of Education and Training) primary schools proved to perform at a significantly lower level than those coming from private schools. On the other hand, given that teacher-learner involvement is greater in primary schools (Selaledi 1999), the picture is not entirely one of disadvantage.

Under this heading one should perhaps consider literacy, which is often also a function of home environment, as described in section 3.2.7. above. Madolo (1995) certainly found that use of and access to books and magazines – either at home or in a library – were important determinants of academic achievement. In the absence of all other factors which favour such achievement, if a learner has repeated chances of reading, and makes use of

them, then learning can hardly fail to take place. Motivation is present however well it may be hidden (Turpie & Paradore 1995). On the other hand, the actual teaching of literacy is no easy matter (Roehler 1992).

3.2.9 Expectations

All learners have some kind of expectations concerning their own performance, which can affect that performance (Leondari, Syngollitou & Kioseoglou 1998) and this may or may not relate to parents' expectations (Bester & Swanepoel 2000:258; Madolo 1995:45) or teachers' expectations (Herman & Tucker 2000). The notion of expectations is also directly related to the notions of self-concept or self-attitude (Madolo 1995:27). The realism or otherwise of these expectations can have a profound effect on continuing achievement: if learners expect to perform well and then perform badly, this can have negative results. It may well have a demoralizing effect and bring a halt to further effort, as it contributes to a low level of self-concept (Madolo 1995:27). Equally, if a learner expects to do badly and then performs well, this may stimulate over-confidence and thus also diminish effort.

Teacher expectations may also contribute to self-expectation, and have, as described above, a very important effect on learner motivation (Bester & Swanepoel 2000; Clarke 1997; Stipek 1988: 207).

The research conducted by Chetty (1996) is of importance here, although somewhat limited by the sampling which covered only a single school and therefore was possibly restricted in cultural terms, although this was not specified. It explored learners' perceptions of a number of variables, covering their own ability to improve and the roles of rewards, gender and culture. She concludes, *inter alia,* that

- "those pupils with high self-concepts achieve better academic results"
- Those with "negative perceptions … tend to be more playful"

- Rewards have a greater effect at matriculation/the highest school-leaving level than at lower levels.
- Boys are more inclined than girls to accept their shortcomings and try not to overcome them.

3.2.10 Self-assessment

Related to the general notion of realistic expectations (Bester & Swanepoel 2000; Leondari *et al*. 1998; Packham & Sutherland 2000) is the ability of learners to assess their own performance, not only in advance but retrospectively. This is a question of identifying areas of weakness, in order to remedy them, and is properly seen as a matter of ownership and control over the continuation of learning (Belfiore & Hornyak 1998; Dembo & Eaton 2000; Duffield *et al*. 2000), although the assessment of self can have a parental dimension (McGrath & Repetti 2000). Moreover, the exercise of self-assessment requires some skill in critical thinking (Thoma & Walker 1997).

As Steyn (1999b:349) puts it, the use of self-assessment "is to ensure that students progress beyond the mere completion of assignments to where they commit themselves to internalizing the learning material", this being because "reflection (is) an essential part of learning, professional growth and development" (Steyn 1999b:350).

Self-assessment is seen as serving to ground learners firmly in their own abilities, and avoiding self-delusion:

> *Such knowledge would prevent unrealistic expectations and would support the child in the formulation of realistic goals. It is important to differentiate between goals which are within the child's power and those which are not* (Bester & Swanepoel 2000:258).

3.2.11 Participation

Most professional teachers are by now aware that unless a learner takes an active part in his or her own learning, very little that is learned will be retained, and the authoritarian model of learning has its limitations (Dembo & Eaton 2000; Duffield, Allan, Turner & Morris 2000; G. Steyn 2000:267). The relative level of participation of any one learner may also have an effect on how a teacher perceives, and therefore responds to that learner (Herman & Tucker 2000). Many learners, however, seem as yet unaware of this, possibly as a legacy from parents who passed through a system in which it was believed that a teacher had passed on accumulated knowledge, of which the pupil was a passive receiver.

This may have a direct relationship with the ability of learners to perceive their own responsibilities where learning is concerned. Such responsibilities may require a certain amount of independence of thought. It has indeed been found that an independent learning ability at a higher education level is one of the better predictors of achievement (Fransman 1995).

The participation or otherwise of learners in their own education is also, to some degree, a function of the teacher's classroom management, discussed in section 2.4.2. Not all learner participation is beneficial, as some can be disruptive. McCall *et al.* (1992:30) enumerate some school behaviours of underachievers in which counterproductive kinds of participation are recognized (see also Zangqa 1999:96-7). It is thus clear that the goal of participation must be clear to the learner as well as the teacher, or learning will not result.

3.2.12 Study skills

Given that learners must be active and energetic on their own behalf, it becomes important that they have the necessary skills to be effective. As has been said (Van Aardt & Van Wyk 1996:168) "the use of effective learning

and study strategies is an important factor in determining academic success". In almost all subjects, skills such as the ability to identify important points, the ability to summarize and the ability to organize material are important (Malan *et al*. 1996:59) as is, even more importantly, the ability to apply critical thinking (Thoma & Walker 1997). Malan *et al*. (1996:61) also include as important the use of available resources and planning strategies.

3.2.13 Time management

The assisting of students in managing their time has been found to have a positive effect on motivation, feeding as it does into self-esteem and positive expectations:

> [These techniques] *provide students with a great deal of predictive control, at the same time that they subgoal the larger*, *more ambiguous task of being a success in school into a series of smaller, manageable tasks, thereby increasing the students' success experiences and thus their self-perceived competence* (Spaulding 1992:121-2).

Although the management of time may thus be thought of as one of the more essential study skills, it is useful to think of it separately, as it may cover leisure just as much as it does study. How much and what kind of leisure is incorporated into a timetable can be just as important as the work schedule, and to some extent time management is another aspect of discipline, and can be thought of as a question of establishing routines, especially for the housekeeping-type of activities within a single class period (Edwards 2000: 364-7). The establishment of any routine can have a beneficial effect on time management as a whole.

3.3 Conclusions

To account for academic success anywhere, it is evident that certain factors can be core indicators. Some are more measurable than others, and in an investigation such as this one, it is only sensible to use those that are

measurable. Bearing in mind (as argued in Chapter 4) that the chief respondents in this investigation are to be teachers, not all the factors peculiar to learners are accessible to a study such as this.

As with school and teacher factors discussed in Chapter 2, it will be seen that some of the factors already discussed will be ignored. These factors cannot be measured sufficiently well through the methods and instruments that are to be used for this investigation. Further limitations are discussed in Chapter 4, although the object is to range as widely as possible over the factors in order to find meaningful correlations with the performance levels of learners in the area of study.

The list of the factors discussed above is repeated here, with some consideration as to their measurability for the purposes of this study:

3.3.1 Learner intelligence and/or verbal skills

Unless the school has been conducting IQ or language tests, and figures are available, it may be assumed that the required information will not be accessible for this investigation.

3.3.2 Learners' home language

For the area under investigation here, it is more than likely that all learners are being taught and are responding in a language not their own – in other words, they are second- (or third-) language learners. The main interest in recording their home language would be as an indicator of culture, as an adjunct to 2.6.10.

3.3.3 Learner motivation

The level of motivation of learners, again, would be a subtle measure and not easily described except as a teacher's perception. It is not intended to administer psychological tests to elicit the motivation of learners.

3.3.4 Background culture

The strength of the language-related culture may vary from student to student, and can be assumed to be stronger in a rural area than in an urban one. Traditional culture is more adhered to, the more rural the area, mainly because occupations are more traditional, and there is less influence from outsiders. The notion of 'tribe' must nonetheless be avoided, being a recent and artificial construct (Ranger 1985).

The travel distance from school can, on the basis of such arguments, be taken as an indicator of the strength of background culture as well.

3.3.5 Gender

School records should make available the number of the learners according to their genders.

3.3.6 Parental involvement

The participation of parents in their children's education is in fact required by new laws and the constitution. Important elements of parental participation are the number and quality of encounters between teachers and parents, as also the number and quality of encounters between learners and their parents where schoolwork is concerned. These encounters could fairly be described as interaction.

Measures of interaction could be the frequency with which teachers meet the parents, and teachers' own perceptions of the importance of such interaction. Teachers perceive parental involvement as important if they also perceived that it had had a positive effect on their learners' work.

3.3.7 Home environment

Here the type of family needs to be examined. In rural South Africa, where extended families are common, and children do not necessarily live with their own parents, only the simplest divisions are possible. The presence or absence of a mother is probably the most important, as the literature suggests.

3.3.8 Foundation

In the area covered by the current study it may be assumed that some early learning experiences – such as primary education – are common to all learners, and in any case will be accessible from school records.

3.3.9 Expectations

Learners' expectations are difficult to access in a study such as the current investigation, which aims to generalize and also elicits information from teachers, not learners. It is more convenient to assume that, in broad terms, expectations are those of the peer group. Individual differences, apart from being difficult to measure, would have less effect on the overall picture for which clarity is sought in this investigation.

3.3.10 Self-assessment

As already discussed (section 2.5.10.), self-assessment is difficult to distinguish from expectations. It may be also be assumed that the District Six schools do not commonly ask learners to predict and then retrospectively analyse their results – even though individual teachers might do this. Thus, as a quantifiable measure, self-assessment would be difficult to access.

3.3.11 Participation

Learner participation in the learning process could emerge from the measures applied to classroom management (section 2.6.5.), namely frequency of opportunities for discussion and level of involvement in decisions on discipline.

3.3.12 Study skills

Again, the teacher's perception of learners' study skills may be adequate here for purposes of generalization. The ability to take meaningful notes and to summarize are important skills in this context (Malan *et al*. 1996:59), and are accessible to a teacher, whose task is anyway to inculcate such skills.

3.3.13 Time management

Classroom management by the teacher structures the time of the learners. Thus, a teacher's time management activities can to some extent reflect the time management of learners.

3.4 Chapter Summary

Examination of the literature on research already conducted shows a number of variables to be important in learner academic achievement. These variables fall into four main categories –

- Cultural and historical background
- School factors
- Teacher factors
- Learner factors.

Since the current investigation will limit itself to questionnaires submitted to teachers only, augmented by some research into school records, not all the theorized factors will be accessible, even where they may be quantifiable. It is theorized that many of the learner factors will emerge by implication from information provided by the teachers.

Nonetheless, enough factors should be available for numerical and statistical tests. From these results sufficient information should emerge to provide a convincing explanation for the difference in performance shown by Thohoyandou and Mutale Districts of Limpopo Province, where Grade 12 results were significantly better than in other parts of the province in the years 2002 to 2006.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Introduction

In Chapters 2 and 3 the factors possibly influencing Grade 12 results were explored. Variables related to these results were identified and discussed.

This chapter focuses on the research design employed for investigating factors which possibly influence Grade 12 results. These factors were proposed on the basis of the literature (Chapters 2 and 3) and are:

Table 4.1: Factors which possibly influence Grade 12 results

1	*SOCIAL AND HISTORICAL FACTORS*
	Language and culture
	Venda history
	The effect of apartheid
2	*SCHOOL FACTORS*
	Locality
	School culture
	Funding
3	*TEACHER FACTORS*
	Training
	Classroom management
	Motivation
4	*LEARNER FACTORS*
	Intelligence and/or verbal skills
	Language
	Motivation
	Background culture
	Gender
	Parental involvement
	Home environment
	Foundation
	Expectations

	Self-assessment
	Participation
	Study skills
	Time management

4.2 Aims of the Investigation

The primary aim of the investigation was to determine which of the identified possible factors actually do have an effect on Grade 12 results in the study area – defined geographically in section 4.5. – and also the nature and magnitude of this effect.

A second aim of this study was to develop a questionnaire that could assess these variables by eliciting the opinions and experiences of teachers.

A third aim of the study was to test which of the variables could be considered to be dependent on each other, and which were independent, by means of contingency tables utilizing the results obtained from the questionnaires. Pairs of variables were accordingly tested without reference to the Grade 12 results obtained by the sample schools. In this way the hypotheses could be better specified and interpretation better grounded. A number of variables were found to be unrelated, in other words, procedures very much followed those recommended by Cresswell (1994).

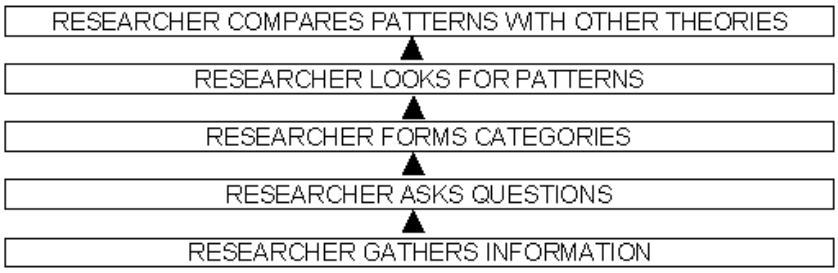


Figure 4.1: Hypothesis formation

4.3 Hypotheses

A total of 18 hypotheses emerged for testing, as follows:

4.3.1 Teacher factors

(Hypotheses based on each factor appear below given factors)

The following three teacher factors were identified:

Highest academic qualification of teachers (Variable 4)

H_{01} The Grade 12 results in a school are independent of the academic level of Grade 12 teachers.

Highest teaching qualification of teachers (Variable 5)

H_{02} The Grade 12 results in a school are independent of the level of teaching qualification of Grade 12 teachers

Teachers' home language (Variable 7)

H_{03} The Grade 12 results in a school are independent of the home language of Grade 12 teachers.

4.3.2 School factors

The following ten school factors were identified:

Locality of school, rural/urban (Variable 8)

H_{04} The Grade 12 results in a school are independent of the situation of the school in terms of urban and rural.

Number of classrooms (Variable 10)

H_{05} The Grade 12 results in a school are independent of the sufficiency of classrooms in the school.

Assembly hall (Variable 12)

H_{06} The Grade 12 results in a school are independent of the presence of an assembly hall in the school.

Administration block (Variable 15)

H_{07} The Grade 12 results in a school are independent of the presence of an administration block in the school.

Stationery supply (Variable 16)

H_{08} The Grade 12 results in a school are independent of the adequate provision of stationery in the school.

Library (Variable 17)

H_{09} The Grade 12 results in a school are independent of the presence of a library in the school.

Library bookstock (Variable 19)

H_{010} The Grade 12 results in a school are independent of the presence of a good number of books in the school library.

Library service (Variable 21)

H_{011} The Grade 12 results in a school are independent of the presence of adequate service in the school library.

Audio-visual aids (Variable 22)

H_{012} The Grade 12 results in a school are independent of the adequacy of audio-visual aids in the school.

Teacher-generated problems (Variable 29)

H_{013} The Grade 12 results in a school are independent of the seriousness of teacher-generated problems in the school.

4.3.3 Parental involvement

The following one parental involvement factor was identified:

Meetings with parents (Variable 31)

H_{014} The Grade 12 results in a school are independent of the frequency of meetings with parents in the school.

4.3.4 Teacher motivation and management

The following two teacher motivation and management factors were identified:

Staff meetings (Variable 44)

H_{015} The Grade 12 results in a school are independent of the frequency of staff meetings in the school.

Scheduling of staff meetings (Variable 45)

H_{016} The Grade 12 results in a school are independent of the scheduling of staff meetings in the school.

4.3.5 Learner motivation and management

The following two learner motivation and management factors were identified:

Learner motivational levels (Variable 54)

H_{017} The Grade 12 results in a school are independent of the level of learner motivation in the school.

Performance with notes and summaries (Variable 56)

H_{018} The Grade 12 results in a school are independent of the level of learner performance in making notes and summaries in the school.

4.4 The Measurement of Variables

The variables used for the purposes of this survey were the following:

Dependent variables

The dependent variables in this study are the Grade 12 results of the two different types of schools.

Independent variables

The independent variables in this study are the different factors from the questionnaire.

4.5 Mode of Enquiry

For the purpose of this study, I have used a multimethod strategy that combines quantitative data with qualitative data in order to add depth to findings (Swanson & Holton 1997:93).The multimethod strategy allows for the verification and triangulation of data.

When collecting quantitative data I used a questionnaire. The qualitative data collection instruments consisted of individual interviews and focus group interviews. Confirmation and corroboration of data required that the researcher triangulate data (Mcmillan & Schumacher 2001:408).

4.6 Research Sites and Sampling

4.6.1 Research sites

The fieldwork for this study was conducted in the Vhembe District of Limpopo Province, Thohoyandou Circuit and Mutale circuit co-ordination, as defined by the Limpopo Province Department of Education and reflected on the map.

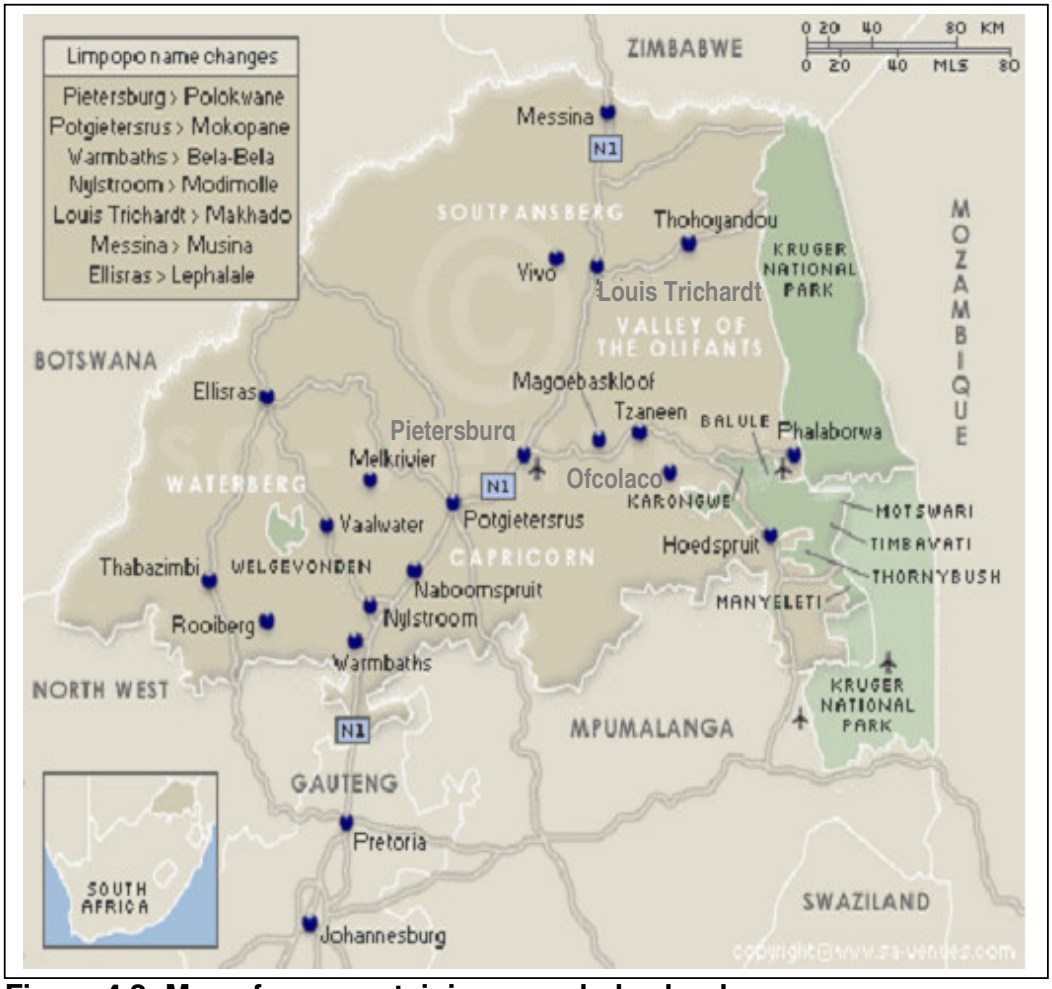


Figure 4.2: Map of area containing sampled schools

(See Appendix G for photographs of sampled schools)

4.6.2 Pilot Study

The questionnaire was initially applied to a group of 10 secondary school teachers whose mother tongue was not the same as the language of the test to identify potentially unclear instructions and items. Testees were requested to circle the numbers of and to underline phrases and words contained in the items they did not understand. On the basis of testees' reactions to the items, a number of items were modified.

4.6.3 Sampling strategy

The teacher population is defined as Grade 12 teachers in the schools from which the sample was drawn. Quantitative data as well as qualitative data were derived from a population of Grade 12 teachers and school principals from the same schools in the sample.

As specified, schools were selected from two circuit co-ordination districts of Vhembe District in the Limpopo Province on the basis of their Grade 12 results for 2002 through 2006. Group 1 comprised the fourteen schools for which Grade 12 results fell in the range 75-100 per cent and Group 2 the ten schools for which Grade 12 results fell in the range 30-40 per cent.

A number of schools were selected according to the following criteria:

4.6.3.1 Time criterion

The sample was drawn according to the Grade 12 results for 2002 through to 2006.

4.6.3.2 Achievement criterion

Schools which fell within one of the following two ranges: 75-100 %(High performing) or 30-40 % (Poorly performing) were sampled.

4.6.3.3 Region criterion

The sample was drawn according to whether the schools were in the Thohoyandou area or the Mutale area (each called districts here, based on administration areas of the Department of Education) of Vhembe District, Limpopo Province, as a way of distinguishing whether they could be described respectively as urban or rural. (It was hoped to obtain equal numbers of rural

and urban schools, but this was not possible, given the Grade 12 results ranges required.)

In each school for which the sample was drawn, seven teachers were asked to complete the questionnaire, and the principal was interviewed (Appendices B and F).

Table 4.4: Breakdown of sample used in study

	Group 1 Schools (Grade 12 results 75-100%) High Performing		*Group 2 Schools (Grade 12 results 30-40%)'Poorly Performing*		
	Thohoyandou District	*Mutale District*	*Thohoyandou District*	*Mutale District*	*Totals*
No. of schools	7	7	5	5	24
No. of teachers	49	49	35	35	168
No. of principals	7	7	5	5	24

The selection of schools in Thohoyandou District on the one hand, and in Mutale District on the other, was in order to gain some information on the differences between rural and urban schools (sections 2.3.1 and 2.5.1).

In the selected part of Limpopo Province, as in many others in South Africa, it is sometimes difficult to specify what is urban and what is rural. Some would argue that all of it is rural, and others would argue that much which may appear to be rural is in fact urban, due to the density of settlement and closeness to main roads. It is certainly true that Thohoyandou is fully urbanised in most senses of the word, with hotels, banks, municipal offices, regional headquarters of government offices not to mention the University of Venda. At the same time, as a district, it is spread over the mountains behind and the plain below, and settlement is somewhat haphazard, even out though well supplied with tarred roads and, more recently, electricity. Mutale, on the other hand, is definitely rural, having very few tarred roads and generally

being located on the northern and eastern side of the mountains (defined in fact by the Mutale River) overlooking the Limpopo Valley, nearer Pafuri than to Beit Bridge, and not far from the far northern borders of the Kruger National Park.

4.7 Multimethod Data Collection Plan

For the purpose of this study, I used a multimethod strategy that has combined quantitative data with qualitative data in order to add depth to findings (Swanson & Holton 1997:93) as indicated in section 4.5 (Mode of enquiry).

4.7.1 Data collection methods

4.7.1. 1 Quantitative part of the study

From the quantitative (non-experimental) perspective, the mode of enquiry was descriptive and comparative because it allowed the assessment of the nature of existing conditions in order to categorise and compare factors (McMillan & Schumacher 2001:33).

When collecting quantitative data I used a questionnaire, which was also used when collecting qualitative data through the open-ended questions on the same questionnaire. This was intended to form the basis and initial data source so that further data collection by means of interviews with respondents and focus group interviews could be based on data gathered from the responses to the questionnaire.

I personally administered the questionnaire, and it was designed with the help of the Statistics Department of the University of Pretoria. The questionnaire includes closed-option questions as well as open-ended ones, the purpose being to derive frequencies for the different variables being explored, so that they could be described and compared. The closed-option questions serve to determine categories, characteristics and preferences associated with the

variables determined in advance (Chapters 2 and 3) for the target schools. Above all, they are designed to yield frequencies for specified variables.
The advantage of this survey method is that it enables the collection of data in a relatively short time. The method proves extremely efficient at providing large amounts of data, at relatively low cost, in a short period of time. The method also allows anonymity, in that individual teachers' names are not recorded, individuals being represented only by a number, thus encouraging frankness where sensitive issues are involved.

However, one weakness of the method is that it does allow respondents to provide data in a way that shows them in a good light. In other words, it could be said to suffer potentially from a social desirability response bias.

4.7.1.1.1 Questionnaire (Appendix A)

The design of the questionnaire was aided by the pilot study, and went through several changes before being administered in its final form. Suggestions as to the questions and format were also taken from Dr P.A. Jones, a development worker in Limpopo Province with experience of teaching in a rural secondary school, and from the Department of Statistics of the University of Pretoria. In its design, care was taken to avoid the following (Babbie 1992:149-152):

- Lack of clarity
- Double-barrelled questions
- Irrelevant questions
- Long items
- Negative items
- Biased items and terms

The questionnaire was administered first to the teachers in the sample. In all there are sixty questions to be answered by the teachers, and the literature review contributed to their compilation in that the questions sought to elicit the

information described in 4.1 broadly divided into biographical data concerning the teachers, school factors, teacher factors and learner factors. (Appendix B)

4.7.1.2 Qualitative approach

From the qualitative (interactive) perspective, which could be described as a phenomenological one, I explored the experience and perceptions of the Grade 12 teachers and principals who were the respondents in the study by means of interviews and open-ended questions (Macmillan & Schumacher 2001:36).

The open-ended questions in the questionnaire, supplemented by the interviews, are designed to give respondents the opportunity to express perceptions and opinions for the purpose of ultimately fine-tuning and interpreting the frequencies derived from the questionnaires. For triangulation purposes, open-ended questions were included, mostly to provide indicators for the researcher as to difficulties and motivations experienced by the teachers, and the answers are not used in the frequency analyses or contingency tables.

The data were collected during deliberately created opportunities. An initial interview was sought with each school principal, in the course of which the purpose of the study was explained and the questionnaires presented for inspection.

A further interview was conducted with each school principal upon collection of the completed questionnaires before statistical analysis was undertaken. This made one-to-one interaction possible which allowed them to assess to what extent the quantitative data might be subjected to individual value systems, and thus influenced by qualitative personal bias from the participants having an opportunity to modify responses.

Qualitative research methods and techniques are appropriate to the social sciences because they are well suited to exploration and discovery in times of

rapid and fundamental change. This is certainly true of education in South Africa today.

Qualitative enquiry was deemed appropriate for the purpose of my study for the following reasons (Worthen & Sanders 1987:50):

- It is generally conducted in natural settings.
- It utilises the researcher as the chief instrument in both data-gathering and analysis.
- It emphasises thick description, that is it obtains real, rich and deep data which illuminate everyday patterns of action and meaning from the perspective of those being studied.
- It tends to focus on social processes rather than primarily or exclusively on outcomes.
- It employs multidata-gathering methods, especially participant interviews.
- It uses an inductive approach to data analysis, extracting its concepts from the mass of particular detail which constitutes the database.

The individual interviews and focus-group interviews were specifically designed to provide such a focus for the analysis of the data.
Ten specific themes have been suggested as a necessary part of a qualitative enquiry and action on the part of a researcher (Patton 1990: 40-41; Swanson & Holton 1997:95).

The following table indicates the relationships attempted in this study:

Table 4.5: Themes identified by Patton-implemented research.

No.	*Theme*	*Research Action Implemented*
1	Naturalistic enquiry (real world situation)	Questionnaires administered and interviews were conducted in schools
2	Inductive analysis (begins with collection of detail to lead to generalization)	I collected data by different means (questionnaire, interview, focus group) to establish links between findings in order to gain insights
3	Holistic perspective (pheno-mena understood as complex system)	Variables were grouped and compared in different ways to arrive at meaningful results
4	Qualitative data (collection of detailed description)	Open-ended questions were provided and interviews conducted to allow opportunity for self-expression
5	Personal contact and insight (personal contact between researcher and participants)	Interviews and focus groups were conducted personally by researcher
6	Dynamic systems (the object of study viewed as dynamic and changing during the study)	Questionnaires were completed and interviews conducted at different times – months apart
7	Unique case orientation (each research case is unique and special)	Each school was considered to be unique, hence enquiry about school culture as a variable.
8	Context sensitivity (placing of findings in a social, historical and temporal context)	The temporal context of the research (2000-2003) which was clearly stated in its title, and the geographical context reflected in section 4.5. and the inclusion of rural and urban as variables in the analysis, section 4.7.1.

9	Empathetic neutrality (assuming the researcher cannot be completely objective, this should not be an excuse to advance a personal agenda)	The researcher, although a Grade 12 teacher, is not on the staff of any of the schools researched nor a personal friend of any of the staff members of those schools
10	Design flexibility (enquiry process adaptive, potentially changing as the research is conducted)	The use of a pilot study to aid in the design of the questionnaire, as well as the interviews and focus groups to aid in the interpretation of the results provide for necessary change and flexibility.

(Adapted from Patton 1990: 40-41; Swanson & Holton 1997:95)

4.7.1.2.1 Individual interviews (Appendix F)

Interviews with the 24 school principals were personally conducted by the researcher on a one-to-one basis. The principals were interviewed because they were considered to be in a better position than teachers to explain the different factors contributing to academic success.

The interview schedule (Appendix F), consisted of fifteen simple questions, and care was taken to ask questions which were flexible enough to allow for responses that were unexpected by the researcher (Baumgartner & Strong 1998:182).

Respondents were initially put at ease by engaging in small talk, which progressed to an explanation of the study. All the same excessive informality was avoided. Audiotapes were used as a back-up when interviewing principals.

4.8 Role of the Researcher

As the researcher in a study like this, one needs to be a sensitive observer that records phenomena as faithfully as possible, while also raising additional

questions, checking out hunches and moving deeper into analysis of the data (McMillan & Schumacher 1993:393). It was important that the researcher should not be too far removed from the issues at the base of the enquiry.
In this case the researcher was a single individual, herself a Grade 12 teacher in a school within the research area, and a mother-tongue speaker of the principal language, Tshivenda, thus to a great degree sharing the culture of teachers and learners alike. All these contributed to an appropriate understanding of and sensitivity to the factors which emerged for investigation.

In addition the researcher's role was functional in the following ways:

- Initiating and assisting in the compilation of the questionnaire
- Administering the questionnaire to school principals
- Structuring the interviews with school principals
- Conducting the interviews
- Triangulating data
- Discussion of results and analyses with the Department of Statistics of the University of Pretoria
- Interpretation of results

4.9 Data Analysis Strategies

4.9.1 Quantitative data analysis

Statistical analysis was done by the Department of Statistics of the University of Pretoria. The following statistical techniques were used to test the hypotheses[1]:

Chi-square tests to determine the significance of difference between the variables.

[1] The hypotheses were tested at the .05 level of significance.

"Chi Square statistics are designed to determine whether an observed number differs either from chance or from what was expected" and they test the dependency of variables upon one another (Coolidge n.d.:239,250). In other words, tests of the null hypotheses may be applied, and these hypotheses rejected at the $p<.05$ level of significance. Such tests were duly applied, and not only to the main hypotheses concerning the relationship between the identified independent and dependent variables.

4.9.2 Qualitative data analysis

The data collected by means of interviews and document inspections were summarised and analysed, and, together with a summary of the responses to the open-ended questions on the questionnaire, were used to aid in the interpretation of the results.

4.10 Quality Assurance Techniques

4.10.1 Qualitative techniques

4.10.1.1 Trustworthiness of qualitative data

The focus of the interpretation of any social phenomenon, which is in this case the qualitative data from both the questionnaire and the interviews, should be viewed as something that can be used for better understanding. Denzin and Lincoln (2003) and Lincoln and Guba (1985) suggest the following in order to increase trustworthiness in a qualitative study:

- Credibility
- Transferability
- Dependability
- Confirmability

For the purposes of this study I sought to increase the credibility of the interview data by implementing member checking and peer review. Krefting

(1991) suggests that member checking, which is where the interviewee plays an active role in being part of the process, in bringing in his/her own meaning or intepretation of the data, is a form of triangulation and thus minimizes researcher bias (Creswell 2003). It was therefore planned that the teachers should be given the opportunity to review the data and make comments and/or changes where they felt it was necessary. In such peer review, the data are given to impartial colleagues who may have experience of the qualitative methods, and the research findings are then discussed (Krefting 1991). The focus group meetings were designed to serve this purpose.

4.10.2 Quantitative techniques

4.10.2.1 Validity

By validity is meant how well the test measures what it sets out to measure (Litwin 1995:33), and this case is distinct from the notion of design validity.

This study relies on valid, authentic and trustworthy methods of collecting and presenting information and interpretations as stated by Hammersley and Atkinson (1983:191).

To reduce by some degree the limitations of the research, certain measures may be taken to enhance design validity (McMillan & Schumacher 1993:389). The following table sets out what the researcher has done where this research was concerned according to the criteria set by McMillan and Schumacher (1993).

Table 4.6: Actions taken to enhance validity of research design

Strategy	*Description of Action*
Multimethod approach	The researcher conducted Interviews and a focus group meeting to aid the interpretation of quantitative data from the questionnaire.
Mechanically recorded data	The researcher used an audio cassette recorder during interviews and the focus group meeting.
Verbatim accounts	Interviews and focus group meetings exist in a fully verbatim form as a result of mechanical recording.
Consistency of application	A single questionnaire was used, duplicated for every respondent, and a single interview schedule used for all interviews conducted by the researcher.

(Adapted from McMillan and Schumacher 1993)

In this study I used two approaches to validity: face and content.

- **Face validity of the questionnaire**

Face validity is based on a cursory review of items by judges (Litwin 1995:35). A questionnaire was administered to elicit information. Certain steps were taken to facilitate validity of the questionnaire as in 4.7, 1.1. To ensure face validity in this study, experts in the field have given their opinion as to whether the items of the questionnaire, on the face of it, have determined the factors influencing Grade 12 results as discussed in section 4.7.1.1.

- **Content validity**

To demonstrate this form of validity, the instrument must show the appropriateness of the items to reviewers who have some knowledge of the subject matter (Litwin 1995:35). The items must also be validated by means

of a literature review. Both of these contribute to the external validity of the research.

In this study the literature review which validates the items – in this case the variables to be measured – was also used to determine the selection of the factors to be tested as influencing Grade 12 results as described in Chapters 2 and 3. Furthermore, the wording and positioning of the questions were checked by various experts. The subsequent statistical testing of the variables to determine their relationship to one another was therefore also a test of content validity, and internal validity was thus established.

- **Reliability**

Reliability is the degree to which an instrument measures what it is supposed to measure (Gay & Airasian 2003). Reliability thus refers to the degree of consistency and/or accuracy with which a questionnaire measures its variables (Mulder 1989:209). Mason (1996:24) maintains that reliability involves the accuracy of the research methods and techniques used.

In this study, the reliability was checked by means of a computer analysis as discussed in section 4.9.1, Quantitative Data Analysis.

In addition to the described measures of validity and reliability, the researcher has attempted to provide as much information as possible about the research design and research methods. Triangulation was thus used to assess reliability of qualitative analysis. Due to the nature and design of the questionnaire (under the supervision of a previous supervisor, Prof T. Malan) the Cronbach α's could not be calculated. My current supervisors advised that I admit this as a limitation of my study.

- **Triangulation**

Triangulation is defined as the use of several different research methods to verify the same finding (Babbie 1992:109). It is maintained (Baumgartner &

Strong, 1998:184) that triangulation is the process of cross-validation among researchers, research methods and data sources. Triangulation is critical in establishing data-trustworthiness (Lather, 1986: 270 and Mcmillan & Schumacher, 1989: 418). Validity and reliability are enhanced by including triangulation in qualitative research (Maxwell, 1996: 94). Triangulation reduces the risk of chance association and systematic biases. Triangulation thus contributes greatly to a study's validity and may be expressed in terms of a diagram that pictures qualitative data interacting with quantitative data.

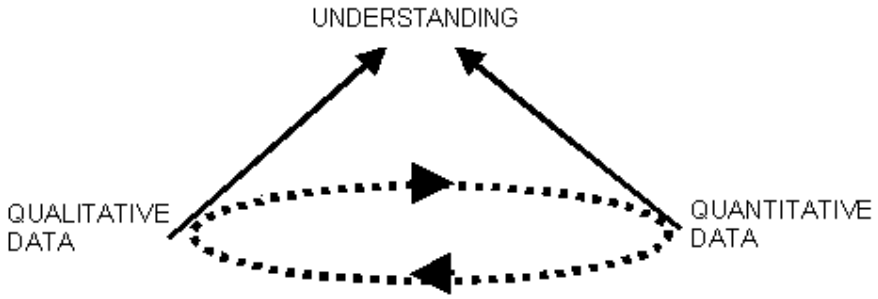


Figure 4.3: Triangulation between qualitative and quantitative data

Triangulation has been employed to determine whether multiple sources of data agree and thus make it possible to arrive at better, cross-checked insights (Burgess 1985:306). The proposed strategy for data analysis – i.e. frequencies compared by means of contingency tables and also tested for independence by the χ^2 test – is designed to facilitate such an approach. In addition, interviews and focus group meetings served to link the various data types. This gives depth to the interpretation of the results. In this study, triangulation essentially required the checking of the extent to which conclusions from quantitative sources are supported by a qualitative perspective, and *vice versa.*

There are basically four types of triangulation (Denzin 1990 in Hodgkinson 2000:109):

- DATA – which involve time, space and persons

- INVESTIGATOR – which consists of the use of multiple rather than single observers
- THEORY – which uses more than one theoretical scheme in the interpretation of any phenomenon
- METHODOLOGICAL – which involves the use of more than one method on the same object or study.

In order to facilitate triangulation of the data I used a range of techniques, normative or interpretive, used in combination or otherwise (Cohen *et al.* 2000:113).

For the purposes of this study data, theory and multiple methods of investigation have been employed as follows:

Table 4.7: Types of triangulation used in the study

	Theory	**Practice**
1. Data	Involve time, space and persons.	• I have used the published school results, enabling the grouping of the sampled schools into two categories; • Data obtained from the principals of schools by means of interview. • Data obtained from teachers by means of questionnaire and I have also used data collected by means of document analysis.
2.Theory	More than one theoretical scheme in the interpretation of any phenomenon	• Obtained by means of the literature review.
3. Multiple methods	The use of more than one method on the same object or study.	• Obtaining the published school results. • Conducting interviews (qualitative approach). • Administering questionnaires and deriving frequencies therefrom (quantitative

		approach). • Administering questionnaires and comparing interviews and questionnaires (quantitative and qualitative approach). • Using documents to arrive at understanding and interpretation (qualitative approach).

(Adapted from Cohen *et al.* 2000:113)

In the questionnaire itself, information was structured in such a way that, in many cases, one set of information served as a double check on another, since virtually the same information was elicited – as in, for instance, the availability of laboratory and the availability of library facilities, both being measures of the level of school funding. The purpose of double checking was thus also a form of triangulation to increase the reliability of the information.

Other ways of cross-validation were sought by means of triangulation in the use of different variables, and calculating the strength of the correlation between them within each school group. Also used to facilitate triangulation were the different methods of data collection which included the use of individual interviews and the conducting of focus groups in addition to school results and the questionnaires (Baumgartner & Strong 1998:183-4; McMillan & Schumacher 1993:432).

4.11 Ethical Measures

In the context of education, ethics are particularly important (McMillan & Schumacher 1993: 197), in that they deal with beliefs about what is right or wrong, proper or improper, good or bad. In this study the researcher considered the following ethical measures:

The researcher undertook to focus on the research questions and not to interfere in any manner that could jeopardize the integrity of data and the study as a whole. Respondents were assured that there would be no unpleasant or damaging effects on the individual or the setting (the school).

Prior to the commencement of data collection activities, the researcher undertook to communicate the aim, objectives, nature and future use of findings to participants.

Permission to administer the questionnaire and to conduct interviews was obtained from the Department of Education in Vhembe District of the Limpopo Province. Care was taken to follow ethical principles as recommended by Cohen *et al.* (2000:58). All the teachers who formed part of the sample completed and signed the informed consent forms (see Appendix A)

The questionnaires were delivered to the target schools by the researcher, after first obtaining permission from the principals. The questionnaires were handed to the principals who were requested to hand them to their Grade 12 teachers. So that teachers would not feel under too much pressure, they were given one week to complete the questionnaires in their own time. Questionnaires were thereafter collected by the researcher directly from the principals. Not all were completed, and the completion rate was as follows:

Table 4.8: Return rate of questionnaires

School Type	*Questionnaires*		*Return Rate*
	Submitted	*Returned*	
Group 1 schools	98	87	88,8%
Group 2 schools	70	51	72,8%

(Adapted from Baumgartner & Strong 1998:183-4; McMillan & Schumacher 1993:432)

A 70% return rate for questionnaires is considered sufficient to validate the findings of an investigation. More than this, “a response rate of at least 50 percent is adequate for analysis and reporting. A response of at least 60 percent is good. And a response rate of 70 percent is very good” (Babbie 1992:267).

After the questionnaires were collected, the researcher arranged to interview as many of the principals as could be available, persisting until all had been interviewed.

It was important, therefore, that the researcher should not interact with the respondents in any way that would suggest the violation of such ethics or that would impact upon the results of the investigation. The questionnaires were administered virtually anonymously, with the researcher only interacting on a personal basis with the school principals. In these interactions, particularly in the formally conducted interviews, it was necessary to put respondents at their ease; but this was done in a standardized way. At no point were the researcher's expectations discussed with the principals; only the methodology was discussed.

Great efforts were also made by the researcher to adhere to the following procedures (Du Plooy 1995: 45-169), in the ways described, I used the following framework:

Table 4.9: Ethical procedures by Du Plooy 1995: 45

Procedures	*Actions Taken*
Protect the rights of human subjects by not causing emotional harm or infringing on their right to maintain self-respect and dignity	The questionnaires were completed anonymously.
Provide all necessary facts without distortion or misrepresentation	The initial interviews with school principals allowed them to ask questions and have them answered to their satisfaction.
Avoid being biased in the interpretation and presentation of data	The follow-up interviews and focus group discussions allowed input of other viewpoints.
Use measurements that are suited to the research problem	Chi-square statistics applied were deemed appropriate to test the independence of frequencies
Report conflicting evidence:	By facilitating triangulation of data.
Report any flaws or limitations in the research	Discussed in section 4.12.

(Adapted from Du Plooy 1995: 45)

In addition the principals were promised that they would be provided with the results of this research.

4.12 Delimiters of the Study

In all enquiry, account must be taken of the Hawthorne effect, which is the effect that the researcher may have upon that which is researched. This needs to be taken into account as a possible limitation in the conduct of the research as well as in the interpretation of the results. Various frameworks are available to aid the researcher (Patton 1990: 40-41; Swanson & Holton 1997:95). I used the following framework:

Table 4.10: Quantitative delimiters

No.	*THEME*	*DELIMITERS*
1	Neutrality and objectivity	The researcher is also a Grade 12 teacher so personal bias cannot be excluded in the framing and selection of the questions.
2	Hawthorne effect[2]	The respondents to the questionnaire, being Grade 12 teachers, could be assumed to be intelligent enough to realize into which category their school's results might fall (although categories were not mentioned to any of the respondents), and structure their responses accordingly.
3	Demand characteristics	In accordance with the Hawthorne effect, respondents may have selected options on the questionnaire which would either justify the poor performance of their school, or refute it.

[2] The 'Hawthorne effect' refers to the possibility that the way in which respondents complete a questionnaire may influence the results.

4	Selected sample	Given the fully specified geographical and results-level limitations on the research, all respondents could be assumed to have had an equal chance of being included.

(Adapted from Patton 1990: 40-41; Swanson & Holton 1997:95)

A further framework applies to the qualitative aspects of the study (compare with Table 4.6.):

Table 4.11: Qualitative delimiters

No.	*THEME*	*DELIMITERS*
1	Naturalistic enquiry	All respondents were functioning educators at the Grade 12 level, and their qualifications and experience formed part of the gathered data
2	Inductive analysis	The fact that data collection and interpretation were performed by one person only, potentially impacted positively on the way in which results were obtained.
3	Holistic perspective	Since this study refers to the grouping and comparison of data, both qualitative and quantitative facilitating triangulation was used.
4	Qualitative data	Qualitative data were used in conjunction with quantitative data.
5	Personal contact and insight	Researcher also a Grade 12 teacher, so personal bias cannot be excluded.
6	Dynamic systems	Although a range of three years was considered where Grade 12 results were concerned, teachers from only one year (2004) were canvassed.

7	Unique case orientation	Not only does the research confine itself to Grade 12 results in certain years only, but the research was conducted in a limited area of the Vhembe District in the Limpopo Province.
8	Context sensitivity	Environmental influences and differences were only canvassed in terms of language, and school locality. Pupils' home background and distance from school were not used in the analysis and interpretation of results.
9	Empathetic neutrality	Researcher also a Grade 12 teacher, so personal bias cannot be excluded.
10	Design flexibility	Once the questionnaire was printed, and the interview schedule used for the first time, there was no need to alter the questionnaire. In the case of interview, the researcher had a better chance to be flexible. Questionnaire results expressed as frequencies, however, did allow for varieties of statistical manipulation in order to determine what was most appropriate.

(Adapted from Patton 1990: 40-41; Swanson & Holton 1997:95)

4.13 Summary

In Chapter 4 a description of the research design has been provided. The statistical techniques that were used to test the hypotheses in this research were also identified.

The next chapter deals with the results of the empirical investigation with regard to factors influencing Grade 12 results.

CHAPTER 5

DATA ANALYSIS AND INTERPRETATION

5.1 Introduction

Chapter 4 focused on the empirical research design and the method of investigation and outlined the various factors and their predicted effect on Grade 12 results. In this chapter the data derived from the views of Grade 12 teachers and school principals are analysed, and it is considered whether or not they support the hypotheses that arose from the various theory analyses as reflected in Chapters 2 and 3.

This chapter is thus divided into four parts, the first being a summary of the hypotheses to be tested which arise out of the literature, and relate to the variables which were expected to influence Grade 12 results. The Grade 12 results are considered here to be the dependent variable. With regard to the other variables, measured in this study, while not experimentally manipulated, it can be assumed that they have to have predated the Grade 12 results and possibly influenced them. This chapter examines the degree of influence or otherwise.

Reporting of the data from group one (high performing) schools, as well as from group two (poorly performing) schools used for testing these hypotheses is then divided into three sections, as follows:

- Frequency analyses and descriptive statistics extracted from the results tables where they are of possible interest.
- Contingency tables with chi-square analysis testing the independence of the variables where possible relationships between the variables emerge.
- Contingency tables with chi-square analysis where the results are not significant and independence of the variables from each other can therefore be assumed.

COMPARISON OF THE DATA FROM BOTH GROUPS OF SCHOOLS

Comparison of the data from both groups of schools was undertaken to test the 18 hypotheses listed in Chapter 4 on the influence of different variables upon Grade 12 results, as each group of schools was chosen to represent different types of results, viz.:

- high performing; and
- poorly performing

Consequently Group 1 schools are styled high performing and Group 2 schools poorly performing.

CONTINGENCY ANALYSES

Before testing the main hypotheses on the effect of the various factors on Grade 12 results, I decided first to see which of the factors might be related to one another in some way, thus impacting on interpretation of the results of the hypothesis testing. Thus in the two-way contingency tables given in Sections 5.4, 5.5, 5.7 and 5.8 pairs of variables are compared and subjected to chi-square testing *separately* for each of the two groups (high performing and poorly performing) of schools.

The chi-square is an appropriate test for this comparison of variables, since it is a “statistical procedure that is used as an inferential statistic with nominal data, such as frequency counts” (McMillan & Schumacher 1993: 612).

It should also be indicated that in this presentation of the analysis and interpretation of the results, not all the items in the questionnaire will be considered, but only those items which yielded statistically significant results.

5.2 Research Hypotheses

(See: 4.3; repeated here for the reader's convenience)

As discussed in Chapter 4 the 18 hypotheses which emerged for testing were as follows:

5.2.1 Teacher factors

Highest academic qualification of educators (Variable 4)

H_{01} The Grade 12 results in a school are independent of the academic level of Grade 12 teachers.

Highest teaching qualification of educators (Variable 5)

H_{02} The Grade 12 results in a school are independent of the level of teaching qualification of Grade 12 teachers.

Teachers' home language (Variable 7)

H_{03} The Grade 12 results in a school are independent of the home language of Grade 12 teachers.

5.2.2 School factors

Locality of school, rural/urban (Variable 8)

H_{04} The Grade 12 results in a school are independent of the situation of the school in a rural area.

Number of classrooms (Variable 10)

H_{05} The Grade 12 results in a school are independent of the sufficiency of classrooms in the school.

Assembly hall (Variable 12)

H_{06} The Grade 12 results in a school are independent of the presence of an assembly hall in the school.

Administration block (Variable 15)

H_{07} The Grade 12 results in a school are independent of the presence of an administration block in the school.

Stationery supply (Variable 16)

H_{08} The Grade 12 results in a school are independent of the adequate provision of stationery in the school.

Library (Variable 17)

H_{09} The Grade 12 results in a school are independent of the presence of a library in the school.

Library book stock (Variable 19)

H_{010} The Grade 12 results in a school are independent of the presence of a good number of books in the school library.

Library service (Variable 21)

H_{011} The Grade 12 results in a school are independent of the presence of adequate service in the school library.

Audio-visual aids (Variable 22)

H_{012} The Grade 12 results in a school are independent of the adequacy of audio-visual aids in the school.

Teacher-generated problems (Variable 29)

H_{013} The Grade 12 results in a school are independent of the seriousness of teacher-generated problems in the school.

5.2.3 Parental involvement

Meetings with parents (Variable 31)

H_{014} The Grade 12 results in a school are independent of the frequency of meetings with parents in the school.

5.2.4 Teacher motivation and management

Staff meetings (Variable 44)

H_{015} The Grade 12 results in a school are independent of the frequency of staff meetings in the school.

Scheduling of staff meetings (Variable 45)

H_{016} The Grade 12 results in a school are independent of the scheduling of staff meetings in the school.

5.2.5 Learner motivation and management

Learner motivational levels (Variable 54)

H_{017} The Grade 12 results in a school are independent of the level of learner motivation in the school.

Performance with notes and summaries (Variable 56)

H_{018} The Grade 12 results in a school are independent of the level of learner performance in making notes and summaries in the school.

In the following analyses, it should be borne in mind that high performance or poor performance forms the background to discussion. High performance in sections 5.3 through 5.5, and low performance in sections 5.6 through 5.8 will be discussed.

5.3 Frequency Analysis for Group One (high performing) Schools

The following are some of the descriptive statistics for group one (high performing) schools which have a bearing on the contingency tables testing the independence of the variables, and the testing of the hypotheses.

Table 5.3.1: Frequency distribution of highest academic qualification of teachers (variable 4) in Group 1 (high performing) schools

	Frequency	*Per cent*	*Cumulative Frequency*	*Cumulative percentage*
Std 10	19	22.09	19	22.09
Bachelor's degree	29	33.72	48	55.81
Honours degree	23	26.74	71	82.56
Master's degree	7	8.14	78	90.70
Other	8	9.30	86	100.00

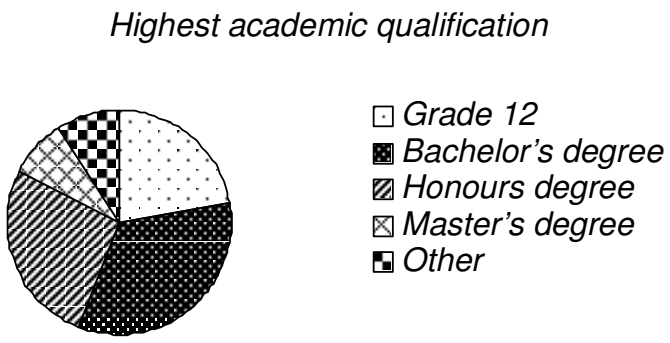


Figure 5.3.1: Highest academic qualification of teachers (variable 4) in Group 1 (high performing) schools

It may be noted that 33,7% of the Grade 12 teachers in the sampled high performing schools hold Bachelor's degrees as their highest academic qualification, and a further 26,7% hold Honours degrees, 22, 9%, have a Standard 10 (Grade12), whereas only 8,1% hold Master's degrees. These results are represented in the pie-chart in Figure 5.3.1. This suggests that this group of schools has teachers that are reasonably well qualified.

Table 5.3.2: Frequency distribution of teachers' home language (variable 7) in Group 1 (high performing) schools

	Frequency	*Per cent*	*Cumulative frequency*	*Cumulative percentage*
TshiVenda	80	91.95	80	91.95
Other	7	8.05	7	100.00

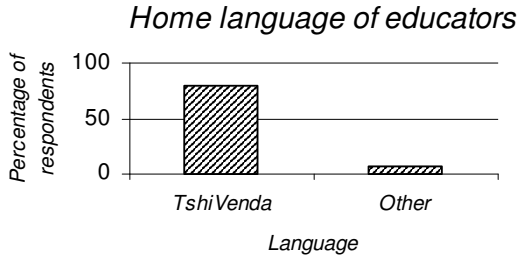


Figure 5.3.2: Teachers' home language (variable 7) in Group 1(high performing) schools

From the results in Table 5.3.2 one can observe that the largest number of the respondents, 91,9%, are Vhavenda. One may argue that the fact that the home language of most teachers in the high-peforming schools in Tshivenda was an advantage as it reflects a culture in which academic achievement is valued – as discussed in Chapter 2 (Section 2.4.4). However, the teacher's home language has not emerged as an important variable in this study, largely because the distribution was fairly uniform over both high-performing and poorly performing schools.

Table 5.3.3: Frequency distribution of school locality (rural/urban – variable 8) in Group 1 (high performing) schools

	Frequency	*Per cent*	*Cumulative frequency*	*Cumulative percentage*
Rural	58	66.67	58	66.67
Urban	29	33.33	87	100.00

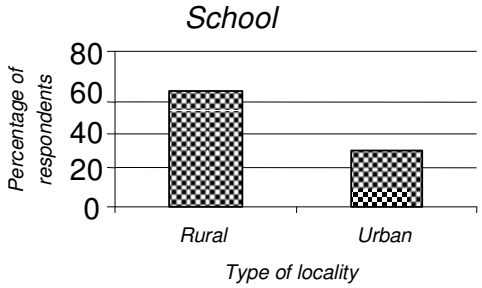


Figure 5.3.3: School locality (variable 8) in Group 1 (high performing) schools

An observation which may be made from Table 5.3.3 is that 66,7% of the high performing schools are in rural areas. It is surprising to find that more schools in rural areas are performing well, since rural schools can be expected to have fewer resources, require longer journeys on the part of learners, and adversely affect teachers by subjecting them to higher prices and more limited resources. It may, however, also be pointed out that rural schools are free of the type of problems mostly associated with urban schools, such as violence and discipline.

In this context the matter of resource availability in high performing schools assumes even greater importance.

Table 5.3.4: Frequency distribution of sufficiency of resources (variables 10, 12, 15, 17 and 23)) in Group 1(high performing) schools

	State	*Frequency*	*Per cent*	*Cumulative frequency*	*Cumulative percentage*
Classrooms (v.10)	Sufficient	24	27.59	24	27.59
	Insufficient	63	72.41	87	100.00
Assembly hall (v.12)	Present	26	30.23	26	30.23
	Absent	60	69.77	86	100.00
Administration block (v.15)	Present	56	65.88	56	65.88
	Absent	29	34.12	85	100.00
Library (v.17)	Present	42	48.84	42	48.84
	Absent	44	51.16	86	100.00
Audio-visual aids (v.23)	Adequate	17	19.77	17	19.77
	Inadequate	69	80.23	86	100.00

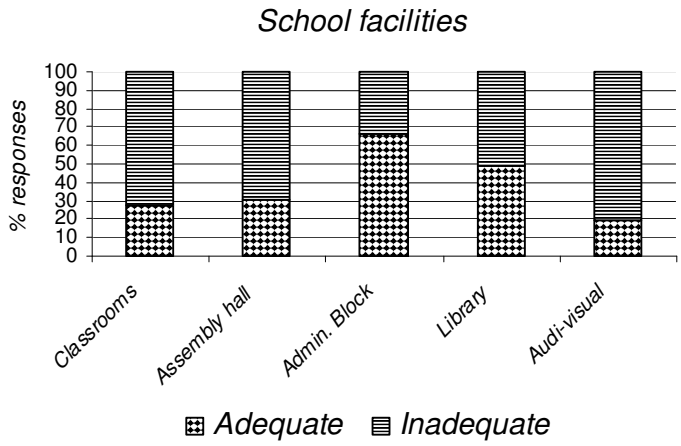


Figure 5.3.4: Sufficiency of resources (variables 10, 12, 15, 17 and 23) in Group 1 (high performing) schools

From Table 5.3.4, reflected in Figure 5.3.4, it is suggested that the majority of high performing schools are inadequately resourced. However, the results could mean that teachers are improvising without adequate resources, since, by definition they are managing to get excellent results.

5.4 Contingency Tables where there are Statistically Significant Relationships between Variables for Group One (High Performing) Schools

In this section tables containing statistically significant relationships ($p<.05$) between variables are presented only for the Group 1 (high performing) schools. More reliable conclusions can thus be drawn.

For every set of variables, the following are tested:

H_0 : The two variables are independent from one another (not related)
H_a : The two variables are dependent on one another (related)

Table 5.4.1: Two-way frequency distribution of classroom sufficiency (variable 10) by school locality (rural/urban – variable 8) in Group 1 (high performing) schools

	Rural	*Urban*
Sufficient classrooms	22	2
Insufficient classrooms	36	27

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	9.3214	.0023*

*p<.05

Effect size[1] 0.33 (Medium) Categorization of effect sizes in this thesis is based on the guidelines provided by Ellis, S.M., & Steyn, H.S. (2003).

Decision : Reject H_0 at a 5% level of significance.

Conclusion: There is enough statistical evidence to suggest that school locality and classroom sufficiency are dependent on (related to) one another. I therefore conclude from this that rural schools are better resourced in terms of number of classrooms than are urban schools.

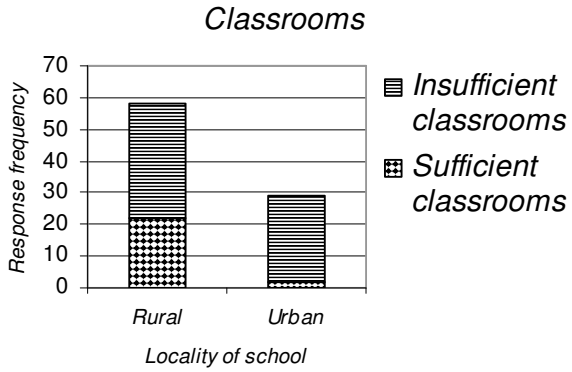


Figure 5.4.1: Sufficiency of classrooms by school locality) in Group 1 (high performing) schools

From the table and Figure 5.4.1 it is interesting to note that classroom insufficiency is more prevalent in the urban areas of the high performing schools. This suggests that classroom insufficiency could be attributed to population density, which is considerably higher in urban areas due to migration in search of labour. It may also be that large numbers of students from the rural areas flock to the urban areas with their parents who are in search of work, or in search of schools they consider well-resourced compared with those in rural areas. The insufficiency of classrooms in the urban areas would therefore represent a lack of preparedness for these tendencies. It may also reflect a policy of concentrating building resources on classrooms in the rural areas rather than any other kind of structure, such as libraries and administration blocks, discussed further on.

[1] Categorisation of effect sized in this thesis is based on the guidelines provided by Ellis, S.M., & Steyn, H.S. (2003).

Table 5.4.2: Two-way frequency distribution of presence of assembly hall (variable 12) by school locality (rural/urban – variable 8) in Group 1 (high performing) schools

	Rural	*Urban*
Assembly hall present	10	16
Assembly hall absent	48	12

Missing frequency: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	14.2540	.0002*

*p<.05

Effect size 0.41(Medium)

Decision : Reject H_0 at the 5% level of significance.

Conclusion : There is enough statistical evidence to suggest that school locality and the presence of an assembly hall are dependent on (related to) one another.

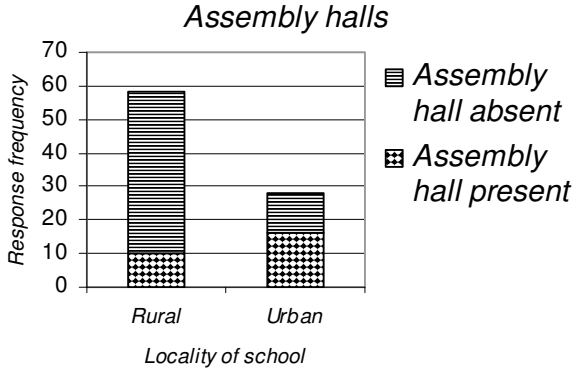


Figure 5.4.2: Presence of assembly hall by school locality

The majority of high performing schools in the urban areas have an assembly hall as compared with only 10 out of 58 such schools in rural areas which also have an assembly hall. In the sense that they have more halls, schools in urban areas are well resourced as compared with those in rural areas. The difference is no doubt due to the difficulty of building in rural areas, where piped water may not be available, and the transport of materials is difficult and expensive. The provision of classrooms would have been a greater priority, and this is supported by the information provided in Table 5.4.1.

Table 5.4.3: Two-way frequency distribution of presence of administration block (variable 15) by school locality (rural/urban – variable 8) in Group 1 (high performing) schools

	Rural	*Urban*
Admin block present	33	23
Admin block absent	24	5

Missing frequency: 2

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	4.9116	.0267*

*p<.05

Effect size 0.24 (Medium)

Decision : Reject H_0 at a 5% level of significance.

Conclusion : There is enough statistical evidence to suggest that school locality and the presence of an administration block are dependent on (related to) one another.

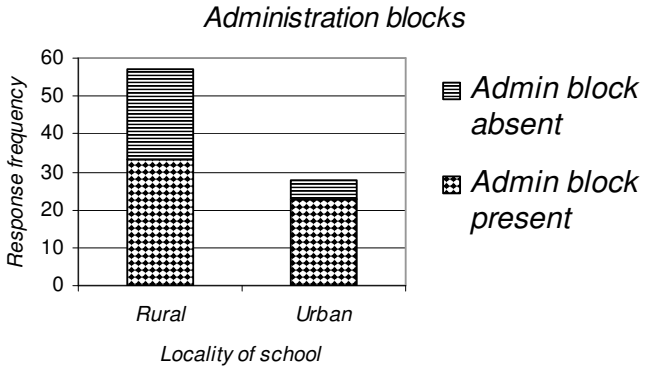


Figure 5.4.3: Presence of administration block by school locality

A small majority – 56,9% of the 58 respondents – from high performing schools in rural areas indicated that they have an administration block, whereas 82% of such schools located in the urban areas have an administration block. The difference between Tables 5.4.2 and 5.4.3 suggests that an administration block takes higher priority than an assembly hall.

To a certain extent the presence of an administration block may be a contributing factor to academic performance. Testing of the main hypotheses, however, reveals no particular effect on Grade 12 performance (Table 5.9.2.7). Any relationship between high performance and the presence of an administration block may be partly due to the fact that the principal, School Management Team and staff members can work more effectively in their offices and staff room, thus positively affecting Grade 12 results.

Table 5.4.4: Two-way frequency distribution of presence of library (variable 17) by school locality (rural/urban – variable 8) in Group 1 (high performing) schools

	Rural	*Urban*
Library present	21	21
Library absent	36	8

Missing frequency: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	9.7337	.0018*

*p<.05

Effect size 0.34 (Medium)

Decision : Reject H_0 at a 5% level of significance.

Conclusion : There is enough statistical evidence to suggest that school locality and the presence of a library are dependent on (related to) one another.

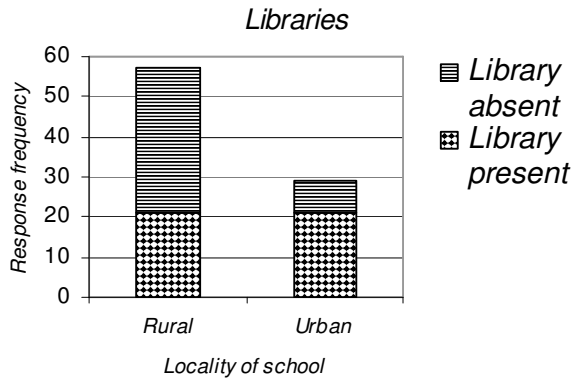


Figure 5.4.4: Presence of library by school locality) in Group 1(high performing) schools

Literature (Bernstein, 2004; Nelson Mandela Foundation, 2005; Simkins, Rule, & Bernstein, 2007) suggests that a library is essential to the development of a spirit of independent inquiry and thus the development of study skills among learners. Results here show that 63,1% of respondents from high performing schools in the rural areas indicated that they do not have libraries in their schools. These results, reflected also in the bar graph, suggest that such rural schools are, where libraries are concerned, not well resourced when compared with urban schools. It is possible that this also reflects on the

quality of the libraries. However, given that all these schools are high performing ones, the results further indicate that the presence of a library does not in fact have any significant effect on Grade 12 results, even though a library could be expected to play a part in the development of learner study skills as described above and in Chapter 2 (section 2.3.3). This alone suggests that library quality may not be as low as the lack of resources may suggest. The results here generally suggest that availability of resources is not a main contributor to academic success. It should also be considered to what extent learners have access to other libraries, for example a public library, which may be more useful than a school library. This, however, is more likely to happen in urban areas than in rural ones.

Table 5.4.5: Two-way frequency distribution of teachers making their own visual aids (variable 23) by school locality (rural/urban – variable 8) in Group 1 (high performing) schools

	Rural	*Urban*
Make own visual aids	9	12
Do not make own visual aids	47	17

Missing frequency: 2

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	6.5784	.0103*

*p<.05

Effect size 0.28 (Medium)

Decision : Reject H_0 at a 5% level of significance.

Conclusion : There is enough statistical evidence to suggest that school locality and teachers making their own visual aids are dependent on (related to) one another.

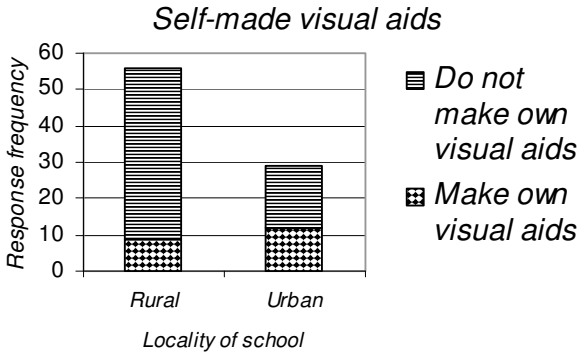


Figure 5.4.5: Two-way frequency distribution of teachers making their own visual aids (variable 23) by school locality (rural/urban – variable 8) in Group 1 (high performing) schools

The fact that the majority of teachers in rural areas do not make their own visual aids, may to a certain extent be attributed to a lack of materials, in turn due to a lack of funding. Zanqa (1999:96) notes the following:

> *Although there are a number of current examples of poorly-resourced schools that are performing virtual miracles of achievement, in the long term and on a day-to-day basis, lack of adequate funding can have a disastrous effect on achievement because it makes everything so much more difficult and thus demoralizing.*

Table 5.4.6: Two-way frequency distribution of teachers offering to help learners with time problems (variable 85) by gender of teacher (variable 6) in Group 1 (high performing) schools

	Male teachers	*Female teachers*
Offer to help	23	8
Do not offer to help	27	27

Missing frequency: 2

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	4.7592	.0291*

*p < .05

Effect size 0.24 (Medium)

Decision : Reject H_0 at a 5% level of significance.

Conclusion : There is enough statistical evidence to suggest that the gender of teachers and teachers offering to help learners with time problems are dependent on (related to) one another. Female teachers in the research group are less inclined/willing to offer help to their learners.

This probably has a cultural basis, related to the high incidence of VhaVenda teachers in the high performing schools (Table 5.3.2). It is often remarked locally that in shops it is the male staff who are more helpful to customers than the female ones.

Table 5.4.7: Two-way frequency distribution of class meetings on discipline (variable 42) by school locality (rural/urban – variable 8)

	Rural	*Urban*
Class meets on discipline	44	28
Class does not meet on discipline	13	1

Missing frequency: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	6.5784	.0103*

*p < .05

Decision : Reject H_0 at a 5% level of significance.

Conclusion : There is enough statistical evidence to suggest that school locality and class meetings on discipline are dependent on (related to) one another. Whereas the vast majority of urban schools meet regularly to discuss disciplinary matters, a sizeable proportion of rural schools do not.

Although the majority of high performing rural schools do have discipline meetings, the fact that almost all such urban schools have these meetings suggests something about the learning environments encountered in the two different locations. The need for discipline is obviously higher in the urban setting.

5.5 Contingency Tables where there are no Statistically Significant Relationships between Variables for Group One (High Performing) Schools

For some of the variables, the chi-square analysis applied to contingency tables showed that some pairs of variables were independent of each other at p>.05 (5%), and that there was therefore no relationship between them. A selected number of different contingency tables were subjected to chi-square analysis. The analyses performed are not directly reported here, but are available. For a number of pairs, it seems enough to report that they are unrelated.

5.6 Frequency Analysis for Group Two (Poorly Performing) Schools

The following are some of the descriptive statistics for Group Two (poorly performing) schools.

Table 5.6.1: Frequency distribution of adequacy of school funding (variable 9) in Group 2 (poorly performing) schools

	Frequency	*Per cent*	*Cumulative frequency*	*Cumulative percentage*
Underfunded	43	87.76	43	87.76
Adequately funded	6	12.24	49	100.00

Naturally funding would have an impact on many of the other variables which have to do with the availability of resources, already considered, for instance, in Table 5.3.4, and further on.

Table 5.6.2: Frequency distribution of sufficiency of classrooms (variable 10) in Group 2 (poorly performing) schools

	Frequency	*Per cent*	*Cumulative frequency*	*Cumulative percentage*
Sufficient classrooms	8	16.33	8	16.33
Insufficient classrooms	41	83.67	49	100.00

Insufficiency of classrooms in 83.67% of the poorly performing schools certainly suggests that availability of classrooms has an impact on Grade 12 academic performance, given that this was the case in only 72.41% of the high-performing schools (Table 5.3.4). However, this is not borne out by the testing of the hypothesis relating Grade 12 results to classroom availability. (See Table 5.9.2.5).

Table 5.6.3: Frequency distribution of adequacy of classroom furnishings (variable 11)

3	Frequency	Per cent	Cumulative frequency	Cumulative percentage
Adequately furnished	4	8.00	4	8.00
Inadequately furnished	46	92.00	50	100.00

A reporting of 92% of inadequate furnishings in poorly performing schools also suggests some significant relationship between this variable and Grade 12 performance, but this is not borne out by the statistical testing of the hypothesis.

Table 5.6.4: Frequency distribution of presence of science laboratory (variable 13) and adequacy of equipment (variable 14)

	Frequency	*Per cent*	*Cumulative frequency*	*Cumulative percentage*
Laboratory	26	50.98	26	50.98
No laboratory	25	49.02	51	100.00
Adequately equipped	9	28.13	9	28.13
Inadequately equipped	23	71.88	32	100.00

Although slightly over half the poorly performing schools do have science laboratories, the fact that 71.88% are regarded by teachers as inadequately equipped must have some bearing on academic results. What is more probable, however, is that not as many rural students are engaging in science, so that overall Grade 12 results are not affected by this (Simkins, Rule, & Bernstein, 2007).

5.7 Contingency Tables where there are Statistically Significant Relationships between Variables for Group Two (Poorly Performing) Schools

In this section the tables with chi-square analysis where there are statistically significant relationships between variables are presented for the Group 2 (poorly performing) schools. In such cases the probability values of these tests are less than .05. There is thus a statistically significant relationship at the 5% level of significance, and more reliable interpretations can be made.

The first group of tables reflects those variables which were found to be related. In the case of these variables, therefore, it must be assumed that, where one variable changes, the other also changes because of a dependency relationship between the two.

For every set of variables, the following are tested:

H_0 : The two variables are independent of one another (not related).

H_a : The two variables are dependent on one another (related).

Table 5.7.1: Two-way frequency distribution of age of teachers (variable 3) by locality of school (rural/urban – variable 8) in Group 2 (poorly performing) schools

	Rural	*Urban*
25-34 years	8	10
35-39 years	6	13
40-55 years	11	2

Frequency missing: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	2	9.0139	.0109*

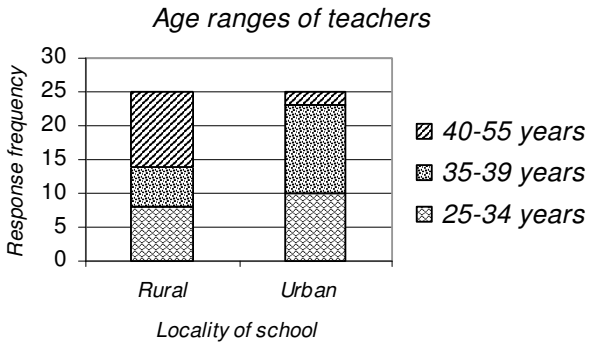
*p<.05

W= 0.42 (Medium)

Decision: Reject H_0 at a 5% level of significance.

Conclusion: There is enough statistical evidence to suggest that school locality and the age of teachers are dependent on (related to) one another. The effect size (w = 0.42) is medium, suggesting the possibility that in practice a larger proportion of teachers in the age group 40-55 teach in rural schools than in urban schools.

Figure 5.7.1: Age of teachers by locality of school



In these poorly performing schools it is interesting that the rural schools have, on the whole, the older teachers, and the younger ones are concentrated in the urban schools. This suggests that the teachers exercise some degree of choice over where they teach, as the younger ones could be expected to opt for a more urban environment, not always appealing to older people.

Table 5.7.2: Two-way frequency distribution of presence of library (variable 17) by locality of school (rural/urban – variable 8) in Group 2 (poorly performing) schools

	Rural	*Urban*
Library present	6	21
Library absent	19	4

Missing frequency: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	18.1159	<.0001*

*p<.05

W= 0.41 (Medium)

Decision : Reject H_0 at a 5% level of significance.

Conclusion : There is enough statistical evidence to suggest that school locality and the presence of a library are dependent on (related to) one another. The effect size (w = 0.41) is medium, suggesting the possibility that in practice a larger proportion of urban schools than rural schools have libraries.

Since libraries are generally regarded as invaluable sources of information, it would be logical to say that the use of libraries should potentially benefit or improve learner performance. On the other hand, absence of libraries is therefore believed to correlate positively with poor performance. In this instance, the majority of the poorly performing schools in urban areas are provided with libraries. Similar studies to the current one suggest that performance may remain poor, despite the presence of a library in a school. Here again the quality of the library and the way it is used may be more important than its actual presence.

Table 5.7.3: Two-way frequency distribution of presence of administration block (variable 15) by locality of school (rural/urban – variable 8) in Group 2 (poorly performing) schools

	Rural	*Urban*
Admin block present	9	20
Admin block absent	16	4

Missing frequency: 2

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	11.3567	.0008*

*p<.05

W= 0.48 (Medium)

Decision : Reject H_0 at a 5% level of significance.

Conclusion : There is enough statistical evidence to suggest that school locality and the presence of an administration block are dependent on (related to) one another. The effect size (w = 0.48) is medium, suggesting the possibility that in practice a larger proportion of urban schools than rural schools have admin blocks.

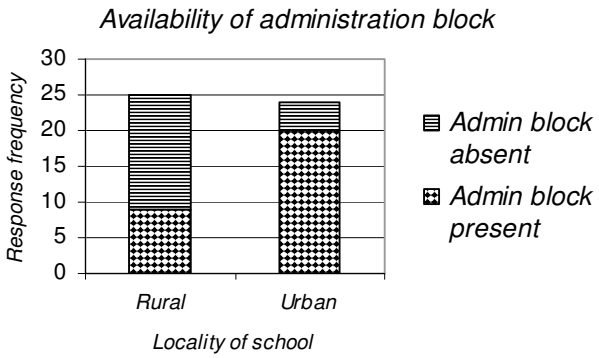


Figure 5.7.3: Presence of administration block by locality of school (rural/urban-variable 8) in Group 2 (poorly performing) schools

The results show that poorly performing urban schools do have physical facilities like an administrative block, whereas those that are rural lack such physical facilities. As discussed in section 5.4. above, in the context of high-performing schools, this is hardly surprising, and is probably due to the difficulty of building.

Table 5.7.4: Two-way frequency distribution of teachers making their own visual aids (variable 23) by locality of school (rural/urban – variable 8) in Group 2 (poorly performing) schools

	Rural	*Urban*
Make own visual aids	1	10
Do not make own visual aids	22	15

Missing frequency: 3

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	8.6196	.0033*

*p<.05

W= 0.42 (Medium)

Decision : Reject H_0 at a 5% level of significance.

Conclusion : There is enough statistical evidence to suggest that school locality and teachers making their own visual aids are dependent on (related to) one another. The effect size (w = 0.42) is medium, suggesting the possibility that in practice a larger proportion of urban schools than rural schools are capable of making their own visual aids.

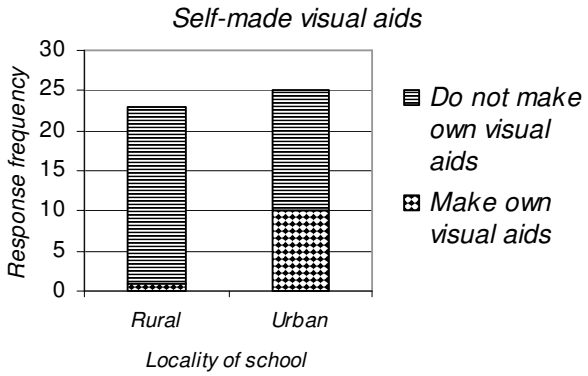


Figure 5.7.4: Self-made visual aids by locality of school in Group 2 (poorly performing) schools

The results show that a significantly larger proportion of teachers from rural areas do not make their own visual aids, but for poorly performing schools there is a large proportion in both types of location. Comparing tables and figures 5.7.4 with 5.4.5, this is a fairly revealing finding, given the fact that the SA DoE has Adapted an OBE teaching and learning approach, which encourages teachers to make their own visual and other aids, thereby compensating for the fact that they do not have satisfactory access to these types of resources. The ideal situation is that educators are encouraged to develop their own low cost materials and equipment to avoid being dependent on externally provided materials which are less available. Since the use of visual aids provides learners with opportunities for practical learning, lack of these resources could therefore be expected to affect learner performance negatively. Studies by Lemlock (1994) indicate that teacher-developed visual aids are more popular with learners and that learners tend to achieve better results when using these resources than those learners who rely only on commercially produced materials. Manana (1994) too maintains that low-cost science teaching equipment in developing countries has a superior pedagogical value over sophisticated equipment as it is developed at the level of the people. In cases where teachers made their own visual aids, achievement improved.

These results therefore suggest that a lack of locally produced visual aids would affect learner performance negatively and learners would perform poorly.

Table 5.7.5: Two-way frequency distribution of presence of assembly hall (variable) by locality of school (rural/urban – variable 8) in Group 2 (poorly performing) schools

	Rural	Urban
Assembly hall present	3	20
Assembly hall absent	22	5

Missing frequency: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	23.2689	<.0001*

*p<.05

W= 0.68 (Large)

Decision: Reject Ho at a 5% level of significance.

Conclusion: There is enough statistical evidence to suggest that school locality and the presence of an assembly hall are dependent on (related to) one another. The effect size (w = 0.68) is large, suggesting a strong possibility that in practice a larger proportion of urban schools than rural schools has assembly halls.

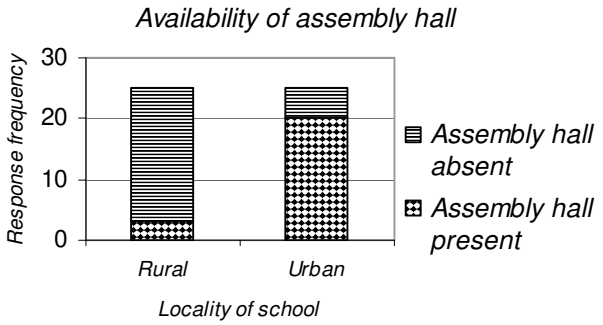


Figure 5.7.5: Presence of assembly hall by locality of school (rural/ urban-variable 8) in Group 2 (poorly performing schools)

As with the administration block (Table 5.7.3.), it is hardly surprising that rural schools have fewer assembly halls than urban ones do. Buildings away from urban centres are more likely to cause problems. The fact that all these schools are in the group that performs poorly, suggests that this rural-urban distribution has no effect on Grade 12 performance.

Table 5.7.6: Two-way frequency distribution of presence of science laboratory (variable 13) by locality of school (rural/urban – variable 8) in Group 2 (poorly performing) schools

	Rural	*Urban*
Science lab present	6	20
Science lab absent	19	5

Missing frequency: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	15.7051	<.0001*

*p<.05

W= 0.56 (Large)

Decision : Reject Ho at a 5% level of significance.

Conclusion : There is enough statistical evidence to suggest that school locality and the presence of a science laboratory are dependent on (related to) one another. The effect size (w = 0.56) is large, suggesting the possibility that in practice a larger proportion of urban schools than rural schools have Science laboratories.

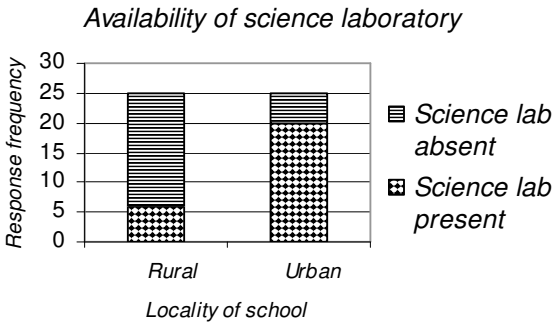


Figure 5.7.6: Presence of science laboratory by locality of school (rural/ urban – variable 8) in Group 2 (poorly performing) schools

Science laboratories are virtually absent in the poor-performing rural schools, but not in the urban ones. The third International Mathematics and Science Study Repeat (TIMSS-R) report indicates that teaching and learning in Mathematics and Science were seriously hampered by a shortage of facilities (TIMSS-R, 2001). The results highlight the shortage of facilities in schools with poor achievement. Out of the nine provinces in South Africa, Limpopo is regarded as the poorest, and it obtained the lowest mean score in Science. According to Macdonald and Rogan (1988), learner performance, particularly in Natural Sciences, is a function of practical work. The laboratory acquires a key role in Science classrooms, not only as a means for visualising textbook material, and for demonstration, but rather as a key element in the Science learning process on account of its use in stimulating and motivating learners.

Studies by Doidge (1991) reveal that even though many schools do have laboratories, these facilities are mostly used by the Heads of Department or by higher classes only. Furthermore, in most schools, laboratories are always reported as being locked on account of possible vandalism. In addition, many

laboratories are without apparatus. The situation Doidge describes in such a dramatic fashion resembles the situation in most schools in urban areas.

Table 5.7.7: Two-way frequency distribution of teachers offering to help learners manage their time (variable 85) by age of teacher (variable 3) in Group 2 (poorly performing) schools

	25-34 years	*35-39 years*	*40-55 years*
Offer to help	3	12	2
Don't offer to help	15	7	10

Missing frequency: 2

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	2	11.0972	.0039*

*p<.05

Effect size: 0.48 (Medium)

Decision : Reject H_0 at a 5% level of significance.

Conclusion : There is sufficient statistical evidence to suggest that the age of teachers and teachers offering to help learners manage their time are dependent on (related to) one another. The effect size (w = 0.48) is medium, suggesting the possibility that in practice a larger proportion of teachers between the ages 35-39 than in the age brackets 25-34 and 40-55 offer to help learners manage their time.

In recent years much attention has been paid to COLTS (Culture of Learning, Teaching and Service) as something that should be promoted in schools in order to bring about improvement, and it could be argued that this relates directly to teacher motivation (Van der Westhuizen *et al*. 1999:318). It seems

possible that teachers in the age bracket 35-39, who are in the prime of their career lives, are energetic and have developed more of an interest in teaching, whereas those who are in the category 40-55 may be giving up on account of other responsibilities, and that teachers in the 25-34 age group have not developed as yet, although this seems unlikely. More likely factors are the type of training they have received, or the primacy of responsibilities associated with a young family. This group may also be too young to understand the needs of learners fully, and may not be sure of what to do in terms of helping learners manage their time. They may not themselves be aware of the need for time management.

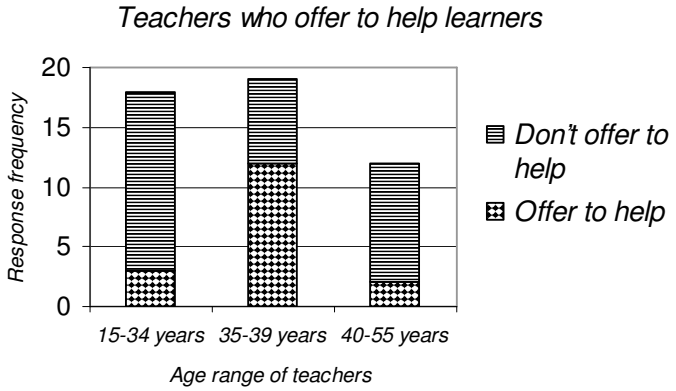


Figure 5.7.7: Teachers who offer to help learners manage their time by age range of teachers in Group 2 (poorly performing) schools

Table 5.7.8: Two-way frequency distribution of teachers offering to help learners manage their time (variable 85) by gender of teacher (variable 6)

	Male	*Female*
Offer to help	11	6
Don't offer to help	12	20

Missing frequency: 2

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	3.2993	.0493*

*p<.05

Decision: Reject Ho at a 5% level of significance.

Conclusion: There is enough statistical evidence to suggest that gender of teachers and teachers offering to help learners manage their time are dependent on (related to) one another.

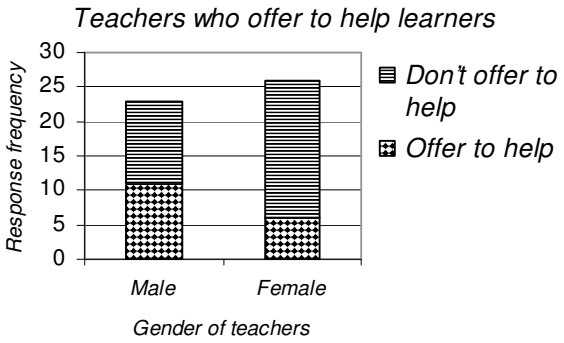


Figure 5.7.8: Teachers who offer to help learners manage their time (variable 85) by gender of teachers(variable 6) in Group 2 (poorly performing) schools

Results show that a larger proportion of male than female teachers offer to help learners manage their time. Where Afrikaans-speaking teachers are concerned, literature shows that 'burnout' among female teachers seemed to occur because of the "problems and uncertainties" connected with the "present period of transition and transformation in education" (Van der Linde, Van der Westhuizen & Wissing 1999:196; similarly Steyn 2000). It is possible that these "problems and uncertainties" have not only been affecting white teachers (Rigsby, Bennet & Boshoff 1996; Zangqa 1999:95), but black female teachers as well, and that this could have contributed to black female teachers' lack of enthusiasm to help learners manage their time. After all, black female teachers' stress levels are higher than the stress levels of their male counterparts (Van Zyl & Pietersen 1999:76-77).

Table 5.7.9: Two-way frequency distribution of class meetings about discipline (variable 42) by locality of school (rural/urban – variable 8) in Group 2 (poorly performing) schools

	Rural	*Urban*
Class meets on discipline	17	23
Class does not meet on discipline	8	2

Missing frequency: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	4.5000	.0339*

*p<.05

Effect size: 0.43 (Medium)

Decision: Reject H_0 at a 5% level of significance.

Conclusion: There is enough statistical evidence to suggest that school locality and class meetings concerning discipline are dependent on (related to) one another. The effect size (w = 0.43) is medium, suggesting the possibility that in practice a larger proportion of rural school classes meets on discipline.

Nelsen *et al*. (1993:4) stress the fact that class meetings concerning discipline are important. These authors maintain that positive discipline and self-discipline are promoted through empowerment techniques such as class meetings, which encourage a number of skills, including the following:

- Intrapersonal skills which seek to understand personal emotions.
- Interpersonal skills which seek to listen, communicate, co-operate, negotiate, share and empathize with others.
- Strategic skills which seek to use responsibility, adaptability, flexibility and integrity in responding to the limits and consequences of everyday life.
- Judgement skills which seek to use wisdom and appropriate values in evaluating situations.

These authors conclude that a lack of class meetings on (e.g.) discipline could affect learner performance negatively. Clearly, teachers attached to township schools in particular need to note this particular finding.

5.8 Contingency Tables where there are no Statistically Significant Relationships between Variables for Group Two (Poorly Performing) Schools

For some of the variables, the chi-square analysis applied to contingency tables showed that some pairs of variables were independent of each other at p>.05 (5%), and that there was therefore no relationship between the pairs of variables.

5.9 Testing of the Main Hypotheses[1] – Comparison of Data from Group One (High Performing) and Group Two (Poorly Performing) Schools

In comparing the two groups of schools (Group 1 high performing, representing good Grade 12 results, and Group 2 poorly performing, representing poor Grade 12 results), the chi-square test was once again appropriate for its capacity to test the independence of two variables. In this case one of the variables is in each case performance as reflected in the school group. This performance is allocated only two states: high (Group 1 schools) and poor (Group 2 schools), and represents the level of Grade 12 results obtained for all the schools in each group.

5.9.1. Null hypotheses which may be rejected

Meetings with parents

H_{014} The Grade 12 results in the schools in the sample under discussion are independent of the frequency of meetings with parents.

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Table 5.9.1.1: Frequency of meetings with parents

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Half-yearly & annually	18	22.22	19	39.58
Quarterly & monthly	63	77.78	29	60.42

Missing frequency: 9

[1] Kindly note that I only report those results that had satisfactory cell frequencies.

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	4.4410	.0351

*p<.05

W= 0.34 Medium

Since p<.05, the null hypothesis (H_{014}) has been rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are dependent on the frequency of meetings with parents.* The effect size (*W* = 0.34) is medium, suggesting the possibility that in practice a larger proportion of groups 1 and 2 schools meet parents quarterly and monthly. Indeed there is good evidence to show that parents' involvement in a child's education before that child even starts school can be as important as any other kind of involvement (Madolo 1995:20, Winter & McDonald 1997), and has much to do with a child's level of literacy (Lauren & Allen 1999).

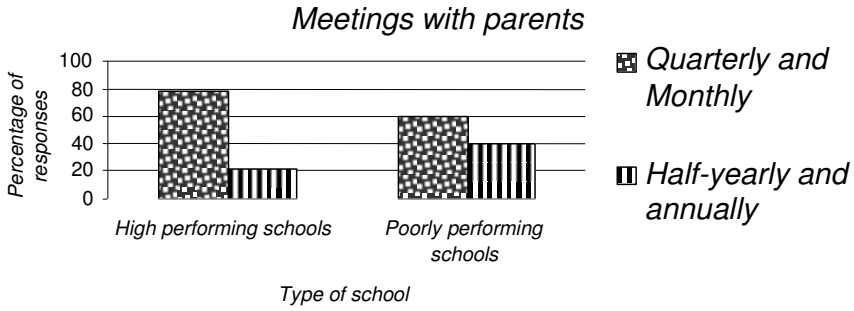

Figure 5.9.1.1: Frequency of meetings with parents

(Rosen 1997) agrees that structured parent-teacher interaction is preferable to one-to-one informal contact (which often results from particular problems teachers are experiencing with a particular learner). The main problem with one-to-one informal contact is to ensure that such interaction should not have negative consequences arising from parents being cornered into a defensive position (Rosen 1997:31), whereupon they may either punish their children or

side with them. Neither response is after all likely to help those involved solve the original problem.

Staff meetings

H_{015} The Grade 12 results in the schools in the sample under discussion are independent of the frequency of staff meetings.

Table 5.9.1.2: Staff meeting frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Daily	10	11.63	19	37.25
Weekly	22	25.58	18	25.29
Monthly	41	47.67	10	19.61
Other frequency	13	15.12	4	7.84

Missing frequency: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	4	19.9694	.0005

*p<.05

W= 0.38 (Large)

Since p<.05, the null hypothesis (H_{015}) is rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are dependent on the frequency of staff meetings.* The effect size (w = 0.38) is large, suggesting that the frequency of staff meetings (in favour of group 2 schools) has practical significance.

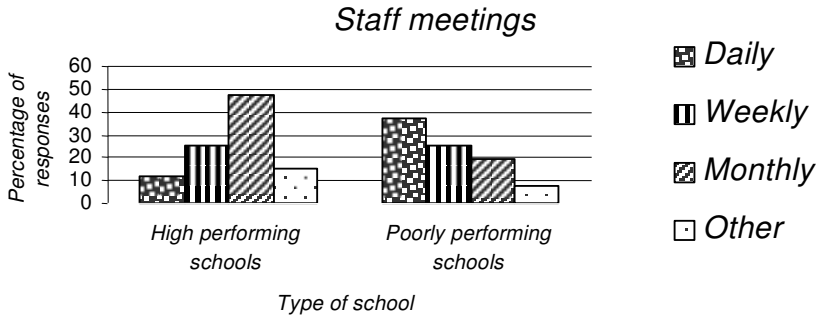

Figure 5.9.1.2: Percentages of staff meetings compared according to school performance group

This finding is consistent with previous research results, which confirm the positive effect of more frequent staff meetings (Mosoge & Van der Westhuizen 1997). In Chapter 2 (section 2.4.3.) the positive effect of involving teachers in the management of the school (Masoge & Van der Westhuizen 1997) is mentioned, and, clearly, frequent meetings must contribute to this.

However, this finding is rather surprising, given the poorer results of group 2 schools (relative to group 1 schools).

Scheduling of staff meetings (Variable 45)

H_{016} The Grade 12 results in the schools in the sample under discussion are independent of the scheduling of staff meetings.

Table 5.9.1.3: Scheduling of staff meetings (Variable 45) frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Scheduled	72	82.76	33	64.71
Not scheduled	15	17.24	18	35.29

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	5.7591	.0164

*p<.05

W= 0.2 Small

Since p<.05, the null hypothesis (H_{016}) is rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are dependent on the scheduling of staff meetings.* The effect size (W = 0.2) is small, suggesting that this result has little practical value. Whether or not schools schedule regular staff meetings, seems to have little noticeable effect on performance.

5.9.2: Null hypotheses which may not be rejected

Highest academic qualification of educators

H_{01} The Grade 12 results in the schools in the sample under discussion are independent of the academic level of Grade 12 teachers.

Table 5.9.2.1: Highest academic qualification of educators (Variable 4) frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Grade 12	19	22.09	17	34.00
Bachelor's degree	29	33.72	21	42.00
Honours degree	23	26.74	6	12.00
Other	15	17.44	6	12.00

Missing frequency: 2

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	4	6.1294	.1897

Since p>.05, the null hypothesis is not rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are independent of the academic level of Grade 12 teachers.*

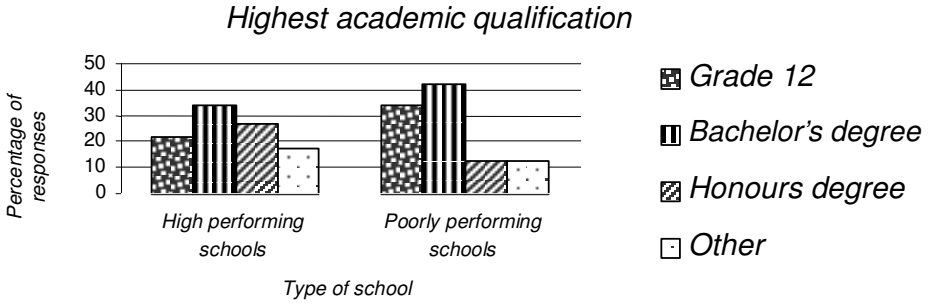

Figure 5.9.2.1: Highest academic qualification of educators (Variable 4) percentages compared according to school performance group

Inspection of Table 5.9.2.1 nonetheless reveals that the majority of teachers in Groups 1 and 2 – in other words, in both the high-performing and the poorly-performing schools – are educated up to the Bachelor's degree level. A sizeable proportion of teachers from Group 1 (high performing schools) are in possession of honours degrees, but a greater proportion in the Group 2 schools are thus qualified. This further supports the argument that Grade 12 results are not in any way dependent on teacher qualification, but possibly on some other teacher factor not revealed in this study.

Highest teaching qualification of educators.

H_{02} The Grade 12 results in the schools in the sample under discussion are independent of the level of teaching qualification of Grade 12 teachers.

Table 5.9.2.2: Highest teaching qualification of educators (Variable 5) frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Secondary School Diploma	40	45.98	30	61.22
University Diploma	29	33.33	15	30.61
Other	18	20.69	4	8.16

Missing frequency: 2

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	4	6.1452	.1885

Since p>.05, the null hypothesis (H_{01}) is not rejected. Therefore it may be concluded that *the Grade 12 results in the schools in the sampled schools are independent of the level of the teaching qualification of Grade 12 teachers.*

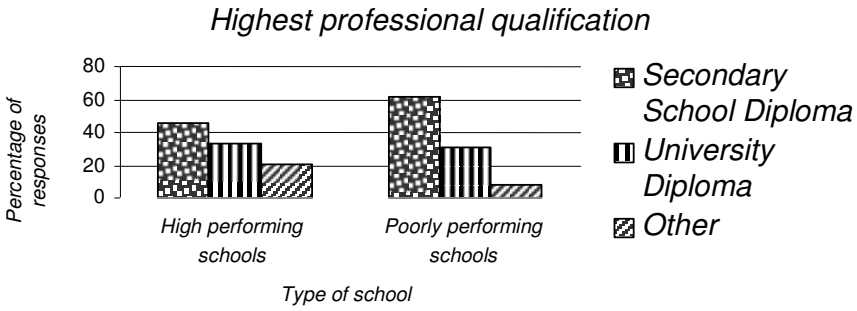

Figure 5.9.2.2: Highest teaching qualification of educators (Variable 4) percentages compared according to school performance group

Inspection of Table 5.9.2.2 reveals that the majority of teachers in Groups 1 and 2 hold the Secondary School Diploma, and it could be argued that, although there is not enough variation between the two groups of schools to have any statistical effect, this is still a rather low qualification for teachers of Grade 12 pupils. In light of the fact that the level to which teachers are trained potentially, impacts on the efficacy of teaching (Maree, 2005), it is possible to argue that schools in this research region need to take drastic steps to upgrade the teaching qualifications of their staff members. Many teachers from both groups of schools do not possess the necessary qualifications to teach up to Grade 12 level.

Teachers' home language (Variable 7)

H_{03} The Grade 12 results in the schools in the sample under discussion are independent of the home language of Grade 12 teachers.

Table 5.9.2.3: Teachers' home language (Variable 7) frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Tshivenda-speaking teachers	80	91.95	45	90.00
Other language	7	8.05	5	10.00

Missing frequency: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	0.1517	.1885

Since p>.05, the null hypothesis (H_{03}) is not rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are independent of the home language of Grade 12 teachers*.

As the home language of the educators is, in almost all instances in both groups of schools, the same as that of the students, it is possible to argue that this in itself might be an important factor. We were, of course, unable to test this hypothesis; however, it could be that, without this factor, Grade 12 results could have been different.

Locality of school, rural/urban (Variable 8)

H_{04} The Grade 12 results in a school are independent of the situation of the schools in the sample under discussion in terms of urban and rural.

Table 5.9.2.4: Locality of school, rural/urban (Variable 8) frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Rural	58	66.67	25	50.00
Urban	29	33.33	25	50.00

Missing frequency: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	3.635	.0546

Since p>.05, the null hypothesis (H_{04}) is not rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are independent of the locality of the school, rural or urban.*

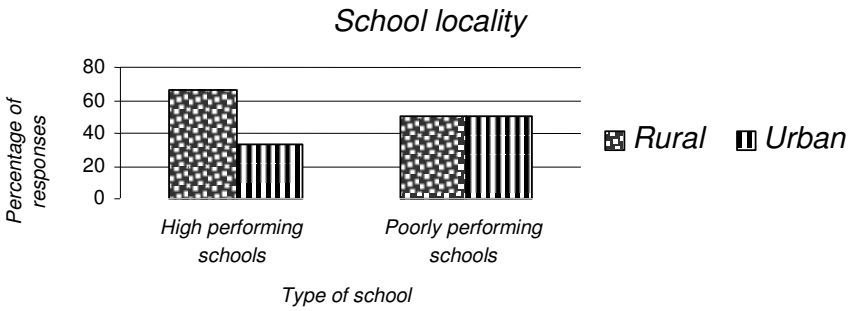

Figure 5.9.2.4: Locality of school, rural/urban (Variable 8) percentages compared according to school performance group

This is in fact a reassuring finding, suggesting that Grade 12 students in the rural areas are not penalized by the fact that they are remote from urban centres. The lack of the kind of distractions offered by urban localities may nevertheless be a factor here, and this assumption is supported by the evidence from Table 5.4.7. above, relating meetings on discipline to the locality of the school.

Number of classrooms (Variable 10)

H_{05} The Grade 12 results in the schools in the sample under discussion are independent of the sufficiency of classrooms in the school.

Table 5.9.2.5: Sufficiency of classrooms (Variable 10) frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Sufficient classrooms	24	27.59	8	16.33
Insufficient classrooms	63	72.41	41	83.67

Missing frequency: 2

Statistical test for independence

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	2.2086	.1372

Since p>.05, the null hypothesis (H_{05}) is not rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are independent of the sufficiency of classrooms in the school.*

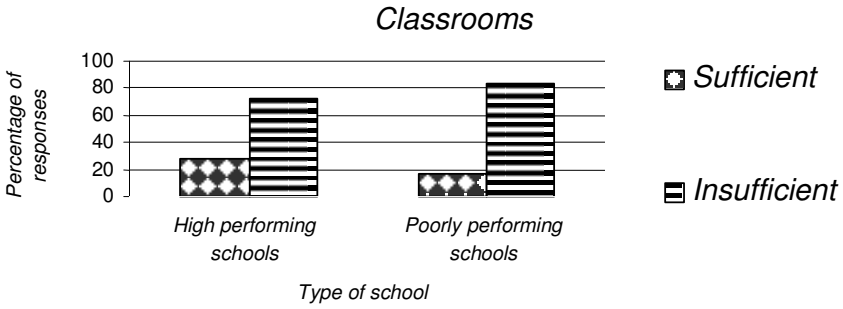

Figure 5.9.2.5: Sufficiency of classrooms (Variable 10) percentages compared according to school performance group

The matter of classroom sufficiency has already been discussed in the context of the differences between rural and urban schools. Rural schools are relatively well provided with classrooms (see Table 5.4.1), although most teachers reported a shortage, and this doubtless impacts on the quality of teaching, especially if classes have to be large as a result.

Assembly hall (Variable 12)

H_{06} The Grade 12 results in the schools in the sample under discussion are independent of the presence of an assembly hall in the school.

Table 5.9.2.6: Assembly hall (Variable 12) frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Assembly hall	26	30.23	23	45.00
No assembly hall	60	69.77	28	54.90

Missing frequency: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	3.0794	.0793

Since p>.05, the null hypothesis (H_{06}) is not rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are independent of the presence of an assembly hall in the school*.

The absence of an assembly hall does not, of course, imply an absence of school assemblies. In rural schools it is more than likely that there is an area of the school grounds where the school may assemble on required occasions and thus generate an atmosphere of community purpose favourable to school culture.

Administration block (Variable 15)

H_{07} The Grade 12 results in the schools in the sample under discussion are independent of the presence of an administration block in the school.

Table 5.9.2.7: Administration block (Variable 15) frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Admin block	56	65.88	29	58.00
No admin block	29	34.12	21	42.00

Missing frequency: 3

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	0.8388	.3597

Since $p>.05$, the null hypothesis (H_{07}) is not rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are independent of the presence of an administration block in the school.*

This is a more surprising finding, since the absence of an administration block must result in considerable difficulty for the school administration and thus for teachers trying to organize their work. It is more than likely that, as a temporary measure, a structure built as a classroom is in fact being used as an administration block in order to facilitate matters for teachers. This would minimize any effect on Grade 12 performance.

Stationery supply (Variable 16)

H_{08} The Grade 12 results in the schools in the sample under discussion are independent of the adequate provision of stationery in the school.

Table 5.9.2.8: Stationery supply (Variable 16) frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Adequate stationery	48	55.81	24	47.06
Inadequate stationery	38	44.19	27	52.94

Missing frequency: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	0.9842	.3212

Since p>.05, the null hypothesis (H_{08}) is not rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are independent of the adequate provision of stationery in the school.*

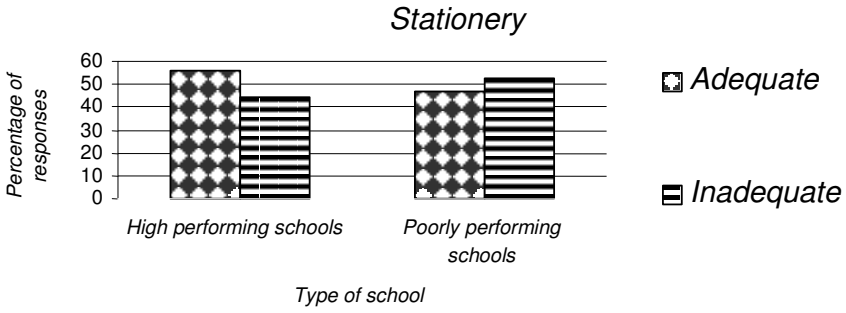

Figure 5.9.2.8: Stationery supply (Variable 16) percentages compared according to school performance group

The table does show a slight difference between high performing and poorly performing schools in this regard, although it is not statistically significant. It becomes worth asking, however, how any students – but especially the high-

performing Grade 12 students – are managing in the face of an apparent stationery shortage. Either they are providing their own stationery, in which case any difference in performance would relate more directly to the family income of the students, or stationery provision is not as important as it is often assumed to be.

Library (Variable 17)

H_{09} The Grade 12 results in the schools in the sample under discussion are independent of the presence of a library in the school.

Table 5.9.2.9: Library (Variable 17) frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Library	42	48.84	27	52.94
No library	44	51.16	24	47.06

Missing frequency: 1

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	0.2157	.6423

Since $p>.05$, the null hypothesis (H_{09}) is not rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are independent of the presence of a library in the school*.

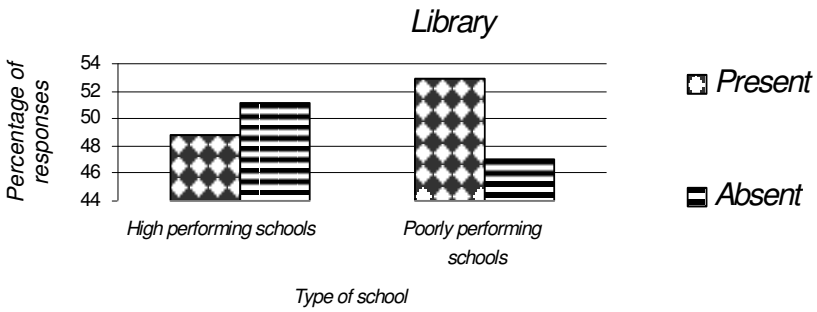

Figure 5.9.2.9: Library (Variable 17) percentages compared according to school performance group

The table suggests, in fact, that the presence of a library might even have a *negative* effect on Grade 12 performance. However, it is reassuring that the statistics do not support this suggestion. The apparent difference seems to be merely a reflection of inadequate sample size. As discussed under Table 5.7.2. above, the provision of libraries in the sampled area relates more to the urban/rural divide, and can still be considered important to academic performance.

Audio-visual aids (Variable 22)

H_{012} The Grade 12 results in the schools in the sample under discussion are independent of the adequacy of audio-visual aids in the school.

Table 5.9.2.10 Audio-visual aids (Variable 22) frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Adequate	17	19.77	4	8.16
Inadequate	69	80.23	45	91.84

Missing frequency: 3

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	1	3.1999	.0736

Since p>.05, the null hypothesis (H_{012}) is not rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are independent of the adequacy of audio-visual aids in the school.*

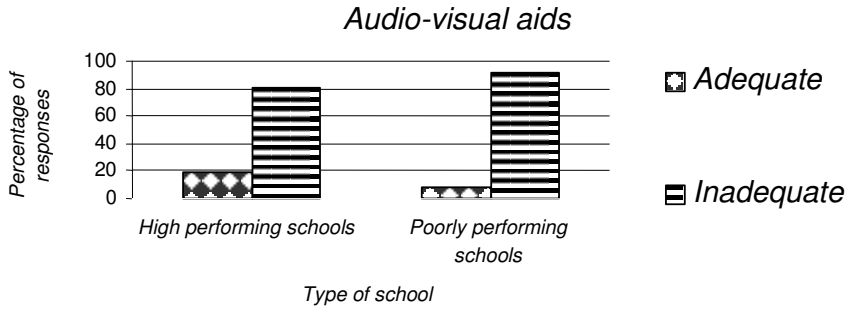

Figure 5.9.2.10: Audio-visual aids (Variable 22) percentages compared according to school performance group

Learner motivational levels (Variable 54)

H_{017} The Grade 12 results in the schools in the sample under discussion are independent of the level of learner motivation in the school.

Table 5.9.2.11: Learner motivational levels (Variable 54) frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
High	37	42.53	18	25.29
Moderate	38	43.68	29	56.86
Low	12	13.79	4	7.84

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	2	2.5552	.2787

Since p>.05, the null hypothesis (H_{017}) is not rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are independent of the level of learner motivation in the school.*

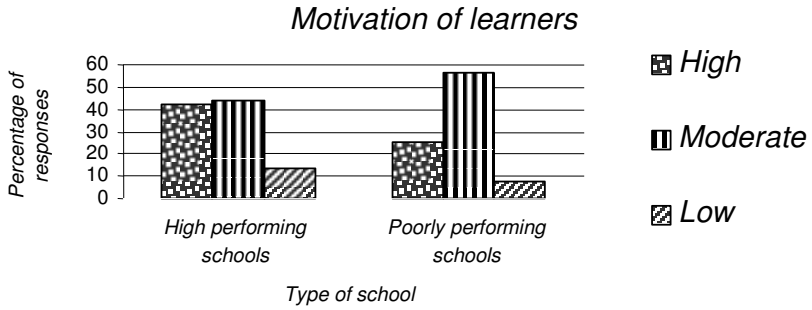

Figure 5.9.2.11: Learner motivational levels (Variable 54) percentages compared according to school performance group

Performance with notes and summaries (Variable 56)

H_{018} The Grade 12 results in the schools in the sample under discussion are independent of the level of learner performance in making notes and summaries in the school.

Table 5.9.2.12: Performance with notes and summaries (Variable 56) frequencies and percentages compared according to school performance group

Category/state	*Group 1 schools*		*Group 2 Schools*	
	Freq.	*%*	*Freq.*	*%*
Very high	29	33.33	15	29.41
Adequate	46	52.87	34	66.67
Poor	12	13.79	2	3.92

Statistical test for independence:

Test	*Degrees of freedom*	*Chi-square value*	*p-value*
Chi-square	2	4.2986	.1166

Since p>.05, the null hypothesis (H_{018}) is not rejected. Therefore it may be concluded that *the Grade 12 results in the sampled schools are independent of the level of learner performance in making notes and summaries in the school*.

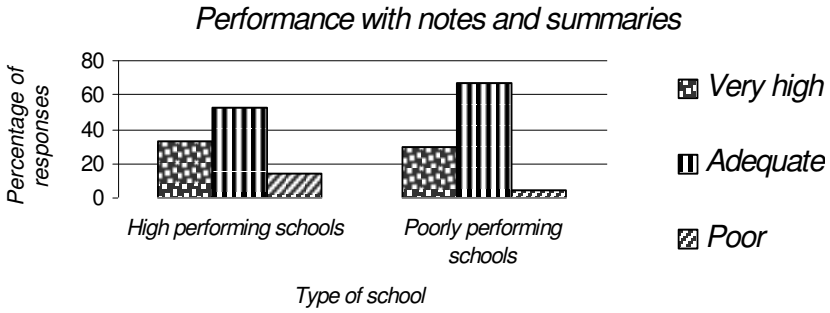

Figure 5.9.2.12: Performance with notes and summaries (Variable 56) percentages compared according to school performance group

5.9 Conclusions

In many cases the statistical analyses, i.e. the chi-square tests for independence, do not support what might be predicted about the relationships between Grade 12 performance and a number of variables. Sometimes the tables do reveal a relationship that is not supported by the analyses to be significant, but are worth discussing in any event, and are also worth further research.

5.10.1 Rejected hypotheses – where Grade 12 results are dependent on some variable

The important variables affecting Grade 12 results are those three to do with meetings with parents and staff, and the scheduling of the meetings. This suggests that the dialogues between adults – parents and teachers – have the most effect on student performance. The fact that the scheduling of staff meetings also has an effect would suggest that the formality of the interaction is also a factor.

5.10.2 Hypotheses which were not rejected – where Grade 12 results are not affected by measured variables

Grade 12 results do not seem to be dependent on any of the other 111 variables measured and explored in this study, although the results from some of them are suggestive but not conclusive.

Important ones among these could be the provision of visual aids (Variable 22), particularly as teachers seem to be unable or unwilling to make their own visual aids (Variable 23).

Learner motivational levels (Variable 54) also bear some examining, as there is a greater number of students with moderate levels of motivation in the poorly performing schools, and this would affect the statistical balance even

though the high performing schools have a greater proportion of highly motivated students than the poorly performing schools. A similar pattern is observable with the variable of performance with notes and summaries.

The variable of library provision (variable 16) is also worth considering, as it was not canvassed to what extent the libraries were actually used, and this may depend on library qualities not apparent from the data collected by this study.

The effect of a small sample size would have affected some of the statistical analyses, but there is also the effect of sample area to be considered. It is noticeable that the teachers in this area are predominantly Tshivenda speakers, thus precluding teachers' home language (Variable 7) from being a true variable. The qualifications of the teachers (Variables 4 and 5), especially the academic ones, are also fairly uniform, masking any possible effect on Grade 12 performance.

That there is some cultural effect is suggested in the interaction between the gender of a teacher (Variable 6) and the teacher's willingness to help learners with time problems (Variable 85) as reflected in Table 5.4.6.

All this suggests that this study, far from presenting any definitive answers to the problem of Grade 12 performance serves mostly to outline a number of trends that need to be investigated further in the future.

5.11 Data Collected through Interviews with School Principals

In accordance with the triangulation proposals described in Chapter 4 (Sections 4.12 and 4.9.1), interviews were conducted with a total of 24 school principals, distributed as shown in Table 5.10.

Table 5.11: Breakdown of sample of principals involved in this study

	Group 1 Schools (Grade 12 results 75-100%) 'High performing'		*Group 2 Schools (Grade 12 results 30-40%) 'Poorly performing'*		
	Urban District	*Rural District*	*Urban District*	*Rural District*	*Totals*
No. of principals	7	7	5	5	24

Since the questions to the principals were presented in the course of an interview, and they had not been required to complete a questionnaire, the information acquired was much more personal and qualitative. In any case, the sample size of principals was too small for meaningful statistics to be calculated, and their responses are thus judged as anecdotal and subjective. Nevertheless, these responses do serve as a valuable comparison with the more quantifiable and perhaps more reliable responses obtained from the teachers. It should not be forgotten that responding principals may have felt that they had a vested interest in any reaction to the responses that they gave.

A number of issues need to be highlighted before I commence my analysis of the qualitative data. Firstly, even though it is assumed that that the principals were conversant with issues around their schools, it cannot be claimed that they "know everything". Secondly, as can be seen from Table 5.10 above, high performing schools are also found in rural areas. Furthermore, although no analysis was undertaken to compare the different types of problems between rural and urban schools, urban schools are known to have specific problems of their own (Steyn & van Wyk 1999:41) and I was particularly interested in finding out if there were differences, not only in terms of the experiences of high performing and poorly performing schools, but also in the experiences of urban principals vis-à-vis those attached to rural schools. Lastly, as I have indicated, the main reason for these comparisons was to

compare the data acquired in this way with responses to the same questions obtained from teachers for purposes of triangulation. The data collected from interviews with the school principals were categorized into fifteen main categories:

1. Length of service of the principal
2. Funding
3. Classroom sufficiency
4. Science laboratory availability
5. Involvement of parents in education
6. Methods of parental involvement
7. Rationale for parental Involvement
8. Availability of code of conduct for learners
9. Problems caused by teachers
10. Problems caused by learners
11. Effectiveness of disciplinary committee
12. Frequency of staff meetings
13. Scheduling of staff meetings
14. Availability of a year planner
15. Teacher motivation

I will now discuss each of these fifteen categories separately.

5.11.1 Length of service of school principals

The principals indicated that they had occupied their position for over nine (9) years on average.

Table 5.11.1: Length of service of school principals

	Number of responding principals			
	High performing schools		*Poorly performing schools*	
Length of service (years)	*Urban*	*Rural*	*Urban*	*Rural*
0-5	1	0	1	1
6-10	4	3	3	2
11-15	1	1	0	1
16-20	1	1	1	0
21-25	0	2	0	1
26-30	0	0	0	0
TOTAL	**7**	**7**	**5**	**5**

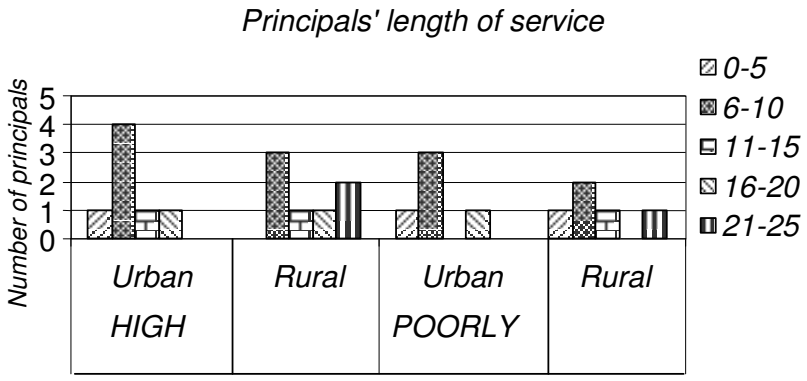

Figure 5.11.1: Length of service of school principals

When this information is broken down further as in Table 5.10.1, it can be seen that principals who have been in service between 6 and 10 years do predominate, and that they are more predominant in high performing schools. It can be assumed that such principals are fairly young, although a greater number of those in the 21-25 year range of service also appear in the high performing schools, and it is interesting that this older group is also to be

found in the rural schools. One interpretation of this is that older principals are more willing to take on schools in rural areas, possibly because they are more peaceful. No analysis was undertaken to compare the different types of problems between rural and urban schools, but urban schools are known to have specific problems of their own (Steyn & van Wyk 1999:41).

5.11.2 Funding of schools

Twenty of the twenty-four principals (i.e. 83%) interviewed from both types of schools stated that their schools were not adequately funded.

Table 5.11.2: Principals' assessment of school funding

	Number of responding principals	
	High performing schools	*Poorly performing schools*
Adequate funding	1	3
Inadequate funding	13	7

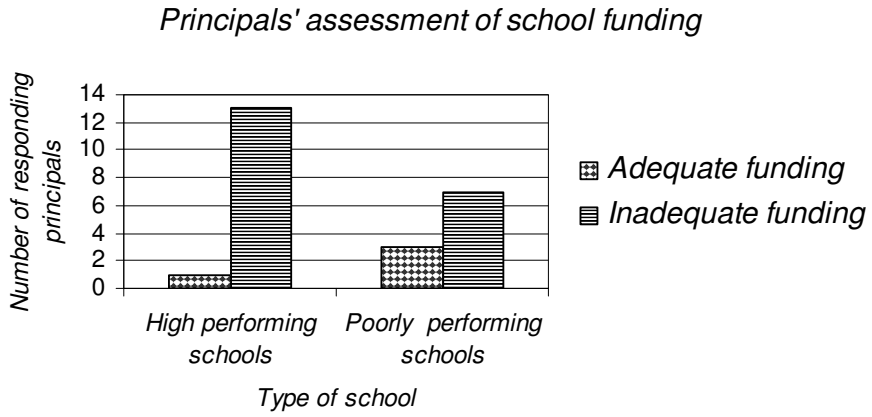

Figure 5.11.2: Principals' assessment of school funding

If the principals are to be believed, more of the high performing schools are in need of funding than the poorly performing schools.

It is interesting that a greater proportion of the principals from the high performing schools considered funding to be inadequate. One plausible explanation for this finding could be that principals' were particularly concerned about the whole matter of funding, since it became clear from some of the responses that principals responding to this question were hoping that their opinion would get transmitted to some authority in the matter.

Zangqa (1999:96) maintains that lack of adequate funding can have a disastrous effect on achievement because it makes teaching and learning so much more difficult and thus demoralizing. It is interesting to note, though, that a number of current examples of poorly resourced schools are performing miracles of achievement. Clearly, even though researchers such as Zangqa (1999) have highlighted the negative impact of insufficient funding on teaching and learning, it should be kept in mind that this need not necessarily be the case.

In the quantitative analysis based on teacher response to the questionnaire, variable 9 (School funding – section 5.6) was dropped at an early stage as not showing sufficient variation between the two types of school. Indirect evidence of funding, as reflected in the presence or otherwise of science laboratory and library (see Chapter 4, Section 4.12.4), was statistically tested, as described above in Tables 5.6.4, 5.7.6 and 5.9.2.9. Here again, there turned out to be no relationship between these and Grade 12 performance.

5.11.3 Classroom sufficiency

The majority of school principals interviewed stated that they did not have sufficient classrooms, and very few claimed otherwise.

Table 5.11.3: Principals' assessment of classroom sufficiency

	Number of responding principals	
	High performing schools	*Poorly performing schools*
Sufficient classrooms	2	2
Insufficient classrooms	12	8

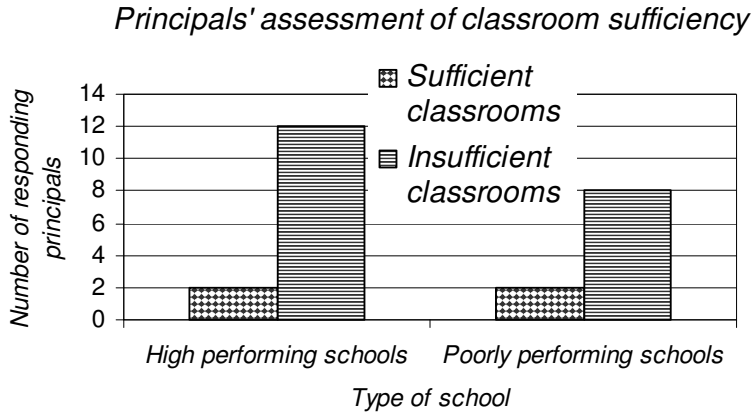

Figure 5.11.3: Principals' assessment of classroom sufficiency

This supports the information obtained from teachers, the majority of whom also reported a shortage (see Table 5.9.2.5) – although the shortage was revealed to be more acute in urban schools (Table 5.4.1). In any event, Grade 12 results proved to be independent of a school's relative classroom shortage. This does not really minimize the importance of having sufficient classrooms; it just means that the effect was the same in both types of school. The principals' view that more classrooms should be provided to enable better teaching seems to be a logical assumption.

5.11.4 Science laboratory availability

Even though principals of the urban schools acknowledged the presence of science laboratories in their schools, they were unanimous in agreeing that the mere presence of these laboratories does not contribute to enhanced learner performance. One of them stated that "We have a building called a laboratory but we cannot afford to buy the chemicals." They complained about the presence of laboratories without equipment, and this is supported by Table 5.6.4. which reflects the teachers' dissatisfaction with the equipment of the science laboratories provided. This might lead to poor performance, as suggested by the Third International Mathematics and Science Study Repeat (TIMSS-R that teaching and learning in Mathematics and Science may be seriously hampered by a shortage of facilities. It needs to be stressed, however, that the mere presence of a laboratory is not enough; there needs to be better funding, a better use, and perhaps better teaching before the function of a science laboratory can be reflected in a school's Grade 12 results. In the light of this, the role of a school laboratory in the Grade 12 performances of the sampled schools is not surprisingly negligible. This is another instance where the effect can be considered uniform over both types of school, and is comparable with the effect of classroom sufficiency.

5.11.5 Involvement of parents in education

Quantitative data obtained from the teachers (Table 5.9.1.1) shows a clear relationship between the *frequency* of meetings with parents and the Grade 12 results. All principals interviewed claimed to involve parents in education, although some complained that, in most cases when they call parents, the parents fail to appear. As a result, the principals end up disappointed and frustrated. Assuming that the methods principals employ to ensure parental involvement are often not effective, the need for more strategic planning to facilitate enhanced parental involvement seems evident.

5.11.6 Methods of parental involvement

The general response of the principals was that there are many ways in which they involve parents in school matters. Parents serve on the School Governing Bodies; they attend school meetings and, when the schools close, parents are usually called in to collect their children's results. They are also called in when there is a problem with a particular learner. It may be asked whether this is enough, given that frequency of meetings turns out to be so important.

Some principals went so far as to say; "When parents are involved, teachers and parents form a partnership." As a result, they believe that learners' academic performances improve. They also believe that misbehaving learners will not misbehave as some fear their parents, and knowledge of their involvement with the school will inhibit bad behaviour. One principal also noted that his particular school has a huge project of constructing the administrative block, and parents are fully involved with that. A plan was drawn by the teacher from the same school, and a parent plumber volunteered to do the plumbing for the school. Even at this basic level the principal considered that the effect was positive.

In one of the schools sampled, a principal stated that parents were involved in an unusual way. The school organized a cleaning campaign and parents were fully involved in the cleaning. The principal felt that encouraging parents to become familiar with the school yard in such a way could have a positive effect on the relationship between school and parents, indirectly impacting positively on learner achievement. This finding is particularly important, since it corroborates the finding contained in 5.1.1: "The important variables affecting Grade 12 results are those three to do with meetings: meetings with parents and staff meetings and their scheduling. This suggests that the dialogues (and thus cooperation) between adults – parents and teachers – have the greatest effect on student performance."

5.11.7 Availability of code of conduct for learners

All 24 principals from both the high and poorly performing schools stated that they have codes of conduct for learners. Any effect on Grade 12 performance cannot therefore be assessed.

5.11.8 Problems caused by teachers

Although most principals did not want to comment on this issue, five principals from the high performing schools stated that they had hardworking teachers who, as human beings, had minimal weaknesses, although four principals from the same category stated that they experienced problems of absenteeism, coming late and non-commitment. At the same time, five principals from the same group of schools (high performing) complained that some teachers did not understand the new teaching style and assessment strategies.

From the poorly performing schools, six principals stated that they experienced problems of non-commitment by teachers. They did not respond to the school siren or bell. They were not time-conscious. Three of these principals stated that teachers were hard hit by the redeployment process. The uncertainty of not knowing where they would be working the following month or year demoralised them. Only one principal from this category indicated that he did not experience problems among teachers.

Table 5.11.8: Principals' assessment of teacher problems

	Number of responding principals	
	High performing schools	*Poorly performing schools*
Satisfied with teachers	5	1
Absenteeism etc.	4	6
Problems with teaching methods	5	

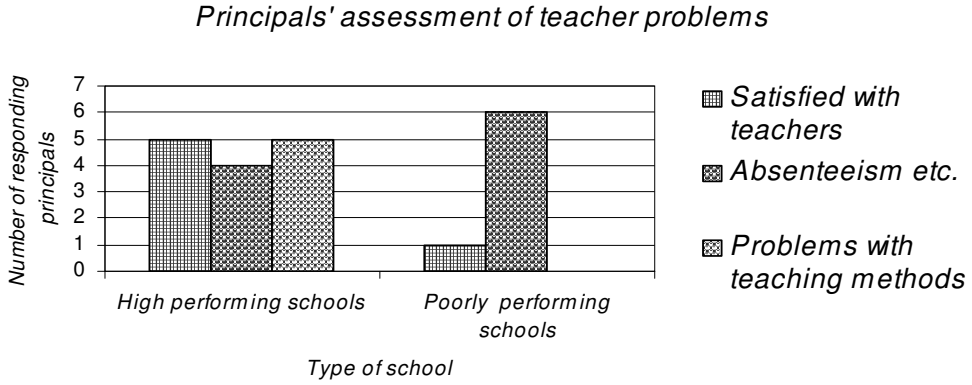

Figure 5.11.8: Principals' assessment of teacher problems

Table 5.10.7 and Figure 5.10.7 might suggest that non-commitment on the part of teachers could indeed affect Grade 12 results, but this conclusion would need further testing. The demonstration that parental involvement is statistically significant (Table 5.9.1.1), in the specific sense of frequency of meetings between parents and teachers, in which the type of relationship formed may also play a part (Section 5.10.6) and also staff meetings and their scheduling (Tables 5.9.1.2 and 5.9.1.3) all suggest in this context a complex interaction of different things. Seemingly, a combination of elements can have a positive effect on Grade 12 results. So far the elements seem to be:

- teachers who enjoy a principal's trust (see: Table 5.10.8);
- frequent meetings with parents (see: Table 5.9.1.1);
- a partnership formed between teacher and parent to manage student behaviour (see the argument following Table 5.9.1.1).

Teacher commitment, as mentioned by the principals, could well be a further element in that combination A committed teacher would be more likely to enjoy a principal's trust, and also more willing to meet with parents and to form a partnership with them. The views of principals who came from the poorly performing schools, identified absenteeism as the main problem with teachers. The lower frequency of administration blocks in the poorly performing schools (Table 5.9.2.7) may suggest that school conditions are an

important factor in teacher commitment. As some of the principals in these schools also report that teachers are hard-hit by the redeployment process, this suggests that not only conditions but terms of employment could be a problem for teachers. The predominance of the older age groups of teachers in the rural schools (Table 5.7.1) may also be a reflection of this.

5.11.9 Problems caused by learners

Of the fourteen principals at the high performing schools, seven stated that they experienced the following problems caused by learners: dodging of classes, late coming, drug abuse, fighting and some learners were not fully committed to schoolwork. These principals went on to say that since they had co-operative parents, they always called them when they experienced these types of problems. Of the remaining principals from the high performing schools, five stated that they experienced minor problems caused by learners. Only two principals from this category stated that there were a few learners who engaged themselves in 'freaking' (hiring of a minibus with loud music also used in buying large quantities of liquor and moving around town, sometimes during school hours).

Of the ten principals from poorly performing schools, nine stated that the main problem caused by learners is 'freaking', related of course to non-commitment to school work, alcohol abuse, vandalism and disrespect for teachers. Only one principal from this category blamed the parents for learners' misbehaviour.

Qualitative analysis of principals' responses seem to suggest that student behaviour may indeed have some effect on their Grade 12 results (*id est*, problem behaviour might have a negative effect on Grade 12 results). It has already been suggested that the closeness of the relationship between parents and teachers can affect Grade 12 results. Even though students' misbehaviour certainly seems to correlate positively with poor Grade 12 results, principals from poorly performing schools in particular were not relating students' unbecoming behaviour to lack of parental involvement.

However, these principals consistently expressed the view that parents were to a certain extent to blame for their children's misdoings, stating that it was obvious that parents should be held accountable for children's problem behaviour. As one of them remarked: "The hiring of a minibus and the purchase of liquor require money, to say the very least, and where else but from their parents would the learners get such money?" (As an aside, the phenomenon of 'freaking' is largely limited to the urban areas, since taxis-for-hire are not generally available in rural zones.)

5.11.10 Presence of a disciplinary committee

All of the 24 principals interviewed (thus from both the high and poorly performing schools) reported that they had a disciplinary committee in their schools. Two of them (from high performing schools) went on to say that their disciplinary committee consisted of teachers (from the School Management Teams) as well as learners (two members of the Learners Representative Council) plus the principal as an ex-officio member.

The mere presence of a disciplinary committee seems to have little noticeable effect, therefore, on Grade 12 results, in the poorly performing schools at least.

5.11.11 Effectiveness of disciplinary committee

The effectiveness on learner behaviour of a disciplinary committee may be another matter. When asked about the effectiveness, all the principals claimed that their committees were very effective.

Given the results discussed under section 5.10.9 above, it is perhaps possible to doubt the principals' opinion on this. In poorly performing schools, discipline is obviously poor and it is possible to relate this to parental involvement.

5.11.12 Frequency of staff meetings

Of the 14 principals from high performing schools, eight stated that they usually held their planned staff meetings once a month. However, they added that their meetings were not limited to the planned ones. They always had a short meeting when there was an urgent issue to be discussed. Of the remaining six principals of the high performing schools, four stated that they had weekly staff meetings and two indicated that they had daily staff meetings. Those who had daily staff meetings indicated that that was in order to encourage teachers to come to school on time.

Of the 10 principals from poorly performing schools, five stated that they had their staff meetings daily. Of the remaining five, three had their meetings weekly and two principals had their meetings monthly.

Table 5.11.13: Principals' version of staff meeting frequency

	Number of responding principals	
	High performing schools	*Poorly performing schools*
Daily	2	5
Weekly	4	3
Monthly		2
Monthly plus	8	

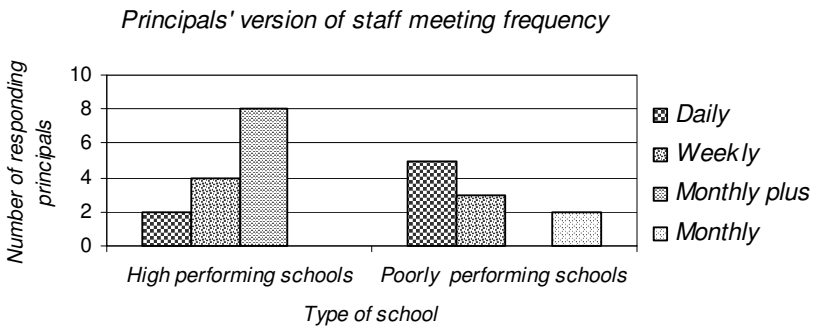

Figure 5.11.13: Principals' version of staff meeting frequency

On the face of it, this may seem a surprising result – until it is compared with Table 5.9.1.2 above. Teachers in high performing schools also reported a high frequency of monthly meetings and a low frequency of daily meetings, with weekly meetings coming somewhere in between. The fact that the two principals in high performing schools who required daily meetings did so in order to exercise discipline over teachers may suggest that a high frequency of meetings could be a result of poor Grade 12 performance rather than an effort to involve all staff constructively in planning their daily teaching and learning activities. Daily meetings are more common in the poorly performing schools, and may be similarly motivated, although this was not mentioned by the principals concerned. This particular finding is consistent with the finding in section 5.9.1. In summary, it seems as if the frequency of daily staff meetings in a school may (at least to an extent) be the result of something being wrong in that school, and monthly meetings may on the other hand be symptomatic of a smoothly-run school, as reflected in Grade 12 performance.

5.11.13 Scheduling of staff meetings

All 24 principals from both types of school (high and poorly performing) have scheduled staff meetings, except in cases of emergencies. This of course would be normal, and would not be expected to have any effect on Grade 12 performance. However, too many unscheduled meetings might indicate some dysfunctionality in the school. As discussed above, daily meetings already suggest this, and daily meetings may well be a substitute for unscheduled meetings.

5.11.14 Availability of a year planner

All 24 principals had a year planner. One principal from the high performing group added that a year planner is compulsory for all schools. Any correlation with Grade 12 performance would not therefore be expected.

5.11.15 Teacher motivation

Of the 14 principals from high performing schools, nine stated that they motivated their teachers by congratulating them on good performance. More than that, they give them merit certificates. From the same group of schools, three principals took their teachers out towards the end of the year – a type of year-end function when they reviewed the whole year's work. Another two principals maintained that, in order to motivate teachers, they valued their contribution and treated them as adults.

The behaviour of the principals in this respect should be seen against their views where teacher problems are concerned, as reflected in Table 5.10.8., according to which principals in the high performing schools were on the whole more satisfied with the behaviour of their teachers.

It is crucially important to reiterate the following: I am fully aware that the qualitative data, depending as it does on the ***opinions*** of school principals, must be carefully interpreted. An interviewed principal would be aware in advance of whether or not the school was producing good Grade 12 results. Furthermore, those in poorly performing schools might (at least to an extent) be seeking to shift the blame away from themselves – onto school funding, teachers, parents, or the students. As a result their information may be less reliable than that coming from the principals of the high performing schools. On the other hand, principals of successful schools might be seeking to take credit for themselves, but, judging by the comments made by these principals during my study, this appears not to have been the case in general.

5.12 Conclusions

It seems clear from the analyses discussed thus far that, in many cases, the statistical analyses, i.e. the chi-square tests for independence, do not support what might be expected about the relationships between Grade 12 performance and a number of variables. However, in a number of instances,

even though the results do not reveal statistically significant relationships, the findings seem worth discussing nonetheless, and worth further research.

5.12.1 Rejected hypotheses – where Grade 12 results are dependent on some variables

The statistically significant variables affecting Grade 12 results are those three to do with meetings: meetings with parents and staff meetings and their scheduling. This suggests that the dialogues between adults – parents and teachers – have the most significant effect on student performance. The fact that the scheduling of staff meetings also has an effect would suggest that the formality of the interaction is also a factor. A raised incidence of unscheduled meetings, possibly reflected in the frequency of daily meetings, as discussed in Section 5.10.12 above, seems to have more of a disciplinary function. Scheduled monthly meetings to deal with the routine business of a school suggest a better management style prevailing at the school. This conclusion arises out of the fact that a relatively high frequency of staff meetings does not seem to be influencing Grade 12 performance positively, and monthly meetings as opposed to daily ones may indeed be having a positive effect on Grade 12 performance. This may reflect on teacher motivation as well as school management, as was suggested when the qualitative data were considered (Sections 5.10 and 5.11.3).

5.12.2 Hypotheses that were not rejected – where Grade 12 results are not affected by measured variables

Grade 12 results do not seem to be dependent on any of the other 111 variables measured and explored in this study, although the results from some of them could be indicative of some connection, while not being conclusive. For instance the relative success of schools in rural areas as opposed to those in urban areas could correspond to a better relationship with parents. Furthermore, the greater proportion of administration blocks in high performing schools could have a bearing on school management and a better

relationship between principal and teachers reflected in the scheduling of monthly meetings.

Another important variable could be the provision of visual aids (Variable 22), particularly as teachers seem to be unable or unwilling to make their own visual aids (Variable 23). Furthermore, learner motivational levels (Variable 54) also bear some examining. Whereas there is a greater number of students with moderate levels of motivation in the poorly performing schools, this would affect the statistical balance even though the high-performing schools have a greater proportion of highly motivated students than the poorly performing schools.

The variable of library provision (variable 16) also deserves further investigation, as it was not canvassed to what extent the libraries were actually used.

The effect of a small sample size would have affected some of the statistical analyses, but there is also the effect of sample area to be considered. It is noticeable that the teachers in this area were predominantly TshiVenda speakers, thus precluding teachers' home language (Variable 7) from being a true variable. The qualifications of the teachers (Variables 4 and 5), especially the academic ones, were also fairly uniform over both types of school. If level of qualification has any effect on Grade 12 performance, the data from this sample were not able to test the hypothesis that better qualified teachers might facilitate better Grade 12 results.

That there is some cultural effect is suggested in the interaction between the gender of a teacher (Variable 6), and the teacher's willingness to help learners with time problems (Variable 85) is reflected in Table 5.4.6**.** One would ordinarily expect women teachers to be more helpful, so it is a surprise to find that men are more helpful. The cultural effect could be that among the Venda, men more than women are often confronted with the need to organize their time efficiently and so are more likely to be sympathetic to a learner who has problems with this.

5.12.3 Qualitative data obtained from school principals

In conclusion I would like to confirm that understanding the potential impact of staff meeting frequencies is perhaps not as straightforward as it may seem at first glance. The fact that those principals in high performing schools who required daily meetings did so in order to exercise discipline over teachers may suggest that a high frequency of meetings could be a result of poor Grade 12 performance rather than an effort to involve all staff constructively in the planning of daily teaching and learning activities. This particular finding is important, and is strengthened by the fact that a relatively high proportion of the poorly performing schools have daily meetings. Furthermore the involvement of parents in teaching-and-learning related activities appears to be crucial, since it appears to impact positively on learner behaviour. Lastly, it is worth noting that principals seem to agree that engaging parents in locating disciplinary problems, impacts positively on Grade 12 performance.

Clearly, the picture is not as clear as one might have hoped it would be. However, even though I have not come up with conclusive “answers” to my research questions, I do believe that I have, in some small way, contributed to debates in this field. All this suggests that this study, far from presenting any definitive answers to the problem of Grade 12 performance, serves mostly to provide material for further research.

CHAPTER 6

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 Overview of the Study

The main aim of the study was to investigate the factors influencing learners' Grade 12 results in Limpopo Province. The basic research question was formulated as follows: "Why do Grade 12 learners in Thohoyandou and Mutale circuit co-ordinations perform better than Grade 12 learners in other circuit co-ordinations?"

The subsequent chapters examined, in different ways, the factors influencing Grade 12 results in Limpopo Province:

CHAPTER ONE**:** This chapter outlined the background to the research problem, by stating the problem, specifying the research objectives, and laying out the research approach. The proposed methods and structure of the research were described.

CHAPTER TWO provided a review of the research literature relating to the cultural and historical background of the school populations being considered, as well as possible school and teacher factors influencing Grade 12 results. This review was undertaken in order to establish a theoretical understanding of and a basis for developing the research instruments used.

CHAPTER THREE reviewed the research literature relating to learner factors such as language, motivation and family background possibly influencing Grade 12 results. This chapter, too, was undertaken in order to establish a theoretical understanding of and a basis for developing the research instruments used.

CHAPTER FOUR discussed and examined the rationale for the research design and methodology. The sample area and delimiters of the study were described.

CHAPTER 5 dealt with data presentation and the statistical analyses and interpretation of the results.

CHAPTER 6 summarized the research and the conclusions to be drawn, and made recommendations for further research and, where applicable, future policy on Grade 12 education.

6.2 Major Findings of the Study

6.2.1 Findings based on the questionnaires completed by teachers (quantitative data)

In the sampled schools most of the variables that could have been expected, according to the literature, to have an effect on Grade 12 results, in fact had had **no** effect, at least among the sampled schools.

The most significant variables which emerged from the analyses were those connected with types of contact – contact with the parents of learners, and contact among teachers as part of the school administration. A superficial but somewhat surprising finding was that frequency of staff meetings had no direct positive correlation with Grade 12 results but, instead, scheduled monthly staff meetings seem to have a greater effect than weekly ones. The fact that staff meetings were scheduled also seemed to favour better Grade 12 results.

Frequency of meetings with parents had a more direct relationship with Grade 12 results, suggesting that parental involvement, whether voluntary or not, did result in better student performance.

6.2.2 Findings based on interviews with school principals (qualitative data)

Even taking into account the fact that much of the information obtained from school principals could be considered biased in one way or another, it is

interesting that some of their comments confirmed the results obtained from the teacher questionnaires, without the principals being aware of those results. Principals who required frequent staff meetings did so on the grounds of teacher discipline, suggesting that these frequent meetings only occur when a school already has problems. A school with fewer problems would in all likelihood need fewer unscheduled staff meetings, so a match with better Grade 12 results is not surprising.

The principals also felt that it was advantageous to engage parents in the process of dealing with disciplinary problems of learners.

6.2.3 Conclusions

Assuming that statistically significant results can be used as a basis for noteworthy conclusions, I conclude that my main findings have to do with school management, and possible with the personality and style of school principals.

A school running calmly, with scheduled monthly staff meetings and no emergency ones can expect better Grade 12 results than those in which teachers are in need of monitoring by the principal. In addition the involvement of parents in students' work and behaviour can be expected to have a beneficial effect on the academic work of their children.

6.3 Limitations of the Study

This study sampled only a very small part of South Africa. Indeed, it sampled only a very small part of Limpopo Province, and that part was one that was already known for its good Grade 12 results.

The sample of schools was therefore small, so that generalization of the results cannot be easily justified. With only 168 teachers from a total of 24 schools, spread over two neighbouring districts in the same province, a great deal of internal uniformity could be expected. It could be argued that this

would make any differences more meaningful, but this assumption cannot be argued statistically.

It should also be borne in mind that the results themselves were taken from a specific time period, before many of the latest education policies had been instituted. Since the only results looked at were those for Grade 12, it should be recognized that the learners who produced them, had an educational background reaching back at least to the year when South Africa only started undergoing major administrative changes. The generally accepted teaching style has since shifted, if only temporarily, away from an authoritarian, top-down style.

Another consideration is that while it might be desirable to find causes and their effects reflected in Grade 12 results, this is not what the statistical techniques employed in my studies were able to accomplish. Only a dependency relationship can be revealed, not the direction of the dependency. With Grade 12 results constituting one variable, it can only be assumed that they are the dependent variable because the measurement of those results covered a single period of five years (2000 to 2005), whereas the other variables could be assumed to be pre-existing and longer-lasting. These assumptions therefore underlie any conclusions that may be drawn.

6.4 Recommendations

6.4.1 Recommendations relating to the study

In spite of all the limitations, the conclusions do suggest practical strategies that schools could employ to improve academic performance among learners. These are not the kind of strategies that need to be reflected in national policies, but they are certainly worth putting on the agenda of meetings where principals come together to make suggestions and implement decisions. These strategies could be described as follows:

- Establishing trust between principals and teachers and learners.

- Assisting teachers in working harmoniously with other teachers and learners.
- Establishing good communication between principals, teachers, parents and learners.
- Affective facets that need be assessed and attended to, include, *inter alia,* the following:
- **Visible** facets: Teachers' (and learners') initiative, participation in teaching and learning-related dynamics and co-operation in group contexts.
- **Hidden** facets: Teachers' (and learners') attitude **and** disposition towards teaching and learning-related facets; his/her self-confidence and perseverance.

6.4.2 Recommendations for further studies

Further studies obviously need to be much more broadly based; the better to aid generalization, but in this study some suggestions have been made that can be more fully explored. For instance:

- What is in fact the optimum frequency of staff meetings?
- Is there any other feature of staff meetings, other than frequency and scheduling that would favour Grade 12 results?
- Are the meetings with parents solely for disciplinary reasons, or is a generally good relationship being established?

To address the challenge of inadequate performance by learners in the research area effectively, a number of matters deserve attention. Training of teachers to deal with the issues referred to seems essential, as well as facilitation of parental guidance programmes and programmes that may enable the parent to help learners at home. It is therefore essential that the parents are empowered to become involved. Consideration should for example be given to the "training" of a number of parents who may in turn "train" others.

Refining the questionnaire used in this study and replicating of the study, involving a larger sample of respondents from different provinces, seems necessary.

Not being possible to explore with the sample used here, but still worth exploring, would be the matter of teacher language. Schools in which teachers and learners speak different languages would be worthwhile including in a sample for future study, as clearly cultural factors are also at work where relations between teachers and principal, between different teachers, and between teachers and parents have emerged as important.

Some way of manipulating the variables in order to show the direction of causality would also be useful. For instance: is it because Grade 12 results are poor that staff meetings are more frequent, or do frequent staff meetings *result* in poorer Grade 12 results, however unlikely that may seem?

6.5 Concluding Remarks

From this study the most significant finding (statistically, educationally and psychologically) seems to be that interpersonal relations are the best indicator of academic performance, either as cause or result. A school's resources seem of lesser importance, although some researchers have suggested that interpersonal relations may be easier in a well resourced school (Maree & Erasmus, 2006). On the other hand, working together in adversity, can also give rise to positive interpersonal relationships. Interpersonal relations are obviously not something that can be legislated for, but if policy-makers can bear in mind the importance of such relationships in trouble-free management, not only Grade 12 results may benefit. It is a principle that can be applied across the board in many disciplines and administrations apart from education.

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PRETORIA 0002

2005-08-01

Dear Principal,

I am currently conducting research into the factors influencing Grade 12 results in the Vhembe District of Limpopo Province for the years 2002 -2005, and I have been granted permission by the **Limpopo Education Department** to conduct research in the school in which you are currently managing as it has been selected to take part in this research.

1. An interview will be conducted and it will take approximately 30 minutes.
2. There is no known risk involved in the research.
3. There are no costs involved.

You are assured that your identity and responses to this interview will be regarded as **extremely confidential at all times and that they will not be made available to any unauthorized user.**

Should you have any queries or comments, you are welcome to contact me.

H.N. MUTSHAENI

CONSENT

In terms of the ethical requirements of the University of Pretoria, you are now requested to complete the following section:

I

_____.

have read this letter and understand the terms involved.

On condition that the information provided by me is treated as confidential at all times, 1 hereby (MARK the appropriate section)

☐ give consent

☐ do NOT give consent that the results may be used for research purposes.

Signature: _____

Date: _____

QUESTIONNAIRE ON SUCCESS FACTORS

AN ANALYSIS OF FACTORS INFLUENCING GRADE TWELVE RESULTS

This study aims at examining factors which successfully influence Grade 12 results in District Six of the Limpopo Province.

Your anonymity is absolutely guaranteed. You are not required to state your name in the questionnaire. The integrated results will, however be made available to each school involved in this study.

There are no right or wrong answers, but please answer as honestly as you can. It should take you about 30 minutes to complete the questionnaire.

PLEASE ANSWER ALL THE QUESTIONS

(IGNORE THE RIGHT-HAND COLUMN)

YOUR ASSISTANCE IS VERY MUCH APPRECIATED.

Please answer the following by filling in the blank space

				This side for office use only
		(Respondent number)	V1 ☐☐☐	1 - 3
1	How long have you been teaching?	YEARS ☐	V2 ☐☐	4-5
2	Your age	YEARS ☐	V3 ☐☐	6-7

Please answer the following by inserting an X in the appropriate block, ignoring the number in it (only once for each question)

3 Your highest qualification:

3 (a) Academic

Std 10	1
Bachelor's degree	2
Honours degree	3
Master's degree	4
Other	5

3 (b) Professional

Primary Teachers' Certificate	1
Junior Secondary Teachers' Certificate	2
Secondary Teachers' Diploma	3
University Education Diploma	4
OTHER (Specify)	5

V4 ☐ 8

V5 ☐ 9

4 Gender

Male	1	V6	10
Female	2		

5 Your mother tongue :

Tshivenda	1	V7	11
Xitsonga	2		
Sepedi	3		
Afrikaans	4		
English	5		
OTHER (Specify)	6		

6 Would you describe the school in which you teach as –

Rural	1	V8	12
Urban	2		

7 Do you think your school is

Underfunded	1	V9	13
Adequately funded	2		

8 Do you think your school has sufficient classrooms ?

YES	1	V10	14
NO	2		

9 Are the classrooms furnished adequately?

YES	1	V11	15
NO	2		

10 Does your school have an assembly hall ?

YES	1	V12	16
NO	2		

11(a) Does your school have a science laboratory ?

YES	1	V13	17
NO	2		

11(b) If yes, is the laboratory adequately equipped ?

YES	1
NO	2

V14 ☐ 18

12 Is there an administrative block at your school ?

YES	1
NO	2

V15 ☐ 19

13 Are you adequately supplied with stationery every year ?

YES	1
NO	2

V16 ☐ 20

14(a) Does your school have a library ?

YES	1
NO	2

V17 ☐ 21

14(b) If yes, how would you rate the library's book stock ?

Good quality	1
Poor quality	2

V18 ☐ 22

Good numbers	1
Too few	2

V19 ☐ 23

14(c) What kind of librarian does your school have ?

Professional, full-time	1
Professional, part-time	2
Teacher, part-time	3

V20 ☐ 24

14(d) Rate the service this librarian provides.

Good	1
Adequate	2
Poor	3

V21 ☐ 25

15(a) Does the school offer an adequate selection of audio-visual aids for classroom use ?

YES	1	V22		26
NO	2			

15(b) Do you make your own audio-visual aids ?

YES	1	V23		27
NO	2			

15(c) How often do you use such aids ?

Frequently	1	V24		28
Seldom	2			
Never	3			

16 To what extent does your school actively involve parents in its administrative decision-making ?

Frequently	1	V25		29
Seldom	2			
Never	3			

17 Does the school have a written code of conduct for teachers ?

YES	1	V26		30
NO	2			

18 Does the school have a written code of conduct for learners ?

YES	1	V27		31
NO	2			

19 Does the school have a disciplinary committee ?

YES	1	V28		32
NO	2			

20 What would you say was the ONE biggest problem caused by teachers at your school ?

Absenteeism	1
Drugs/alcohol	2
Assault	3
Sexual misconduct	4
Other	5

V29 ☐ 33

21 What would you say was the ONE biggest problem caused by learners at your school ?

Absenteeism	1
Drugs/alcohol	2
Assault	3
Sexual misconduct	4
OTHER (Specify)	5

V30 ☐ 34

22 How often do you meet learners' parents at your school ?

Once a month	1
Once a quarter	2
Twice a year	3
Once a year	4
OTHER (Specify)	5

V31 ☐ 35

23 Do you think that the involvement of parents in their children's education is essential for good management ?

Strongly agree	1
Agree	2
Disagree	3
Strongly disagree	4

V32 ☐ 36

24 To what extent do you think parents are involved in their children's education in your district?

Fully involved	1
Partly involved	2
Not involved	3
Not sure	4

V33 ☐ 37

25 How important in effective learning, do you think, is the involvement of parents in their children's education?

Extremely important	1
Fairly important	2
Not very important	3
Of no importance at all	4

V34 ☐ 38

26 **How frequently do you have the opportunity to talk to** parents about education?

Almost always	1
Often	2
Sometimes	3
Seldom	4
Never	5

V35 ☐ 39

27 Do you, as a teacher, experience problems as far as learners' discipline is concerned?

Yes, to a great extent	1
Yes, often	2
Seldom	3
No, not at all	4

V36 ☐ 40

28 Do you allocate specific times for specific activities in class?

YES	1
NO	2

V37 ☐ 41

29 Is time allowed for discussion in the classroom?

YES	1
NO	2

V38 ☐ 42

30 Is there a formally constituted class committee to discuss and propose solutions to problems ?

YES	1
NO	2

V39 ☐ 43

31 How important to education do you feel the discipline of learners is?

Extremely important	1
Fairly important	2
Important	3
Of no importance at all	4

V40 ☐ 44

32 Do you have a disciplinary committee at your school?

YES	1
NO	2

V41 ☐ 45

33 Do you have class discussions or meetings concerning discipline ?

YES	1
NO	2

V42 ☐ 46

34 How would you describe your relationship with your learners ?

Excellent	1
Very good	2
Satisfactory	3
Bad	4

V43 ☐ 47

35 How often do you have staff meetings ?

Every day	1
Once a week	2
Twice a week	3
Once a month	4
Once a term	5

V44 ☐ 48

36 Do you have scheduled/planned staff meetings ?

YES	1
NO	2

V45 ☐ 49

37(a) Do you have a year planner for your school?

YES	1
NO	2

V46 ☐ 50

37(b) If yes, do you stick to it?

YES	1
NO	2

V47 ☐ 51

38 When do you start with effective teaching after the reopening of the school ?

First day	1
Second day	2
Following week	3
Other	4

V48 ☐ 52

39 To what extent are you motivated to teach?

Strongly motivated	1
Motivated	2
Not motivated	3
Strongly unmotivated	4

V49 ☐ 53

40 "Involving teachers in decision-making can motivate teachers when teaching." To what extent do you agree or disagree with the above statement?

Strongly agree	1
Agree	2
Disagree	3
Strongly disagree	4

V50 ☐ **54**

41 Do you regard yourself as being involved in decision-making in your school ?

Yes completely	1
Yes mostly	2
Not much	3
Not at all	4

V51 ☐ **55**

42 Have you ever been rewarded for work well done?

YES	1
NO	2

V52 ☐ **56**

43 Do you reward learners for work well done ?

YES	1
NO	2

V53 ☐ **57**

Please answer the following by inserting an X in the appropriate block

(only once for each question)

44 What would you say is the motivational level of your learners to perform well in general?

Very high	1
Moderate	2
Low	3

V54 ☐ 58

45 In general, how do your learners think they will perform in their examination?

Very well	1
Adequately	2
Poorly	3

V55 ☐ 59

46 What is the performance level of your learners when they take notes and make summaries?

Very high	1
Adequate	2
Poor	3

V56 ☐ 60

Please answer the following questions in your own words, where appropriate, giving up to three reasons, and write each reason on a separate line.
Otherwise, please answer the questions below by inserting an **X** in the appropriate block, as before.

47 If you think that the involvement of parents is extremely important or quite important, please state why.

FIRST REASON V57 61

SECOND REASON V58 62

THIRD REASON V59 63

48(a) Do you as a teacher experience problems when involving parents in education ?

YES	1
NO	2

V60 64

48(b) If yes, describe the problems:

FIRST PROBLEM..... V61 65

SECOND PROBLEM V62 66

THIRD PROBLEM V63 67

49(a) **Do you think that involving parents in educational matters at school level can cause problems?**

YES	1
NO	2

V64 68

49(b) If yes, describe the problem areas:

FIRST PROBLEM..... V65 69

SECOND PROBLEM V66 70

THIRD PROBLEM V67 71

49(c) If no, give reasons for your opinion:

FIRST REASON V68 72

SECOND REASON V69 73

THIRD REASON V70 74

50(a) **In your opinion, are parents in your district knowledgeable enough to be involved in education?**

Yes	1
No	2

V71 75

50(b) If the answer is no, what do you think should be done and how?

FIRST SOLUTION.....

SECOND SOLUTION V72 76

V73 77

THIRD SOLUTION V74 78

51(a) **Would you be comfortable if parents volunteer to teach**

some of the subjects they are good at during their spare time?

YES	1
NO	2

V75 ☐ 79

51(b) If no, state your reasons:

FIRST REASON ..... V76 ☐☐ 80

SECOND REASON ..... V77 ☐☐ 81

THIRD REASON ..... V78 ☐☐ 82

52 If you feel that you are experiencing problems with learners, describe the problems below

FIRST PROBLEM..... V79 ☐☐ 83

SECOND PROBLEM ..... V80 ☐☐ 84

THIRD PROBLEM ..... V81 ☐☐ 85

53 Now that corporal punishment has been abolished, how do you deal with learners' misbehaviour?

FIRST SOLUTION..... V82 ☐☐ 86

SECOND SOLUTION ..... V83 ☐☐ 87

THIRD SOLUTION ..... V84 ☐☐ 88

54(a) Do you help learners to manage the time spent on their problems?

YES	1
NO	2

V85 ☐ 89

54(b) If yes, describe how you do it:

FIRST METHOD;.....

V86 ☐☐ 90

SECOND METHOD: .....

V87 ☐☐ 91

THIRD METHOD: .....

V88 ☐☐ 92

55(a) In your opinion do teachers need to be motivated in order to work?

YES	1
NO	2

V89 ☐ 93

55(b) If YES, state reasons:

FIRST REASON .....

V90 ☐☐ 94

SECOND REASON .....

V91 ☐☐ 95

THIRD REASON .....

V92 ☐☐ 96

55(c) If NO, state reasons:

FIRST REASON .....

V93 ☐☐ 97

SECOND REASON .....

V94 ☐☐ 98

THIRD REASON .....

V95 ☐☐ 99

56(a) Do you actively try to improve the motivation of your learners to study hard and perform well?

Always	1
Often	2
Sometimes	3
Never	4

V96 ☐ 100

56(b) If yes, describe how you do it:

FIRST METHOD;.....

V97 ☐☐ 101

SECOND METHOD: .....

V98 ☐☐ 102

THIRD METHOD: .....

V99 ☐☐ 103

Please answer the following by filling in a percentage in the appropriate block

(only once for each question)
Estimate the answers to save time

57 About what percentage of the learners in Grade 12 have the following languages as their home language ?

57(a) Tshivenda % ☐ V100 ☐☐☐ 104-6

57(b) Xitsonga % ☐ V101 ☐☐☐ 107-9

57(c) Sepedi % ☐ V102 ☐☐☐ 110-2

57(d) Afrikaans % ☐ V103 ☐☐☐ 113-5

57(e) English % ☐ V104 ☐☐☐ 116-8

57(f) Other (specify: .....) % ☐ V105 ☐☐☐ 119-21

58	With regard to the learners you teach, about what percentage come from the following types of home ?			
58(a)	Two parents most of the time	%		V106 122-4
58(b)	Only mother most of the time	%		V107 125-7
58(c)	No parents, only other relatives	%		V108 128-30
58(d)	Other type of household (specify:)	%		V109 131-3
59	What percentage of the learners usually travel the following distances to school ?			
59(a)	More than 20 km	%		V110 134-6
59(b)	15-20 km	%		V111 137-9
59(c)	10-14 km	%		V112 140-2
59(d)	5-9 km	%		V113 143-5
59(e)	Less than 5 km	%		V114 146-8
60	Is there anything you would like to add to the questionnaire ?			

.....
.....
.....
.....
.....

Thank you very much for your assistance.

In due course you and your school will be provided with feedback on the analysis of the results of this questionnaire.

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DEPARTMENT OF EDUCATION

Ref: 8/3/1
Enq: Makuya M.E.

Mrs Mutshaeni H.N.
P.O. 371
THOHOYANDOU
0950

CONDUCTING AN EDUCATIONAL RESEARCH STUDY: YOURSELF.

1. Your letter dated 30/06/05 has received a departmental attention.
2. The permission is granted to you to conduct research with regard to Grade 12 results in Vhembe District.
3. It is an official procedure to consult the Circuit Managers for arrangement before you commence.
4. Your attention will be highly appreciated.

DISTRICT SENIOR MANAGER FOR EDUCATION

VHEMBE DISTRICT
THOHOYANDOU GOVERNMENT BUILDINGS; OLD PARLIAMENT; BLOCK D

ANNEXURE D

UNIVERSITY OF PRETORIA

FACULTY OF EDUCATION

RESEARCH ETHICS COMMITTEE

CLEARANCE CERTIFICATE	**CLEARANCE NUMBER : CS07/09/07**
DEGREE AND PROJECT	PhD Curriculum and Instructional Design and Development An analysis of factors influencing Grade 12 results.
INVESTIGATOR(S)	H N Mutsheeni - 99235130
DEPARTMENT	Curriculum Studies
DATE CONSIDERED	13 September 2007
DECISION OF THE COMMITTEE	APPROVED

This ethical clearance is valid for 3 *years from the date of consideration and may be renewed upon application*

CHAIRPERSON OF ETHICS COMMITTEE	Dr S Human-Vogel
DATE	13 September 2007
CC	Prof J G Maree (Supervisor) Dr C Amsterdam (Departmental Representative) Mrs Jeannie Beukes (Administration)

This ethical clearance certificate is issued subject to the following conditions:

1. A signed personal declaration of responsibility
2. If the research question changes significantly so as to alter the nature of the study, a new application for ethical clearance must be submitted
3. It remains the applicant's responsibility to ensure that all the necessary forms for informed consent are kept for future queries.

Please quote the clearance number in all enquiries.

THOHOYANDOU TECHNICAL HIGH SCHOOL

Private Bag X2597
SIBASA
0970
Limpopo Province
Tel/Fax: 015 962 6171

08 JULY 2005

Mutshaeni H.N.
P. O. BOX 271
Thohoyandou
0950

Dear Mrs Mutshaeni

PERMISSION TO CONDUCT RESEARCH.

1. The above matter refers.
2. Permission to conduct research in our school has been granted

Please note that research should be conducted in the afternoons.

3. Hoping that you will find the above in order.

Yours Sincerely.

Thovhakale P.S

THOHOYANDOU TECHNICAL HIGH SCHOOL
PRINCIPAL
2005 -07- 08
LIMPOPO PROVINCE
P/BAG 2597 SIBASA

APPENDIX

Schedule of questions used in interviews with school principals

1. For how long have you been principal of this school ?
2. Do you think your school is adequately funded ?
3. Do you have sufficient classrooms ?
4. Do you have a science laboratory ?
5. Do you involve parents in the education of learners ?
6. Do you think that the involvement of parents in education is important ? Why ?
7. How do you involve parents ?
8. Do you have a code of conduct for learners in your school ?
9. Could you describe some of the problems which are caused by teachers at your school ?
10. Could you describe some of the problems which are caused by learners at your school ?
11. Do you have a disciplinary committee ? Is it effective ?
12. How often do you have staff meetings ?
13. Are your staff meetings scheduled ?
14. Do you have a year planner for the school ?
15. How do you motivate your teachers ?


2008/03/15


2008/03/15


2008/03/15


2008/03/15


2008/03/15


2008/03/15


2008/03/15


2008/03/16


2008/03/16


2008/03/16