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Learner performance disparities between former white and former black schools in Gauteng Province of South Africa after more than a decade of democracy.

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CHAPTER ONE
INTRODUCTION

1.1. Background of the study

Since 1994, South Africa has been making attempts to recover from the ravages of almost five decades of apartheid education. While the current government has been trying to correct the disparities entrenched in education during the apartheid rule, the grip seems to be too strong as evident in the continuing learner performance variation from province to province and from school to school. Despite all transformational endeavours implemented by the Department of Education, which boasts some of the best educational policies in the world, the general performance of learners in South African schools is still disappointing. According to the findings of a study done by the Human Science Research Council (HSRC) a few years ago, 63% of Grade 6 learners in South Africa could not read, write and count (City Press, 12 November 2006).

Factors such as teacher-learner ratios, exorbitant school fees at former Model C schools, school violence, inappropriate infrastructure, inadequate learning materials and under-qualified teachers are usually blamed as contributing negatively on the output of our education system. The apartheid legacy of unequal and skewed distribution of resources to provinces and schools, continue to be evident in the persistent disparities of learner performance within and between provinces in South Africa. While Gauteng Province is one of the best performing provinces in education in general, learner performance variation from one school to another, especially between former white and historically black schools in this province and the country as a whole, is still prevalent and worrisome. This raises a number of questions – some of which are discussed later in the chapter – given massive investments in education that the ANC government has made since 1994 in an attempt to redress inherited educational inequalities.

This study has a direct link to the large-scale project undertaken by the Human Sciences Research Council in partnership with a Consortium of South African Universities[1]. This

[1] The consortium was established to conduct doctoral studies programmes and research in the area of educational policy studies. Partner institutions before the higher education mergers included: University of

bigger research project was a comparative study of teacher quality and learner performance in southern Africa. One of the objectives of this research project – whose scope extended across three South African provinces and two other African countries – was to train doctoral students from the South African universities taking part in the project. The doctoral students taking part in this project were required to develop their own personal doctoral projects linked specifically to the bigger research project, in order for them to utilize, amongst other things, data generated from the bigger study. I was one of the doctoral students from the University of the Witwatersrand who took part in the research project, and it is for that reason that I embarked on this study.

The main research study investigated teacher quality and learner performance in Grade 6 Mathematics. My study, this dissertation, investigates, for the same grade and subject, the nature and reasons for persistent learner performance disparities[2] between former white and former black schools, despite the massive educational changes made in South Africa since 1994. Reasons included understanding the progress made so far in addressing apartheid-created educational inequalities and possible factors or forces still accounting for learner performance variation between the two former school types. Apart from considerable evidence pointing to the fact that factors such as family and community background (USAID, 2005) and socio-economic status (SES) (Soares, 2004) contribute to learner performance achievement, there is increasing empirical evidence that indicates that better teaching and the language of instruction may also influence learner achievement. This dissertation seeks to take the investigation a step further by investigating additional possible reasons and how they might contribute to learner performance disparities.

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the Witwatersrand, University of the Western Cape, University of Cape Town, University of Natal (Durban and Pietermaritzburg) and University of Durban-Westville, together with the School of Education at Stanford University in the United States. This research project is known as the HSRC-Stanford study. (Please not that this dissertation uses the Harvard referencing style, so footnotes are only used for purposes of clarifying some concepts).

[2] This is simply what is commonly referred to as the 'student achievement gap' in the US.

1.2. The problem statement

Results of studies such as TIMSS 2003 and SACMEQII reveal persistent, apartheid trends of learner academic performance in South Africa despite some remarkable educational changes that the ANC government has made since 1994. Learner performance continues to be determined by the ex-department of education to which a school belonged during the apartheid era; as shown by the performance of South African learners in TIMSS 2003. (See Table 1 below.)

Table 1: TIMSS 2003 average Mathematics and Science scale scores of learners from the different types of schools

Number of schools per former Department	**Average Science scale score (SE)**	**Average mathematics scale score (SE)**
Ex-DET schools (n = 3 314)	234 (4.4)	257 (2.8)
Ex- HoR schools (n = 496)	345 (10.1)	339 (8.0)
Ex- HoD schools (n = 137)	380 (23.5)	373 (18.0)
Ex-HoA schools (n =314)	512 (17.0)	499 (16.6)
National average (Grade 9)	**267 (5.4)**	**285 (6.5)**

Source: Adapted from Reddy (2007)

Educational changes that have taken place since 1994, ranging from restructuring to policy development, aimed, amongst others, at restoring the culture of teaching and learning, and in particular, improving learner performance. But fifteen years down the line, we are still stuck with the same old trends of learner performance, as shown in the above table. The only thing that seems to have changed, in so far as today's learner performance is concerned, is that variation may be determined by social class rather than by race. The most pressing question that this study seeks to probe is ***why?*** **Why** do we continue to have persistent learner performance variation between former white and historically black schools despite huge investments and massive educational policy changes since 1994?

1.3. Focus and aims of the study

This study is concerned with the persistent learner academic performance disparities or gaps between former white[3] and former[4] black schools after 15 years of democracy in South Africa. The study investigates learner performance disparities with regard to the period stretching from 1994 to 2008. In particular, the study focuses on the teaching and learning of Grade 6 Mathematics in public schools located in Gauteng Province of South Africa.

1.4. The research questions

The main research question which the study asks is: Why do we continue to have persistent learner performance disparities or variation between former white and former black schools in South Africa despite huge educational investments and policy changes since 1994? In specific terms, the study asks the following sub-questions:

- Do socio-economic contexts or conditions significantly contribute and explain learner performance disparities, especially amongst learners from the same socio-economic conditions (district municipality and township?)
- Does teacher quality in terms of content knowledge (CK) and pedagogical content knowledge (PCK) differ between former white and former black schools and does this contribute to their learners' performance disparities?
- What are learners' perceptions of teacher content and pedagogical content knowledge and does this contribute to an explanation of learner performance disparities?
- Do supervision and evaluation systems differ and significantly contribute to learner performance disparities between former white and former black schools?
- What other factors might help explain the persistent learner performance disparities between former white and former black public schools in Gauteng Province?

[3] In this study, former white schools refer specifically to historically Model C schools.

[4] In this study, former black schools refer specifically to historically township schools.

1.5. Central argument

My main argument in this dissertation is that despite the investment, inputs and strategies since 1994, the education system in historically black schools is not working largely because of issues of classroom practice. What my argument tries to explain is that teaching and learning processes in former white and former black schools are still fraught with huge inequalities or disparities, hence learner performance disparities. It then becomes illogical and unreasonable to expect our education system to produce equal learner performance while teaching and learning processes between former white and former black schools remain hugely unequal. Put differently, it would be unfair to expect the education system's outputs to be equal while the inputs remain unequal.

1.6. Significance of the study

The results of international achievement studies, such as SACMEQII and TIMSS 2003, show worrying trends of persistent learner performance disparities between former white and former black schools in South Africa. The main aim of this study is therefore to investigate forces or factors that account for learner performance disparities between former white and former black schools after 15 years of democracy in South Africa.

As stated above, this study seeks to understand why former white public schools continue to outperform former black schools despite massive educational changes made by the government to date. There are various factors that may contribute to learner performance disparities that this study seeks to probe. These factors might provide an explanation as to why learner performance variations continue to exist between the previously advantaged and disadvantaged schools in Gauteng despite the education system overhaul in the form of policy interventions, infrastructure development and other reforms that have been embarked upon.

What I hope to achieve with this study beyond its intrinsic value and a PhD qualification, are the following objectives, which are divided into three categories:

Theoretical contributions

● To contribute to the literature focusing on issues of learner performance and to the body knowledge in general.

● To offer insights into the experiences of key stakeholders within the school community, including learners themselves, on issues of teaching and learning of Mathematics, and supervision and evaluation.

Methodological contributions

● To determine the usefulness of employing technologically advanced data gathering instruments such as a DVD camera within the generally unwelcoming classrooms of South African schools.

● To explore the possibility and suitability of doing a PhD project which is located within a bigger project.

● To establish the extent at which educational policies aimed at improving teaching and learning quality translate into actual practice.

Policy-related contributions

● To contribute to the debates about the extent to which educational changes in South Africa have contributed in reducing learner performance gaps and improving learner performance.

● To contribute to understanding and generating debates around the efficacy and achievements of current reform strategies.

1.7. Limitations of the study

Efforts have been made to include key issues relating to learner performance in general and learner performance disparities in particular, from different dimensions and angles. However, the issue of school management has not been directly and fully dealt with in the study. Management challenges and how they impact on learner performance were not probed in detail. However, some of the questions that matter most in terms of the focus of the study were raised in the school principals' interview instrument (see Appendix B). These were questions that relate to issues of supervision and evaluation, school resources, parental support, teacher quality, the language of teaching and learning, and so forth. Although these questions were not adequate in terms of being

directly focused on issues of school management, they nevertheless give a sense of the effectiveness and efficiency of school management at the sample schools. In a sense, this compensates for this limitation.

The use of video cameras to film lessons in classrooms where teachers had been notified in advance about the visit to their classrooms raised the possibility that teachers would 'fake' their normal behaviour, and that their learners would act responsively because they were being observed. However, to compensate for this limitation, we commenced the actual filming only after learners and teachers had settled down and become accustomed to the presence of a video camera. Also, our strategy was to film lessons from the back of the classroom behind the learners. This strategy helped to minimize disruptions and distraction of learners' attention (see Chapter Three).

Another limitation of the study relates to the generalizability of the findings of a study of this nature -a case study consisting of a small sample of schools. However, efforts were made to include a diverse population in the sample, in terms of learners, teachers, school principals and teacher union representatives, coupled with the use of multi-research methods. Nevertheless, the results of the study cannot necessarily be generalized to the population at large. While the collected data allows one to form a general sense of factors that impact on learner performance disparities between former white and former black schools, one cannot state categorically that the findings emerging from the study are applicable to all schools in South Africa. This, unfortunately, is one of the inescapable limitations of the case study methodology (see Kibourn, 2006; Flyvbjerg, 2006).

1.8. Structure of the dissertation and chapter outlines

Chapter One: *Introduction* – as seen above, introduces the dissertation by discussing the problem statement, focus and aims of the study, research questions, the main argument, and the significance of the study.

Chapter Two: *Reviewing scholarly perspectives on learner disparities* – reviews both international and national scholarly works (perspectives) on current issues of learner performance disparities, particularly in Mathematics. This chapter is organized around

themes that emerge from reviewed literature such as socio-economic status of schools, teacher quality, the language of teaching and learning of Mathematics, culture of teaching and learning, teacher supervision and evaluation, school funding policies and family background. The chapter concludes by critiquing many studies that reveal over and over again the issue of learner achievement gaps between middle- and low-income learners. The argument that emerges from the literature suggests that most historically black schools are dysfunctional, hence persistent learner performance disparities between former white and former schools.

Chapter Three: *Research methodology* – focuses on the methodology and strategies utilized to gather data for the current study. Amongst the methodological issues dealt with in the study are sampling strategies, data collection procedures, research methods used, a distinction between the current study and the HSRC-Stanford study, challenges encountered and how they were addressed, lessons learnt, data management procedures, issues of reliability and validity as well as limitations of the study. The chapter concludes by acknowledging and showing some methodological challenges faced by the study during the processes of data gathering.

Chapter Four: *Contextual matters* – This chapter contextualizes the legacy of educational inequalities inherited from apartheid education and its impact on the research project of educational equity, and in particular on learner performance in South Africa. The chapter also shows how the legacy of inequality is expressed in the West Rand District Municipality (WRDM), the area of the case study. The chapter concludes by arguing that constraining efforts towards learner performance equity are factors connected with the severity of the legacy of educational inequalities inherited from the apartheid education by the new education system.

Chapter Five: *Policy matters* – deals with educational legislation related to matters of learner performance and learner performance disparities. The chapter investigates the impact and extent to which the post-1994 educational policies contribute to addressing learner performance disparities between former white and former black schools within the South African education system. Both the apartheid and post-1994 educational policies are dealt with in this chapter. Policies discussed in this chapter include the ones relating to restructuring and de-racialization of the education system, decentralization of

school governance, free education, rationalization and redeployment of educators, national school nutrition, scholar transport, curriculum change, the new (pro-poor) funding model, Mathematics and Science improving (Dinaledi Project), the post-1994 educational policies aimed at addressing learner performance disparities, and key findings and implications for learner performance disparities. What I argue in this chapter is that the way equity-driven educational policies are implemented creates a tension, leading to the perpetuation of learner performance disparities.

Chapter Six: *Teacher quality* – aims to investigate how teacher quality varies between former white and historically black schools in Gauteng province and how this account for learner performance disparities between the two groups of schools. The main argument of the chapter is that former white schools continue to attract and retain better teachers than former black schools, hence persistent learner performance disparities between the two sets of schools. The sources of data for this chapter are questionnaires (including teacher and learners' Mathematics tests), lesson observations, interviews and general school observations. The chapter concludes by contending that any strategy aimed at improving education quality needs to have improvement of teacher quality as an integral part.

Chapter Seven: *Teacher supervision and evaluation* – aims to investigate possible discrepancies in terms of the availability, the execution (administration) and the sustaining of teacher supervision and evaluation between the two sets of schools investigated, and how these account for academic learner performance disparities in Mathematics. The chapter first addresses the notion of teacher supervision and evaluation, after which it discusses teacher supervision and evaluation within both the apartheid and post-apartheid contexts. The chapter then points to the need for teacher supervision and evaluation in teaching and learning. The chapter also tries to locate the issue of teacher supervision and evaluation within relevant theoretical thinking. The chapter concludes by discussing some of the challenges related to the administration of teacher supervision and evaluation amongst unionized teachers. What I argue in this chapter is that teacher accountability amongst unionized teachers at former black schools is often seriously lacking while teachers at former white schools tend to be more accountable and disciplined.

Chapter Eight: *Learners' experiences and perceptions of teacher knowledge* – aims to probe learners' views or judgments on teaching and learning issues such as teacher content and pedagogical content knowledge. The chapter discusses learners' perceptions on aspects such as what constitutes good Mathematics teaching, extra lessons and language of teaching and learning. It then discusses emerging patterns and their implications for learner performance disparities. The chapter also comments on the weakness of many studies in ignoring learners' views on vital and sometimes sensitive matters such as teacher competence and knowledge. The chapter argues that former white schools may perform better because they have better organized, committed and accountable Mathematics teachers, with higher levels of teacher knowledge, than former black schools.

Chapter Nine: *Conclusion* – concludes this dissertation by, amongst other things, pulling together some of the key theoretical insights that emerge from the thesis, recapping the key findings of the study and the key challenges encountered. It concludes by presenting the possible policy implications of applying the findings of this study.

CHAPTER TWO
REVIEWING SCHOLARLY PERSPECTIVES ON LEARNER DISPARITIES

2.1. Introduction

The aim of this chapter is to investigate or ascertain how the literature explains issues of learner performance disparities amongst learners served by the same education system and in some instances, hailing from the same socio-economic backgrounds. This literature review covers the period between 1994 and 2009.The question that this chapter seeks to address is: What are some of the forces or reasons which, according to the literature, account for the persistent learner performance disparities between former white (Model C) and former black (township) public schools in South Africa?

My argument in this chapter is that while there have been significant attempts to transform the South African education system since 1994, not enough has been done to address educational inequalities inherent in the system and in particular, to equalize learner performance between former white and former black schools.

This literature review chapter is organized as follows: this first section introduces the main issue – the review of relevant literature; the second section discusses the body of related international literature; and national or local literature is discussed in the third section. The patterns emerging from the literature discussed in sections two and three are the focus of the fourth section of the chapter. Conclusions of the chapter are discussed in the fifth section, while the conceptual framework through which this study is understood is presented in the sixth and final section of the chapter.

2.2. International perspectives on learner performance disparities

The challenge of learner performance disparities in education systems, which in the US is generally referred to as the learner achievement gap, is a worldwide phenomenon. As early as the 1960s, countries such as the US began grappling with this challenge, which led to the popular but controversial study by James Coleman in 1966 (see Coleman et al, 1966). This was the first ever study to be conducted on issues of learner performance disparities between white, African American and Hispanic (Latino) learners. However, to

date, the quest to understand the complexity of learner performance disparities still continues – as confirmed by the studies reviewed below.

In the US, closing the achievement gap between white, Latino and African American learners is one of the top educational priorities. It is for that reason that the No Child Left Behind (NCLB) Act of 2001 was promulgated to do just that – close the achievement gap between 'races' in Mathematics and Reading. Notwithstanding the fact that notable progress has been made in this regard in the US, closing the student achievement gap, according to the Center for Assessment and Evaluation of Student Learning, "remains elusive" (CAESL, 2004:1). What is common to South Africa and the US is that they both face the challenge of persistent learner performance disparities. They both seem to struggle to address this problem, despite massive investment of resources in their education systems.

A related study on the student achievement gap was conducted by Wenglinsky (2004). Drawing from the 2000 National Assessment of Educational Progress data sets, Wenglinsky used the Hierarchical Linear Model (HLM) as a method of analysis. The main purpose of the study was to identify instructional practices that might reduce the student achievement gap. Although this study focuses on racial achievement gap amongst students, it deals with the matter of learner performance variation, as does the current study. It is only the angle from which the matter is approached that seems to differ in the two studies.

Two main instructional practices were revealed by the Wenglinsky's study to be effective in reducing the achievement gap, namely, time on task and conducting routine exercises (see Wenglinsky, 2004). The belief here was that learners who spent more time on Mathematics learning performed better. However, the study also seemed to be supportive of the view that closing the achievement gap was not going to be easy and instant, given the deeply entrenched inequalities. This study differs from those done in South Africa regarding the reasons for learner performance disparities. While family background and school SES are some of the main reasons attributed to learner performance disparities in local studies as will be seen in the next section, what comes from the international arena seems to extend to the teaching and learning engagements within a classroom situation (see Coleman et al, 1966; Wenglinsky, 2004).

In another study, Johnson and Kritsonis (2006) investigated the achievement gap between white and minority groups in the US, focusing specifically on why the performance of African American lags behind. The authors analyzed the National Assessment of Education Programs (NAEP) data sets for the purposes of their study. In short, what the findings suggest is that African American students do not perform well in Mathematics because schools do not stick to the instructional practices recommended by the National Council of Teachers of Mathematics (NCTM).

In my view, a further and deeper investigation into instructional practices in the classroom would shed more light on the differences and similarities in terms of how white and the minority groups are taught Mathematics. Also, reliance on a single source of data (secondary study) could be a limitation that undermines the value and rigour of the study (by Johnson and Kritsonis, 2006). I have nothing against analyzing existing data sets, but I feel that there is a need to take up some of the questions raised by such sources in the form of further research fieldwork exercises. I think that further probes linked to and informed by the source of data from which the study draws (the National Assessment of Education Programs) would provide much better informed and balanced findings.

Ford et al (1998) conducted another study on the learner achievement gap in the US. Their focus was on examining the experiences of gifted black learners in relation to peer pressure. The sample consisted of Grades 5 and 12 learners, though it is not clear why these two grades were chosen. Two major findings that emerged from the study show that black learners attributed acting 'white' with school achievement, intelligence, and positive school behaviours and attitudes; and equated acting 'black' to low intelligence, negative school achievement and poor behaviours and attitudes (see Ford et al, 1998: 115)[5].

What the main findings of the study by Ford et al (1998) suggest is that the reason black learners are lagging behind white learners in learner performance is a psychological issue. While psychological matters and attitudes can be crucial and convincing, they obviously cannot be the only factors that determine learner achievement. For example,

[5] Being white was psychologically associated with good performance, while being black was associated with poor performance.

what about the impact of instructional practices raised by Johnson and Kritsonis (2006), and family background and school quality raised in the next section by South African researchers such as Christie, Butler and Potterton (2007), Van der Berg (2007b), Van der Berg and Louw (2007) and Fleisch (2008)? It is one thing being gifted, having a good family background and being at a good quality school, and quite another being gifted but with poor family background and poor school quality. Positive psychological attitudes would work in the former situation but possibly not in the latter. As a result, I find the findings of this study questionable and not very convincing. By virtue of being gifted, black gifted learners perform well in their schoolwork. The study would have been more balanced had it included the views of 'not-gifted' learners because they are obviously the ones who do not do well at their schoolwork.

In a study that compares the education system of two Latin American countries (Chile and Brazil) with Cuba's, Carnoy (2007a) investigated why Cuban learners perform better academically. Using a combination of data sets drawn from interviews and the analysis of textbooks and video tapes of Grade 3 Mathematics lessons, Carnoy attributed the good performance of Cuban learners to a number of factors. These factors included the fact that in Cuba children's health is a high priority; schooling lasts for the whole day; salaries of public servants are fairly equal, which makes recruiting of good teachers (with high CK and PCK) into teaching much easier; the training of teachers is done in a small number of highly controlled teacher training institutions; strict teacher supervision forms an integral part of the education system; and most importantly, the fact that almost all Cuban learners have an equal opportunity to learn (Carnoy, 2007a).

In terms of the situation in Chile and Brazil, what the study revealed was that the education systems were characterized, amongst other things, by violence, poor health, an inadequate supply of good teachers, disorganized social conditions, and unequal distribution of good teachers – with rural schools being the most affected (Carnoy, 2007a). I found this to be one of the most interesting and best studies that looked into issues of learner achievement and achievement gaps. It is evident that the situation in Cuba is very different from what happens in countries such as Chile and Brazil, and most unfortunately, in South Africa as well. South Africa, Chile and Brazil have all been subjected to violent apartheid/dictatorship regimes, and changing from such conditions

in terms of educational context and delivery will take a long time to achieve (see Carnoy, 2008).

Drawing chiefly from the same data sets, Carnoy (2008) then identifies three main factors as being key in determining learner performance: good social environment, intensely focused instruction and well-trained and regularly supervised teachers. What the current study does is to use a different context to further probe these issues in relation to both types of learners and schools as selected for this study. While the current study seeks to understand what the general patterns are in South Africa, its particular focus is to understand the current situation between former white (Model C) and former black (township) schools in South Africa. In other words, the current study takes the comparison of learner achievement down to school level within the current South African education system.

Collier and Thomas (2004) studied the effectiveness of the use of dual language in teaching and learning. Dual language is defined as the use of both the official language of learning and teaching and the mother tongue of learners, if the official language is not their first language/ mother tongue, when teaching. The most relevant example is the use of English and Spanish in schools catering for English and Spanish learners. The main argument of their study is that using dual language has what they call “astounding” effectiveness in improving the performance of learners and, most importantly, reducing the learner achievement gap in Mathematics (Collier and Thomas, 2004:1). This is a confirmation of the importance of language of learning and teaching (LoLT) in epistemological access, as raised by Setati (2004) (see Chapter Six). While the Collier and Thomas study and the current one are similar in the sense that both deal with the language issue in their investigations, the current study probes the matter in a different context. It probes the matter in a South African context where all learners, irrespective of their main or first language, are subjected to teaching and learning of Mathematics in English.

A study conducted by Abedi et al (2006) seems to be in direct contrast to the claim made by the above study by Collier and Thomas (2004). The aim of their study was to explore whether English (second) language learners (ELLs) have a similar opportunity to learn as non-ELLs (English first language learners) and how learner performance tends to

differ between the two groups of learners in a Mathematics test. Testing of learners was used as a research method, with hierarchical linear modeling used for analysis purposes. Surprisingly, their findings showed, amongst others, that content coverage, teacher content knowledge and the prior Mathematics ability of the class had more influence on the performance of ELLs in Mathematics than LoLT. In other words, what this study suggests is that it is content coverage, teacher content knowledge and prior Mathematics knowledge that matter most in learner performance.

Interestingly, the study by Abedi et al (2006) also showed that ELLs who took part in this study reported less content coverage and that their classes had lower Mathematics ability than their non-ELLs peers. This is a serious discrepancy that clearly poses some reliability questions on the findings of this study. This finding is in contrast with the findings of other studies that suggest that the language of learning and teaching does have an impact on learner performance (see Setati, 2002; Setati 2004; Ramphele, 2009). The current study therefore seeks to deal with the issue of the language of teaching and learning and how it impacts on learner performance in a less confusing and unambiguous way.

A reading and reviewing of the international studies – especially those that deal with the learner achievement gap in the US – seem to point in one direction: that there are persistent and stubborn learner achievement gaps between white and minority groups (see Barton, 2003; Education Trust, 2006; Ferguson, 2002; Jencks and Phillips, 1998; Lee and Burkham, 2002; Peske and Haycock, 2006). This is something that is generally known, and I think current studies should concern themselves more with investigating new ways of addressing, rather than identifying, the challenge.

2.3. National perspectives on learner performance disparities

A number of pieces of relevant literature have been reviewed in order to establish what the local literature says about learner performance disparities. Internationally, as discussed above, there is ample literature dealing with issues of student achievement gap. One google-search of the concept ‘student achievement gap’ produces about 754 000 results. In South Africa, the volume of literature on the same topic is relatively low. However, the pressure exerted by the findings of both international and national learner

achievement studies, such as TIMSS, SACMEQII and the national systematic evaluation conducted in South Africa, has seen an increase in the volume of literature focusing on issues of educational inequalities in general and learner performance disparities in particular. Some of this literature is discussed below.

Jansen (2001) has looked at the politics of performance in South Africa, in particular issues of autonomy, accountability and assessment. In this article Jansen questions the state's rush to focus on performance (of both teachers and learners) without adequate investment in the education system (Jansen, 2001:560). He argues that the state is obsessed with performance or educational outputs, which diverts attention from making the required educational inputs needed to redress the historical inequalities of an apartheid education system (Jansen, 2001:555). Put differently, what he argues is that the state's rush to focus on performance is premature because there are still huge investment gaps between former white (Model C) and former black (township) schools. Jansen further argues that the deeply entrenched apartheid differences cannot be ignored, and for that reason, he questions the comparability between the two school groups (Jansen, 2001:560). What emerges from his work is that some of the main reasons for learner performance disparities are lack of resources, school infrastructure and upgrading, poor teacher training and curriculum development, especially in the previously disadvantaged schools.

There is no doubt that Jansen's 'politics of performance' relates directly to issues of learner performance disparities. However, I think that some of his claims, while they are valid and spot-on, do not acknowledge and give credit to some of the crucial educational changes that have taken place since 1994. They can be interpreted as generalisations. For instance, there has been a significant improvement in the distribution of learning materials to the previously disadvantaged schools. As local research shows, some of the township and rural schools today do have adequate learning and teaching support material (LTSM) and human resources. In other words, the situation in some schools is reasonably conducive for teaching and learning not unlike some former Model C schools. What has become a problem in some schools today, as shown by research, is poor management and use of school resources, such as textbooks (see for instance, Carnoy, 2008; Van der Berg and Burger, 2002).

Van der Berg and Louw (2007) conducted research based on the findings of the SACMEQII project. I have chosen to review this study not only because it deals with issues of learner performance disparities, but also because their study is directly linked to the SAMEQII project, as is – to a certain extent – my study. Some of the findings of the SACMEQII study raised a number of questions with regard to the performance of South African Grade 6 learners nationally, in terms of the ex-departments of education within which their schools were located in the past (see Table 1 above).

The main aim of the study conducted by Van der Berg and Louw (2007) was to understand the poor performance by South African Grade 6 Mathematics learners in general and the learner disparities between middle- and low-income learners in particular. Using the hierarchical linear model as the main research method of analysis, they were able to identify three main factors as the reasons for poor performance by some South African learners. These were poor monitoring of student progress by school principals, teacher absenteeism and poor teacher quality (Van der Berg and Louw, 2007:4). These factors were largely influenced by SES, which put learners from richer families at an advantage over learners from poor families. In other words, what this study suggests is that SES is an important determinant of learner performance (see Van der Berg, 2005a:7).

The trends emerging from the Van der Berg and Louw (2007) study are very interesting. However, their claims could have been strengthened if interviews had been conducted with affected respondents such as learners, teachers and school principals. This is a dimension that my study includes in its methodology, as clearly shown in Chapter Three. I engaged all stakeholders at school level: learners, teachers and school principals as already mentioned, plus teacher union representatives. Added to that, I observed Mathematics lessons in order to get a better understanding – from a classroom situation – of issues of teacher quality and teaching and learning processes.

Another piece of literature relevant to my study is the journal article by Reeves and Muller (2005). The article focuses on variation in the structure and the organization of learning school Mathematics. What makes this article particularly relevant to my study is its specific focus on issues of learner achievement inequality in Mathematics and how the opportunity to learn (OTL) plays itself out in the whole equation. The article premises

itself on the generally known research finding that says that achievement is related to content and skills actually made available to learners in a classroom situation. What the authors argue here is that improved schooling or the provision of the opportunity to learn can improve the achievement of low socio-economic status learners and reduce learner achievement gaps.

The opportunity to learn (OTL)[6] is projected here as the main factor accounting for learner performance disparities between low- and middle-income schools (township and former Model C schools). The belief is that curriculum coverage and curriculum exposure can improve learner achievement and equitably distribute learning opportunities. Without disputing the crucial role that OTL plays in addressing learner performance disparities, I think what matters most is the quality of the OTL which learners are provided with. A mere provision of an OTL, while it is essential, is not sufficient. I think it is the 'opportunity to quality learning' (OTQL) that will make the greatest difference in addressing learner performance disparities between low- and middle-income learners. What matters most is the quality of the opportunity to learn or the quality of the subject matter provided for learners.

The methodological design of the Reeves and Muller (2005) study has both similar and different aspects to the ones used in the current study. What is similar in the two studies is that they both focused on content coverage through the time spent on lesson observation and interviews. Methodological differences between the two studies are also apparent. While the study by Reeves and Muller (2005) utilized other methodological strategies such as examining teachers' lesson plans and schemes of work, as well as measuring curricular pacing across two adjacent grades (Grades 5 and 6), the current study utilized other methods such as filming lessons, testing (of both teachers and learners) and general school observation.

It is apparent that the study by Reeves and Muller (2005) was more prolonged than the 'once-off approach' that my study took. However, the use of several methodological strategies in my study were sufficient to generate the data needed to understand learner performance disparities between former white and former black schools in Gauteng province.

[6] Reeves and Muller (2005) define OTL in terms of the curriculum content offered to learners and the time devoted to teaching a particular learning area as well as sequencing and pacing of such curriculum content.

An analysis by Crouch[7] (2005), of equity and quality reforms in South Africa and lessons learned, also bears some relevance to my study, thus warranting a review. Crouch's article focuses on policies aimed at resource redistribution in the South African education system. The author argues that the educational resource redistribution policies have managed to achieve significant improvements in reducing inequalities within the education system (Crouch, 2005:9). He also asserts, however, that this has not as yet translated to an improvement in learner outcomes, and that there is still a lot to be done (Crouch, 2005:14).

The article draws its data from secondary sources such as the 1996 and 2000 School Register of Needs. While my current study focuses on learner performance disparities between former white (Model C) and former black (township) schools, the study by Crouch (2005) focuses on resource redistribution across the education system after 1994. Despite the fact that Crouch (2005) does not use first-hand data to draw conclusions, his study documents the distribution of resources across South African public schools and the subsequent impact which it has had on learner performance disparities. Where the findings of this study appear to be inconclusive, largely as a result of inadequate methodological strategies such as interviews with relevant stakeholders, my study goes a step further in addressing such gaps, not only in terms of methodology, but also in terms of providing current and updated data.

Van der Berg and Burger (2002) studied school performance in the Western Cape, focusing specifically on education and socio-economic differentials. This is a paper that clearly relates and talks to my study in a direct way, not only because it deals with issues of differentials in educational performance, but also because it extends its focus to socio-economic matters. The main purpose of the paper is to assess and show how the education system tries to overcome human capital and labour market inequalities in South Africa. In other words, the main question that the paper seeks to answer is: Does the South African education system really overcome the human differentials and labour market inequalities? This includes educational inequalities and learner performance

[7] Luis Crouch was a technical advisor to the South African Department of Education between 1995 and 2002. His advise and influence on some of the educational changes that took place in the South African education system cannot be disregarded.

inequalities in particular. To answer the question, the paper draws from data acquired from the Department of Education data sets.

Despite the fact that the their (Van der Berg and Burger) study is not based on primary research data, it utilizes and manipulates existing data in an interesting way to show the influence of socio-economic differentials between rich and poor schools. What the authors argue here is that poor schools do not succeed in overcoming human capital (learner performance) differentials on any appreciable scale, largely because of inadequate resources and inefficient use of allocated resources. This is in contrast to Crouch (2005)'s assertion that educational resource redistribution policies in South Africa have achieved significant improvements in reducing inequalities within the education system, though a lot still needs to be done.

One of the key findings of this study by Van der Berg and Burger was that the South African education system is currently substantially incapable of reducing inequalities in the labour market because of its inability to reduce inequalities in educational (learner) performance in a relatively short time period (Van der Berg and Burger, 2002:26-27). Crouch points out that "it may not be reasonable to expect outputs to track inputs in such a short time frame, especially when factoring in poverty and other social variables…" (Crouch, 2005:14).

In another related study, Louw, Van der Berg and Yu (2007) analyze educational attainment and intergenerational social mobility in South Africa. Of particular relevance to the present study, is their investigation of the role that parents' education plays in children's human capital accumulation. This study draws from the 1985, 1991, 1996 and 2001 population censuses. The methods employed here are descriptive analysis and the calculation of social mobility indices that measure absolute and relative social mobility in the population of South Africa.

The impact of parents' education on learner performance and learner achievement gains in particular, is also dealt with in my study. However, a difference between the two studies is that Louw, Van der Berg and Yu (2007) make learner performance comparison in terms of race across the country while my study compares two former types of schools, irrespective of the race of learners. Louw, Van der Berg and Yu (2007) found family background – i.e. household income and parents' education – to be the main

determinant of persistent learner performance variation amongst South African races. According to these authors, this leads to educational quality differentials between white and black learners, which translate into income inequalities later in their lives.

Interestingly, the analysis and evaluations by Louw, Van der Berg and Yu (2007) indicate that there have been significant improvements of the intergenerational social mobility within race groups over the last few years. The indices also reveal that South African children are better placed to take educational opportunities than their peers in other comparable countries (Louw, Van der Berg and Yu, 2007:234).

The existence of correlation between parents' education and learner performance also emerged in Crouch (2005) and Hirsch (1999). While Hirsch agrees that parents' education can reduce performance gaps, Burns (2001, cited in Louw, Van der Berg and Yu, 2007) argues that the relationship between parents' education and learner performance is non-linear. The reason that he furnishes for this argument is that there seems to be no difference in educational benefits between a child with a poorly-educated mother and a well-educated father and a child where both parents are well-educated.

The study by Taylor and Yu (2009), which investigates how strongly learners' socio-economic status determines educational achievement in South Africa, also relates and talks to the current study. My study is concerned with the persistence of learner achievement gaps in the South African education system and the extent to which SES account for this. The question the Taylor and Yu (2009) study seeks to probe is: To what extent is the South African school system transforming or reproducing existing patterns of inequality? What emerges as the authors' main argument is that, given the current situation (which displays huge SES gaps between the rich and the poor), the South African education system seems to be reproducing existing inequality patterns.
Drawing from the Progress in International Reading Literacy Study (PIRLS) 2006, and to a certain extent from TIMSS 2003 and SACMEQII, the study by Taylor and Yu (2009) had two main findings. The first is that student background is the main determinant or reason for learner performance variation in reading scores between historically white and middle-class schools and historically black and township schools (Taylor and Yu,

2009:5). The second finding suggests that the school mean socio-economic status[8] is a crucial determinant of learner achievement in reading scores (Taylor and Yu, 2009:36). In other words, what they are suggesting here is that learners' SES plus the socio-economic condition of a school determine learner outcomes. In the context of South Africa and its current learner performance situation, this suggests that good learner SES and good school SES are key reasons why former white and middle-income schools continue to do better than former black and low-income schools.

Similar patterns seem to emerge from my study. Relatively poor backgrounds (lower SES) for learners in township schools, compounded by poor school quality are the kind of educational challenges which most previously disadvantaged schools continue to grapple with. These are schools that are generally referred to as being dysfunctional (see Jansen, 2008; Fleisch, 2009 and Van der Berg, 2009). While a sizable proportion of educational resources, in particular LTSM, have been made available to the previously disadvantaged schools, particularly former black schools, the challenge here is that this does not seem to translate into improved learner outcomes.

What these findings (by Taylor and Yu, 2009) suggest is that resources alone are not sufficient. There are additional requirements that need to be met, which include appropriate and optimal use of educational material and quality teaching. This seems to be one area that former black schools in South Africa are still finding hard to master according to the findings of the study done by Carnoy and Chisholm et al (2008), reviewed later in this chapter. While the study by Taylor and Yu (2009) makes commendable progress towards providing a better understanding of the extent to which learners' SES plus school SES determine educational achievement in South Africa, its reliance chiefly on one source of existing data is its shortcoming. It is true that quantitative analysis of the PIRLS data sets provide an interesting picture of how SES impacts on the performance variation amongst South African learners. But it becomes difficult to draw conclusive conclusions based on just one quantitative analysis. A detailed, qualitative probing with searching questions at school level could complement and enhance the quality of the findings of their study. This is where the present study, with its multi-research methods, plays a role.

[8] School SES refers to the school socio-economic status or condition.

In another related study, Van der Berg (2008a) investigates the impact of poverty on the educational performance of poor schools. In particular, the author tries to understand factors that inhibit performance in poorer schools. Drawing from SACMEQII data sets as the main source, Van der Berg (2008a) employs regression analysis and hierarchical linear modeling (HLM) as methods of data analysis. A key finding that emerges from this study is that poverty reduces the ability to learn amongst poor learners (see Van der Berg, 2008a:11). Van der Berg further contends that poverty not only negatively affects initial enrolment, but the survival to higher grades as well (2008a:23). Put simply, his study suggests that poverty prevent poor learners from accessing quality education effectively (see Van der Berg, 2008a:22). The issue of the socio-economic status of learners and schools are issues which are central to my study, hence a review of this study by Van der Berg (2008a).

Like Taylor and Yu (2009) as discussed above, Van der Berg (2008a)'s claims seem to suggest that learners' SES matters most for learner achievement when combined with good school socio-economic status. This claim was also supported by one of the most striking findings of another study conducted by Van der Berg (2008b), which showed that SES does not have any significant impact on learner performance outside of the richest schools. What this assertion suggests is that learners from rich or middle-income families (with higher SES) are unlikely to perform well in poor or dysfunctional schools.

In line with assertions by Jansen (2001) and Taylor and Yu (2009) as discussed earlier, Van der Berg (2008b) also attributes the challenge of disparity in performance between former white and former black schools to the dysfunctional conditions in the latter. The claims which he seems to make suggest that improving the provision of resources to previously disadvantaged schools, whilst commendable, cannot alone improve the educational quality in those schools. In his view, the solution lies in addressing the functionality of former black schools (see also Van der Berg, 2009).

Setati (2004) deals extensively with the impact of language of learning and teaching (LoLT) on learners' understanding of Mathematics. Her aim was to explore the role of language in the learning and teaching of Mathematics in multilingual classes. The study involved interviewing Grade 11 and 12 Mathematics learners and their teachers. The main question of the study revolved around learners' LoLT preference. Surprisingly, English emerged as the predominantly preferred language of learning and teaching

(Setati, 2008:109). The author argues that both teachers and learners appear to prefer using English as a language of teaching and learning largely because they are more concerned about access to the social advantages that come with English fluency than access to Mathematics epistemology (Setati, 2004:99; Setati, 2008:114-115).

While some research tends to underplay the impact of LoLT on learner performance, there is increasing research evidence that links LoLT to learner performance in general and learner performance disparities in particular. The findings of the study by Setati (2004) are very decisive and clear about the negative impact that the continued use of English as a LoLT has on the performance of English (second) language learners (ELLs) in mathematics. In short, and very crucially, what the study suggests is that the language of teaching and learning matters most for learners' understanding of Mathematics. Put differently, this study argues for the use of mother tongue in the teaching and learning of Mathematics. The fact that many Mathematics teachers in township schools resort, from time to time, to code-switching[9] when teaching Mathematics, is a clear indication that LoLT indeed matters a great deal in teaching and learning of Mathematics (see Chapter Six).

The findings of Setati's study are in line with the findings of the study conducted by Collier and Thomas (2004), which forms part of the international literature reviewed earlier. Their (Collier and Thomas') study shows the effectiveness of using dual language for teaching and learning purposes in education as a way of reducing learner achievement gaps in Mathematics in multiracial classes. In other words, what this study suggests is that attempts should be made to ensure that learners are taught in the language that they understand better. In other words, an appropriate approach needs to be taken in linguistically diverse classrooms – in both former black and former white schools. However, the findings of this study depended chiefly on data drawn from secondary sources. What my study does is to probe the issue of LoLT further. Apart from interviews with learners, Mathematics teachers, school principals and teacher union representatives, my study employed additional research methods such as testing and

[9] This term refers to the use of different languages interchangeably to explain concepts or problems, in order to ensure that all learners understand the work being presented. According to Setati (2002) code-switching happens when an individual alternates between two or more languages.

lesson observation. This provided my study with a pool of data sets generated from different sources for purposes of triangulation.

Another study that is closely related to the current study was conducted by Carnoy and Chisholm et al, (2008). The main aim of their study was to investigate factors contributing to low levels of performance amongst South African learners. A specific focus here was the role which teacher skills and practice play in the teaching and learning processes within the socio-economic and administrative conditions of the sample schools. Testing, questionnaires and lesson observations were the main research methods used in the study. What emerged as the main findings of the study were the low levels of Mathematics content knowledge (CK) amongst both teachers and learners, low levels of pedagogical content knowledge (PCK) amongst teachers, unequally distributed PCK across schools, very little or no real group work amongst learners, and a clear correlation between pedagogical content knowledge, learner test scores and socio-economic background (Carnoy and Chisholm et al, 2008).

There is no denying the fact that this is one of the most important of the few studies conducted on issues of teacher quality and learner performance in South Africa. Its success in using technological research methods such as lesson filming, its new model of including PhD students, and its involvement of scholars from different research institutions and universities, are some of its notable strengths. However, the study does not deal with issues such as the perceptions of learners on teacher competence, the perceptions and experiences of teachers and teacher union representatives regarding issues of supervision and evaluation, and teaching and learning, as well as principals' experiences and opinions on issues of supervision and evaluation. These and related issues are dealt with in my PhD study.

In a nutshell, what emerge from the above reviewed body of literature is that very little is said about teacher quality and supervision (monitoring) and evaluation except for few studies, for instance, Carnoy and Chisholm et al, (2008), Christie et a (2007), and Carnoy (2007a; 2007b; 2008). The importance of teacher quality seems to be underplayed when school quality is mentioned in most of the reviewed studies. While teachers are one piece of the teaching and learning puzzle, without which the puzzle cannot be complete, it is vital to mention that it is quality teaching that makes a great

difference. My study goes a step further in trying to close these gaps. Its investigation extends to issues of supervision and evaluation and teacher quality. It also utilizes school observations as a research method as well as incorporating learners' perspectives on matters of teaching and learning (of Mathematics) as they experience it on a daily basis within the classroom situation (see Chapter Eight).

Since the release of SACMEQII findings, there has been much pressure on countries – South Africa included – to turn the situation around. Certainly, since then there have been notable attempts in the South African education system to improve educational quality in poorly performing schools. It is therefore necessary to analyze data from studies such as TIMSS 2003 and SACMEQII in the light of the current and updated data emerging from schools. Any ignorance of the current situation at school level – whatever the situation is – creates gaps in information and has the potential to mislead the public. It is such gaps that the present study tries to fill by probing some of the further questions raised by TIMSS 2003 and SACMEQII.

Locally, more and more research projects have shown the persistent performance gaps between former white and former black schools, without focusing much on how best to address them. This is one weakness area that South African educational researchers need to address. What South African researchers should be concerned about at this point in time should be suggesting the solutions to educational problems. That's the kind of research that really makes a difference, informs policy and skills the nation.

While the body of literature reviewed above gives one a sense of the extent to which the issue of learner performance disparities has been researched locally, it also raises a number of questions. For example, if indeed family background/ SES (household resources and parents' educational level) and school SES are both crucial for improving learner performance, it would mean that addressing the functionality of former black or township schools, as espoused by Jansen (2008), van der Berg (2009) and Taylor and Yu (2009), won't, on its own, be sufficient. Whereas the closing of learner performance gaps takes time, as proven in the US where the project started in the early 1970s (Wenglinsky, 2004), South Africa's case is compounded by the slow pace of government to address this challenge. It is for that reason that I argue in this chapter that the

government is not doing enough to address inherent educational inequalities in general and learner performance disparities in particular.

2.4. Emerging patterns

Seven important categories of patterns emerge from the reviewed literature. The first is the role of socio-economic status of the school and how this impacts on learner performance. The second concerns teacher quality and the difference this makes to learner performance. The third is the significance of the language of learning and teaching, and how this impacts on the teaching and learning of Mathematics. The fourth pattern relates to the culture of teaching and learning, and its effect on learner performance. The fifth emerging pattern relates to teacher supervision and evaluation and the role it plays in learner performance. The sixth pattern concerns funding policies, and their impact on learner performance. The role of family background and their socio-economic status, and the difference this makes on learner performance, is the seventh and final pattern emerging from the literature.

Socio-economic status of the school

With regard to the impact of school SES on learner performance, what Van der Berg and Louw (2007) found was twofold. On the one hand, there was no clear relationship between school SES and student test scores amongst the poorest 60% of learners (Quintiles 1-3). On the other hand, there was a positive relationship between SES and learner performance for the two highest school quintiles (Quintiles 4 and 5)[10] (Van der Berg and Louw, 2007). The Grade 6 Mathematics study conducted by Carnoy and Chisholm et al, (2008) showed a strong relationship between school SES and learner performance across all school quintiles, with higher SES schools performing better than lower SES schools (see Carnoy and Chisholm et al, 2008:35). Experts involved in the transformation of the South African education system such as Crouch (2005) argue that resources, as well as the efficiency in resource utilization, do matter in school achievement gains.

[10] A classification of schools into groups, determined by the Minister of Education according to the school's level or status of poverty, for (need for funding) purposes. The poorest schools are in Quintile 1, and the richest are in Quintile 5. The first three quintiles have been declared 'no-fee' schools in South Africa, meaning that learners attending these schools do not pay school fees at all.

Van der Berg and Louw (2007) argue that schools with higher socio-economic status (richer schools) have an advantage over schools with lower SES (poor schools), especially when school SES interacts with other drivers (factors) of inequity in test scores. In other words, school SES contributes when it comes to determining learner performance. To qualify this point, Van der Berg and Louw (2007:17), argue that both rich and poor learners are likely to perform better in richer schools, with rich learners gaining more from the superior quality of education offered in those schools. Surprisingly, the findings of another study conducted by Van der Berg and Burger (2002) in the Western Cape Province, showed that socio-economic status measured in terms of school fees, had a somewhat smaller impact on learner performance.

Jansen questions the reasoning behind comparing "a white urban school with middle-class parents, an established school infrastructure, and an elite group of advantaged students" against "a black rural school serving the children of poor families in dilapidated buildings where a poor 'culture of teaching and learning' exists" (Jansen, 2001:560). In other words, what Jansen suggests here is that there are still huge inequalities between the two school groups for them to be compared on a fair and equal basis. To a certain extent, this assertion is in line with the main argument of the current study (see Chapter one). However, I think the wording of the statement is somewhat too generalized. There has been a massive influx of black learners into former white (urban) schools since 1994, such that talking about 'white schools' today is a bit misleading. In fact, the majority of former white (Model C) schools have since become predominantly black in terms of learner enrolment. This applies to my sample schools as well.

The generalized view of black school buildings as being 'dilapidated' can also be challenged. As emerged in the teacher quality and learning outcomes study by Carnoy and Chisholm et al, (2008), some of the school buildings in township schools appeared to be in good condition and modern. I think empirical evidence drawn from actual school situations can go along way towards complementing and updating some of the claims made by Jansen (2001).

It is well-documented that the South African education system has made remarkable progress in the provision of school resources, through its pro-poor funding policies. It is also true that a considerable number of previously disadvantaged schools have

benefited immensely from this reconstruction project. But as shown by several studies (see, for instance, Van der Berg, 2001; Van der Berg, 2002; Van der Berg, 2008a) resource provisioning alone has not translated into improved learner performance in former black schools, and the question that frequently crops up in current scholarly debates is: Why? While school resources are generally viewed to matter a great deal in improving learner performance, what is important seems to be the ability to convert such resources into outcomes (Van der Berg, 2008a: 10).

Teacher quality[11]

Reeves and Muller argue that "[a]chieving greater equality in outcomes for South African learners will of necessity entail assisting schools across the system to deliver quality" (Reeves and Muller, 2005:106). It is important to indicate that in delivering quality, teacher quality matters most. It is very difficult if not impossible to deal with issues of learner performance disparities without touching on issues of teacher quality. The Western Cape is one of the best performing provinces in South Africa in terms of learner performance, and Van der Berg and Burger (2002) attribute such good performance largely to the availability and quality of teachers.

Teacher quality and the role of teachers in general matter most in any attempt to understand the challenge of addressing learner achievement gaps locally or internationally (see Crouch, 2005). This is clearly shown by, amongst other things, the use of teachers' lesson plans and scheme of work in the study done by Reeves and Muller (2005), and in the lesson filming by Carnoy and Chisholm et al (2008), as already alluded to in the previous section. According to Van der Berg and Louw (2007), disparities in teacher quality in South Africa seem to be one of the most serious challenges in the education system. Van der Berg attributes disparities in teacher quality in South Africa to the heterogeneity in the training of teachers as a result of historical racial divisions within the system.

Jansen (2001) singles out the lack of teacher training in South Africa, especially for teachers attached to the previously disadvantaged schools, as one of the reasons for poor teacher quality and learner performance. Three main findings related to teacher

[11] See Chapter Six, section 6.2., for definitions of the concept of teacher quality.

quality emerged from the study by Van der Berg and Louw (2007), namely; that teacher quality matters most in schools serving middle class learners; that schools catering for richer learners perform better, because they employ better qualified teachers; and thirdly, that it is higher SES learners who are more likely to benefit from good quality education.

Good teachers alone are, however, unlikely to improve learner performance in schools that are dysfunctional and trapped in poverty situations of all kinds. This is in line with my argument that while almost all learners of school-going age in South Africa have been given an opportunity to learn through improved access to schooling, very few of them have access to quality learning. It is mostly learners who attend middle class schools who continue to have access to quality learning while low-income and working class learners continue to be subjected to poor quality learning because of the dysfunctional conditions of such schools and often poor teacher quality.

Language of learning and teaching

The grade targeted for the 2006 PIRLS study was Grade 4. However, in South Africa and a few other countries, Grade 5 learners were tested instead. The reason given by the International Association for the Evaluation of Educational Achievement (IEA) for choosing Grade 5 instead of Grade 4 in South Africa was that it uses multiple languages for teaching and learning. This is a clear indication that the impact of the language of learning and teaching (LoLT) cannot be ignored in matters of learner performance, especially in a country such as South Africa with its many languages.

Despite the fact that the South African Constitution declares all of its eleven languages as 'official languages' in terms of section 6, sub-section 1 (Republic of South Africa, 1996b), only two languages, English and Afrikaans, are generally used as languages of learning and teaching (with the exception of Foundation Phase). Afrikaners use Afrikaans as LoLT for historically nationalistic reasons, but they also endorse the view that mother tongue instruction matters a great deal for learner performance. On the one hand, the 'forced'[12] use of English (and in some instances, Afrikaans) as a language of

[12] The use of English as a language of learning and teaching in South Africa, while it is good for English speakers and those who choose to use it, is not necessarily good, let alone constitutional, for non-English speakers and those who would prefer to learn and teach in their own languages. African languages are not

learning and teaching in former black schools connects learners with the global world. On the other hand, it tends to be problematic in instances where learners, and even teachers, struggle to understand the language of teaching and learning. Ramphele argues that we should not be surprised by the scorecards (learner performance disparities) because "the teachers who are meant to be teaching…children in English don't read, don't write, don't comprehend the very language" (Ramphele, 2009:2).

If learners and teachers have a poor understanding of the language of teaching and learning, how on earth are they expected to have a good understanding of Mathematics content? What would happen, for instance, if all Grade 6 learners in South Africa, black and white, were to take standardized Mathematics test in Zulu or Venda? Chances are that Zulu and Venda speaking learners would do better largely because of the language advantage. What I argue here is that the basis on which standardized tests are conducted will remain unequal and unfair as long as learners are not given the opportunity to learn and take the test in the language which they understand better. Looked at another way, Ramphele argues "if you do not teach children from grade one to at least grade four in their mother tongues, you are separating them from their parents – there is no storytelling that can happen" (Ramphele, 2009:2).

What is clear is that any attempt to exclusively attribute the achievement gap to factors such as parents' education level and poverty (see for instance, Van der Berg, 2008a) is tantamount to being economical with the real facts. There can be no better explanation of the achievement gap than the challenge that comes with second language acquisition (Hakuta et al, 2000; Moore and Redd, 2002) and use of second language as a language of learning and teaching.

In her study, *Researching Mathematics Education and Language in Multicultural South Africa*, Setati talks of "tensions that accompany teaching mathematics to learners whose

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as yet, for a variety of reasons, generally used as languages of learning and teaching in South Africa beyond the Foundation Phase. At this stage, learners have to choose between English and Afrikaans as LoLT, especially in former white schools, despite the fact that the Constitution of the Republic recognizes all eleven languages as official languages. In other words, African learners have little choice when it comes to language of teaching and learning. The current situation forces them to learn in an already determined language.

main language is not the LoLT (language of learning and teaching)" (Setati, 2002:17). She attributes these 'tensions' to instances where learners for instance, remained silent when a teacher raised questions, largely as a result of not understanding the questions in English. Based on the findings of her study, Setati suggests that, "for substantial teaching and learning and engagement in conceptual discourse to occur, the learners' main languages are required" (Setati, 2002:18). This is another clear indication that the LoLT matters in mathematics learning and teaching and, consequentially, in learner performance.

Language difficulties also emerged during the interviews with different stakeholders in my study (see Chapters Six and Eight). Both teachers and learners complained about the problem of a poor grasp of English by the learners, which they linked to poor learner performance in Mathematics. While international achievement studies are good at keeping countries on their toes, in South Africa the playing field in this regard is far from being level. As Setati argues "it is…not possible to ignore the socio-political aspects of language when exploring multilingualism in mathematics education" (Setati, 2004:3).

Culture of teaching and learning

The concept 'culture of teaching and learning' is widely used in the South African education fraternity. It refers to the attitude of educators and learners towards learning and teaching as well as to their spirit of dedication and commitment to the schools (see Lethoko, 1997). The struggle for freedom in South Africa led, amongst others, to highly politicized and militant atmosphere amongst both teachers and learners in (township) schools, and to a certain extent, amongst parents as well. This politicized atmosphere resulted in defiance campaigns, the disruptions of lessons, and vandalizing of property in public schools. In the process, the culture of learning and teaching was hugely compromised.

Many township public schools became characterized by weak or poor attendance, absenteeism of officials, lack of the desire to teach amongst educators, weak leadership and administration, disruptions leading to vandalism, gangsterism, rape, drug abuse, high dropout rates, poor school results, and a general feelings of hopelessness and low morale; with school buildings, facilities and resources in a poor state (see Mkhantshwa, 1997). After the attainment of democracy in 1994, a huge task facing the Department of

Education was to restore the lost culture of learning and teaching in schools, especially in black public schools.

Jansen (2008) explains the disparities of learner performance between former white (Model C) and former black (township) schools in terms of culture. His main argument centres on the fact that schools have different cultures of teaching and learning. According to Jansen, when former white (middle-income) schools admit learners from former black (township) schools, sometimes the dysfunctional behaviour of learners from township schools becomes a challenge for the receiving schools (Jansen, 2008:6).

In other words, Jansen (2008) explains disparities in learner performance between former white and former black schools in terms of their culture of teaching and learning, as well as in their work ethics. What Jansen (2008) suggests is that the 'good' culture inherent in former white schools contributes to their learners' good academic performance, while the 'dysfunctional' culture that still existents in most of the township schools contributes to the dismal academic performance of their learners.

In their analysis of South Africa's SACMEQII results, Van der Berg and Louw (2007), identify teacher absenteeism (an aspect of school culture) as another factor that contributes to learner performance inequities. Interestingly, teacher and learner absenteeism did not strongly emerge as a serious challenge to learner performance in the teacher quality and learning outcomes study conducted by Carnoy and Chisholm et al (2008) in the Gauteng province of South Africa. However, one cannot deny the prevalence of other aspects of school culture such as violence and low morale across some schools.

Teacher supervision and evaluation

Carnoy (2007a) identifies teacher supervision and evaluation (generally known as 'inspection' in South Africa) as one of the main factors that account for Cuba's better academic achievement. The issue of teacher supervision and evaluation is hotly contested in South Africa. It is generally known that South African teachers are not only highly unionized, but also resistant to systems of supervision and evaluation. The issue of teacher supervision and evaluation (see more details in Chapter Seven) is so critical

that the Ministerial Committee set-up in 2007 (see Christie, Butler and Potterton, 2007) to investigate issues around 'schools that work'[13] focused on this issue to a large extent.

Specifically, the 'schools that work' study aimed to investigate 'schools that work' in order to understand what made them succeed in conditions where others did not. A total of 18 schools across all provinces of South Africa were visited for interview purposes. An area of focus for the study was the Integrated Quality Management System (IQMS) – the teacher supervision and evaluation system that comprised three initial instruments: a whole school evaluation (WSE), a performance management system (PMS) and a developmental appraisal system (DAS)[14].

The study's major findings showed that teachers were in favour of the appraisal part of IQMS, but not the other parts, in particular its evaluation component (Christie, Butler and Potterton, 2007:121). However, what came out very clearly from the study was that 'schools that work' had well-established internal accountability systems. This ensured that academic programmes went smoothly and that the schools were ready for the pressures exerted by external accountability measures as well. What this suggests is that there is a strong correlation between teacher supervision and evaluation and school/ learner performance.

The study by Christie, Butler and Potterton (2007) is one of the very few studies that investigates the crucial issue of supervision and evaluation in South Africa. However, the study does not take into account learners' views, especially on issues of supervision and evaluation. Such data can be vital for triangulation purposes with other data sets. Learners' voices are missing in this study. My PhD study tries to address this gap. In addition to including learners' views through interviews, the current study includes the views to other important stakeholders in the South African education system – teacher union representatives. Teacher union representatives – who are critical in addressing challenges related to supervision and evaluation – added a vital dimension to the data sets of the current study.

[13] These are schools that do well academically in conditions where others schools do not.

[14] These instruments are explained in detail in Chapter Seven.

The above reviewed studies by Carnoy (2007a) and Christie, Butler and Potterton (2007) confirm the generally held view that teacher accountability is key in academic achievement. Teacher accountability is a crucial strategy in attaining academic achievement; and teacher supervision and evaluation is a tool through which to achieve teacher accountability. However, what seems to emerge from the literature is that our teachers are highly unionized, and that their focus is on teachers' rights, and not on teachers' responsibilities; on employment matters and labour issues, not on professionalism (see Ramphele, 2009:2). In my view, accountability seems to be a vital aspect terribly lacking amongst our unionized teaching force (see Christie, Butler and Potterton, 2007). The most important question is 'why is accountability lacking amongst most unionized teachers in South Africa?' (see Chapter 7).

School funding policies

Some scholars attribute the persistent learner performance disparities between former white and former black schools to the deep-rooted resource inequalities of the past. It is well-documented that during the apartheid era, the white education department had ten times more resources allocated per teacher/learner than the black education department (see Crouch, 2005; Fiske and Ladd, 2004). This is how the long and deeply entrenched educational inequalities were created in South Africa. Van der Berg (2008a) argues that resource allocations have equalized for former black and former white schools but that inequalities lie outside the system and in the organizational school culture and management of resources through provincial and school levels. It is, however, unfortunate, as I argue in this chapter, that the government has not done enough to focus directly and eradicate these inequalities in its reform project.

There is ample empirical evidence that shows that the new school funding policies perpetuate inequalities between rich (middle-income) and poor (low-income) schools. This is largely because rich schools have well-established management and fundraising skills, which enable them to generate more funds than poor schools (see Sayed, 1999 and Jansen, 2001). For instance, former white (middle-income) schools can afford to appoint School Governing Body (SGB) teachers, which amongst others, helps to keep their learner-teacher ratios low.

Some former white schools also pay performance bonuses to their teachers, which has the possibility to act as a motivation catalyst for teachers. Lower SES schools cannot afford to do this owing, amongst others, to their low financial status when compared to their higher SES counterparts. Scholars such as Sayed (1999) have shown how hugely unequal school fees charged by schools perpetuate inequalities between rich and poor schools, despite the pro-poor funding model currently being used for school funding in South Africa. There is no denying the fact that financial resources play a huge role in determining a school's SES; and a schools' SES is shown overwhelmingly, both in the South African and international literature reviewed in the previous sections, to strongly correlate with learner performance.

Family background[15]

Learners' family background has a great influence on their school performance (see Crouch, 2005). Home is where children learn most – where learners spend more time than in actual school (see Hirsch (1999). In the context of this study, family background refers to household resources and parents' educational level. This is the definition used by Van der Berg and Louw (2007), and which my study adopts for its description of family background. Both parents' education and household resources are not only determinants of learners' SES, but they also act as a form of social capital available to learners. It is the quality of such social capital that is most likely to impact on learner performance. Crouch further clarifies this point, "[i]f such environmental factors as parental literacy and income are very unequally distributed, one would expect that educational results would also be" (Crouch 2005:6).

Van der Berg and Louw (2007) assert that family background does indeed impact on learner outcomes. They argue that white learners – despite the increase in educational attainment amongst black and coloured learners between 1985 and 2001 – continue to enjoy their parents' superior SES. They further argue that it is largely for this reason that we are sitting today with intergenerational variation in learner outcomes in South Africa. Hirsch argues that irrespective of how good a school is, "students from good…homes… will always have an educational advantage over students from less-good homes…" (Hirsch, 1999:44).

[15] In this study, this refers to household resources and parents' education level –family background SES.

Interestingly, this is in contrast to the assertion by Van der Berg (2008a) and Taylor and Yu (2009) who argue that the impact of learners' SES (family background) is conditional. That is, it matters most in schools with good socio-economic status (affluent schools). A combination of the two factors (household resources and parents' education) could be another possible reason for good learner performance. It is unfortunate that, as reflected in emerging patterns in the present study, the majority of the learners in former black schools have very poor family backgrounds and school socio-economic conditions. It is also unfortunate that at the time that both national and international achievement studies are gaining momentum, low-income learners are having to overcome obstacles such as low levels of household resources and poor parent educational attainment (Louw et al, 2007). The issue of parents' educational level comes out very strongly in the reviewed literature as one of the key predictors of learner performance. Educated parents are viewed as having the ability, amongst others, to 'kick-start' the process of learning during the pre-school period and to assist with homework (see Taylor and Yu, 2009).

Van der Berg and Burger (2002) used the matriculation rates of the 20-24 year olds in the Western Cape province as captured in the 1996 census to demonstrate that parents' educational level matters a great deal. For those whose parents had attained less than Grade 10, only 25% passed matric (grade 12); for those whose parents had grade 10 or 11, the matriculation rate rises to 44%; the rate rises to 78% where the parents had matric, and up to 87% where parents had obtained a degree. This is a clear illustration of the impact of parental education on learner performance. This assertion is in line with some of the trends that emerged in the current study, as shown in this chapter and later in Chapter Eight.

Van der Berg and Louw (2007) argue that, while the government has made significant progress in promoting equity across the reunified schooling system over the past decade, persistence in intergenerational SES inequalities will limit the extent to which majority of learners are able to escape the historical disadvantage which they bear, largely because of their parents' low educational level. There is also empirical evidence that shows that black South African learners living with both genetic parents attain better learning outcomes than those living with non-genetic parents (see Anderson, 2000). This raises a serious challenge, especially in the light of learners coming from child-headed

families and learners whose parents are migrant workers. This situation occurs amongst some low-income learners, as emerged from interviews with learners in the present study (see Chapter Seven).

Taylor and Yu (2009) see educational inequality in South Africa as being reflected in income inequality. Put differently, they argue that there is a strong correlation between educational quality and achievement with employability and earnings. In other words, learner performance inequality at school level, later translates into income inequality in the labour market.

There is no doubt that adequate empirical evidence has emerged from the reviewed literature to confirm the correlation between family background and learner performance. However, improving family background is unfortunately not directly located within the scope and mandate of the education system. The education system can only intervene in improving parents' educational levels through programmes of adult education, and help compensate for family poverty through scholar transport, school nutrition programmes, no fee-school policy, and in some instances through the provision of school uniforms and much-needed educational resources. Anything beyond this, such as improving household incomes, building strong home-based academic support for children and so on, is outside of the scope and powers of the Department of Education.

2.5. Conclusion

A number of different claims emerged from the body of literature reviewed in this chapter. On the issue of a state-created social environment for good teaching and learning to take place, the key claim that emerged from literature is that poverty has a negative impact on the academic performance of learners. With regard to the issue of well-trained and regularly trained teachers, teacher quality in other words, the claim is that there is unequal distribution of good teachers across the school system, with good teachers opting to teach in well-resourced schools as opposed to dysfunctional and poor schools.

With regard to the issue of teacher supervision and evaluation, the key claim that emerged is that the main challenge is a terrible lack of accountability amongst unionized

teachers, especially in historically black schools. Another claim that emerged from the literature is that during the struggle for freedom in South Africa, the culture of teaching and learning at most former black schools collapsed, and that this has led, amongst other things, to dysfunctional schools. The literature also confirmed the general assertion that family background (household resources and parents' educational level) has an impact on learner performance.

In a nutshell, literature indicates that there are still huge inequality challenges inherent in the South African education system. While a number of discrepancies emerged from the reviewed body of literature, such as in terms of the impact of resource inputs on learner performance gains in low-income schools, the literature seems to converge on the correlation between professional teacher development and improved learner performance; and between family background (social capital) and learner performance, amongst others.

In as far as the language of teaching and learning of Mathematics in South Africa is concerned, my submission would be that instruction should be done through the language that learners understand better – even if that means dual language education. And the language which learners understand better is more likely to be their home language. The reviewed literature reveals some important factors that directly or indirectly account for learner performance disparities. However, research that repeatedly points out the gaps in learner achievement between the previously advantaged and disadvantaged schools without suggesting solutions to the predicament has become monotonous. As the reviewed literature shows, the fact about the existence of gaps is generally established and adequately documented. What is more crucial at this stage is researching ways of addressing such gaps that play themselves out in the form of learner performance disparities between middle- and low-income schools in South Africa.

2.6. Conceptual framework

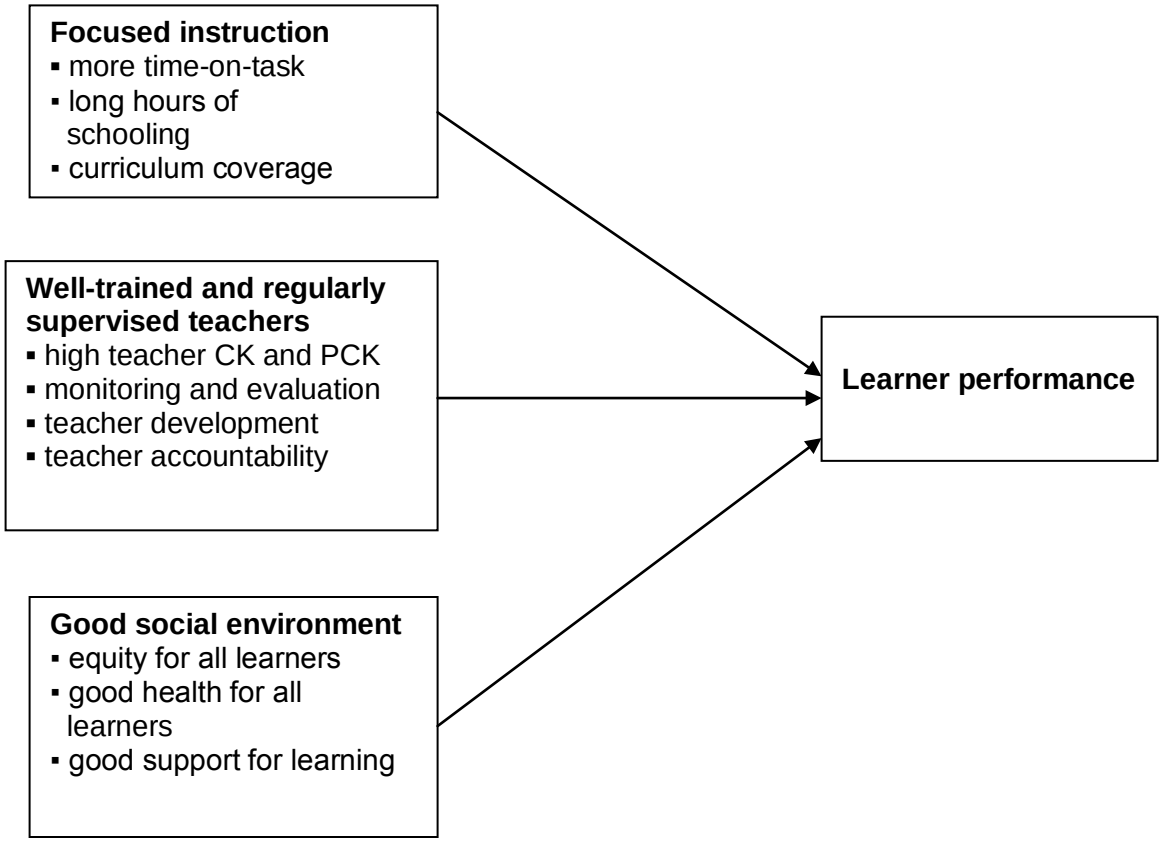
This section focuses on the theoretical lens through which I make sense of the issue of learner performance and how learner performance disparities play themselves out. The

conceptual framework originates from Carnoy's theoretical thinking reflected in the following statement:

> Cuban children attend schools that are intensely focused on instruction and are staffed by well-trained, regularly supervised teachers in a social environment that is dedicated to a high academic achievement for all social groups (Carnoy, 2007a:141).

This statement clearly specifies why Cuban learners do better at school. Three factors (which are schematically projected in Figure 1 below) emerge as very crucial for Cuban learners' good performance namely: intensely focused instruction; a state-created conducive academic environment of teaching and learning which largely determines a school's (good) socio-economic status; and well-trained and regularly supervised teachers with high content knowledge and pedagogical content knowledge (teacher quality and intense supervision and evaluation). Without disputing the importance of the three factors in determining learner performance, and eventually learner performance disparities, my study adds two other factors that I believe are equally vital and influential. These are family background and the language of teaching and learning as strongly emerged in the above-reviewed body of literature. In short and as informed by South Africa's unique context, my study thus explores learner performance disparities through the analytical lens of five factors (see Figure 2).

Figure 1: A projection of Carnoy (2007a)'s three main factors that account for learner performance



The first factor that influences learner performance is *focused instruction*. The intensity and regularity of the actual teaching and learning processes are vital in determining learner performance. Whereas intense instruction should automatically translate into more time-on-task, curriculum coverage and good examination preparations for learners, amongst other things, the opposite shall automatically lead to less time-on-task, little teaching and learning and poor examination preparations for learners. Focused instruction also calls for teacher preparedness in terms of content and pedagogical content knowledge, as shown in more detail in the discussion of the next factor.

The second factor is *well-trained and regularly supervised teachers.* This factor simply refers to teachers who are appropriately qualified and regularly monitored for purposes of teacher development and teacher accountability. In other words, teacher quality and

teacher supervision and evaluation are two important aspects here. Essentially, the levels of content and pedagogical content knowledge, amongst teachers, and their ability to translate that into effective teaching and learning through focused instruction, coupled with good qualifications and experience, are highly likely to have a huge impact on learner performance.

Having well-trained teachers, but who are not monitored and evaluated for both development and accountability purposes, can hardly improve learner performance. Teacher supervision and evaluation therefore becomes a key aspect in ensuring that well-trained teachers remain functional. The level of recognition of the importance of teacher supervision and evaluation, management, and monitoring and evaluation of teaching and learning processes influences the quality of learner performance. The theory is that, the level and the culture of accountability amongst teachers does matter when it comes to learner performance.

The third factor is the state-created *good social environment* conducive for teaching and learning processes. The state support in terms of promoting good health, safety, learner equality and most importantly, the opportunity to learn for all learners, is crucial in determining school socio-economic status and eventually educational quality. The nature and the level of support provided by state, and the society at large, in education provision is therefore crucial. In Cuba, for instance, the state has created a very good social environment which plays a key role in the high achievement gains frequently displayed by Cuban learners in international tests (Carnoy, 2007a).

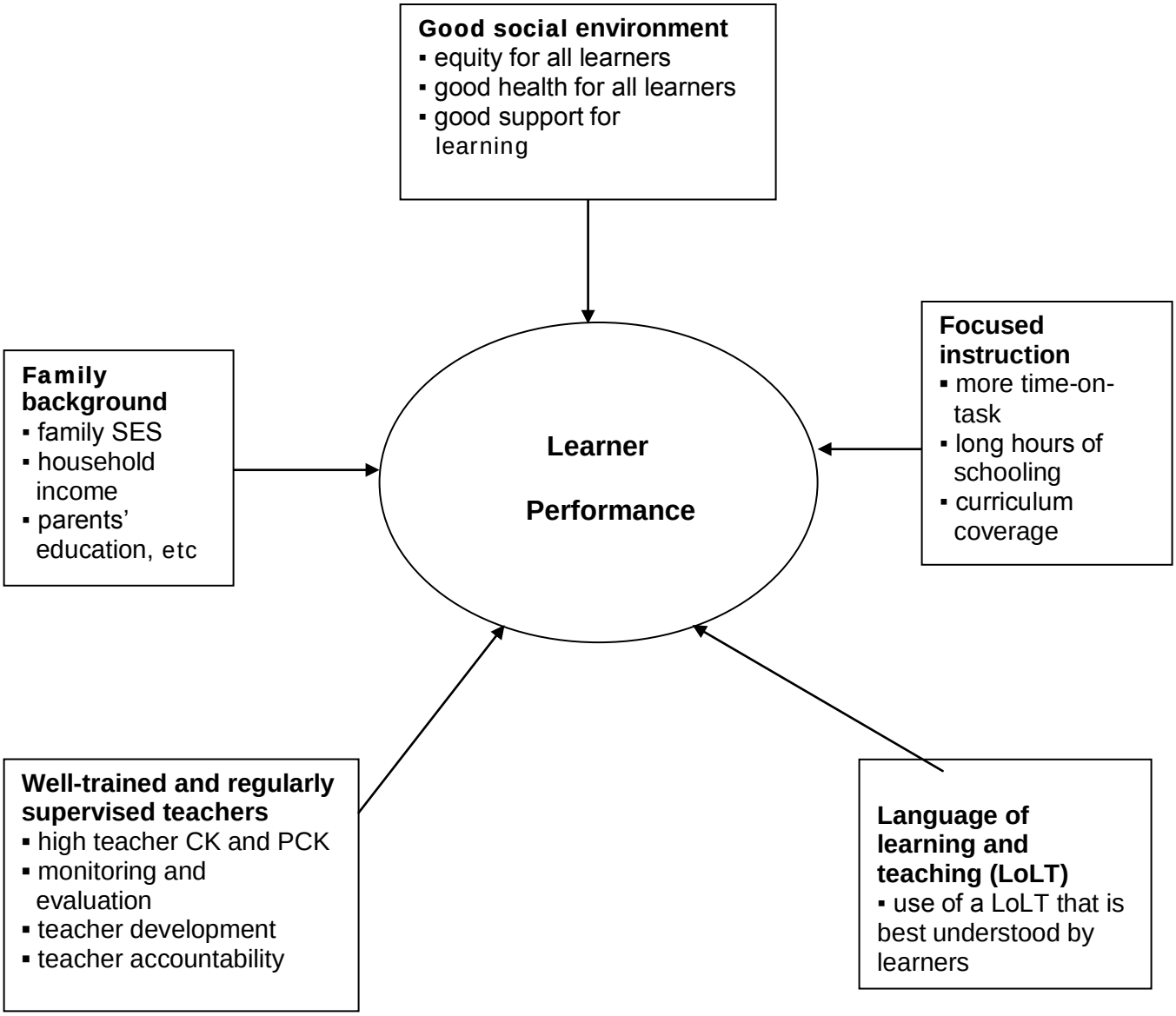
Family background is the fourth factor that influences learner performance in South Africa, as clearly demonstrated by a number of studies alluded to in the previous sections. The availability and quality of family SES, household income and the level of parents' education, which is a form of social capital available to learners, together have an influence on learner performance.

Language of learning and teaching (LoLT) is the fifth factor that has an influence on learner performance. The capacity of learners to understand the language of learning and teaching plays a crucial role in their ability to understand the subject matter not only of Mathematics, but of any subject being taught. So the use of English as a LoLT will

undoubtedly have varied impact on English speakers and non-English speakers, which eventually translate to varied impact on learner performance.

The thinking behind this five-factor conceptual framework is that improved learner performance can best be achieved if the state: (i) ensures that the social environment within which schools operate and learners learn is optimally conducive and supportive of learning for all learners equally; (ii) ensures that there is adequate and focused instruction in all classrooms on quality subject matter material; (iii) ensures that the teaching force carrying out the focused instruction is well-trained and regularly supervised for purposes of both development and accountability; (iv) ensures that efforts are made, though often difficult, to improve the family backgrounds of learners in order to ensure that all learners have adequate social capital to draw on for their learning responsibilities; (v) and finally ensures that the teaching and learning of particularly Mathematics is done through the language which is best understood by most learners.

Figure 2: Learner performance (variation) conceptual framework



CHAPTER THREE
RESEARCH METHODOLOGY

3.1. Introduction

This chapter seeks to present details of research methods used and steps undertaken in collecting the data needed for this study. The study set out to address disparities that continue between former white and former black public schools in learner performance, after almost fifteen years of democracy. This chapter explains how data was collected, in what contextual setting and for what purpose. It outlines strategies, procedures and channels followed for data collection purposes. What I argue in this chapter is that with sound approaches and proper procedures, accessing South African public classrooms for research, and in particular lesson observation, is possible and not too problematic. This is in contrast to the widely held view that the highly unionized South African teaching force treats a classroom as a private or autonomous space (see Rice et al, 2007; Harrel et al, 2000; Jansen, 2004).

Section one of the chapter presents the main aim of the chapter and its argument. Section two discusses the epistemological and research approach adopted by the study. Section three discusses the sampling procedures employed for the selection of sample schools. The methods and procedures used for data collection purposes are discussed in section four. The processing and analysis of the different data sets is dealt with in section five. Section six draws the line of demarcation between the HSRC-Stanford study and the current study. Challenges encountered during methodological data collection processes are discussed in section seven. Section eight identifies lessons learnt through the various methodological data collection processes. Section nine deals with the management of the data set collected. Section ten deals with issues of reliability and validity. The limitations of the study are discussed in section eleven. Section twelve makes some concluding remarks.

3.2. Epistemological and research approach

This is a predominantly qualitative study drawing on a literature review, documentary analysis, testing, interviews and observations. Parts of some quantitative data were used

but solely for purposes of explaining and improving the quality of the qualitative data; quantitative data were minimally used. In short, the study displays and retains its qualitative characteristics. The rationale for choosing qualitative methods was that a qualitative dimension was missing in the HSRC-Stanford study, since it largely focused on quantitative methods. This study intends not only to make an original and meaningful contribution to the work of the large-scale study, but also to probe issues of teacher quality and learner performance more deeply. It attempts to answer some of the questions that the large-scale study did not deal with, such as issues of teacher supervision and evaluation, and learners' perceptions of teacher knowledge.

The main question for my study, which is generally about understanding the 'why'[16], is informed by privileging qualitative methods over quantitative ones. Rigorous and intensive probing through qualitative methods (especially interviews) are better suited for yielding detailed responses; they give respondents the freedom to express their opinions about issues raised. It was for this reason that interviews and observations were part of the main research methods used for data collection in this study.

The project took a case study approach. It is exploratory in nature, in that its quest is to explore forces and factors responsible for the continued learner performance disparities between former white and former black primary schools. It identifies and focuses on four units of analysis (see next section) within one study area. Since gaining insight into the forces or factors at play within a particular area was the focal point of this study, a case study approach then became an appropriate vehicle through which to carry out investigations. My choice of a case study approach was not only informed by the fact that case studies are best suited and appropriate for exploratory investigations (see Yin, 2003), but also because this approach allows researchers to observe the characteristics of individual units in detail, units such as a child, a class, a school, or a community (Cohen and Manion, 1994:106). The purpose is to probe and analyze the multifarious phenomena constituting the life of the unit, with a view to establishing generalizations for the wider population (*ibid)*.

[16] The main question of this study was about understanding why, after more than fifteen years of democracy and massive educational changes in South Africa, we still have persistent learner performance disparities between former white and former black schools, especially in Mathematics?

Generalizations from case study findings can be problematic as they are often compromised by sample size, which is usually very small. However, case studies are capable of producing valid generalizations applicable to the populations from which the samples were drawn (Jacobs et al, 1999:718). Sharp, however, argues that the generalizability of case studies are often underestimated (Setati, 1998:785). In essence, the data sets collected in this study were mainly qualitative and minimally quantitative in nature and they were analyzed both quantitatively and qualitatively. In specific terms, data collected through lesson observation DVDs were analyzed quantitatively by making use of a modified version of the time segment measurement instrument created by Marshall[17] for his work done in Guatemala (See appendix E for the instrument). However, this was done to add value and boost the quality of the overall data that were analyzed qualitatively.

Combining qualitative with some quantitative approaches assisted in triangulation[18] of data. Using quantitative with qualitative approaches is also useful in that qualitative approach can be used to generate questions and theories, and quantitative approaches can be used to test them (Jacobs et al, 1999:717-718). In some instances researchers incorporate both approaches (traditions) together in a single study design (see Creswell, 1994). As in the case of lesson filming, using a video camera enables the integration of the two traditions in that video data can be used both quantitatively and qualitatively (Jacobs et al, 1999). An advantage of this approach is that, while quantitative data can be aggregated, summarized and subjected to statistical analysis, qualitative data allows for the discovery of new ideas and unanticipated occurrences (*ibid*). My study, however, is predominantly qualitative in nature, with just a very small proportion involving quantitative methodology. The graphs that illustrate quantitative data sets in this study are only presented in the appendices section (Appendix F) of the dissertation.

Observations were carried out in two formats in this study, namely, lesson observations and general school observations. The main respondents in the interviews were principals, teachers, teacher union site stewards, and learners – as the main role players in learning and teaching at school level. Research techniques used in this study took the

[17] one of the US researchers who formed part of the research team for the HSRC-Stanford study

[18] Triangulation is defined as combining research methods to give a range of perspectives or the use of multiple data types to investigate the research question (Olsen, 2004).

form of note taking for general school observations; video filming for lesson observations; and voice recording for interviews (as explained in detail in section 3.5. below).

3.3. Sampling strategy

Purposive sampling was employed to select a sample of four schools, located within the West Rand District Municipality in Gauteng Province. The schools were selected on the basis that I had previous dealing with them in the main HSRC-Stanford study. The West Rand District Municipality (WRDM) was chosen because of its mixture of rural, mining, township and suburban schools. The four sample schools were spread across the three municipalities of the WRDM, as reflected in map 1 in Chapter Four, showing the location of the local municipalities.

The results of international comparative studies such as SACMEQII and TIMSS 2003 (see Moloi and Strauss, 2005; Reddy, 2007), show huge learner performance disparities between former white and former black schools in general, and between former ex-departments in general, especially between ex-HoA (white) and ex-DET (black) schools. It was for this reason that I chose to focus on former Model C and township schools. My main goal was to understand the persistent learner performance disparities between these two types of schools, in spite of all the educational changes that have taken place since 1994.

My choice to focus on former white and former black schools was not in any way to suggest that there are no disparities between former white, former coloured and former Indian schools. However, the gaps between former white and former coloured and Indian schools are much less when compared to that between former white and former African schools (see Table 1 in Chapter One). Thus I chose to focus specifically on former white and former black African public schools. In order to do an equal number of schools – of both former white and former black schools available within the municipality – I focused on four of the six sample schools that formed part of the bigger HSRC-Stanford study in West Rand District Municipality.

3.4. Data collection

Data collection procedures for this study commenced with the training of data collectors as part of the research team[19] for the HSRC-Stanford Southern Africa Regional Study. The part of the training relevant to this study within the bigger research study was training in lesson filming using a video camera. We were taught how to use a hand-held video camera. We were also shown how to conduct the general school observations and the format of note taking to be used.

I liken data collection to gold mining. As a miner, you have to start by surveying the availability of gold underground; organize teams of miners and mining equipment; take care of safety measures, and provide workshops for miners about safety measures; start the actual digging work, where you have to deal with challenges such as very hard rocks and streams of water as you go deeper into the ground; dealing with the threats of rock-falls and many other threats inside the mine shaft. Whilst getting hold of raw gold is naturally a relief and joy to a miner, there are still the refinery processes that need to be undertaken to get raw gold into its final product, which is the real gold.

Data collection for research purposes follows more or less similar procedures. A researcher has, amongst other things, to conceptualize a research project; identify a suitable study area and relevant respondents; work out suitable data collection methods; negotiate access to the study area; test research instruments; undergo the actual data collection processes; clean, analyze and interpret the collected data sets; and, finally, write up the report.

Five research methods were used for data collection purposes in this study, namely: an extensive literature review; documentary analysis; observation (lesson and general school observations); interviews; and testing (of both Grade 6 Mathematics teachers and learners).

[19] I formed an integral part of the research team, coordinating the whole of the fieldwork project, liaising and negotiating with schools, allocating schools to members of the team, dealing with all logistical arrangements and taking part in all data collection exercises, including lesson filming.

Extensive literature review

The first research method used to gather data in this study was an extensive review of related literature. The first purpose of the extensive review of literature on matters related to learner performance and learner performance gaps was to gain an understanding of how far this area has been researched before, so as not to re-invent the wheel. A second purpose was to gain theoretical insights in order to develop and refine a conceptual framework for my study. A third purpose was to acquire 'secondary data' for my study from the findings of other studies. As seen in the previous chapter, the literature review focused on both international and national bodies of literature.

The review of South African literature revealed a number of patterns that explained learner performance disparities between former white and former black schools. These included poor monitoring of student progress by school principals in historically black schools; teacher absenteeism and poor teacher quality in historically black schools; differences in school and learner SES in the two types of schools; lack of resources, teacher development, school infrastructure and upgrading, and curriculum development in former black schools. Jansen (2001) argues that the South African state is obsessed with educational outputs, while ignoring its immediate task of making the required educational inputs to redress the historical inequalities of the apartheid education system.

Curriculum coverage and exposure; parents' educational level; inequalities in resource redistribution; low levels of content knowledge and pedagogical content knowledge amongst teachers attached to former black schools; unequal distribution of pedagogical content knowledge across schools; school mean SES and learner background also formed part of the trends emerging from the national literature.

Documentary analysis

Several educational policy documents were analyzed as part of the data collection for my study (see Chapter Five). The main purpose of analyzing educational policy documents and programmes was to ascertain the extent to which policy change has impacted on the project of educational equity in general, and on learner performance in particular.

Policy documents were categorized in terms of their specificity and relevance to themes that emerged from their analysis. The themes that emerged from the process of document analysis were, amongst others, de-racialization of public schools; decentralization of school governance; a new school funding policy; free education; rationalization and redeployment of educators; a national school nutrition programme; a scholar transport programme; curriculum change; and improving Mathematics and Science: the Dinaledi Project. The analysis of educational policies that related to these themes generated a volume of qualitative data to augment and triangulate with other data sets collected for the purposes of my study.

Observation

Observation as a research method in the study, as already stated, took the form of *lesson observations* and *general school observations*. While the former dealt specifically with issues of lesson filming in the classroom situation, the latter focused on the general, physical appearance of schools, that is, school infrastructure and other school resources.

Lesson observation was part of the third research method used in this study. This took place in spite of the general assertion that gaining access to classrooms as research settings for purposes of conducting observational research is a serious problem, whether for more-structured or less structured observations (Forster, 2006). The technique used for data collection purposes during lesson observations was video recording.[20] Video recording is increasingly becoming a common feature in educational research, especially in classroom situations. Video tapes have been used before in studies of this nature in countries such as Panama, Guatemala and Cuba (see Carnoy, 2007a)

Apart from the fact that a video camera captures the kind of data that stays original, permanent and detailed (Jacobs et al, 1999), video data has a number of other advantages over other types of data. It is easily digitized and stored on computer CD-ROMs. Data can easily be saved on computer servers or devices such as discs and DVDs. It is easily accessed from any section of the observation by simply clicking on the

[20] In this study, video recording refers specifically to the use of a video camera to record activities taking place during lessons in identified classrooms.

appropriate section of the DVD. Video data can be easily and quickly duplicated for use by many researchers or team members. It is easily stored and analyzed and it can be easily disseminated to other researchers or audiences through the internet (*ibid).* Other advantages of using video recording for data collection include the fact that, unlike other devices, it captures almost everything that happens in a particular place, e.g. a classroom. It also captures the type of data that one can see and hear, i.e. the audiovisual data. It is often said that actions speak louder than words. And interestingly, video-recorded data, such as filmed lessons, also provides researchers with an opportunity to see and interpret the body language, actions or gestures of research participants, which in this case would be learners and teachers.

Teaching and learning activities inside classrooms were videoed extensively in order to ensure that a true reflection of the usual day-to-day teaching and learning activities inside the classroom were recorded. The actual recording started a number of minutes after both teachers and learners had become accustomed to the presence of the video camera inside the classroom.

Team members from Stanford University – experts in the use of video cameras for lesson observation purposes, who had filmed lessons in countries such as Guatemala, Cuba and Panama – trained the whole team in the technicalities of using a video camera to film Mathematics lessons. Standard procedures for filming were developed and agreed upon by the whole team in order to minimize bias. One researcher filmed the lesson in the classroom, standing at the back of the room, behind the learners, so as to minimize disruption of the lesson. DVD discs were formatted before recording and finalized after recording. For identification purposes, all DVD discs, were marked with the school name and the date of recording. One class per school and one Mathematics lesson per class was video-tapped for the duration of one period. On average, the duration of the lesson filmed in the sample schools was 30 minutes.

After one day's training, lesson observations in schools commenced the next day. This provided the team with the opportunity to engage with and put into practice what they had learnt during the training. Most, if not all, of the lessons filmed were single-focus-topics. Lessons on single focus topics are easier to film than multi-topic lessons where

learners work in groups and on different topics. There were no multi-grade[21] classes involved, only Grade 6 classes were observed; this also made filming less complicated. The video cameras used had good sound quality, and this made it easier for a teacher to be clearly heard even in instances where the focus shifted from the teacher to other happenings in the classroom. The research team met at the end of the first day's fieldwork for debriefing. General challenges and difficulties encountered during the fieldwork were discussed and solutions suggested for subsequent fieldwork trips.

General school observation was carried out by the team. This included observation of the physical conditions of buildings, and the educational facilities available such as: laboratories and libraries; sporting facilities such as playing grounds and gymnasiums; and learning and teaching support material (LTSM) such as stationery, textbooks and overhead projectors. Note-taking was the data collection technique for general school observations. Researchers were not bound to follow a particular sequence in their observations. However, their notes were confined to the above-mentioned factors. After the fieldwork, I organized and typed all my hand-written observation notes from the sample schools into a more professional and 'clean' format for analysis purposes. Data collected through this method was essential in supplementing video recorded data. Whereas video recording of lessons captured data from within the classroom situation, general school observation notes provided additional data both from outside and inside the classroom. The two sets of data together provide a better understanding of the two groups of schools investigated in the current study: former white and former black schools.

Interviews

Accessing sample schools for interview purposes was actually very easy in that the process was part of the large-scale HSRC-Stanford study. I had already established a bond with these schools, and they did not have any problem when they were told about the need for interviews as additional data collection for my study. It is important to indicate that only learners who took part in the large-scale study in 2007, together with their teachers, were interviewed for purposes of the current study. In this dissertation (the current study), quotations from school principals, Mathematics teachers, teacher

[21] These are classes serving more than one grade mainly due to shortage of classrooms.

union representatives and learners were coded as follows: school – FWS for former white school; FBS for former black school; position – P for principals; T for (Mathematics) teacher; TUR for teacher union representative; L for learners; gender – M for male and F for female. For example, (FWS, L3, M) represents male learner number 3 from a former white school. For more details on interview codes, see appendix D.

Four different instruments were used for interviews: learner, teacher, principal and teacher union site steward interview questionnaires. I conducted four learner focus groups, one per sample school. Each group comprising ten Grade 6 learners, with a 50-50 split on gender representativity. I did two Grade 6 classes per sample school because this was in line with what the main HSRC-Stanford study did at each of their sample schools. With the average teacher:learner ratio in Gauteng Province standing at 1:31 in 2008 according to South African Institute of Race Relations (2007), ten learners per class translated to about 32% of Grade 6 learners interviewed per sample school.

I created a relaxed, friendly and safe atmosphere for my focus group interviews so that participants (learners) could be able to relax and express themselves freely. Empty classrooms, and conference rooms in some instances, were used for learner focus group interviews. To maximise confidentiality, learner interviews were conducted with learners only, in the absence of teachers or any other member of the school community. One-on-one interviews were conducted with four Grade 6 teachers; four school principals; and seven teacher union site stewards, representing two of the biggest teacher unions in South Africa – the South African Democratic Teachers Union (SADTU) and National Professional Teachers Organisation of South Africa (NAPTOSA). SADTU is the biggest teacher union in South Africa that is highly militant and politicized though aligned to the ruling African National Congress. NAPTOSA is the second biggest teacher union in South Africa with an entrenched professional and 'child first' approach (see Govender, 2008 and Jansen et al, 2009).

The interview questionnaires comprised mainly open-ended questions, so as to allow respondents, especially in focus groups, to have enough space to air their views and express their opinions about the issues raised. The instruments also included a few closed questions, mainly taking the form of multiple choice format questions. The learner instrument dealt with issues such as learners' perception of what a good Mathematics

teacher is; home and school socio-economic factors and how they influence learners' performance; the availability of learning and teaching support material (mathematical equipment, textbooks and so on); the difference between former white and former black schools after years of democracy (in terms of infrastructure, educational facilities, teacher quality and so on); and opinions on how non-performing schools (mainly former black schools) should improve their performance.

The teacher instrument (questionnaire) comprised and probed issues such as the nature of the challenges encountered in the teaching of Grade 6 Mathematics; the availability of mathematical LTSM; the impact of initial teacher training on the development of teacher content knowledge (CK); the impact of in-service training (workshops) on the development of teacher pedagogical content knowledge (PCK); the impact of socio-economic factors on learner performance; their opinion on the importance of teacher supervision and evaluation, how they feel about being observed, their opinion on teachers' resistance against lesson observation and supervision; and what they think could be the reasons for former white schools' academic advantage over their black counterparts in Mathematics.

Amongst other issues which the school principal instrument (questionnaire) dealt with, were how often they observed teachers' lessons; what they know to be some of the reasons given by teachers for resisting lesson observation; what they know to be reasons for teacher unions' resistance to teacher supervision and evaluation; their opinion on the impact of teachers' initial training on developing their CK; the impact of in-service training on developing teachers' PCK; and what they think could be the reasons that former white schools continue to do better than black schools in Mathematics in spite of years of educational transformation in South Africa.

The teacher union site steward instrument focused on their opinions about the availability of LTSM; the importance of lesson observation and supervision; why teacher unions resist supervision and evaluation and in particular, lesson observation; the reasons learners in former white schools continue to do better than learners in former black schools in Mathematics; and their opinions about how teacher supervision and evaluation could be improved.

Testing

Testing entailed administering Mathematics tests for both Grade 6 teachers and their learners in the sample schools of the main HSRC-Stanford study. The results of both the teacher and learner tests from the main study were used to assess the level of teachers' and learners' mathematical competency at my sample of schools (see Chapter Six for the average performance of both teachers and learners in the sample schools of this study).

3.5. Data processing and analysis

Processing and analysis of data was carried out in terms of the nature or type of data set collected: literature review, document analysis, lesson observation, general school observation, interview and test data sets.

Literature interview data set

The data set collected from the extensive literature review was analyzed qualitatively in terms of identifying patterns, frequencies and similarities emerging from related literature and from empirical evidence emerging from related studies. Frequencies and consistencies of patterns emerging from various studies, both international and local, were used to make sense and arrive at identified patterns or factors for the current study (see Chapter Two).

Document analysis data set

The data set generated from educational policy documents was analyzed by means of identifying the initial aims and objectives of policy documents versus their actual achievements and implementation challenges. Related literature was also used to further illuminate and identify policy achievements and challenges, as well as possible remedial measures that need to be taken going forward.

Lesson observation data set

The Time Segment instrument, developed by Jeff Marshall – one of the US researchers who formed part of the research team for the HSRC-Stanford study – and which has been used in studies conducted in countries such as Costa Rica and Guatemala, was used for analyzing lesson observation data captured on video. However, the instrument

was modified, adjusted and altered where necessary, so as to make it more relevant to the South African context and for the purpose of my study in particular. This modification included taking out some of the irrelevant issues/activities and replacing them with more relevant and directly linked ones. Marshall's Time Segment instrument thus served as a guideline in developing the instrument used in this study. Although most of the time segments or activities were adopted, a significant number of them were new, unique and directly relevant to this study. For instance, whereas Marshall used a 15 second time period to mark a predominant activity, I used a 60 second time period (one minute). The reason for this adaptation was that I felt that the longer the period (for classifying the activity) the clearer the predominant activity becomes. Fortunately, the video cameras used to record the lessons display the time spent in each lesson. The general length of a lesson period across the sample schools was 30 minutes. This meant that at the end of each lesson period, about 30 clicks or more had been made, especially in instances where there were predominant activities happening simultaneously.

The Time Segment instrument comprises two main parts, namely: a series of segments and a series of post-lesson observations (see Chapter Six). The time segments are divided into six categories as follows:

Category 1: *Seat Work*. This is a group of activities that students do while seated at their desks working individually. This category is further divided into the following sub-categories: 1a – Copying instructions/ problems; 1b – Solving problems individually while the teacher circulates; 1c – Solving problems individually while the teacher is doing other tasks at his/her desk; 1d – Teacher checking work individually while students are working, by circulating or getting students to come to his/her desk; 1e – Checking work individually, stopping students in order to do that.

Category 2: *Recitation*. This is a group of activities that involves exchanging information in various ways such as question and answer or students going to the board. Sub-categories here are as follows: 2a – Question and Answer (Q-A) Whole Class/ Individual; 2b – Q-A Whole Class Chorus; 2c – Q-A Whole Class, Groups Reporting; 2d – Individual/Whole Class Reading Orally; and, lastly, 2e – Solve at the board.

Category 3: *Group Work*. This category is group work by students in the following sub-groups: 3a – Individual groups working quietly while the teacher circulates; 3b – Individual groups working quietly while the teacher is busy on other tasks; 3c – Individual groups solving problems by talking amongst themselves while the teacher circulates; 3d – Individual groups solving problems by talking amongst themselves while the teacher is busy on other tasks; 3e – Group discussions by students; 3f – Group problem solving by students; 3g – Teacher checking group work while students are working; 3h – Checking group work by stopping students in order to do so.

Category 4: *Whole Class Instructions, Demonstrations, Lecture, Review* (teacher-centred). This is expected to be a highly common activity in most classes.

Category 5: *Transition*. This refers to a change of action by both students and teachers, for instance, when the teacher orders students to take out their workbooks – there is a transition from one activity to another. This activity is not very common.

Category 6: *Interruption/Discipline*. This is an instance where the lesson stops because of interruption, for instance, by a school principal wanting to talk to the teacher or any other outside interruption.

Post-lesson observations. refers to the series of observations noted after lesson observations have been done, such as the overall level of engagement of a class; the overall degree of discipline in a classroom; the physical appearance of a classroom and so on, which directly or indirectly impact on learner performance.

Using the Time Segment instrument involved, firstly, watching the video DVD for each lesson, and then marking which category of activities was dominant after each and every 30 second interval. The reason behind this was to establish which activities had the most, or the least, time spent on them during lessons. Secondly, using the instrument also helped in establishing the differences and similarities between schools (former white and former black), in terms of: the physical conditions of classrooms; discipline levels amongst learners; and the availability and use of learning and teaching support materials inside classrooms, as well as other educational facilities that impact on learner performance in general and on learner performance disparities in particular.

General school observation data set

General school observation was done simultaneously with the lesson observation. General observation focused on the quantity and quality of educational facilities available at the sample schools. These included school buildings (the quality of building materials, heating facilities, air conditioning, ventilation, floor carpeting or matting, lighting and so on); playgrounds; libraries; laboratories; school fencing; school security; school communication devices (such as intercom facilities); school nutrition programmes; general discipline and order at the schools; learner and staff composition and so on. Note taking (hand written) was used to record general school observations.

In order to ensure legibility and clarity, all hand written records of general observations were typed using a word processor. This made it easier for analysis purposes which involved identifying similarities and differences between facilities at former white and former black schools, in terms of the quality, quantity and availability of educational facilities as described in the previous paragraph.

Interview data set

A powerful and high quality voice recording device was used to capture the interviews. The technological device used does not use tapes or cassettes. Apart from a recoding capacity of up to 99 messages/ interviews on each of the four folders that the device contains, the device provides very clear and audible voice recordings. The voice recording package included a software disc and a cord which makes it easy for one to transfer or save recorded data/ interviews onto a PC for transcription purposes. The software comes with a transcription device that has buttons such as ‘slow’, ‘fast’ and ‘normal’. This enables one to choose the best and most convenient tempo for listening to recorded interviews. By using ‘repeat’ and ‘fast forward’ buttons, I was able to go backwards or move forward to the exact part of the recorded interview that I wanted to listen to. I found that the use of this device greatly facilitated transcription of interview data and ensured audibility of the recorded voices.

All recorded interviews were then transcribed by means of a word processor for analysis purposes. Cleaning of the data happened simultaneously with transcribing of interview data. This involved getting rid of unnecessary parts of data, such as unnecessary repetitions, interrupting voices and other noises. The data was then analyzed by

identifying and coding frequencies of responses, as well as similarities and differences. Emerging themes were then identified, classified or clustered, interpreted and, finally, compared in terms of former white and former black schools in the sample.

Mathematics test data set

The average performance of both Mathematics teachers and learners from each of the four sample schools were calculated and tabulated in order to gain a better understanding of the performance variation across these schools. Learner test scores were explained and clarified from different angles and explored in relation to different variables, for example in terms of the school fees charged by a school or in terms of school quintile, etc., as is detailed in chapter Six.

3.6. Methodological comparisons between the current and the HSRC-Stanford study

The HSRC-Stanford study

The HSRC-Stanford study was a quantitative study that included 40 representative sample schools from across the Gauteng Province. It focused on Grade 6 Mathematics. The methods used in the HSRC-Stanford study were observations (general school observations and lesson observations by filming) and questionnaires (learner, teacher and principal questionnaires).

My study

My study differs from the HSRC-Stanford study in four main respects. First, it developed its own research question/s. Second, it used a sub-sample from the HSRC-Stanford sample. The study focused on four schools, purposively sampled, within one district municipality in Gauteng province. Third, unlike the HSRC-Stanford study that used only quantitative research methods, my study – though predominantly qualitative – used both qualitative and quantitative research methods. Fourth, this study differs from the wider study through its development of additional instruments and more in-depth qualitative research. The current study used research methods that included interviews, testing, and observations. Focus group interviews were held with learners in the sample schools; and semi-structured interviews were held with teachers, teacher union representatives, and school principals.

The interviews sought to investigate, amongst others issues, the perceptions of learners on teacher competence; the perceptions and experiences of teachers and teacher union representatives on issues of supervision and evaluation and teaching and learning; and principals' experiences and opinions on issues of teacher quality, resources and supervision and evaluation. Observations (general school observations and lesson observations) were used in both studies. However, the differences in the research questions of the two studies meant that the two studies used this method in different ways and for different purposes.

3.7. Challenges encountered and how they were overcome

This section deals with several methodological challenges encountered during the course of data collection processes in the current study. One of these was organizing access to schools, and another was that of dealing with the sensitive and intimidating issue of negotiating lesson filming with highly unionized Mathematics teachers, as detailed in the next paragraphs.

Gaining access[22]

Gaining access to schools and recruiting learners to become participants are some of the most challenging tasks in research projects (Rice et al, 2007; Harrel et al, 2000). This is even more serious in a country such as South Africa that has one of the most democratic Constitutions in the world, wherein basic human rights are constitutionally guaranteed. Gaining access to research sites and getting participants on board for any research project has to be carefully negotiated within the confines of both the Constitution and research ethics, otherwise the project is doomed to collapse (See Murphy et al, 1992).

Gaining access to the four schools in this study was done at the same time as it was done for the 40 sample schools of the HSRC-Stanford project. The main challenge in terms of accessing the schools was 'selling' the research idea to relevant educational authorities and potential participants. This entailed informing them about the project and furnishing them with some of the details of the project. This process was useful in

[22] Negotiating access to research settings, such as classrooms

addressing possible hiccups and hindrances before the actual data collection commenced. It was important to convince authorities and participants about the importance of the study in improving learning and teaching, and more importantly, to win their trust, support and co-operation.

AS a PhD student and a research trainee at the HSRC, I was involved in most processes and activities undertaken in the larger HSRC-Stanford project: from the conceptualization and planning of the project; negotiating access with sample schools; developing interview instruments; liaising with sample schools; organizing fieldwork tasks and data collection; capturing and cleaning data; and writing up reports through to the presentation of the findings. Access negotiation with the sample schools was thus just one of the many responsibilities that I was tasked with in this project.

The South African education system has multilevel educational authorities and we had to deal with each level in our quest to gain access to our research sites and participants. After conceptualizing the idea and developing the proposal for the main project, the 'first stop' was the national Department of Education (DoE). A letter requesting permission to conduct a study of this nature, together with the proposal, was sent to the DoE, for the attention of the Director-General, as well as to Heads of Education Committee (HEDCOM[23]). A written approval (for the project) from HEDCOM, signed by the Director-General, was granted.

Once the sample schools were identified, letters and proposals for the project were sent to Gauteng Department of Education (GDE) for the attention of the Head of Department (HOD). We also had to deal with the GDE requirements (see Appendix C), which all researchers have to meet before they are allowed to conduct research in Gauteng schools. The first of these requirements entailed a submission of all research documents to GDE. These included a research proposal; a full list of institutions (schools) and/or offices taking part in the study; request letters sent to schools and other participants; and copies of questionnaires and interview schedules to be used in the study.

[23] This committee comprises the heads of all the provincial Education Departments in South Africa under the leadership of the Director-General of the national Department of Education.

The second part of the requirements was the actual request for permission. This included requesting permission from the Head of Department, who referred us to the office of the Senior Manager: Policy Coordination, Monitoring and Secretariat Services; and requesting permission and liaison with district managers, school principals, SGBs, teachers and parents of learners who were to take part in the study. This was a very complicated process that required patience and thorough planning. The Gauteng Department of Education does not compromise when it comes to these requirements. To a certain extent, our project, in particular the fieldwork, was delayed while we sorted out and ensured that we met the requirements.

Request letters sent to parents/ guardians included copies of consent letters which parents/ guardians, freely and voluntary, had to sign, officially giving consent for their children to take part in the study (See Appendix A for copies of consent letters sent to different authorities). Unlike recruiting adults to become participants in a study, recruiting learners, and especially Grade 6 learners, who are still regarded as minors according to law, requires parental or guardians' consent for participation. Most Grade 6 learners are 12 years old if they entered the system at seven-year-olds, which, in terms of Section 5(4) of the South African Schools Act, 84 of 1996, as amended, is the required age for admission in Grade 1 (See Rice et al, 2007).

It normally takes some powers of persuasion to convince parents to give consent for their children to take part in research projects. Usually, they agree and become motivated once they know that the project will benefit their children one way or the other, and that it won't risk their well-being or health, or threaten their lives! Section 28(1) paragraph f(i) of the Constitution of the Republic South Africa gives every child the right not to be required or permitted to perform work or provide services that place at risk their well-being, education, physical or mental health, or spiritual, moral and social development (Republic of South Africa,1996b). Added to that, there are legal and ethical implications to be considered when children are involved in research activities.

After a week of sending out request letters and research proposals to all interested parties, I made telephonic follow-up calls to check that our letters had been received, and to establish when we could expect responses. These telephonic conversations with different authorities gave me an opportunity to explain the project to those who had not

yet received the letters and furnish them with the details of the project. The phone calls also helped to clarify some of the concerns and questions which recipients had. After more than a month, responses started coming in. Approvals, written and telephonic in some instances, were received from the GDE, districts, some schools (principals and teachers), some SGBs and some parents.

The next step, after receiving a substantial number of approval letters and consent forms from different stakeholders, was to start the process of ethics clearance with the Human Research Ethics Committee of the University of the Witwatersrand[24]. Ethics committees do not only serve as 'gatekeepers' in ensuring that inappropriate or excessive demands are not made on schools, principals, teachers or children (Woods and Roberts, 2003), but they also ensure that codes of research ethics are followed and respected by researchers. After dealing with all the requirements of the Human Research Ethics Committee, ethics clearance was also granted.

On receiving approval letters, the next step was to send copies of approval letters from the national Department of Education (DoE) and districts to all the sample schools as proof of the approval and endorsement of the study by the Department of Education. Phoning schools was the next step; followed by following ups on documents that had been sent to schools, and then making appointments and necessary arrangements with schools in preparation for school visits and data collection.

There were, however, a number of challenges that were encountered in the process of trying to gain access to schools, especially classrooms, for lesson observation purposes. This is not surprising, given the fact that accessing schools for research purposes is, in general terms, always very difficult (see Lamb et al, 2001). The June 2007 public sector strike action by almost all public sector unions in South Africa, teacher unions included, caused serious delays in the communication and liaison with schools and districts. All in all, the strike action led to 16 days of non-teaching and learning, especially in public schools, which ultimately delayed the fieldwork.

[24] See http://web.wits.ac.za/Academic/Research/Ethics.htm

Another serious challenge was the issue of obtaining parents' consent letters. Very few signed consent letters were received from parents, which made it very difficult to start with the process of data collection. Realizing that mailing another batch of copies of consent letters to parents to sign might yield similar results, the only feasible option left was to drive to all the sample schools and hand-deliver consent letters to schools. This gave me an opportunity to urge Grade 6 Mathematics teachers to hand out the letters to learners so that they could take them home to their parents/guardians, get them to sign, and then bring them back to schools by the end of that week. Parents responded positively, and by the time data collection processes started, almost all consent letters from parents were then received. Another advantage of visiting the sample schools in person was that I got to know the exact locations of schools, which made locating schools much easier during the actual data collection process.

Lesson filming

Doing lesson observation is a serious challenge in South Africa, let alone lesson filming. The rejection of the apartheid system of governance and apartheid education in particular, which culminated in serious protest actions in the early 1990s, resulted in, amongst other things, the resistance to apartheid-designed school inspections, and classroom inspections in particular (see ANC, 1994). This resistance resulted in classrooms becoming 'no go areas' for education officials. The element of resistance against inspection and/or lesson observation was detected amongst some of the teachers who we wanted to observe while teaching Mathematics lessons. Lesson observation was the biggest challenge that I had to deal with during my fieldwork preparations. The following were some of the challenges that I encountered during the process of organizing lesson observation and filming:

*Restlessness and excitement amongst learners***:** As expected, in some classes, as soon as learners saw the video camera, they became very excited and disorderly. Some children, for some reason, assumed that they would be appearing on television. Even after explanations that our filming of the lesson had nothing to do with television, there were still a few learners who, from time to time, stared at the video camera rather than at the teacher. This, to a certain extent, compromised their full attention and focus on the teacher and on the lesson itself. However, the fact that the camera focused mainly on the teacher delivering the lesson, and the fact that the teacher tried very hard to draw

learners' attention by calling out their names when they seemed not to be paying attention, assisted in minimizing the amount of divided attention amongst learners.

*Video cameras intimidating to teachers and learners***:** The presence of a stranger and the use of a video camera in the classroom had an intimidating and disruptive impact on the normal functioning of daily classroom activities. This sometimes led to nervousness and artificial behaviour amongst both teachers and learners. However, the use of small video cameras and the strategy of filming lessons from the back of the classroom, to a certain extent, reduced the level of nervousness and artificial behaviour.

*Reluctance by some teachers***:** Despite the fact that teachers had consented to take part in this study in advance, most of the teachers in my sample schools were reluctant to be observed when teaching, and especially being filmed. This reluctance was exacerbated by the fact that the fieldwork took place when there was still a stand-off between the Department of Education and the teachers' unions on the issue of teacher performance appraisal. Several attempts by the Department of Education to gain access to the classrooms for teacher appraisal purposes had failed in the past; largely due to resistance and protests by the teacher unions. This resistance saw teacher appraisal instruments such as the Developmental Appraisal System (DAS), Whole School Evaluation (WSE) and recently, Integrated Quality Management System (IQMS) collapse without achieving their intended goals.

During the writing of this dissertation, the Department of Education signed an agreement with the teacher unions around the latest instrument called the Occupational Specific Dispensation (OSD)[25]. However, there was still a stalemate between the DoE and the teachers' unions around the establishment of the National Education Evaluation and Development Unit (NEEDU), which was largely aimed at issues of monitoring and evaluation of teachers. One way or the other, these dealings between the Department of Education and the teacher unions negatively impacted on our lesson filming project. While some teachers mistook us for IQMS teams, others told us that they had a directive from their union not to participate or cooperate with anyone wanting to conduct lesson observations in their classrooms. Persuasion was the only strategy I could use to get teachers' cooperation.

[25] A teacher evaluation instrument including the notion of performance related pay.

With attention shifting from access to quality teaching and learning and performance in South Africa, the prospect of teachers being filmed tended to generate some anxiety and suspicion amongst some teachers, especially those who are members of teacher unions. Some teachers felt that they were being made to betray the position and resolutions of their unions. As someone who had been an active member of one of the biggest teacher unions in South Africa myself, I was able to understand their concerns and how best to address them. After engaging in discussions with teachers, I managed to get them to cooperate.

3.8. **Lessons learnt**

There were a number of lessons to be learnt from engaging in data collection processes and procedures for both the bigger HSRC-Stanford project and the current study; particularly the exercise of gaining access to research sites and recruiting participants. The following are some of the lessons learnt:

Enough time needed for access negotiations: There is a need to allocate enough time for the processes of access negotiations. The reason being that there are a number of time-consuming issues that need to be dealt with such as choosing sample schools; finding out which schools would be available for the project and which ones would not; preparing the documents for the project such as the research proposal, request/ access letters, consent letters, the research instruments, and so on. In fact, time needs to be allocated for each and every task in order to avoid having to do many different tasks simultaneously, as this has the potential to compromise the quality of the work done.

Document preparations should be done beforehand: Gaining permission for research projects requires the preparation of a number of documents such as research proposals, access letters, consent letters, and so on. In addition to these documents, are those needed when making ethics applications. It is therefore important to draft and prepare these documents in advance so that by the time they are needed, they are readily available. Modifications and changes can easily be done to original documents if the need arises. Early preparation helps to avoid situations where access letters have to be drafted in a rushed atmosphere, which could compromise their persuasive power.

Preparatory visit to schools: Apart from interacting with schools telephonically, visiting schools in person also plays an important role in gaining access. Some schools, especially those located within poor semi-rural and township areas still do not have telephones, which makes it difficult to communicate with them and coordinate arrangements for research or to follow-up on documents that have been sent to schools. In other schools telephones are simply not working. Visiting schools in person for preparatory purposes prior to the actual data collection processes then becomes a good option. Amongst other advantages, a preliminary visit to schools provides a good opportunity to get to know the exact location of schools and to find the quickest routes to get there. Preliminary visits also provide an opportunity to address concerns and questions about the project, and to hand-deliver and collect outstanding documents, as well as to persuade and encourage doubtful potential participants to take part in the study.

3.9. Data management[26]

Obtaining research data involves a number of processes and dealing with challenges such as those mentioned in the previous section. The storage and retention of data as a valuable resource then becomes crucial. Large amounts of data were collected for my study. There were three data sets, namely: notes generated from the extensive literature review, document analysis and general school observation; video DVDs (discs) and interview transcripts. Video DVDs were saved on a computer server and then transferred to a database package for storage purposes. General school observation notes were captured electronically into MSExcel spreadsheets and then saved on the database. All hard copies, including DVDs or discs and interview manuscripts were locked away for later use.

[26] Data management involves planning, development, implementation of systems for the acquisition, storage and retrieval of data

3.10. **Reliability and validity**[27]

Reliability and validity point to the trustworthiness, credibility and accuracy of the data gathered and/or findings. In specific terms, validity is concerned with the study's success at measuring what the researcher set out to measure. Reliability is concerned with the accuracy of the actual measuring instrument or procedure (Howell et al, 2005). In everyday life, the word 'reliable' means something or someone dependable or trustworthy. In research, the meaning of 'reliable' goes deeper than that. It means a dependable measure, the kind of measure that is both reliable and valid (see Trachoma, 2006). In this context, reliability means repeatability or consistency of research findings. This in itself means that if an independent researcher were to utilize the same research methods and procedures, he/she should be able to get the same or almost the same results.

There are two distinct types of validity, namely; internal validity, which refers to the rigour with which the study was conducted, and external validity, which refers to the extent to which the results of a study are generalizable[28] or transferable. Generalizability of research findings, to a large extent, depends on the reliability of such findings in that when results are reliable and valid, this enables the researcher to make claims of generalizability applicable to the sample population and other populations with similar characteristics or set-up. However, generalizations, according to Gillian, are often suspect in that there are too many elements that are specific to a group or institution (Gillian, 2000:06). Whilst generalization was not the main goal of this study, attempts were made to achieve the transferability of the findings of the study to other populations through the thick description process.[29] Erickson (1986) argues that the issue of generalization should better be left to readers "because it is the reader, not the

[27] Validity refers to the degree of truly measuring what is intended to be measured; and reliability refers to the consistency of a test, survey or observation or other measuring devices (see Heffner, 2004).

[28] The extent to which research findings and conclusions from a study conducted on a sample population can be applied to the population at large (Howell et al, 2005).

[29] This is a term pioneered by American social anthropologist Clifford Geertz, that describes what can be achieved through attention to, reflection on, and written analysis of, the fine grain, or detail, of what one is observing.

researcher, who determines what can apply to his or her context" (Erickson (1986) cited in Reis, 2010:1).

Reliability and validity of the findings of this study were achieved by, amongst other things, carefully and thoroughly following all prescribed procedures and steps needed for the approval of a study of this nature; following standard research ethics protocols needed for the gaining of access to the research setting and recruiting participants; using multiple sources of data (learners, teachers, teacher union representatives and school principals) and research instruments (video camera, observation notes and interview transcripts) – commonly referred to as triangulation; and the involvement of both local and international research experts in the large-scale study – especially those who had already conducted similar studies in other countries – not only in the training of the team, but in data collection as well.

Coupled with the involvement of both local and international researchers in the larger project, the involvement of my two supervisors as well, the HSRC supervisor and the PhD supervisor, played a crucial role in ensuring that I did not become biased in anyway, in any aspect of this study (see detailed explanation of this aspect in the next section).

3.11. Limitations of the study

As a black, up-and-coming researcher in South Africa who has been affected one way or the other by apartheid and its Bantu education legacies, there were possibilities of my judgments being clouded by the pain that I experienced in the hands of apartheid rule. This posed possible risks of being one-sided. To eliminate such a risk, I utilized the general skills, experience and research expertise of my HSRC mentor – a seasoned white South African researcher, who was always willing to read my work, to give advice and feedback, and to alert me to any bias in my research project.

The dependency of my study on the bigger HSRC-Stanford project in terms of funding, time frames, and so on, was another possible limitation. A possible danger here was that if the large-scale project, for some or other reasons collapsed, my study, which was dependent on its existence and funding could have collapsed as well. However, the

experience and expertise of the seasoned researchers who led the bigger HSRC-Stanford project ensured that my project in Gauteng was successful.

Another limitation was the use of video cameras to film lessons in classrooms that made both teachers and learners feel uneasy and uncomfortable. Videoing lessons could have made the participants react and change their behaviour or conduct during lessons, especially the learners. As data collectors we had to be strategic and give both teachers and learners some time to first get used to being filmed before the actual filming started. It was only after the excitement of being filmed had settled down, that we actually started filming lessons. Filming was done from the back of the classroom behind the learners, which also assisted to a certain extent in reducing uneasiness and excitement within the classroom.

A further limitation was a tendency by some teachers to practise a lesson and drill learners in preparation for the day of the lesson observation. Teachers tended to do this when they were informed well in advance of our visit. It was in situations such as this that obtaining a true reflection of what actually happens during lessons tended to be compromised. What I did when I made arrangements for the school visit dates, was to stress to principals and teachers that the research was not a fault finding mission. I had to convince them that the aim was actually to assess how far we have progressed and to establish the challenges we are still faced with – especially in teaching and learning of Mathematics in South Africa. Although there were some signs of 'pre-drilled' lessons in some classes, especially at the beginning of lessons, these tendencies generally faded away as the lessons progressed. Even when this was the case, one could still observe the level of quality interaction between teachers and learners through the quality of questions asked by learners and responded to by teachers – aspects that cannot be 'rehearsed' with ease.

3.12. Conclusion

This chapter raises important methodological challenges. These include developing a separate study from the wider or main study; identifying the differences and similarities between the two studies; dealing with simultaneous multi-tasking in the process of access negotiations with sample schools; and the tightly controlled and strict

requirements of the Gauteng Department of Education for gaining access into schools for research purposes. The study was also an 'experimental' approach to a PhD study, where the PhD candidate was simultaneously involved in almost all the processes of the main study, while working on a PhD study which was dependent in many ways on the main study. The challenge was to make a clear distinction between the two studies.

Accessing classrooms in South African public schools, especially for outside researchers and education officials has never been an easy thing, in particular to observe lessons. The highly unionized teachers in South Africa are known for resisting lesson observation. This resistance to a large extent contributes towards making the inside of classrooms and the learning activities within classrooms relatively unknown to the outside world. The methods used in this study, in particular lesson observation and filming, which were understandably very difficult to achieve, hopefully make a meaningful contribution towards a better understanding of what actually happens inside a typical South African classroom during teaching and learning lessons (periods).

Another possible but unusual methodological contribution made by this study is that of interviewing learners to get their perspectives on issues that affect them, especially sensitive issues, such as their views on their teacher's knowledge. Essentially, the methodology employed in this study was itself a milestone towards seeking answers to the challenge of persistent learner performance disparities between former white and former black schools in South Africa.

CHAPTER FOUR
CONTEXT MATTERS

4.1. Introduction

This chapter focuses on the legacy of educational inequality inherited from apartheid. In essence, the chapter seeks to establish the complexity of the legacy of inequality inherited by the ANC administration from the apartheid regime, and the challenges this legacy poses for the reform projects in schools. The main question raised by this chapter is: What educational challenges and difficulties is the new education system faced with in its quest to reform education in South Africa? My argument in this study is that the complexity of the legacy inherited by the ANC government has made it very difficult for the new administration to achieve learner performance equity across South African schools.

Section two of the chapter discusses how the legacy of educational inequality was created in South Africa. Section three discusses the legacy of educational inequalities inherited by the ANC government. Section four focuses on the impact of the legacy of inequalities on learner performance' and section five on the legacy of inequality as expressed in the socio-economic context of the West Rand District Municipality (WRDM). Finally, section six makes some concluding remarks.

4.2. The creation of the legacy of educational inequality in South Africa

Jansen et al (2009) argue that schools emerge from, and are shaped by, their social and historical contexts (Jansen, 2009:7). In other words, the situation in schools is largely determined by the social contexts within which they operate and the historical developments or events that they were subjected to. Long before the Bantu Education[30] policy came into effect, African education had in the earlier years been mostly run by

[30] This was an educational system designed by Hendrik Verwoerd for Africans so as to fit them for their role in apartheid society. This system resulted, amongst others, in far less money being spent on educating black children as opposed to educating white children. This led to much resistance from the black community to Bantu Education; ultimately resulting in conflicts such as the 1976 Soweto student uprisings.

missionaries, and later with some aid provided by the state. But as soon as the Nationalist Party introduced the Bantu education policy, state funding for African schools became conditional. Missionaries had to accept and administer the Nationalist Party's racially based curriculum or face losing funding. It was for this reason that most mission schools, which were opposed to apartheid education, chose to close down rather than take part in the Nationalist Party's discriminatory activities.

Separate accounts were established for funding the 19 education departments. African education was funded from the general poll tax collected from Africans themselves, rather than from the General Revenue Account that funded white education. This was one of the many ways of ensuring that the education of the African child remained grossly under-funded and neglected while white education enjoyed superior funding. This differentiation saw white schools receiving funding of up to ten times more per learner than that received by African schools. Resources at schools were allocated on the basis of race rather than need.

Almost all educational policies, just like the government system in place during the period, reflected the system of 'separate development'. The Bantu Education Act, no.47 of 1953, was the cornerstone of Bantu Education, which meant education of low quality or what many called 'gutter education' for blacks. Hendrik Verwoerd, the former apartheid Minister of Native Affairs and the architect of Bantu education, was the person who led the process of designing educational policies meant to block access to learning of Mathematics by black learners. His harsh statement of "What is the use of teaching a Bantu child mathematics when it cannot use it in practice?" (Brooks, 1968:57), enforced inequality of access and outcomes as far as Mathematics was concerned. This policy aimed, amongst others, at channeling black youth into unskilled labour markets, in order to maintain white supremacy and prosperity at the expense of blacks. It also aimed at dehumanizing black people and at creating an inferior, non-competent race obedient to the oppressors (Rothstein, 2004).

In short, Bantu education, as a system of poorly resourced mass state schooling, denied black learners access to the educational opportunities enjoyed by their white counterparts. Fiske and Ladd refer to this unequal provision of education as "racially unequal by design" (Fiske and Ladd, 2004:4). It was by design that black learners were

denied access to quality education and adequate learning so that they could become 'hewers of wood and drawers of water'. The following words by Hendrik Verwoerd, the then Minister of Native Affairs, clearly demonstrate the idea behind Bantu education:

> There is no space for him (the Native) in the European Community above certain forms of labour. For this reason it is of no avail for him to receive training which has its aim in the absorption of the European Community, where he cannot be absorbed. Until now he has been subjected to a school system which drew him away from his community and misled him by showing him the greener pastures of European Society where he is not allowed to graze (Brooks, 1968:57).

The outcomes of this act and the consequent poor resourcing of African education were very destructive, resulting in: dilapidated school buildings; overcrowding in classrooms; poor teacher training; and teaching with a lack of basic learning and teaching support material such as textbooks and equipment. In short, the Bantu Education Act of 1953 made certain that conditions in black schools were as unfavourable as possible for teaching and learning, while white schools had educational resources in abundance. The education of blacks in general, and Africans in particular, was extremely underprivileged during the era of Bantu education.

The ideology of separate development spilled over into the curriculum of the apartheid education system. The apartheid curriculum, which was informed and based on the ideology of Christian National Education, was actually designed to discourage critical thinking, enquiry and discussion. It was designed to foster domination by whites and submission of blacks (Harber, 2000). The curriculum was riddled with racially offensive syllabus content (Jansen, 1997).

The creation of homelands and self-governing states specifically for blacks, created unprecedented levels of disparities within the general education system. Attempts by the apartheid government to improve or modernize education under the guise of 'equality in separation' never bore fruit. In fact, such attempts led to intense resistance from black communities and from black learners in particular, as was witnessed during the 1976 Soweto uprisings.

By 1983, education in South Africa for Indians, coloureds and whites, had been organized into three separate 'own affairs' services under the tricameral parliament. And while white education was organized in four semi-autonomous provincial departments, black education was divided into six self-governing territory departments, four so-called independent state departments, and a central government department administering education for blacks living in 'white areas' (Department of Education, 1995). All in all, the apartheid government had 19 education departments in the four former provinces: Cape Province, Orange Free State, Natal and Transvaal. These education departments were independent from one another, and each one had its own policies, curriculum, examinations, administration, educational infrastructure and so on, without any co-ordination or co-operation amongst them. Except for the four former independent homelands: Transkei, Venda, Bophutatswana and Ciskei, the rest of the homelands were subjected to more centralized control by the apartheid administration.

Funding of education was another area that was characterized by all sorts of inequalities. Funding was done in accordance with the racially differentiated education departments[31]. Social and economic discrimination in general against black South Africans during the apartheid rule left a legacy of inequality along racial lines. This discrimination saw the poorest 40% of the society earning only 11% of the total income, while the wealthiest 10% earned 40% (Jansen and Taylor, 2003). The apartheid principle of separate development controlled almost all spheres of life and the education fraternity was no exception in this regard. By 1986, the state spent nine times more on the education of a white learner than it did on the education of a black learner in the deep rural apartheid-created Bantustans (Department of Education, 2005). While white learners enjoyed good quality education with superior infrastructure and facilities supported by well-trained teachers (Fiske and Ladd, 2004) and adequate learning and teaching material, the majority of black learners had to put up with conditions of extreme neglect (Human Sciences Research Council, 1997).

Under the apartheid system, whites also had better access to employment, while blacks lived in dehumanizing environments, with poor opportunities for both education and employment. The apartheid government also introduced the Bantustan policy that led to

[31] As already mentioned in Chapters One and Three, the apartheid education system was designed in terms of race: HoA for whites, HoR for coloureds, HoR for Indians and DET for Africans.

forced removals and disruption of social and family systems and, in particular, the disruption of a black child's inferior education. The apartheid education system aimed to provide black children with the type of education that would limit their potential and ensure that when they become adults, they would remain within the confines of the working class (Ocampo, 2004).

The late 1980s and early 1990s saw unprecedented levels of violence and unrest that destabilized and threatened the total collapse of teaching and learning in black schools in South Africa. The unrest and violence, along with other forms of protest, gave rise to lawlessness in schools, a loss of the culture of teaching and learning, and high levels of teacher unionization, especially in historically African schools. In short, the apartheid reforms of the late 1980s and early 1990s did very little to address the legacy of separate and unequal education. The skewed notion of separate but equal education had only an ideological meaning. In a real sense, the apartheid education system was invested with huge inequalities which translated into huge differentiation in educational spending in terms of ex-department. For instance, in 1988/89 the government spent per capita R656 on African children, R1221 on Coloured children, R2077 on Indian children and R2882 on white children (Harber, 2000:14). This kind of skewed spending on education ultimately translated into unequal learner performance (as already illustrated by table 1 in chapter 1).

4.3. The legacy of educational inequalities inherited by the ANC government

As shown and confirmed in the previous section, the ANC government inherited an education system fraught with huge inequalities – a legacy of separate and unequal education. The massive educational changes in South Africa since 1994, coupled with the right to education as guaranteed by Section 29 of the Constitution of the Republic of South Africa, and compounded by the Education For All (EFA) project, led to huge enrolment increases across South Africa schools. The de-racialization of public schools saw many learners from rural and township schools flocking to former model C schools. These factors gave rise to a number of challenges such as the need for more funding for more classrooms, textbooks, teachers, stationery, and other educational resources.

The focus on access to education for all and to all schools across the system, whilst indeed a positive move, was soon overtaken by the need for quality education. The shift in education from access to quality is a worldwide phenomenon (see USAID, 2005), largely precipitated by evidence of poor learner performance and learner performance disparities. For example, it was largely the challenge of attaining educational quality that led to the World Conference on Education For All (WCEFA) in Jomtien, Thailand, in the 1990 (see Inter-Agency Commission, 1990). The pressure to start producing good results across the board began to mount on the newly established South African education system. Physical access to schools alone was insufficient (see Motala, 2007). Addressing poor learner performance and learner performance disparities was the new challenge that the ANC administration had to deal with.

The pressure on education systems to focus more on educational quality was largely exacerbated by the increase of international and national testing of learners. These were studies such as the Monitoring of Learning Achievement (MLA), the Southern Africa Consortium for Monitoring Educational Quality (SACMEQ), and Trends in International Mathematics and Science Survey (TIMSS). South Africa participated in both the SACMEQII and the TIMSS 2003 studies and in both studies South African learners' performance was poorer than that of learners from economically poorer an smaller countries such as Mozambique and Swaziland, as reflected in Table 2 below.

Table 2: Mathematics and Reading scores for seven southern African countries

Country	Average Reading Score	Average Maths Score
Mauritius	536	585
Swaziland	530	517
Botswana	521	513
Mozambique	515	530
South Africa	492	486
Namibia	449	433
Malawi	429	431

Source: Adapted from SACMEQ (2005)

The ANC government thus inherited huge disparities between former white (model C) and former black (township) schools in learner performance disparities as is shown in the analyses of the results of SACMEQII and TIMSS 2003 (see Reddy, 2007). Results of local studies such as the Systematic Evaluation conducted in Grades 3 and 6 also showed trends of high levels of disparity in performance between former white and former black schools. It was the evidence of learner performance disparities that gave rise to the current study.

At school level, the complexity of the legacy of apartheid education was highly visible. The most striking features of the legacy of apartheid education were evidenced in the report of the School Register of Needs Survey 1996 (see HSRC, 1997). The report revealed huge inequalities, neglect and deprivation. Amongst the inequalities unearthed by the 1996 School Register of Needs was the fact that one in every four schools had no piped water within walking distance. About 11% of the schools got their water from dams and rivers. While not less than 435 schools had access to electricity, 13% of schools had no toilets, and almost half of the schools in the country used pit toilets. There was an acute shortage of classrooms, and three to four teachers often had to share one classroom space. About 2000 schools were in dire need of repair. The unequal funding of education over many years accounted for these shocking findings. This undoubtedly had a negative bearing on the quality of education across black schools in general, and on teacher quality and learner performance in particular.

The findings of the 1995 National Audit on Teacher Education, commissioned by the Department of Education to look into the nature of teacher education in South Africa, revealed some disturbing weaknesses on the part of the teaching force in South Africa. These weaknesses included: fragmentation in teacher provision; a high number of unqualified teachers; a mismatch between supply and demand; and under-qualified teachers (Department of Education, 2006). Prior to 1994, there were many disparities in the teaching force ranging from salaries that were determined in terms of race and gender, teacher distribution, and the quality of teacher education.

In an attempt to address these weaknesses and challenges, the Department of Education embarked on massive transformative measures. Such measures included reforming teacher salary scales; equalizing teacher:pupil ratios arising out of the uneven

distributions of teachers across South African schools; rationalizing and redeploying of teachers to under-resourced areas; and right-sizing and/or reduction of teacher training institutions (colleges) from 36 to 21. However, instead of solving problems, interventions such as the bungled rationalization and redeployment of teachers led, amongst other things, to the exodus of good and experienced teachers and school managers from the system. This impacted negatively on the education system leading to the crippled functioning (see discussion of rationalization and teacher redeployment in Chapter Five).

On the teaching front, the findings of the National Teacher Education Audit, singled out the quality of teacher education as the biggest challenge (see Harber, 2000). The audit clearly indicated that, while there were pockets of excellence in some institutions, the quality of teacher education was generally poor. Apartheid-based teacher education was inefficient and not cost-effective. Colleges of Education were classified as college-schools rather than higher education institutions. The uneven and unequal quality of teacher education amongst institutions of teacher training was one of the most worrying factors. This (unequal teacher quality) was compounded by the rationalization and redeployment of teachers which went horribly wrong, resulting in even worse teacher distribution inequalities across schools (see Chapter Six). Unequal teacher quality distribution amongst schools was also compounded by the closing down of teacher training colleges which resulted in low production of teachers, especially of Mathematics and Science teachers.

The President's Education Initiative (PEI) – the first broad-based research project by the Department of Education into the teacher development field, with an investment of R250m – pointed to low levels of reading skills, weak conceptual knowledge, and poor subjects knowledge amongst teachers (Taylor and Vinjevold, 1999). Apartheid education departments, which were infused with huge inequities when it came to per capita spending in education, were characterized by huge disparities in terms of distribution of qualified teachers and teaching and learning resources (Department of Education, 1996). All these issues pointed to inadequate training of teachers, especially black teachers during the apartheid era. This poor training had a direct and indirect impact on teaching quality and learner performance.

In spite of the massive educational changes described above, the ANC administration has not yet succeeded in significantly altering the learner achievement patterns across South Africa's racial and socio-economic communities. Neither has the administration succeeded in narrowing the gap in resources between the richest and poorest schools in South Africa (see Wilson, 2004). The new administration inherited an education system with unprecedented inequalities. These inequalities –whether social, economic, cultural or political – continue to pose a serious challenge to the project of educational transformation in our schools.

4.4. The impact of the legacy of educational inequality on learner performance

It is clear from the above sections that there is an immense impact of the sorry state of education during apartheid era on educational reforms in general, and learner performance equity attempts in particular. It is also clear that the impact of more than 350 years of colonialism and apartheid in South Africa will for a long time continue to frustrate the project of educational equity and learner performance. The ANC government has inherited complicated educational inequalities that run deep (see Jansen and Taylor, 2003; Department of Education, 1995; Ocampo, 2004). Jansen et al (2009) refer to the inherited legacy of educational inequality as "the long shadow of history…which casts over schools, teachers and learners…" (Jansen et al, 2009:7-8). The negative impact of such an inherited legacy cannot be ignored in any strategy aimed at turning the education system around.

Jansen et al (2009) contend that the imposition of colonialism and apartheid systems in South Africa as well as the resistance against the racial and class character of education has defined the culture and character of schools today (Jansen et al, 2009:7). Clearly, this is the culture and character of huge and persistent inequalities between former white and former black schools that continue to impact on the current learner performance disparities between the two school groups. It therefore becomes clear that the complexity and severity of the inherited legacy of educational inequalities is one of the main factors accounting for learner performance disparities in South Africa. It is also clear that this 'long shadow of history' will remain a challenge to educational equity efforts for a long time.

However, there are schools that are resilient and well performing despite their location in the midst of abject poverty and despite the impact of the legacy of the inherited educational inequalities (see Harber, 2000:66). For instance, the Mbilwi and Ivory Park High Schools, which are deep rural and township schools respectively, have constantly achieved good results in Grade 12 examinations. It is through active agency and resilience that such type of schools and some individual teachers manage to defy all odds and produce good results in very challenging school situations. These are schools that Christie, Butler and Potterton (2007) refer to as 'schools that work' (Christie, Butler and Potterton, 2007:1). However, it is important to indicate that these schools are just a drop in the ocean. While there are those schools that are resilient and well performing against all odds, there are those schools whose learner performance mirrors their abject poverty and resource-deficient situations. These are the schools that continue to be on the receiving end of the persistent legacy of educational inequalities inherited from apartheid.

4.5. The impact of the legacy of inequality as expressed in the sample schools

As stated in Chapter Three, four sample schools were selected for this study. The four schools are located within the West Rand District Municipality (WRDM). The West Rand District Municipality is situated on the South Western edge of Gauteng Province, west of the city of Johannesburg. It comprises three local municipalities namely: Mogale City, which includes Krugersdorp, Munsieville, Kagiso, Azaadville and Magaliesburg; Randfontein, which includes Mohlakeng and Toekomsrus; and Westonaria, which incorporates Bekkersdal (see Map 1 below).

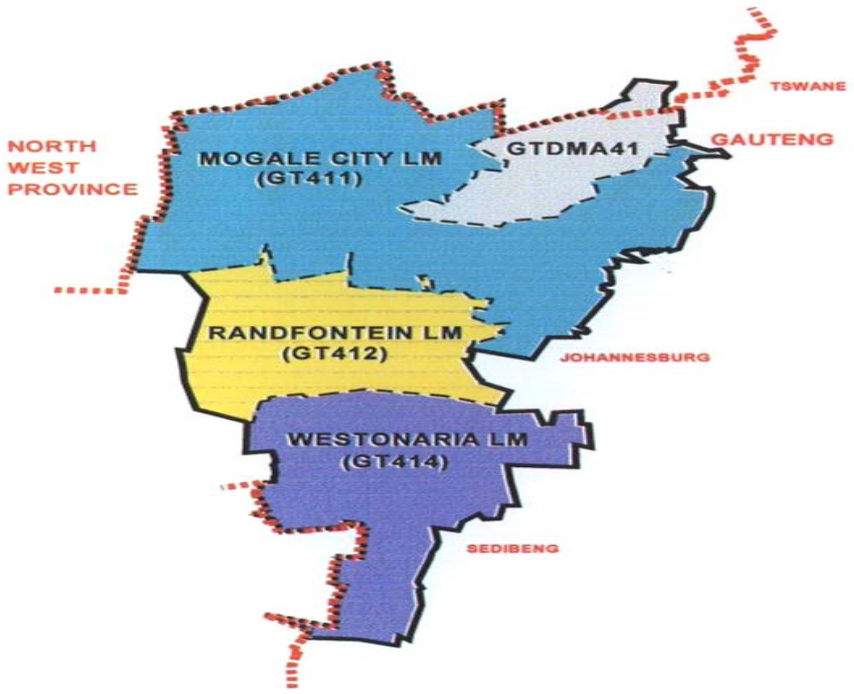
According to the Census 2001, the population of the West Rand District Municipality was estimated at 533 675. This number increased to 539 038 in 2007 according to Community Survey 2007 (see StatsSA, 2007), which accounts for 9% of the total population of Gauteng Province (WRDM, 2006). The gender distribution patterns within the district municipality according to Census 2001, showed men's dominance at 52.76% with women at 47.23%, trends similar to those of the province itself. The district municipality's population grew by 1.6% between 1996 and 2004 (WRDM, 2006), while its average household size stood at approximately 3.7 persons per household, according to Census 2001.

Whereas 53.4% of residents of the West Rand District Municipality lived in stand-alone housing structures in 2001 (StatsSA, 2001), this decreased to 48.3% according to 2007 Community Survey (StatsSA, 2007); with 28.3% of residents living in informal settlements, either in backyard or stand-alone informal structures (*ibid*). A total of 78% of the residents, have access to electricity, however, the district municipality's electricity supply backlog shows that a sizeable number of residents, precisely 7 605, most if not all of whom are blacks, still do not have access to electricity (WRDM, 2008). Similarly, while 53.6% have access to piped water inside their dwellings, the district municipality still has a piped water supply backlog of 7 336 houses, that should cost about R84.5 million. Although 74.6% of the residents have access to flush toilet facilities (StatsSA, 2007), the use of the bucket system for sanitation purposes in Bekkersdal paints a grim picture of this district municipality (see WRDM, 2008).

In 2005, the district municipality's poverty rate[32] was estimated at 20.6% (DoA, 2005). This was caused by, amongst other things, high unemployment levels within the district municipality – with low economic growth, low investment drive, insufficient diversification of the economy, and mining retrenchments as a result of poor gold prices. The percentage of unemployed people varies across the three local municipalities of the district municipality, with Randfontein having had the highest unemployment rate in 2005, at 40.9%, according to Global Insight data (in WRDM, 2008) as seen in Table 3 below. The high unemployment and the poverty rates in the West Rand District Municipality, to a certain extent, contributed towards the mushrooming of informal settlements in the district municipality, which, according to Census 2001, stood at 48 122 informal dwellings, accounting for 32% of the total housing types in the district municipality.

[32] This is a measure of the poverty level within a community. In this context, indicators such as unemployment rate, local economic growth, and local investment were used to measure poverty.

Map 1: Map of the West Rand District Municipality showing the location of its three local municipalities[33]



Source: www.wrdm.gov.za/reports.htm

For purposes of anonymity, the two former white (model C) schools will be referred to as schools A1 and A2 while the two former black schools (township) will be referred to as schools B1 and B3.

School A1

The first sample school is located in a small town or a rural suburban area called Westonaria, in the Westonaria local municipality. This is a former whites-only school that was part of the ex-department of House of Assembly (HoA) during the apartheid era. As a result of the post-apartheid educational policy changes that took place in South Africa, the school has since become predominantly black if not 100% black in terms of learner enrolments, but is still predominantly white in terms of teaching staff. This is a Quintile[34]

[33] These are local municipalities within which the sample schools of this study are located.

[34] A group classification of schools determined by the Minister of Education according to the school's level or status of poverty, for funding purposes.

5 school, which means it is in the highest category of resource availability. It has well-developed state-of-the-art sporting fields (tennis courts, soccer field, netball field, gym, athletics field), library and laboratories; a separate administration block; quality furniture; double/three storey classroom buildings; a sickbay – a room for learners who do not feel well; a computer lab; and a staffroom.

The school is situated in a clean, secure, quiet middle-class neighbourhood – an environment that is undoubtedly conducive to teaching and learning. The wealth of the school is evident from the fact that the school fees were R2 200 per annum in 2004 and 2005 (Department of Education, 2005). Most of the learners do not live in the neighbourhood. They commute on daily basis from neighboring township communities such as Bekkersdal, Zuurbekom and Soweto. These are learners whose parents or guardians can afford to pay daily transport fees and the high school fees charged by the former model C schools.

Table 3: Unemployment rates in the WRDM from 2001-2005.

Year	*Mogale City*	*Randfontein*	*Westonaria*
2001	28.1%	38.4%	27.6%
2002	29.5%	40.5%	28.5%
2003	31.1%	41.1%	29.1%
2004	31.4%	40.3%	30.0%
2005	30.8%	40.9%	29.6%

Source: Global Insight in WRDM (2008)

School A2

The second sample school is also a former white school located on the outskirts of the small town of Randfontein, in the local municipality of Randfontein. This is a former Model C school that fell under the Transvaal Education department (TED) during the apartheid era. The school is predominantly black in terms of learner enrolment, but predominantly white in terms of the teaching staff. It is a suburban school boasting top class infrastructure and facilities, including world-class sporting fields (that include

soccer fields, with well-cut lawns; tennis courts; a netball field and a gym); administration block; good classrooms in double storey buildings; a sickbay; a library; a laboratory; and a computer lab.

The school is located in a suburb that was formerly inhabited by whites-only. The school has security gates manned by security guards plus an intercom system for purposes of controlling access to the premises. Needless to say, the school provides a conducive environment for both teaching and learning. The large number of taxis and cars usually waiting in the parking lot outside the school, when school closes at the end of each day, shows that the school serves a large number of commuter-learners coming from neighbouring communities such as Mohlakeng, Bekkersdal and Toekomsrus. This school is classified as a Quintile 5 school, implying that it is one of the richer schools in the country. According to the EMIS data of 2005 (Department of Education, 2005), the school fees were R1450.00 in 2004 and R1470.00 in 2005 per learner. This fee is a clear indication that this is a school for those learners whose parents can afford to pay daily transport fees and expensive school fees for the education of their children.

School B1

This is a former black school located in the township of Kagiso, which falls under Mogale City local municipality. Kagiso township was established around 1926 by ex-miners and squatters just on the outskirts of Luiperdvlei. The school fell under the Department of Education and Training during the apartheid era. The total population in the township is estimated at about 190 000 people; the most predominant languages are Tswana and Xhosa (*ibid*). The school is classified by the Department of Education as Quintile 3, which indicates that the schools' socio-economic status (SES) is classified as 'average'. The school fees charged by the school in 2004 and 2005, were R70.00 and R80.00 respectively (Department of Education, 2005). According to Circular 24 of 2008 of the Gauteng Department of Education, Quintile 3 schools have now also been declared no-fee schools, exempting an additional 27.37% of the entire provincial population from payment of school fees (see Gauteng Department of Education, 2008). In essence, this shows that this is one of the poorer schools in the country.

School B2

The fourth sample school is a former black school, but which was established after 1994 under the new Department of Education. It is located in the township of Bekkersdal in the Westonaria local municipality. Bekkersdal is one of the poorest townships in the West Rand District Municipality. The use of the bucket system by about a quarter of the residents of this township almost 15 years into democracy says a lot about the poverty level in this township. It is largely due to the high poverty levels of the area that this school has been classified as Quintile 1 –the poorest of all. Quintile 1 schools are 'no fee' schools. The school charged R80.00 and R100.00 in 2004 and 2005 respectively (Department of Education, 2005). These low fees are further proof of the poverty rate in the area where the school is located. As a 'no fee school', it becomes the responsibility of the government to pay an average of R740.00 for each Quintile 1 learner and R668.00 for each Quintile 2 learner, depending on the province of course (BuaNews, 8 January 2008). This school is in the poorest 20% of schools in the country – the most needy schools, which qualify for the highest funding allocation (see Department of Education, 2005).

The school has quality buildings – a clear indication that it has benefited from the new government's school building programme – despite the fact that it is located within a semi-rural township. Although the bucket system is still used for sanitation purposes by some in the township, the school has flush toilet facilities for staff within the admin block and pit toilets with ventilation for learners. Overcrowding seemed to be a trend in classrooms at this school. This over-crowding might point to a shortage of classrooms. In contrast to the state-of-the-art sporting fields in former white schools within the same district municipality, this school has bare (without lawn) soccer and netball fields – sporting fields for convenience sake. While former white sample schools boast luxuries such as media and resting rooms, for this school these are luxuries which, given its poor socio-economic status, it just could not afford.

4.6. Conclusion

The resilient legacy of educational inequalities inherited from the apartheid regime, as discussed above, provides a sense of the depth and magnitude of the extent to which history impacts on schools. It becomes clearer that a legacy of education which one

administration inherits from another, will largely determine the culture, attitudes, behaviour, values and performance of inherited schools for a long time, whether negatively or positively. The data generated and analyzed in this chapter appears to suggest, on the one hand, that the inherited legacy of educational inequalities is one of the main forces accounting for persistent learner performance disparities between former white and former black schools in South Africa. On the other hand, it shows a strong correlation between the inherited legacy of education inequalities and learner performance, as also argued by Jansen, 2009:8).

The huge levels of inequalities institutionalized by and inherited from the past regime pose a serious challenge to the reform project in our schools, in particular, equalizing learner performance. It is therefore imperative for the Department of Education and anyone embarking on educational reform projects to be conscious of the complexity and resilience of the legacy of educational inequality inherited from apartheid –a plain reality that will frustrate educational reforms for some time. This will help all of us to understand that while we have to deal with all sorts of new challenges, we also have to learn to deal with the ones that we inherited from apartheid – the legacy of educational inequalities.

CHAPTER FIVE
POLICY MATTERS

5.1. Introduction

Since the dawn of democracy in 1994, many policies have been developed in all sectors of the public domain in South Africa. The education sector is no exception in this regard. The rate at which new educational policies have been developed has been very high indeed. One question that seems to do the rounds amongst scholars and education specialists in general is whether the Department of Education has been able to match the rate of policy development with the actual implementation of the policies. It would seem that the Department of Education itself has been aware of this challenge since educational changes were first introduced after 1994. For example, the Education and Training White Paper of 1995 states "policy is important, but execution is more important" (Department of Education, 1995:7). The aim of this chapter is to investigate the impact or extent to which the post-1994 educational policies have contributed towards helping or hindering the equalizing of learner performance between former white and former black schools.

The main question which this chapter asks, and answers is: How far have educational policies aimed at educational equity contributed to equalizing learner performance or reducing learner performance disparities between former white and former black schools? My argument in this chapter is that the new educational policies aimed at educational equity (such as de-racialization of schools, decentralization of school governance and rationalization and redeployment, as discussed in this chapter) have in fact perpetuated learner performance disparities between former white and former black schools while trying to reduce them. Sayed argues that the new funding policies perpetuate inequalities between rich and poor schools (Sayed, 1999:141). This chapter endorses Sayed's (1999) argument. However, the chapter adds three other educational policies to the one Sayed refers to as perpetuating inequalities namely, policies of de-racialization of schools; decentralization of school governance; and rationalization and redeployment.

Section two of this chapter discusses educational policies aimed at achieving equitable redistribution of learning opportunities and how they were implemented. Section three describes the impact of educational policy changes on educational equity. Section four makes some concluding remarks for the chapter.

5.2. Educational policies aimed at achieving educational equity

This chapter analyzes a number of educational policies aimed at equalizing educational opportunities in South Africa. The first set of policies analyzed is the one dealing with de-racialization of public schools. The second type of educational policies analyzed in the chapter is concerned with decentralization of school governance. This is followed by analysis of funding policies. The fourth set of policies focus on the issue of free and compulsory education. Rationalization and redeployment of educators becomes the next educational policy to be analyzed, followed by the policy focusing on a national school nutrition programme. The seventh set of educational policies analyzed in this chapter is related to scholar transport programmes. This is followed by analysis of policies dealing with curriculum change in South Africa. The ninth, and final, policy set analyzed in this chapter is policy related to Mathematics improvement, in particular, the Dinaledi Project.

Desegregation of public schools

The South African Schools Act, 84 of 1996, Section 5(1) compels all public schools to admit learners without unfairly discriminating against them in anyway (Republic of South Africa, 1996a). In essence, this policy de-racializes all public schools in South Africa. The desegregation or de-racialization of the education system was thus a milestone that will go down as one of the biggest achievements in the history of South Africa's democracy. The de-racialization of schools was one of the biggest aspects of restructuring in the education system. This restructuring was a significant policy intervention that saw former Model C schools opening their doors to learners of all race groups. A large number of township and rural learners moved to former white schools. In some cases, this movement left township schools deserted. This in turn, led to some township schools closing down, owing to very low learner enrolment rates.

One of the surprising things that emerged from this study is the low enrolment rate or absence of white learners at the two former white schools in the sample. There was only

one white Grade 6 learner in one of the former white schools, and none in the other school. The question is: Where have all the white learners gone to and why? This question, which is unfortunately not directly answered in this study, clearly needs further investigation.

The de-racialization of schools, while it was a positive move and within the constitutional provisions to do so, had its own unintended consequences. First, the movement of black middle-class kids to former white schools seems to have strengthened these schools at the expense of former black schools. More often than not, it is learners who come from good family backgrounds who can afford to attend and pay high fees at middle-income (former white) schools. Unfortunately, the same cannot be said for low-income learners who have to put up with mediocrity at their former black schools, most of which are dysfunctional. Second, the failure of the teacher redeployment policy to redistribute teachers or teacher knowledge equally across all schools also perpetuated inequalities between former white and former black schools (as clearly shown later in this chapter). Third, former white schools, in spite of the new pro-poor funding policy, have displayed better readiness and capacity to mobilize and utilize resources compared to historically black schools.

There were, however, challenges that this policy posed to both former white and former black schools. De-racialization of schools was a positive move in that it gave previously disadvantaged learners access to better resourced schools. However, it also led to township and rural learners flocking to former white schools. This migration, in some cases, left some township schools almost empty and thus catering for learners who did not seem to have other options but to remain stuck in those poor performing schools. There is a clear tension that exists in this policy. The migration of former white learners from former white schools, irrespective of where they have gone to, seems to be in direct conflict with the whole idea of de-racialization or de-segregation of schools and integration of learners across all races.

What I argue here is that the policy of desegregation or de-racialization seems to have achieved unintended results – perpetuation of inequalities. A simple example is the case where disadvantaged children move to advantaged schools without taking into account the social and cultural impact of this move. Such a movement could have a negative

impact on their adaptation to the new school and subsequently, their academic performance. For example, Jansen argues that when former white schools admit learners from historically black (township) schools, they do not simply admit learners, they also admit their school cultures (Jansen, 2008:6). In other words, learners from historically black schools may bring along destructive and negative attitudes to learning and authority from their dysfunctional schools (see Chapter Two). While this study does not dispute Jansen's argument, it contends that, in spite of the influence of their negative school cultures, learners attending former white schools generally still have better access to quality education than learners attending historically black (township) schools.

While the project of equitable redistribution of learning opportunities (educational equity) to all learners in South Africa has generally provided almost all learners with access to an opportunity to learn[35], it has unfortunately only succeeded in providing black middle class learners with access to quality learning. As for low-income learners they continue to have access only to poor learning. In other words, this new development has divided learners into two 'colour-blind', socio-economic classes, namely: middle class and low-income learners. Middle class learners have access to quality education, while it is still very difficult, if not impossible, for low-income learners to have access to quality education.

Decentralization through school governance

Amongst the post-1994 education transformation changes was the democratization of school governance. This change involved the devolution or decentralization of powers to school level. These powers have been devolved to school level by the South African schools Act, 84 of 1996. The process of decentralizing school governance called for the restructuring of the apartheid school governance structures. School governing bodies (SGBs)[36] were established in terms of the South African Schools Act in place of the old parent-teacher associations (PTA's) and parent-teacher-student associations (PTSA's).

[35] In the South African context, opportunity to learn generally refers to learners' access and exposure to actual teaching (See for instance, Reeves and Muller, 2005). However, not all teachings lead to quality learning.

[36] These are structures that govern public schools (and independent schools) and are composed of democratically elected school principals, representatives of educators, parents, co-opted members and learners (only in secondary schools). Their main responsibility is to govern schools.

The new government devolved the powers to govern schools to SGBs. This devolution makes members of SGBs juristic persons with powers not only to enter into contracts, but also to sue and be sued. In terms of Section 20(1) of the South African Schools Act, SGBs now have the power to adopt their own constitution; to adopt a code of conduct for learners; to draw up the budget for the school in consultation with parents; to determine language and admission policies for learners in line with the Constitution of the Republic of South Africa and any applicable provincial law; to recommend the appointment of teachers and support staff to the Head of Department as well as the expulsion of learners for serious misconduct (Republic of South Africa, 1996a).

Beckman argues that functions and not powers have actually been delegated to SGBs (Beckman, 2002:161). For instance, in order for SGBs to determine language and admission policies, they have to ensure that they are in line with the provisions of the Constitution and any other relevant provincial law. Beckman refers to these kinds of powers as 'disguised centralism' (Beckman, 2002:160). In other words, according to Beckman, these are restrictions that have elements of centralism. However, there has been a significant shift, or change, from the way the apartheid system operated towards a more democratized and legitimate form of school governance. Today, unlike during the apartheid education era, all stakeholders in and around school communities can have a say in the governance of schools. This fact is corroborated by scholars such as Woolman and Fleisch (2008:58).

Different schools have obviously experienced the introduction of school governing bodies differently. Given the legacy of a racially divided education system with huge inequalities, the experience of former white schools, cannot have been the same as that of former black schools. Education levels amongst parents in general, governance and fundraising skills amongst parents on the SGBs, and the involvement of parents in general in school matters, are factors that obviously play a role in how schools experience and deal with decentralized governance of schools. There is ample research evidence that links the ineffectual functioning of some SGBs to low educational levels amongst parent members, poor fundraising mechanisms, and poor parent participation or involvement in school matters (see, for instance, Baloyi, 2002).

The policy of decentralization of school governance also has unintended results. While the policy of decentralization of school governance improved the participation of important stakeholders in the running of education and in decision-making processes in particular, it also perpetuates inequalities between former white and former black schools in terms of the operations and functioning of SGBs. The previously disadvantaged schools – especially rural, township and farm schools – struggle to get their SGBs to function properly when compared to their counterparts in former white schools. Some of the reasons for the failure are high illiteracy levels amongst parents who serve on those SGBs, lack or inadequate training for participation on SGBs, and lack of fundraising strategies and social capital connections for most of the former black schools (see Baloyi, 2002; Department of Education, 2004).

The ability to fundraise and mobilize substantial resources by former white school SGBs, stands out as one of the main factors responsible for the continued inequalities between the two former types of schools (see Sayed, 1999). Whereas the idea of decentralization of school governance was a noble and empowering one, the challenge was the capacity and readiness of poor schools and parents to carry out their new responsibilities.

Lack of management, communication and financial skills as well as infrastructural backlogs, emerged as some of the main difficulties hampering the effectiveness of former black school SGBs. What I am suggesting here is that SGB training in former black schools seems to be inadequate because, amongst others, they were not able to fundraise and manage schools effectively like their counterparts at former white schools. Thorough training for SGBs and school management teams (SMTs) could go a long way towards preparing and capacitating all relevant stakeholders for the devolution of school governance.

According to the review on school governance undertaken by the Department of Education in 2004, other factors which led to the poor functioning of SGBs in previously disadvantaged schools were: lack of time for SGB matters, and lack of transport and lack of understanding of SGB members' roles (see Department of Education, 2004). These challenges, according to the Department of Education's 2004 review, led, inter alia, to "a deep sense of despondency and hopelessness among those faced with the daunting task of governing schools…" (*ibid*). This finding by the review was a revelation of the

levels of frustration and despair experienced by members of SGBs, especially parent members in poorly equipped schools. While the decentralization of powers generally worked effectively in former white schools, it posed a serious challenge in many of the previously disadvantaged schools, the majority of which are former black schools.

New school funding policy

The ANC government inherited one of the most discriminatory school funding systems in the world when it took over power in 1994. For this reason, reconstructing and developing a new, humane and inclusive school funding model was one of the priorities of the new government. This restructuring and development was done in accordance with the legislative mandate provided by various educational policies promulgated since 1994. In terms of Section 29 of the Constitution of the Republic of South Africa, which is the Supreme Law in the country, education has to be transformed and democratized in accordance with the values of human dignity, equality, human rights and freedom, non-sexism and non-racism (Republic of South Africa, 1996b).

Fiscal reform measures were embarked upon so as to redress the past inequalities in education funding that had seen white schools enjoying massive financial support to the detriment of black schools. Based on this legislative mandate, the new Department of Education developed a Schools Funding Model, which was first implemented in 2000 (see Department of Education, 2003). Later on, the Schools Funding Model became known as National Norms and Standards for School Funding of 1999, as amended (see Department of Education, 1999).

The development of National Norms and Standards for School Funding policy was in a sense, mandated by the South African Schools Act, 84 of 1996. The South African Schools Act arguably became the cornerstone of all post-apartheid educational policies of the Department of Education. As for the National Norms and Standards, the main aim of the policy of was to create a national system for providing non-personnel non-capital (NPNC)[37] school allocations, with 60% of the total budget going to schools serving the

[37] These are consumable items such as exercise and textbooks, pens, electricity and items which last more than one year such as furniture, equipment and photocopiers.

poorest 40% of learners (Department of Education, 1996a:26). It also aimed at prioritizing redress and targeting poverty through the allocation of funds to public schools. This is a pro-poor funding model or approach, through which the Department aimed to spend more on poor schools than on rich ones.

The Preamble of the South African Schools Act, 84 of 1996 clearly states that:

> [T]his country requires a new national system for schools which will redress past injustices in educational provision, provide education of progressively high quality for all learners and in so doing lay a strong foundation for the development of all our people's talents and capabilities…(Republic of South Africa, 1996a).

In fact, the chief objective of the South African Schools Act is to provide for a uniform system for the organization, governance and funding of schools. In terms of Section 29 (1) of the Constitution of the Republic of South Africa Act, 108 of 1996, everyone has the right to basic education, including adult basic education and further education, which the state, through reasonable measures, must make progressively available and accessible. In other words, the state has a responsibility to provide such education.

Section 34 (1) of the South African Schools Act, further requires the state to fund public schools from public revenue on an equitable basis in order to ensure the proper exercise of the rights of learners to education and the redress of past inequalities in educational provision. It was basically for these reasons or legislative mandates that the Norms and Standards for School Funding were developed.

The poorest of the poor schools have so far clearly benefited immensely from the pro-poor funding mechanism employed through the Norms and Standards. Amongst others, the Norms and Standards policy has led to the formalization of the exemption of those parents who are unable to pay school fees and the declaration of the poorest schools as no-fee[38] schools. No-fee schools fall under Quintiles[39] 1 and 2, and 3 in some provinces.

[38] These schools are exempted from paying schools by virtue of being located within poverty-stricken communities.

For instance, the Gauteng Department of Education has declared schools falling into Quintiles 1-3 as no-fee schools, thus bringing huge financial relief to the poorest communities. In 2007 alone, about 425 schools were declared no-fee schools in Gauteng province, which translate to about 21% of the total schools in Gauteng (Gauteng Department of Education, 2008b). In order to cater for learners from poor families which find themselves in communities serving Quintile 4 and 5 schools, the South African Schools Act further provides for full, partial or conditional exemption of parents (from paying school fees) who meet the exemption requirements as stipulated in the Educational Laws Amendment Act, no. 24 of 2005. The most pertinent and directly related question, in terms of this study is: Have all these new funding policies been able to contribute towards reducing learner performance disparities between former white and former black schools? This question is answered later in the chapter.

The main challenge for new education funding policies, which could also be a challenge to almost all other educational policies, was translating all the financial inputs into quality education or quality teaching and learning, especially in previously disadvantaged schools, and former black schools in particular. Some of the questions which beg to be answered are: Did the financial inputs that were being made ensure improved access to quality learning opportunities by learners at previously disadvantaged schools, and former black schools in particular? Have the new school funding policies made a contribution to addressing learner performance disparities in Mathematics between former white and former black schools? These questions and related ones are also answered later in the chapter.

Another challenge was the right given by the South African Schools Act to school governing bodies (SGBs) at all public schools to determine their own school fees. Many parents whose children attend rich schools – the majority of which were former white schools – can afford to contribute huge sums of money to these schools in the form of school fees. It is these high school fees (see Chapter Six and Appendix F), amongst other things, which perpetuate old trends of inequalities between former white and

[39] As mentioned in Chapter 4, these are groups into which the Department of Education classify schools according to their poverty index or financial status, i.e. from the poorest to the least poor. Public schools are currently grouped into 5 national quintiles, i.e. from 1 to 5.

former black schools, albeit on class rather than on race. Even the Department of Education itself admitted to the gravity of this challenge (see Department of Education, 2003; Gauteng Department of Education, 2008). In the words of the former MEC for Education in Gauteng province, Angie Motshekga:

> [W]e are still faced with the situation that the quality of education, especially in the historically disadvantaged sectors of society, remains a major challenge (Motshekga, 2008a:1).

Section 37 of the amended Norms and Standards for School Funding (see Department of Education, 2006b), indicates the irony that plays itself out here, given the redress and equity function which this policy sets out to perform. The section, while it affords parents the right to contribute any amount of school fees that they deemed appropriate, appears to give advantage to middle class schools. How? In the sense that wealthy parents are given an opportunity to increase the already superior financial status of middle class or former white schools. This stronger financial muscle, in a way, adds to their already developed state-of-the-art facilities, equipments and learning and teaching support material (LTSM), amongst other things. It is this kind of financial gaps which Sayed refers to as accentuating inequities along the lines of class rather than race (Sayed, 1999: 150).

What emerges from the discussion of the new funding policy above is that there is a tension that emerges between the right given to SGBs in terms of Section 39(1) of the South African Schools Act to decide on the amount of school fees, and the pro-poor funding model adopted in the distribution of the Norms and Standards funds. The financial skills of former white schools in mobilizing more funds than their black counterparts exacerbates financial inequalities between the two school groups despite the pro-poor funding model.

Another tension emerges between the school funding policy and the admissions policy. While the South African Schools Act gives every learner the right to be admitted to any public school, the right of SGBs to decide on the amount of school fees tends to keep former white schools exclusively for learners from wealthy home backgrounds or middle-income learners because of high school fees charged at these schools.

Free and compulsory education

The idea of free education in South Africa was first mooted in the Freedom Charter adopted in 1955, which called for the 'doors of learning' to be opened (see ANC, 1955). A second call was made by the ANC's Education Policy and Training Policy (see ANC, 1994), which promised ten years of free and compulsory general education. Thirdly, and most importantly, the right to basic education – that the state has to take reasonable measures to ensure is available to all learners – was formally guaranteed by section 29(1) of the Constitution of the Republic of South Africa (1996).

When the ANC finally took over power in 1994, it embarked on policy implementation initiatives aimed at bringing about free education for all. These policy initiatives included the provision of free stationery, textbooks and general learning and teaching support material to all public schools, and so on. All these policy changes and implementation initiatives were aimed at redressing the injustices of the past and offering all learners equal opportunities to quality learning. In particular, the ANC government aimed to address learner performance disparities between former white and former black schools.

However, despite the fact that the Constitution guarantees everyone the right to education, the ANC government has yet to fully translate free education into specific legislation and most importantly, to enforce compulsory education. Section 3, sub-section 1 of the South African Schools Act states that:

> [E]very parent must cause every learner for whom he or she is responsible to attend a school from the first school day of the year in which such learner reaches the age of seven years until the last school day of the year in which such learner reaches the age of fifteen years or the ninth grade, whichever occurs first (Republic of South Africa, 1996a).

This section officially makes education for learners between the ages of 7 and 15 compulsory. In terms of section 3, sub-section 6 (b):

> Any person who, without just cause, prevents a learner who is subject to compulsory attendance from attending a school, is guilty of an offence and liable on conviction to a fine or to imprisonment for a period not exceeding six months (Republic of South Africa, 1996a).

However, enforcing this law has so far been most elusive for the government. This is despite the fact that South Africa is close to achieving universal primary education in terms of enrolment for school-going age, with 96.6% of children enrolled for primary education in 1996 (Department of Education, 2006a)

While attempts have been made to offer free education in terms of the provision of free educational resources, there has never been an instrument in place or a set of regulations to enforce compulsory school attendance. Except for no fee schools (schools where all learners are exempted from paying school fees), and free stationery in public schools, no fully–fledged legislation that focuses specifically on free education has yet been promulgated in South Africa to date (2009). While the enrolment rate is high, only 29% achieve a Grade 12 Certificate (Ramphele, 2009:2). This high drop-out rate clearly calls for tighter control and the extension of compulsory education even in higher grades.

Attempts to make education free seem to have succeeded in making a huge difference in the educational lives of poor learners, and black learners in particular, most of whom hail from townships and rural areas. However, these attempts unfortunately do not seem to have had any impact on the lives of middle-income learners and former white school learners in particular. The reason here is that most of the former white schools are in Quintiles 5 and 4, which are affluent schools. Such schools do not qualify for benefits such as new buildings, 'no fee' initiative and in some instances, free stationery and textbooks. However, their exclusion seems to have made very little impact in changing the status quo. They continue, despite all these changes, to perform far better than most of the former black schools because through school fees they are able to maintain their quality.

As things stand, the pro-poor funding approach – which seeks to redress the skewed and unequal distribution of educational resources – has seen free education benefiting one section of society – the previously disadvantaged. On the one hand, this is seen as a positive move in equalizing the distribution of resources between former white and former black schools. On the other hand, the decentralization of school governance seems to be in direct conflict with and undermining this move. The powers given to school SGBs to determine school fees to be paid and to mobilize further financial

resources have seen formerly white schools increasing the financial gap between the two sets of schools.

Rationalization and redeployment of educators

The 1995 national teacher audit (see Department of Education, 1995) revealed huge inequalities in teacher distribution across public schools. After the audit, the new national Department of Education embarked on a post-provisioning or right-sizing project that sought to equalize the distribution of teachers and learner:teacher ratios across all schools. This project included moving teachers from urban to rural schools, former white to former black schools and visa versa, and from over-staffed to under-staffed schools. This project came to be known as 'rationalization and redeployment' (R&R) of teachers. The project was formalized by the National Policy on Teacher Supply, Utilization and Development (1996). The main aim and argument for teacher redeployment was to address educational inequalities based on race in South Africa (see Chisholm et al, 1999). The national standard learner:teacher ratios agreed upon by education stakeholders or parties in the Education Labour Relations Council (ELRC) were 40:1 in primary schools and 35:1 in secondary schools.

The implementation of the rationalization and redeployment policy coincided with the introduction of the new macro-economic policies in South Africa in 1996. These policies ushered in the Growth, Employment and Economic Redistribution (GEAR)[40]. GEAR, amongst others, aimed at fiscal discipline and reducing costs. Fortunately or unfortunately, the policy of rationalization and redeployment unfolded along the prescripts of GEAR. In particular, the main concern about the public education sector was its large expenditure on salaries at the expense of other developmental needs and responsibilities in education, such as infrastructure and learning and teaching support materials. Rationalization and redeployment, within and in accordance with the goals of GEAR, therefore aimed largely, on the one hand, at reducing the size of the teaching force (retrenchment) and the cost, which would automatically translate into a reduction in salary expenditure (*ibid*). On the other hand, it aimed at equitably redistributing teachers across all schools as a means of redressing the skewed and unjust teacher distribution of the apartheid education system that favoured one race over others.

[40] The macro-economic policy was introduced by Mbeki's administration in 1996, amid stiff resistance from members of COSATU affiliated unions and the South African Communist Party.

Two strategies were employed to reduce and redistribute teachers. The first strategy aimed at reducing the size of the teaching force was the offer of voluntary severance packages (VSP) for teachers wishing to exit the system. The initial budget of VSP was estimated at about R600 million (see Chisholm et al, 1999), but as a result of poor control over the strategy, a higher number of teachers than expected volunteered to take the severance package. This severance package resulted in the expenditure of about R1 billion, which was nearly double the initial budget. The retrenchment was unfortunately not well-planned or controlled in terms of which teachers exited the system. A blanket approach was used to encourage teachers to exit the system, regardless of the subject they taught, their expertise or experience. This approach resulted in the loss of some of the best and most experienced teachers and school managers. Ostensibly, this approach has had a negative effect on the functioning of the education system. Rural and township schools were the most severely hit, largely because of the difficulties they generally have in recruiting and retaining good teachers.

The second strategy was the compulsory transfer of excess teachers from schools with lower learner:teacher ratios to schools with higher learner:teacher ratios. The former group consisted mostly of former white schools, while the latter consisted of former black schools. The rationalization and redeployment policy had a little effect on former white schools, if any, mainly in that they had diverse curricula and established Mathematics, Science and Technology (MST) programmes. Also, because they were able to generate funds from school fees, as well as the fact that former white schools were, and are, able to employ more teachers (SGB employed teachers), which assists them in maintaining lower teacher:learner ratios. This advantage is arguably another loophole for the perpetuation of inequalities between former white and former black schools, as has been argued by scholars such as Sayed (1999).

The compulsory transfer of teachers was met with stiff resistance from teacher unions and teachers in general (see Harber, 2000:15). Some teachers attached to urban schools refused to be redeployed to rural schools, and some white teachers refused to be redeployed to former black schools, in particular township schools. In some instances, teachers opted to take voluntary severance packages or jobs in the private sector rather than be deployed to schools located in places where they did not feel comfortable going.

The policy of rationalization and redeployment was not without challenges and side effects. The policy also resulted in massive 'moving around' of teachers – both voluntarily and involuntarily – across different schools within the education system. In essence, the outcome was not necessarily the hoped-for redistribution of skilled or good teachers to schools where they were needed. As a result, I argue here that the policy of rationalization and redistribution did very little, or was not successful, in redistributing good teachers from the previously advantaged schools to the previously disadvantaged schools. In fact, it led to a significant number of good teachers exiting the education system.

Garson (2008a) refers to the rationalization and redeployment process as "nothing less than disastrous" (Garson, cited in Harber, 2000:15). It was disastrous because about 16 000 teachers, who included good Mathematics and Science teachers and school managers, exited the education system. In other words, former black schools also lost the few good teachers that they had as a result of rationalization and redeployment. Added to that, some teachers placed on the redeployment list waited for a long time to be placed at another school – and all the while they continued to be paid their salaries. Some schools employed temporary teachers while waiting for teachers to be redeployed to their schools. This meant that in some instances, two teachers (a temporary teacher and the teacher waiting to be redeployed) were being paid for the same position – the so-called 'double parking' situation in other words (see Harber, 2000:15).

As clearly corroborated by the 2008 Organization for Economic Co-operation and Development (OECD) Review of the National Education Policies (OECD, 2008), the policy of rationalization and redeployment failed to equalize the redistribution of teachers across all public schools. The policy failed to address, or reduce, learner performance disparities or inequities between former white and former black public schools in terms of teacher redistribution. We still have unequal distribution of good teachers across the public education system, especially Mathematics and Science teachers. This problem is also compounded by the fact that good teachers usually choose to teach in schools with enough resources and good infrastructure. In South Africa, such schools are mainly the former white schools.

In short, rationalization and redeployment has been an unpopular policy, not only amongst teacher unions, but also amongst some political organizations as well. It is for this reason that the implementation of the policy between 1996 and 1997, was met with conflict, confusion and uncertainty (see Chisholm et al,1999; Chisholm, 1998; Motala, 1996. It would be fair to say that, instead of reducing learner performance disparities between former white and former black schools, the policy of rationalization and redeployment perpetuated the disparities. While some white good teachers refused to be redeployed to former black schools, some good and experienced teachers in former black schools took severance packages and quit the public education system permanently. As argued by Ramphele (2009: 2) "we mismanaged the downsizing of our teaching corps". This observation points to the fact that the policy itself had good intentions, which unfortunately, were undermined and frustrated by poorly-planned execution or implementation strategies.

A tension also emerged in this policy between the need to redistribute teachers and the leeway given to teachers who wanted to exit the system. There was poor control on the kind of teachers who were supposed to have been allowed to exit the system, leading to loss of some good teachers in the process. The exodus of experienced and well-qualified teachers frustrated the project of rationalization and redeployment. Instead of achieving its set objectives, the project left poorer schools, predominantly former black schools, with huge shortages of skilled teachers especially in Mathematics, Science and Technology (MST). In other words, the project of rationalization and redeployment, to a certain extent, contributed towards perpetuating inequalities between former white and former black schools.

National School Nutrition Programme

This programme was launched in terms of the National School Nutrition Policy in 1994. It was one of the Presidential Lead Projects. It later became part of the 2002 Food Security Strategy for South Africa. The main aims of the programme were, amongst others, to provide food directly to primary school learners so as to eradicate hunger amongst learners from poor families; reduce the effect of malnutrition on learners' capacity to learn; improve school attendance and punctuality by learners; and most importantly, improve their general well-being (see OECD, 2008). The National School Nutrition Policy was generally geared towards improving learner performance amongst

low-income learners. This intervention stems from ample empirical evidence that shows that learning is affected by hunger, a low energy diet, disease, parasite infestation and micro-nutrient deficiency (*ibid*).

The policy targeted learners from poor family backgrounds in order to ensure that they have at least one decent meal a day. In 2008 the National Schools Nutrition Programme had a budget allocation of R1 152 billion. Approximately 6 041 million learners in 17 899 South African public schools benefited from the Programme in 2008 (see Department of Education, 2008a). In Gauteng province alone, a total of 378 903 learners from 1 107 public schools benefited from the schools nutrition programme in 2008 (Gauteng Department of Education, 2008a). In the face of rocketing food prices and high rates of unemployment in South Africa in 2008, the impact that the National School Nutrition Programme has had on education should not be under-estimated. The programme will go down in history as one of the most important interventions for the well-being of low-income learners. The 6 041 million learners (who benefited from this programme in 2008) is a huge number that should not be disregarded at all.

It is clear that the policy on National School Nutrition has made some significant contributions in reducing disparities in terms of access to nutritional resources amongst learners. However, there is little empirical evidence to be able to claim that it has helped reduce the gap between former white and former black schools in terms of academic performance. The huge gap in learner achievement still evident between the two groups of schools would cast doubts about any such claim. Providing nutritional resources to poor learners is a commendable move and one of the many interventions that is needed to help fix the problems in our education system. Nevertheless, the provision of food on its own is insufficient. Other dysfunctional features across a sizable number of former black schools are of serious concern and no amount of food will address them.

There are many challenges that need to be sorted out at historically black schools. Such challenges include the low levels of teacher content and pedagogical content knowledge; poor teacher morale; a compromised culture of teaching and learning; poor school management; a lack of resources; poor use of available LTSM and a lack of accountability amongst unionized teachers (see Ramphele, 2009; Bloch, 2009; Fleisch, 2009, Harber, 2000). Until challenges of this nature are addressed, it would be unfair to

expect the National School Nutrition Programme to make any significant contribution towards improving learner performance in former black schools.

While school nutrition programmes are believed to improve learner attendance, there is scattered and insufficient data to draw conclusions that school nutrition programmes do indeed translate into improved academic performance. This programme should be weighed against other challenges such as the unequal distribution of good teachers across schools; the inability to optimally utilize LTSM; learners' limited access to textbooks; low levels of Mathematics knowledge amongst teachers and low teacher morale. When one considers other constraints, it is apparent that a school nutrition programme – while to a certain extent it does make a difference for poor learners – is only a drop in the ocean. A host of other educational challenges need to be sorted out as well.

Scholar transport programme

As the Department of Education believed that no learner should be further than one hour from the closest school where his/her grade is offered, the Department had to implement a scholar transport initiative. This initiative aims at ensuring that learners living in isolated areas are able to get to school on time. In 2007, a total of 193 250 learners benefited from the free scholar transport programme (OECD, 2008). In Gauteng Province alone, no less than 47 000 learners from both primary and secondary schools benefited from this programme in 2008 (Gauteng Department of Education, 2008). In some instances, some learners were given free bicycles to ride to school. However, each and every programme or initiative has its own challenges. A dispute over late payment to transport service providers by the Gauteng Department of Education was one issue that caused serious disruptions to the smooth functioning of this project.

Nevertheless, it is through this kind of intervention that the Department aims to redistribute and equalize access to opportunities to learn to all South African learners. There is no denying the fact that the *Scholar Transport Programme* is another policy intervention which, to a certain extent, makes a contribution towards alleviating transport difficulties faced by learners who live far from their nearest schools. However, in Gauteng Province, this programme is characterized by many challenges ranging from failure to pay services providers (the owners of rented buses) to un-roadworthiness of

some of the buses. These challenges have led, in some instances, to learners not going to school during strike action staged by bus drivers. However, overall, the programme is a step in the right direction.

Although the provision of free transport is a positive initiative, I think what matters most is the school environment to which learners are offered free transport. It is unfortunate that most of the learners attending former black schools are being offered free transport to dysfunctional institutions. It is this aspect (school functionality) that makes the significant difference.

Curriculum change

The post-1994 changes also dictated an overhaul of the apartheid education curriculum. Redressing the legacy of huge inequalities in an education system that consisted of not less than nineteen fragmented and racially-based education departments, was one of the top priorities of the ANC government. The ANC government inherited an education system in crisis. The education system was in crisis in terms of, inter alia, unequal access to schools for learners; unequal educational opportunities and most importantly, different and irrelevant curricula for different racial groups. Added to that, the apartheid education system advocated an examination-oriented teaching and learning approach which emphasized rote learning and unimaginative teaching methods (see Botha, 2002). The new administration saw a need to change the approach of the education system from content-oriented and teacher-centred teaching and learning to a more learner-centred approach. In response, the ANC government introduced the policy of outcomes based education (OBE) in 1997 as a replacement to the unpopular apartheid education curriculum. The aim was to specifically address issues of quality and inequalities in education (*ibid*).

Although preparatory processes had started earlier, the formal introduction of the OBE policy, in the form of Curriculum 2005[41] – commonly abbreviated as C2005 – was launched on 24 March 1997. Just like any other new policy, the policy had both its critics and supporters. Criticisms centred on the fact that the new curriculum had been made too complicated; it used a difficult language and many technical terms; teachers were not ready for it because of insufficient training; it added administrative responsibilities to the

[41] It was called Curriculum 2005 because the aim was to ensure that the implementation of the OBE policy was fully-fledged throughout all grades and fully functional by 2005.

already-burdened teachers; there was lack of appropriate learning and teaching support materials and so on (see Jansen, 1998; Botha, 2002; OECD, 2008). As a result of these and other criticisms, a Review Committee, comprised of both critics and supporters, was formed to review the new curriculum. As a result of the Review Committee Report on Curriculum 2005 (see Chisholm et al, 2000), the OBE framework underwent a metamorphosis[42]. Curriculum 2005 changed to the Revised National Curriculum Statement (RNCS), eventually called the National Curriculum Statement (NCS).

One of the most serious criticisms and challenges to OBE has revolved around the issue of teacher training as is argued by scholars such as Jansen (1998) and Bloch (2009). Most of the South African teachers were trained during the apartheid era in accordance with the apartheid education curriculum. After this apartheid training, they then experienced the widely criticized mass OBE-oriented in-service training workshops for teachers. This training took the form of short-term training workshops for teachers throughout the education system. In terms of teachers' general perceptions of the effectiveness of these training workshops, what has emerged as the main concern was that the workshops were not as educative as they were supposed to be. The facilitators themselves seemed to be inadequately trained and ill-prepared for the task of training teachers. Bloch (2009) refers to it as "poor training and development for teachers, and a host of form-filling and compliance rituals" (Bloch, 2009:17).

Despite all these criticisms, the OBE curriculum was implemented in the new education system. The year 2008 will go down in educational history as the first time that all Grade 12 learners in the country sat for a final examination based on the same national OBE curriculum. However, the main complaint about the OBE curriculum is that it produces an increasing number of learners who cannot read and write. Bloch (2009) argues that we need to focus on the foundational basics on which all other knowledge is built. His assertion is that "[y]ou must know how to add and how to read and write if you are going to be able to think" (Bloch, 2009:17). USAID (2005) supports this argument by adding that "[t]he relationship between early reading skills and academic survival and success is well established" USAID (2005:14).

[42] This is a biological term that denotes a change from one growing stage to another. However, the change was fairly dramatic.

Whilst the introduction of the new OBE curriculum marks a shift from the apartheid curriculum to a curriculum that is claimed to be practical and relevant for all learners, it was marred by controversies and confusion from the start. It is a well-known fact that OBE requires sufficient resources. Sufficient resources in turn require sufficient funds. According to Bloch, "OBE requires the best infrastructure and resources for it to work" (Bloch, 2009:17). As elaborated earlier, former white schools have stronger financial resources than their historically black counterparts. These resources made a difference in the implementation of the OBE curriculum between the two sets of schools. Indeed after more than a decade after its introduction, there is one section of our society that is calling for OBE to be scrapped: "We need to let go of OBE and focus on the basics in education" (Ramphele, 2009:3).

I think the OBE curriculum – while it is based on good intentions such as developing learners' independent thinking and ensuring learner-centred teaching – is too ambitious. It depends on contextual conditions such as teacher knowledge and resources. Another challenge is lack or poor management and monitoring of the implementation or delivery of the OBE curriculum. The general lack of monitoring and evaluation in most of the schools, especially former black schools, owing largely to resistance by teacher unions (discussed in detail in Chapter Seven) is a cause for serious concern. The curriculum is generally believed to be too demanding in terms of the resources, including human resources, and training required. While former white schools have and can afford the necessary educational resources, the same cannot be said for former black schools. This inequality in terms of affordability then becomes another factor perpetuating inequalities between the two school groups. Regardless of whether OBE is a good policy or not, there are clearly many problems that are implementation-related. What is important is ensuring that the OBE curriculum is less confusing; getting the right ingredients in terms of adequate resources and a well-trained teaching force to implement it.

Improving Mathematics and Science: Dinaledi Project

In an attempt both to redress the legacy of inequalities inherited from Bantu Education and to improve the number and quality of learners doing Mathematics and Science in

South Africa, the Department of Education launched the Dinaledi[43] project in 2001. When the project kicked-off, it had only 102 schools in disadvantaged communities. By 2008, the number of Dinaledi schools was estimated to have increased to about 500 (OECD, 2008). These schools get special treatment in terms of the provision of educational resources. According to the 2007/2008 annual report of the Department of Education, Dinaledi schools were provided with extra resources such as textbooks, scientific calculators, and training of Dinaledi teachers (see Department of Education, 2008).

In Gauteng Province, the number of Dinaledi schools increased from 70 in 2006 to 105 in 2007 (Gauteng Department of Education, 2008). Although Mathematics or Mathematical Literacy has become a compulsory subject in South Africa, as per the requirements of the new National Curriculum Statement (NCS), Further Education and Training (FET) Phase, Dinaledi schools still get preferential treatment.

The Dinaledi Project is a well-conceived intervention that attempts to improve the quality and quantity of Mathematics learners attending disadvantaged schools. Clearly the Project provides a remarkable contribution towards improving access to opportunities to learn Mathematics and Science, subjects that were only offered to the select few during the Bantu education era. Nevertheless, there is still inconclusive data to claim, and to be quite certain, that this initiative is improving the quality of learners' performance.

Like other educational policies or programmes, the Dinaledi project has its own set of challenges. It benefits selected schools. It targets the 'stars' as the name denotes. Learners are selected on the basis that they have shown potential in Mathematics. However, the programme ignores individual learners with potential who are trapped in dysfunctional schools. Although all children have access to schooling, not everyone has the right to the 'supposedly' quality education provided by the Dinaledi project. In short, the project benefits a minority of learners. Other learners are being denied access to the resources and the financial support that come with Dinaledi project, solely because they find themselves in wrong schools.

[43] Dinaledi is a Sotho word which means 'stars' in English. This project therefore attempts to create Mathematics and Science stars in previously disadvantaged communities.

The implication is that while the Dinaledi Project seeks to redress learner performance disparities in Mathematics and Science between the previously advantaged and disadvantaged schools, it simultaneously – intentionally or unintentionally – perpetuates inequalities between those previously disadvantaged schools that benefit from the programme and those that do not as yet benefit from it.

5.3. The impact of educational policy changes on educational equity

South Africa has some of the most progressive and democratic policies in the world. From the Constitution of the country down to policies of different government departments, including the Department of Education, meaningful progress in policy development has undoubtedly been made. However, one of the most noticeable concerns in recent public policy debates has been the extent to which the rate of policy formulation is not commensurate with the rate of policy implementation. My argument is that there is a gap between South Africa's educational policies aimed at educational equity and their actual implementation, hence they have not as yet been translated into practice. In other words, good policies are not good enough until they are effectively implemented and are able to achieve what they are intended to achieve.

Whereas the educational policies as analyzed in the previous section have laid a foundation for meaningful change, their goals and objectives, especially the ones that relate to educational equity, are still far from being achieved. Translating these educational policies fully into schools and classrooms has yet to be realized. Lack of effective implementation capacity and policy enforcing instruments or tools seem to be some of the main reasons behind this situation. Despite some educational changes, former white and former black schools still project two distinct worlds in terms of school infrastructure, home-based support systems, financial resources, teacher quality, educational resources and so on.

The day-to-day teaching processes between former white and former black schools are still characterized by numerous inequalities. After almost fifteen years of democracy, there are on the one side, well-endowed public schools with impressive resources and facilities that produce good academic results while on the other side, there are desperately poor schools which produce poor academic results (Jansen et al, 2009:8). There is a high number of dysfunctional schools, estimated to be about 80% of the entire

school community (see Cohen, 2009:7). Most of these schools are obviously black schools, and clearly this is another challenge undermining and threatening the success of the reform project in the South African education system.

My understanding of educational equity is based on the premise that, for learner performance to be equitable, almost all aspects of the teaching and learning processes should be equitable. Until the huge prevalent disparities that characterize the activities of teaching and learning between the two sets of schools are eradicated, it will be very tough if not impossible to achieve educational equity in general and equal learner performance in particular. It is only when equitable opportunities for quality learning have been created across all schools that changes will translate into more equitable learner performance.

5.4. Conclusion

The main focus of this chapter has been on answering the question: How far have educational policies aimed at educational equity contributed in equalizing learner performance or reducing learner performance disparities between former white and former black schools? Clearly a large number of educational policies in South Africa have been developed, which have made a significant contribution towards ensuring access to education for almost all school-going age learners. This is a huge improvement in terms of ensuring access to opportunities to learn (OTL) for South African learners. However, the challenge is to ensure that policies do not improve the situation on the one hand whilst perpetuating inequalities on the other hand.

Tensions and contradictions seem to characterize most of the educational policies discussed in this chapter. There seems to be a tension between the intentions of the policies and their actual implementation on the ground. In other words, while the policies seek to achieve one thing they lead to the destruction of another thing – such as in the case of rationalization and redeployment policy that resulted in the loss of good teachers. While deficiencies or inadequacies in the development of these policies tend to be problematic, the implementation of these policies seems to be the main problematic area. It is largely in implementation where confusion and tensions arise, leading, amongst others, to unintended results and in some instances, worsening situations.

CHAPTER SIX
TEACHER QUALITY

6.1. Introduction

Teachers are the most valuable resource in schools (Marlow and Inman, 1993; O'Neil, 2002; Palmese, 2008). As a result, there is an ever increasing need in the education sector worldwide for teacher development, focusing specifically on teacher quality. The issue of teacher quality has become a hot topic in the global education sector. In South Africa, the need and call for quality education gained momentum after the attainment of increased levels of access to education became coupled with low levels of learner performance. The concept of quality education[44] has been a buzzword throughout the education fraternity for some time (Craig et al, 1998; ADEA, 2004; Anderson, 2002; Tatto, 2000; Boyle et al, 2003; Prouty, 2000). The two main aims of this chapter are to investigate the scale of variation in teacher quality between former white and former black schools in Gauteng Province; and how this accounts for disparities in learner performance between the two sets of schools.

The key question which this chapter sets out to probe is: Does teacher quality differ between former white and former black schools, and does this contribute to the disparities in learner performance? In the chapter, I argue that former white schools attract and retain better teachers than former black schools, and that this difference contributes to persistent disparities in learner performance between the two sets of schools. The sources of data for this chapter are test scores, lesson observations, interviews and general school observations.

The chapter is structured in the following way: Section one introduces the chapter. The second section contextualizes and explains the notion of teacher quality as it is understood in the chapter. The third section discusses the different measures of teacher quality used. The fourth section reports on the emerging themes, while the emerging trends are discussed in the fifth section. The sixth and last section provides some concluding remarks.

[44] The emphasis in South Africa seems to have shifted from mere access to education to quality education, as demonstrated by an increasing number of both international and national learner achievement studies.

6.2. Making sense of the notion of teacher quality

It is necessary to first understand what 'quality' entails before making sense of the concept of teacher quality. The discussion about quality started many centuries ago by the Greek philosophers such as Socrates, Plato, Aristotle and others (see Pirsig, 1974). The Greek word for quality is *arête,* which also refers to excellence (see Reeves and Bednar, 1994:420). The concept of quality has various definitions depending on the context within which it is defined. For instance, quality in business may mean something different to quality in sport, arts and culture, health, education and so on. For example, some define quality as value (Abbot, 1955 cited by Reeves and Bednar, 1994:419) while others refer to it as conforming to requirements (Crosby, 1979 cited by Reeves and Bednar, 1994:419). However, excellence seems to be the underlying factor that is applicable to almost all the different contexts. Excellence seems to be the key word in defining quality, as captured in the following definition:

> Investment of the best skill and effort possible to produce the finest and most admirable results possible…Quality is achieving or reaching for the highest as against being satisfied with the sloppy or fraudulent…it does not allow compromise with the second rate (Tuchman (1980:38).

In other words, any product or performance which is sub-standard or which does not make the excellence grade, is not quality. To Plato, the word *arête* meant absolute, that is, "the good, the highest form, the highest idea of all" (see Pirsig, 1974:373). In other words, there is no compromise with quality. In short, quality in teaching means teaching excellence.

The Alliance for Quality Teaching (2008) describes teacher quality as being evidenced through producing high levels of student learning. Ladson-Billings, in her interview with Wayne Au argues "we don't really get to see teacher quality until we see someone who has full responsibility for their classroom…(in Au, 2005:1).

According to the Educational Testing Service (ETS) (2004), 'teacher quality' is characterized by teachers who know the content of the subjects they teach, i.e. that they have subject matter competence, and know how to teach. According to Wren (2006) high quality teachers are those with talent, knowledge and skill. In other words, high

levels of proficiency in content and skills, and the art of the actual classroom practice, are the essence of teacher quality. According to the US Department of Education (1999), there are two broad elements that most observers agree characterize teacher quality, namely, teacher preparation and qualification, and teaching practices.

The United States' No Child left Behind Act of 2001 emphasizes the need for a 'highly qualified teacher' if learner achievement gaps are to be closed and learner achievement for low-income groups improved. The Act links teacher quality directly to highly qualified teachers. The No Child Left Behind Act defines a highly qualified teacher as a teacher who has a college degree, a state certification and is able to demonstrate knowledge in the subject taught (see US Department of Education, 2006). Leigh (2007) defines teacher quality as the teacher's own academic aptitude and his/her ability to raise his/her students' test scores.

What emerges more clearly from the above definitions and descriptions of teacher quality is that teacher quality is made up of a number of aspects or factors. It is clear that in the American context teacher quality is characterized by three main factors – a degree, state certification and demonstrable subject matter knowledge. What this means is that a qualification alone does not make a quality teacher (see Wren, 2006) nor does state certification or demonstrable subject matter knowledge alone make a quality teacher. In other words, highly qualified teachers (in terms of qualifications) should also be able to teach in such a way that learners are able to learn the subjects which they teach.

Some of the most important characteristics attributed to teacher quality are intellectual ability, academic subject matter preparation, knowledge of how to teach (learning theory, instruction, assessment and classroom management), teaching experience and competencies in cultural and multilingual issues (see The Alliance for Quality Teaching, 2008). Put another way, skills attributed to teacher quality are basic academic skills, thorough content knowledge of subjects taught, knowledge of both content-specific pedagogy and hands-on teaching skills (see ETS, 2004).

According to the Academy for Education Development (AED), the most commonly used descriptors of quality education are learners who can demonstrate academic

achievement and strong personal growth (Academy for Education Development (AED) (2005:2). These are the kind of learners who are taught by teachers who, according to Craig et al, (1998:12), have a good mix of characteristics (including some mentioned above):

- Competence in the language of instruction
- Use of a range of pedagogies appropriate for the content
- Ability to create and sustain an effective learning environment
- Development of a strong sense of ethics and professionalism and commitment to teaching
- Recognition and response to the needs and interests of their students and communities
- Habitual reflection on their teaching and students' responses and adapting the learning environment accordingly
- Caring about students.

The aspects of content knowledge and pedagogical content knowledge are crucial, and they are further discussed in detail in section 6.3. below. Rice (2003) argues that it is good teachers who produce good learners. Who are good teachers? Good teachers will be those teachers who possess the characteristics already discussed in the previous two paragraphs. It is therefore difficult, though possible, for learners to learn what their teachers do not know how to teach (see The Education Trust, 2003). Put differently, teachers cannot teach what they do not understand, and as a result, learners cannot learn any thing from such kind of lessons (Adediwura, 2007 and Tayo, 2007:166). What this suggests is that there is a correlation between what teachers know and what they teach (see Adediwura and Tayo, 2007). It is therefore crucial for teachers to master both their content and pedagogical content knowledge and to ensure that they keep on improving and updating their teaching knowledge. It is for that reason that ETS (2004) argues: "teachers do not enter the classroom as finished products" (ETS, 2004:6). What this means is that for teachers to attain teacher quality, they have to combine the content knowledge which they got from their initial training with their daily experience and expertise of classroom practice or their pedagogical content knowledge).

The former Secretary of Education in the US, Margareth Spellings, once said: "We know [that] nothing helps a child to learn as much as a great teacher" (Margareth Spellings,

cited by the US Department of Education, 2006:1). Christie, Butler and Potterton (2007) sum up the importance of teacher quality in teaching and learning in no uncertain terms:

> [B]uilding the capacity of teachers (knowledge, skills and use of resources) is a crucial dimension of enabling schools to address their central tasks of teaching and learning. School improvement cannot be achieved unless schools have teacher capacity (Christie, Butler and Potterton, 2007:114).

The implication of the above is that the difference in the levels of teacher quality between schools could be one explanation for the difference in learner performance.

6.3. Measures of teacher quality

For purposes of this study, five main measures of teacher quality were used as a lens through which to understand the level of teacher quality amongst the Grade 6 Mathematics teachers in the sample schools. These measures were: teacher qualifications; teacher experience; learner academic outcomes; teacher content and pedagogical content knowledge; and the school resources available to both teachers and learners, which include issues related to the language of learning and teaching (LoLT).

T*eacher qualification*

Teacher qualification is one of the most crucial factors used to measure teacher quality. For instance, the US education system, and in particular, the No Child Left Behind Act, links 'highly qualified teachers' to teacher quality (as discussed in the previous section). In my study, interviews with Mathematics teachers in the sample schools were used as a source of data on teacher qualifications. All the four filmed Mathematics teachers in the study were qualified teachers in terms of the South African qualification standards (see Table 4 below). Their initial teacher training qualifications were as follows: for the two teachers attached to former white schools, one had a degree while the other had a diploma. As for the two teachers attached to former black schools, both of them had diplomas.

Table 4: Qualifications of the sampled Mathematics teachers

Teacher attached to	Initial qualification	Postgraduate qualification
Former white school	Degree	None
Former white school	Diploma	Degree
Former black school	Diploma	Diploma
Former black school	Diploma	None

In terms of additional qualifications, only one teacher from each school group had obtained additional qualifications while working. One teacher attached to a former white school had attained a first degree, whereas one teacher attached to a former black school had attained a second diploma. In short, both Mathematics teachers who taught at former white schools had degrees, while their counterparts in former black schools only had diplomas. However, neither of the two teachers who had obtained additional qualifications had studied Mathematics related degrees or diploma. In other words, none of the four teachers had completed postgraduate (post-initial teacher training) studies specializing in Mathematics, and none of them had ever received an award related to Mathematics teaching. In other words, their postgraduate studies were not mathematics-related.

The years in which the teachers obtained their initial qualifications ranged from 1990 to 1997. That is, they all first qualified in the nineties. In terms of the study levels of Mathematics in their qualifications, the two teachers attached to former white schools (school A1 and A2) had studied Maths up to 4th year and 3rd year respectively, while the two teachers attached to former black schools (school B1 and B2) did Maths up to 3rd year and 2nd year respectively. The two teachers attached to former white schools were thus slightly better qualified in Mathematics than the two teachers who taught at the former black schools. Added to that, the teachers attached to former white schools were slightly better qualified both in terms having degrees (rather than diplomas) and in terms of having higher levels of Mathematics in their qualifications.

It is important to indicate that all four teachers are products of disadvantaged systems of education in South Africa, despite the fact that they were teaching at different schools in terms of ex-departments. Three of them came from ex-DET (African education system) while one came from ex-HoD (Indian system). However, they attended different institutions for their initial teacher training, namely: the University of the Witwatersrand, the Rand College of Education, the University of Bophuthatswana and the Soweto College of Education. Only one teacher, attached to one of the former white schools in the sample, had studied in a historically white institution of higher learning while the rest had trained at historically black institutions of higher learning. Both of the teachers attached to the two former white schools had been exposed to OBE in their initial teacher training, whereas only one of the teachers who taught in one of the former blacks schools had received OBE in the initial teacher training.

Further informal training for teachers such as attending Mathematics in-service training workshops or courses also plays an important role in teachers' ongoing training. One of the two Mathematics teachers attached to a former white school, indicated that he 'sometimes' attended such training courses, while the other three teachers in the sample indicated that they attended courses 'quite often'. Essentially, attendance of workshops organized by the Department of Education by all four teachers was relatively similar.

Research has shown that teachers' professional development plays a crucial role in school improvement (Bredeson, 2000) and in improved learner performance in particular. Arguably, nothing in a school has more impact on learners in terms of improving their self-confidence, skills and classroom behaviour than the personal and professional development of their teachers (see Law and Glover, 2000). It is teachers who are well equipped with sound subject knowledge and good pedagogical content knowledge, who are able to facilitate effective learning for learners by creating meaningful learning opportunities for them (see Goodnough and Hung, 2008). However, the issue of teacher qualification remains a serious challenge in South Africa. This challenge was revealed through the findings of the first ever South African National Teacher Audit of 1995 and the President's Education Initiative project of 1999. The National Teacher Education Audit of 1995 revealed fragmentation in teacher education provisioning, mismatches between teacher supply and demand, and a high number of unqualified and under-qualified teachers.

Evidence emerging from both developed and developing countries suggests that the most effective way to develop good and well performing teachers is to begin with a sound pre-service programme and continue with lifelong in-service learning (Craig, Kraft and Du Plessis, 1998; World Bank, 1995). The Academy of Education Development (AED) (2005) refers to this as ongoing professional development of teachers. The National Policy Framework for Teacher Education and Development (Department of Education, 2007) aims at improving professional teacher development, recruitment and retention. The development of both these policy documents is a clear indication of recognition of the serious need for teacher quality development in South Africa.

According to the Department of Education, teachers are the essential drivers of good quality education (Department of Education, 2007:3). A crucial point, consistent with literature and other international experience, is that teacher effectiveness and morale tend to increase when teachers gain content knowledge and teaching skills coupled with professionalism, community empowerment and accountability (Academy for Educational Development (AED), 2005). Indeed, research shows that teachers want to be respected as professionals, and that they need to acquire skills and attitudes that enhance their professionalism (*ibid*). In response to this need, the Department of Education, through the National Policy Framework for Teacher Education and Development, aims, amongst other things, to ensure the improvement of teachers' professionalism and performance and to ensure that they are worthy of being held in high regard by the people of South Africa (Department of Education, 2007).

South Africa's teaching profession suffered hugely as a result of the apartheid policies and as a result, the new ANC government inherited massive teacher development backlogs. It is these backlogs that continuously pose all sorts of transformational challenges for education. In sharp contrast to South African teachers, Cuban teachers earn salaries that are similar to those of other professions. This makes it easier to recruit the best and brightest young people into the teaching profession in Cuba, unlike in other countries where teacher salaries are relatively lower than other professions (Carnoy and Marshall, 2005:231).

Like in other education systems, for South Africa to achieve excellence in Mathematics, it has to invest in the training and development of good Mathematics teachers and good

teaching in every classroom for every child (see Setati, Adler and Venkat, 2007). It is imperative for South Africa to produce a crop of Mathematics teachers with good content and pedagogical content knowledge; that is the kind of Mathematics teacher who knows what to teach and how to teach it (see Ingvarson and Rowe, 2007). The problem of poor performance in Mathematics in South Africa is a longer-term problem which needs long-term planning; the challenge here is that building up a high-quality teaching corps takes time (see Setati, Adler and Venkat, 2007).

Teaching experience

This study used interviews to acquire information about teachers' general teaching experience and of their Mathematics teaching experience in particular. The two teachers who taught at former white schools had nine and thirteen years of Mathematics teaching experience respectively. The two teachers attached to former black schools had seventeen and seven years of Mathematics teaching experience respectively. In other words, the average number of years of experience of the two Grade 6 Mathematics teachers in the former black sample schools was twelve years. In the two former white schools, the average was eleven years. Thus there was only a slight difference in years of experience between the two school groups. The most experienced Mathematics teacher and the least experienced teacher in the sample taught at former black schools.

Experience is often confused with expertise, especially amongst old teachers; what is important is the quality of a teacher's experience. It would be incorrect to confuse the number of years of being a teacher, or in the service of the Department of Education, with appropriate teaching experience. A teachers' real experience should be ascertained in terms of the quality of work that a teacher has actually done over the years of his/her service. If, for instance, a teacher is absent from school most of the time or he/she does not teach regularly in class, why should such a teacher be called an experienced teacher? I think there should be a distinction between long years in employment and experience. In other words, not all teachers who have been in the teaching profession for many years necessarily have expertise or real teaching experience.

However, in the case of the four sample teachers, they were all genuinely experienced. The way they conducted their lessons depicted some sense of real teaching experience acquired over the years of their service in the Department of Education. The minimum

number of years' experience of Mathematics teaching in the group was seven years. Under normal circumstances, seven years of real teaching experience should be adequate in terms of impacting on learner achievement.

Learner academic outcomes

The results of one learner test were used to evaluate learner performance in the four schools in my study. The test had been designed for use in the 40 sample schools that took part in the bigger HSRC-Stanford study (as discussed in Chapter Three). In the bigger study, a pre-test was written in the first quarter and a post-test in the third quarter. However, almost half of the schools that wrote the first Grade 6 Mathematics test did not write the second one because teachers were preparing learners for the final exams. As a result, because some of my sample schools had not taken part in the second test, I was only able to use the results of the first learner test to evaluate the content knowledge of learners in the sample schools.

The performance of learners in the test displayed familiar trends – learners in former white schools outperformed learners in former black schools. Classes in the two former black schools (B1 and B2)[45] achieved an average of 41% and 46% respectively. Classes in former white schools (A1 and A2) achieved an average of 60% and 70% respectively, as shown by the table below. The average learner performance across the two former black schools combined was 44%. The average learner performance across the two former white schools combined was 65%. The average standard deviation between the two school groups was thus about 20%.

The results of the test clearly suggest a somewhat low level of Mathematics content knowledge amongst learners in former black schools and fairly high level of Mathematics content knowledge amongst learners in former white schools. There appears to be a correlation between teacher qualifications and learner performance in that both Mathematics teachers attached to former white schools (whose learners performed better) had degrees while their counterparts in former black schools had diplomas.

[45] Codes B1 and B2 are used for the two former black schools while A1 and A2 are used for the two former white schools.

Table 5: Average learner Mathematics test score per school

Score	Former white schools	Former black schools
Maths score	School A1: 60 School A2: 70	School B1: 41 School B2: 46
Average score	65	44

Teacher content and pedagogical content knowledge

Of all the characteristics attributed to teacher quality discussed above, content and pedagogical knowledge – a concept introduced by Shulman (1986) – seems to enjoy much focus. A great deal has been written about content knowledge (CK) and pedagogical content knowledge (PCK) (Marks, 1990; Even, 1993; Smith, 2000; Segall, 2004). There is substantial evidence which suggests that teachers need both content knowledge and knowledge of how to teach particular subjects if teacher quality and educational quality in general are to be achieved (see Taylor, Muller and Vinjevold, 2003; Malcolm et al, 2000). Christie, Butler and Potterton (2007) argue:

> The pedagogic relationship is one of authority. Its quality depends crucially on teachers' knowledge of what they are teaching, their assumptions about how learners learn, and their repertoire of pedagogical assessment practices (Christie, Butler and Potterton 2007:107).

Content knowledge refers to the subject matter knowledge of a particular subject or learning area that teachers obtain or acquire during their training as teachers. In the context of this study, it refers to Mathematics subject matter knowledge. Content knowledge is what Ingvarson and Rowe define as "what teachers should know" (Ingvarson and Rowe (2007:2). Adediwura and Tayo define pedagogical content knowledge as an understanding of ways of representing the subject that make it comprehensive to others, and an understanding of what makes the learning of specific topics easy or difficult (Adediwura and Tayo, 2007:166). Koppelman (2008) on the other hand, defines PCK as a practical way of knowing the subject matter used by teachers (instructors) when teaching. Ingvarson and Rowe define PCK as "what teachers can be able to do" (Ingvarson and Rowe (2007:2).

The President's Education Initiative project (1999) pointed out that the most critical challenge for teacher education in South Africa was the limited conceptual knowledge of many teachers. For example, teachers' poor grasp of their subjects was evident in factual errors observed during lessons. It is constraints of this nature that contribute to learners' low levels of performance (Department of Education, 2007). The phasing in of the new OBE curriculum in South Africa seems to have compounded the situation. It is for this reason that Motala (2007) asks whether teachers are pedagogically prepared to deliver the new curriculum.

In my study, sources used to gather data to evaluate teachers' content and pedagogical content knowledge included Mathematics tests, for both learners (see Table 5 above) and teachers (Table 6 below), interviews (learner, teacher, principal and teacher union interviews) and lesson observations.

The Mathematics test – which was administered to both Grade 6 Mathematics teachers and learners – gave a sense of the level of Mathematics knowledge that teachers and learners had. The performance of Mathematics teachers in the test reflected the old trends of higher levels of teachers' Mathematical proficiency in former white schools than in former black schools. The two Mathematics teachers at the former black schools scored 53% and 57% respectively while their counterparts at former white schools scored 70% and 73% respectively (see Table 6 below). The results of the teacher test showed a lower level of content knowledge amongst Mathematics teachers at former black schools than that of their counterparts at former white schools. While the average learner performance at the two former black schools was 44%, the average performance of their teachers in the test was 55%. This was lower than the average of 65% for learners and 72% for their teachers at former white schools. The variation between the two schools amounted to an average standard deviation of 17%.

Table 6: Teacher Mathematics test score per school

Score	Former white schools	Former black schools
Maths score	School A1: 70 School A2: 73	School B1: 57 School B2: 53
Average score	72	55

The results of learner tests are one indication of what teachers know (content knowledge) and what they are able to pass on to their learners, that is, their classroom practice (pedagogical content knowledge). There appears to be a correlation between teacher content (Mathematics proficiency) and learner performance; as well as teacher pedagogical content knowledge and learner performance -as shown by the performance of both teachers and learners in the above tables. Random distribution of both content and pedagogical content knowledge amongst the sample schools is another important trend emerging from the test data (See Graph 1 in Appendix F). However, this trend seemed to be higher in the higher quintile schools than in the lower quintile ones.

Observing teachers' lessons is one of several ways that can be used to gain insight into teacher quality. I conducted lesson observations of four Grade 6 Mathematics lessons (one from each of the four sample schools) in the four sample schools. Details of how observations were conducted and lessons were filmed are discussed in Chapter Three.

Analyzing camera-recorded data is a very challenging exercise, more so in South Africa because this is still a fairly new technique in the educational research sector. As discussed in Chapter Three, I used a time segment instrument to analyze the recorded lesson observation data. (As mentioned before, this instrument was adapted from the instrument developed by Jeff Marshall, an American researcher who came to train the South African team for the HSRC-Stanford pilot study. Marshall had used his instrument to analyze recorded data for studies conducted in countries such as Panama, Costa Rico and Cuba (see Carnoy and Marshall, 2005)). The instrument is used mainly to analyze the quality of a lesson or of teaching. It provides for both numerical and non-numerical summaries or qualitative observations. In other words, it allows for both

quantitative and qualitative data analysis. The main idea behind the instrument is to identify predominant activities during a lesson. These activities have to be classified into time segments after a specified period of time using clicks. Time segments are further divided into categories (see Appendix E). For the purposes of my study, I modified and adjusted the instrument to fit the South African classroom context (see Chapter Three for more details).

One of the main activities or time segments of the modified instrument I used during the lesson observation dealt with 'Seat Work'. This activity included learner solving problems while the teacher was circulating, or busy with other tasks such as checking learners' work. Another activity was 'Recitation', which included the teacher asking questions that learners answered individually or in chorus. 'Group Work' consisted of learners working in groups while the teacher was circulating or working on other tasks. 'Whole Class Instructions, Demonstrations, Lecture and Review' mainly involved the teacher doing most of the talking while learners were listening. 'Transition' involved learners taking their focus off the actual lesson for activities such as taking out workbooks, pens or cleaning the board. 'Interruption/Discipline', comprised lesson interruptions such as an announcement over the intercom, a knock at the door, or learners moving in and out of the classroom during the lesson.

The instrument included a set of post-lesson observations. These observations covered issues such as homework, the degree of engagement amongst learners, levels of discipline, types of LTSM used, learner participation in lessons and the physical condition of classrooms.

What emerged from the activity 'Seat Work' was that teachers at former black schools spent more time circulating and checking learners' work than their counterparts at former white schools. In other words, teachers at former black schools spent more time circulating and less time teaching than teachers at former white schools (the same pattern emerged from learner interview data in Chapter Eight). This observation could mean that learners at former white schools are more likely to be taught more and cover more of the curriculum than their counterparts at former black schools.

The Mathematics teachers at the former white schools also appeared to be more passionate about their work. This was evident in their capability to motivate and engage their learners during lessons. The Q-A (question and answer) teaching style was used predominantly at both schools, but lessons at former white schools were more lively than at former black schools. Learners at former white schools engaged by asking questions and challenging some of their teachers' ideas. It seemed that teachers at former white schools pitched the questions at the right level for their learners. This was evident in the active interactions between teachers and learners.

An important observation that emerged from the lesson observation was a lack of group work amongst learners at both former white and former black schools. Group work offers learners an opportunity to debate issues amongst themselves, to challenge one another, to reach consensus and come up with common answers. In a sense, the lack of group work amongst learners implied a lack of vital engagements between learners, but it also raises questions about this form of learner-centred approach that OBE curriculum seeks to entrench.

Instances of a more teacher-centred approach were noted during lesson observations at both former white and former black schools. However, this approach seemed to be more prevalent at former black schools. The teachers in the two former black schools spent a combined total of 14 minutes of their Maths lessons on activities that were teacher-centred[46]. At the two former white schools, teacher-centred activities consumed just nine minutes of their lesson time. This high amount of time was largely due to the predominant use of a question and answer approach in both school groups.

At one of the former black schools, noise amongst learners was the main cause of lesson interruptions and disturbances. This aspect was observed in the Mathematics class at school B1. The level of noise in this class made it difficult for the teacher to concentrate and focus on her lesson. The teacher had to repeatedly tell learners to stop making a noise. The main cause of the high noise level was learner movement around the classroom, for example, to borrow learning materials such as mathematical

[46] These were activities that were dominated by the teacher dominated without learner involvement. In other words, learners were just listening without any active participation in an activity.

instruments, pencils and rulers. About five minutes of the lesson period was characterized by ‘noise’ in the Mathematics class at this school.

There were also incidences of ill-discipline in the former black school classes, largely due to learners moving around borrowing pencils, rulers or erasers. Former white school classes were characterized by a high degree of discipline and less movement by learners around the classrooms. Every learner seemed to have his/her learning material such as pencils, rulers and erasers. For instance, in the Mathematics class in one former white school (school A2), learners remained silent and continued with their work even when the teacher left the classroom for a moment. At the other former white school (school A1), learners were so actively involved and engaged throughout the lesson that there was no ‘space’ for ill-discipline in the classroom.

Learning and teaching support material (LTSM) is a crucial part of the teaching and learning process. Learners at the former white schools had adequate LTSM such as textbooks, workbooks for learners, study guides, worksheets and enough mathematical instruments. The situation at the former black schools painted a different picture. A general shortage of learning and teaching support material characterized the former black schools.

What lesson observation data showed, amongst others, was that shortages of LTSM (such as pencils, rulers and erasers) at former black schools, made learners to rely on sharing the few resources available amongst themselves. This was the reason for much of the movement and disturbances in class. So there is varied availability and use of LTSM between the two school groups. The former white schools operated in a situation of abundance while their counterparts still faced huge shortages. On top of textbooks, learners at former white schools used study guides. However, it is important to note that the study guides used in the former white schools were compiled by the Mathematics teachers themselves from different Mathematics textbooks. This effort on the part of the teachers is a clear demonstration of the passion that some teachers show in their lessons. The availability of funds and support for such initiatives from their school management also played a crucial role in ensuring that they were able to produce these study guides. However, the initiative for carrying out the task stems from the passion that the teachers have for teaching. Also of interest is that there was no homework given at

the end of any of the four Mathematics lessons observed in the study. Learners completed classwork instead.

In the quest to gain more understanding about the perceptions of teachers, teacher union representatives and school principals on the issue of teacher quality in general, and content and pedagogical content issues in particular, I drew on interview data. In the teacher interviews, teachers attached to former white schools said that their initial training as Mathematics teachers had been very helpful in developing their content knowledge. In contrast, their counterparts at the former black schools said that not enough had been done to develop their content knowledge. Teachers at the former white schools attributed their sound initial training to "excellent lecturers" (FWS, T2, F), whereas teachers at the former black schools, contended that "the initial training was not enough" (FBS, T1, F).

In the interviews with school principals, principals from both school groups were unanimous in bemoaning the low Mathematics qualification levels and experience amongst teachers in former black schools. One school principal attached to a former white school complained "the qualifications of teachers at former black schools that are teaching Mathematics are not quite sufficient" (FWS, P1, M). Another principal attached to a former black school expressed concern about "lack of experienced educators" (FBS, P1, M).

Another interesting point related to teachers' content knowledge emerged from interviews with teacher union representatives. Representatives linked teachers' content knowledge to the institutions where the teachers had studied for their initial teacher training. The contention amongst teacher union representatives was that the level of teachers' content knowledge differed according to the institutions where teachers had completed their initial teacher training. To quote:

> It is because of the different teachers' training colleges that were attended… like I am from a former coloured college. It differs because here we have white colleagues and their training was also done differently, and also with my African teachers here, they also had a different training, Ja (FWS, TUR3, F).

The same trend emerged in the bigger HSRC-Stanford study (see Carnoy and Chisholm et al, 2008). In the South African context, the Mathematics content knowledge of teachers who trained at universities and held degrees appeared to be higher than those who had trained at colleges and held diplomas. Interestingly, their placement at either higher or lower SES schools after their initial training seemed to be a further determinant of the level of their CK. In other words, the CK of teachers placed at middle-income schools seemed to be positively influenced and superior to that of their counterparts placed at low-income schools. One teacher union representative who was interviewed argued that teachers attached to former black schools "were able to do their work, but the initial training was not enough" (FBS, TUR1, F). Poor teacher training together with poorer SES of low-income schools seemed to dampen the morale of teachers in those schools, which would eventually erode their teaching ability.

Essentially teachers at former white schools also appeared to have a superior pedagogical content knowledge than their counterparts at former black schools. Interview data suggested that the Mathematics teachers at the former white schools 'oozed confidence' and felt in total control of their teaching knowledge. This is made plain in the following extract from an interview with one Maths teacher:

> [F]or these past years I've been teaching, I've managed to develop enough knowledge, expertise in the area at a primary level to an extent that I can handle any question really that comes from a learner (FWS, T1, M).

What was interesting was the fact that teachers in the former black schools appeared to feel that they benefit somewhat, though not enough, from the Mathematics training workshops. In contrast, teachers attached to former white schools seemed to feel that they did not gain anything new from departmental training workshops organized at district level. One of the main reasons given was that most of the workshops dealt with issues that they had already done at their school-based training workshops. This fact is clearly echoed in the following quote from an interview with one of the teachers attached to a former white school:

> [M]ost of the time we go to workshops or cluster meetings. And then normally they have things that you already know. Ja, most of the time, so they are not really helpful, you just go because you are forced to go, it's compulsory…(FWS, T2, F)

Passion for teaching Mathematics and their financial muscle (capability) appeared to be some of the main reasons behind former white schools' ability to organize Mathematics experts to come to their school in order to and train the teachers.

The issue of additional teacher training workshops organized by former white schools for their own teachers was also mentioned by teacher union representatives. In addition to Mathematics specialists, former white schools, according to teacher union representatives, also organized specialists from organizations such as the South African Council for Educators (SACE) and teacher unions to come and conduct workshops with their teachers. In the words of one teacher union representative:

> We do have our own workshops especially if we find that there are issues or certain things not in place…We also get the union in like we are going to get people in from SACE to come and assist the teachers with portfolios and the like (FWS, TUR2, M).

The adequacy and efficiency of the current mode of workshops to achieve the goal of closing the gap between the old apartheid curriculum and the new OBE one (as briefly alluded to in Chapter 5) seems to be suspect, if the following comments by interviewed school principals from both former black and former white schools are anything to go by:

> I don't think there is enough done to train Mathematics teachers at the moment, and also there is not enough resources available for them to attend courses to increase their knowledge (FBS, P1, M).

> I think former white school teachers had an opportunity to be thoroughly trained. I think they've been given some kind of methods which we as black people did not get. OBE is trying to train the teachers but I think it is too short. Through training on Maths…should be given first preference. I think because of the unskilled Maths educators of the past, we find ourselves in this situation, where educators did not have the right skills to teach our children… (FWS, P2, F).

The fact that former white schools organized their own workshops (at school level) indicates, on the one hand, that the Department of Education was not doing enough in that area. There was a clarion call from across all the sample schools, former black and white, for adequate and efficient training workshops. One school principal from a former white school complained that training workshops for Mathematics "aren't enough…[t]here should be more". (FBS, P2, F). Another school principal attached to a

black former school wished that “they could be more…they could give Maths people efficient study opportunities.” (FWS, P2, F). Another concern about training workshops seemed to be about their timing. According to one school principal attached to a former black school, most training workshops were held “in the afternoon, at about 14h30 to 16h30, and that time there is nothing much that you can do because you come from school and you are tired” (FBS, P1, M). The issue of inadequate teacher training, and the need for more training, was also echoed by teacher union representatives:

> I think the teachers themselves have to be trained or re-trained…
> (FWS, TUR1, F).
>
> It would be nice if all teachers were trained rather than taking only a few. With teacher training workshops for all teachers plus learner-teacher support material, things can be much better. Only one teacher was taken per grade in the recent training workshop, and my suggestion is that they should take all teachers (FBS, TUR1, F).
>
> I think we need…more training. We need to be assisted every time
> (FBS, TUR2, F).

On the other hand, the initiative taken by former white schools to organize their own training workshops could mean that teachers attached to former white schools had a sense of ‘teacher agency’, something hat seemed to be lacking in former black schools.

School resources

According to Duke (2008), organizations depend on resources and unfortunately resources are almost always limited. However, in the case of schools, the degree to which resources are limited differs from one school to another, depending on a number of factors. In the South African context, these factors include: historical source(s) of funding; the department to which the school formerly belonged; and fundraising capabilities of the school. In the context of this study, the term ‘resources’ is used to refer to infrastructure, educational facilities, learning and teaching support material, finances and home-based school support (HBSS). It is mainly the lack of these forms of resources that contributes to the inequalities between low- and middle-income schools. Kozol (1991) refers to such inequalities as ‘savage inequalities’.

The question that this section seeks to answer is: Do socio-economic conditions of schools significantly differ between former white and former black schools, and how do

they contribute and explain teacher quality variation and general learner performance disparities between former white and former black schools in Gauteng Province? In other words, does the quality and quantity of school resources influence teacher quality in particular and learner performance disparities in general? Learner tests, general school observations and interviews were used to collect data related to school resources.

Learner test results showed a significant influence of school resources on the performance of both learners and teachers in this study, especially in terms of School Quintile[47]. There were huge variations in terms of the school fees charged by the sample schools. The two former black schools (school B2 and B1) had previously charged R80 and R100 respectively (schools in Quintiles 1-3 are now 'no-fee paying' schools), while the two former white schools (school A2 and A1) charged R1470 and R2200 respectively (see Table 7 below).

Table 7: School Quintiles and fees charged by the sample schools

SCHOOL	QUINTILE	SCHOOL FEES
School B2 (FBS)	3	80
School B1 (FBS)	1	100
School A2 (FWS)	5	1470
School A1 (FWS)	5	2200

The school fees charged by the sample schools, to a large extent, determined the quantity and quality of resources that they were able to mobilize. And this in turn seemed to influence the performance of both learners and teachers. In other words, the higher the school fees charged (which is an indication of the amount of resources at a school's disposal), the higher the achievement scores (see Graph 2 in Appendix F). In South Africa, school fees are determined and decided by the parents of learners through school governing bodies. School fees are thus decided upon according to affordability by parents. Fees are thus also a clear indication of parents' socio-economic 'muscle'.

[47] This is a national classification of schools according to their poverty index (also see Chapter Five, footnote 10).

Higher fees 'select' learners from higher income families equipped with more social and cultural capital. This difference in turn has some bearing on learner performance and thus also plays a role in determining learner performance disparities.

As shown in the table above and in Chapter Four, the composition of the sample schools in terms of quintiles in this study was as follows: the two former black schools were Quintiles 1 and 3, while the two former white schools were both Quintile 5 schools. The former black schools were lower quintile schools and the former white schools were higher quintile schools, hence the school fees charged. The test scores were lower for both learners and teachers in the lower socio-economic status (SES) schools (Quintiles 1 and 3) while higher in higher SES schools (Quintile 5) (see Graph 3 in Appendix f). There appears to be a correlation between the school resources or school socio-economic status and the performance of both learners and teachers in the tests.

The general school observations involved looking at the general school set-up including the availability of physical resources and educational facilities. In terms of resource availability, two different worlds emerged in the two school groups. As described in Chapter Four, former white schools had state-of-the-art school buildings, administration blocks (with heating and air-conditioning facilities), libraries and laboratories as well as 'luxuries' such as sickrooms[48], media rooms, swimming pools and gyms. Apart from ordinary school buildings, former black schools lacked important facilities such as libraries and laboratories, let alone the non-essential facilities (luxuries) available in former white schools. There were definite variations in terms of the availability of educational resources between the two school groups. Inadequate resource availability in former black schools appears to be one of the causes of learner performance disparities between the two groups.

In terms of teaching and learning aids, pictures on the walls and so on, the walls of classrooms at former white schools were colourful and full of educational material, in particular Mathematics charts. In sharp contrast, the walls of classrooms at former black schools were generally bare, with very few visual aids.

[48] Rooms with beds for learners who do not feel well to rest; while waiting for medical help or for transportation to health facilities or their homes.

Interviews with learners were another source of data on school resources. High levels of poverty and the general lack of resources in former black schools emerged as very strong factors in the various interview data sets.

The following common resource-related themes emerged from the interviews with learners, teachers, teacher union representatives and school principals: learning and teaching support materials (LTSM), home-based school support (HBSS) and language of learning and teaching (LOLT).

Learning and teaching support material: Shortage of and inadequate access to textbooks were some of the main concerns expressed by learners at the former black schools. On the other hand, learners at the former white schools had their own copies of textbooks as well as the study guides that their teachers had compiled from different Mathematics textbooks. In fact, learners in former white schools hardly used their textbooks in class although they had their own copies. They rather relied on the well-resourced study guides compiled by their teachers from different Mathematics textbooks. Undoubtedly it takes not only passion, but commitment as well for a teacher to go the extra mile to compile these guides. This is a demonstrable ability on the side of former white school teachers to mediate support material for their learners.

Textbook shortages at former black schools were exacerbated by the fact that, for whatever reason, learners at the former black schools did not have full access to available textbooks. This is a trend in poor performing schools. Even where there are sufficient books for learners, learners are not usually allowed to take textbooks home because of concerns about loss of and damage to books (USAID, 2005). This was the case at both of the former black schools in the sample. Textbooks were kept at school and learners were not allowed to take them home for studying or for homework purposes. Regarding resources in general, interviewees observed:

> [T]here are more challenges in the township schools in terms of resources…(FBS, P1, M).

> [T]here are lots of differences. They (former white schools) have lots of mathematical instruments than us. We don't have enough here, even our teachers share instruments such as compasses (FBS, L6, M).

In contrast, learners in former white schools were provided with their own study guides, and had full access to the textbooks. In fact, they were provided with a new set of study guides every school term. The following observation from an interview with a learner from a former white school about the status in former black schools indicates that two different worlds exist within the same municipality.

> They don't have the luxuries we have here – media centre, computer centre, labs, technology room, art room, netball courts and so on. They don't have best facilities like we do. They don't have enough space for classes, there are few classes. They don't have enough desks, tables, heaters and so on (FWS, L10, M**).**

According to former white school learners, they have 'luxuries'[49] such as media centre, computer centre, laboratories, technology rooms, art rooms and classy sporting facilities. Most learners in the former black schools can only dream about these kinds of facilities and resources. Data also indicated enormous disparities in terms of the availability of basic amenities such as electricity and water in learners' homes. These disparities understandably have a direct impact on their studies and performance.

Piped water, electricity and sanitation are some of the basic necessities without which life becomes untenable for residents and learners in communities. Lack of water – which translates into a lack of proper sanitation – and electricity, presents unfavourable study conditions as well as poor home-based school support (HBSS) for learners. In one way or another, these factors have a negative effect on learners' academic performance, and obviously contribute towards performance disparities between learners at former white and former black schools in the province.

Whilst none of the learners at the former white schools mentioned problems related to lack of basic amenities, some learners in former black schools discussed the unfavourable home conditions under which they had to do their school work. For example, a learner said:

> Some of us do not have basic necessities such as electricity, water and so on. And these affect some of us in such a way that we are not able to do

[49] The word literally means opulence or extravagance, which in this context simply shows that former white schools have educational resources in abundance, i.e. they have more than enough.

> our homework, and for that reason, we end up doing our homework in class (FBS, L4, M).

In summary, data showed huge disparities in relation to post-1994 resource distribution in public schools. These included disparities in relation to basic educational necessities such as textbooks, one of the most important forms of learning and teaching support material. While former black schools did not have enough textbooks and mathematical instruments or equipment, former white schools had enough textbooks and mathematical equipments, (as well as study guides compiled from different textbooks by their teachers and paid for by their schools). Carnoy speaks of 'the wise use of resources' that he argues:

> …will demand school managers who understand the elements of good instruction and who are not drawn off by pressures to spend money on show rather than substance (Carnoy, 2008:21).

It is really surprising that former black schools continue to struggle to get sufficient textbooks, fifteen years into democracy in the South African education system. This is the situation despite the fact that the Department of Education continues to invest hugely in LTSM. The Gauteng Department of Education, for instance, continues to spend huge sums of money on resources that are allocated on a pro-poor[50] basis in an attempt to reduce resource inequalities amongst public schools. In the past four years I (between 2004 and 2008), the Gauteng Department of Education spent over a billion Rand on learning and teaching material alone (Motshekga, 2008).

The role played by educational resources in general and learning and teaching support material in particular, in influencing the quality of teaching and learning cannot be understated. In fact, there is a growing body of literature and empirical evidence which shows that there is indeed a correlation between the quality and condition of school facilities and learner achievement (see Uline and Tschannen-Moran, 2008; Earthman, 2004; Higgins et al, 2005; Schneider, 2002; Bullock, 2007).

Looking internationally, Cuba's academic advantage over many countries is, for instance, attributed, amongst other factors, to its better physical classroom conditions

[50] This type of resource redistribution channels more resources to the poorest schools, which is aimed at redressing the inequalities and imbalances of the past.

and the fact that schools have more teaching and learning material than many other countries. (Carnoy, 2007a). But I think the issue of academic advantage goes beyond the mere availability of school materials. As Carnoy (2008) correctly points out, it is the wise use of resources, rather than simply having resources, that makes a difference. This observation raises questions about the ability of teachers at former black schools to make effective use of the few resources available in their schools. Obviously, the effective use of even limited available resources can make a difference to teaching and learning and in turn, to learner performance.

The support provided by schools themselves in the form of safe learning environment, managerial support, guidance and counseling support, motivational support, material support (resources) and so on, also appear to have an impact on learner performance. It would really be unreasonable for an uncaring, poorly managed and unsupportive school to expect good learner achievement. Equally, it would be unreasonable for a school system with huge school support disparities to expect equity in terms of learner achievement.

What the data showed in terms of school support was on that former white schools appear to continue to provide better school support services to their learners than former black schools. The data showed that there is more control over teaching and learning processes in former white schools than in former backs schools. Data also showed that learners in former white schools are safer in their schools than learners in former black schools. This observation is corroborated by data collected through the use of the general school observation schedule on the issue of security facilities available at the two groups of schools.

On the discipline front, data generated from learner interviews indicated that the level of discipline amongst former white school learners was better when compared to their counterparts at former black schools. Learners at former white schools attributed the good discipline largely to the fact that the schools summon their parents to schools or give ‘detention’ “if we do something wrong such as not going back to class after breaks”, as attested by a learner in one of the focus group interviews. Data also suggested that there were better forms of motivation and counseling services provided to learners at the former white schools. For example, in one of the group interviews a learner said:

> [T]eachers here (former white schools) are motivating their learners, encouraging their learners… in township schools they don't care about you. If you fail, you fail (FWS, L3, F).

There was no mention of these forms of support by any learners at former black schools in the interviews. This omission suggests that in the former black schools, this kind of support could be minimal or non-existent. According to interview data, the former white schools had sufficient financial resources to appoint counselors and invite private motivational speakers to the schools. This was a sign of a high level of teacher agency amongst teachers attached to former white schools. The same could not be said of the former black schools which were still struggling with basic learning and teaching support material such as textbooks.

Home-based school support: According to a number of studies conducted on the issue (Abouchaar, 2003; Melhuish et al, 2001; Sylva et al, 1999), parental support or involvement (seen in some circles as reflecting parental interest in the education of their children) influences learners' achievement and cognitive development. According to Abouchaar (2003), the main idea behind parental involvement in the education of their children should be to provide a 'home learning environment' (HLE). This idea is similar to what I term 'home-based school support' (HBSS). However, there are differences in terms of the scale and level at which parents get involved in their children's education. The level of parental involvement can be affected by the socio-economic status of parents, parents' relationship with teachers, parents' level of education, and the degree of interest parents have in the education of children.

According to data on learners' perceptions and experiences, parental support available to learners at former white and former black schools in the study varied. Certainly former white school learners appeared to have more parental support than former black school learners. In addition to parental support, some former white school learners indicated that they also had private tutors organized by their parents. Some learners at former white schools also indicated that they had cognitive resources such as computerized mathematical programmes that contributed towards developing their Mathematical knowledge. Learners coming from low-income families or from socio-economic conditions characterized by poverty, unemployment, poor education levels, inadequate facilities, child-headed families (largely as a result of HIV/AIDS) and poor service

delivery, can only dream about this form of help. Most of the learners in this study attending the former black schools came from this kind of environment.

What emerged strongly from the interviews with learners was that, apart from former black school learners having insufficient parental support with their schoolwork, circumstances also dictated that they take care of their younger siblings either because parents were dead or because they were absent owing to work commitments. It was clear that the learners from poor home backgrounds, the majority of whom were attached to former black schools, had weak social capital structures compared to their counterparts in former white schools. This is reflected in the response of one of the learners interviewed from a former black school:

> When I get home from school, I must go fetch water, clean the house and look after my siblings, which make me do my homework late at night (FBS, L1, F).

The main reasons given for lack of proper parental support amongst learners at former black schools were: working parents who work late; deaths of parents largely as a result of HIV/AIDS; and uneducated or poorly educated parents. The fact that some learners had to walk for some distance to fetch water, do house chores, and take care of their siblings, compounds the situation. The school support system in former black schools is not as effective as it should be. The situation appears to be the result of school managers' inability to supervise teachers' work, teachers' poor work ethics, the high levels of militancy and resistance to supervision amongst unionized teachers, inadequate LTSM and proper educational facilities, high levels of ill-discipline amongst learners, and lack of services such as counseling and motivational talks. This situation contributes to extant disparities between the two former types of schools.

By comparison, the support for former white school learners seemed to be well-organized. What emerged is that former white schools, apart from quality educational facilities and enough LTSM, had well-functioning school support systems, which included good management, professional work ethics amongst teachers, good disciplinary levels amongst learners, and support services such as counseling and motivational talks. This was, unfortunately, not the case in former black schools.

Language of teaching and learning: The use of English as a language of teaching and learning in most non-English school communities in South Africa, has been of a great concern and is a bone of contention in the education sector. Some scholars have been arguing for some time now that, as long as black learners are subjected to English as a medium of instruction, it will always be difficult for them to compete on a fair basis with their white counterparts whose medium of instruction is their first language (either English or Afrikaans). In this study, the language of teaching and learning (English) proved to be a serious challenge to learners in both former white and former black schools. A teacher interviewee from a former white school said:

> Language is the barrier in most of the interactions that we engage in with learners such as explaining mathematical concepts in understandable language that is accessible to the learners. I find myself using a language that is beyond learners' understanding and that tends to be a barrier to learners' understanding. Sometimes I find that it is English itself that is a barrier to Maths language. Maths has got its own jargon as we know, but we have to use English as a medium of instruction and most of our learners are struggling with English as a medium of Instruction (FWS, T1, M).

Similar sentiments also emerged from one interviewed teacher attached to a former black school:

> Language, language is the most serious challenge. Like most learners, two different languages. So you have to include the home language somewhere, to them the home language and the language of teaching and learning are trying to explain some of the things (FBS, T2, M).

In spite of the fact that both sets of schools shared this dilemma, the situation at former white schools – where there were still a considerable number of white English mother-tongue teachers – was far better than it was at the former black schools. This was evident, for instance, in the way learners at former white schools were able to actively participate during lessons and engage with their teachers by raising good questions. In short, when it comes to knowledge of English, learners at former white schools appeared to be better off than their counterparts at former black schools. This difference provides another explanation as to why former white schools continued to do better than former black schools.

All interviewed stakeholders in this study, learners included (see Chapter Eight), generally agreed that the language of teaching and learning (English) was an added

disadvantage for learners for whom English is not a first language. Data from interviews with school principals point to the same findings. The issue of the language of teaching and learning used for Mathematics was also mentioned by teacher union representatives as being one of the main challenges schools (former black schools in particular) were facing in the learning and teaching of Mathematics.

> [T]hese kids start English in Grade 1, but you won't believe when I say in Grade 6 they still don't understand some of the instructions. You still…see some of them getting things wrong because they did not understand what was required. A language is a big barrier…(FWS, TUR1, F).

There was greater emphasis, from teacher union representatives, about language being a barrier to learners understanding of Mathematics, especially those hailing from lower SES backgrounds. Teacher union representatives attached to former black schools were very vocal in raising their concern about the difficulties related to the language of learning and teaching of Mathematics.

Some section of the society including parents, feel that the use of mother tongue for teaching and learning will limit their children's opportunity to assimilate into the global world. However, the question of the most effective language-in-education policy is a hotly contested one in South Africa. Undeniably, the language issue is one of the many factors that contribute to persistent learner performance disparities. If Afrikaans learners, for instance, have access to Afrikaans-speaking teachers and can learn in their own language up to tertiary level, surely, this right should be extended to other language groups. Essentially, comparing the performance of learners across schools while disregarding the critical factor of language of teaching and learning defeats the fairness of the comparison.

It is very clear from the post-1994 school resource distribution described in this section that the basis of reproduction of inequalities institutionalized along racial lines has shifted from race to class. In other words, educational inequalities today manifest themselves along class rather than racial lines, as was the case during the apartheid era. It is on this basis that I argue that there are still huge inequalities in the teaching and learning processes at former white and former black schools. These inequalities do indeed

translate into disparities in learner performance between former white and former black schools.

6.4. Emerging themes

A number of themes emerged from the analysis and interpretation of the data sets discussed above. These included:

Passion for teaching Mathematics

Interview data shows indicators of teacher quality to be limited not only to subject matter (content) knowledge and pedagogical content knowledge. The passion for teaching – in this case Mathematics – emerges as one very important indicator of teacher quality. The ability to go the extra mile in teaching Mathematics appeared to differentiate quality teachers from the rest. Former white schoolteachers, according to the interview data, show a great deal of passion for Mathematics in comparison to their former black school counterparts.

> Look, honestly speaking I enjoy teaching Maths. I have been teaching it since 1997. So it has been my main learning area. Basically that's the reason, I am enjoying it up to this point (FWS, T1, M).

> Yes, I do (enjoy teaching Maths). I think because I am passionate about my learning area and I love teaching Maths (FWS, F).

The school principal interview data clearly suggests that Mathematics teachers at former white schools possess superior content and pedagogical content knowledge. This trend is also demonstrated through learners' achievement scores as reflected in national and international learner achievement tests such as TIMSS 2003 and SACMEQII. The same trend was also demonstrated by teachers' classroom practice. Teachers at the former white schools also appeared to have a clearer understanding of how the systems in their schools worked, as is reflected in the words of one of the interviewed school principals:

> The teacher who is teaching Grade 6 Mathematics, is a teacher that has been associated with this school for many years. In fact she did her teacher training practice with us. So she is quite aware of the systems in place, etcetera. She has a lot of experience, a lot of exposure, she's qualified for the job, no problem (FBS, P2, F).

What is also apparent from the principal interview data is the fact that Mathematics teachers (at the former white schools) seem to have the ability to top up their content and pedagogical content knowledge with passion for teaching the subject. In as far as the issue of passion for teaching Mathematics is concerned, school principals attached to former black schools also appear to share the view that passion is an important motivator:

> It must come from inside the person. The bottom line is that, any educator, not just a Mathematics educator, needs to be dedicated to his or her subject… it just comes from the person…not the colour of the skin. They need to be dedicated, motivated and love the job that they are doing (FBS, P1, M).

One interviewed school principal attached to a former white school described her Grade 6 Mathematics teacher as "a teacher who goes an extra mile in mathematics" (FWS, P2, F).

The data appear to show two types of teachers in the teaching profession: the first type comprised those teachers who have been trained and simply work as teachers in schools. Despite their training and the exposure to teaching, they have not developed any identity with the profession – they have not 'become teachers', and thus do not execute their duties with passion. The second type comprises those teachers who have been trained as teachers and have identified strongly with the profession of teaching. In other words, they have 'become teachers' and thus executed their duties with passion (see Cross et al, forthcoming).

Whereas teachers at former white schools generally display a sense of passion for teaching Mathematics, teachers at former black schools, display what appears to be a 'reserved or handicapped' passion. Their love and passion for Mathematics teaching is somewhat frustrated by the challenges and the unfavourable learning conditions faced by their learners. For example, learners who still have to use candles and paraffin lamps for studying at home, learners in overcrowded classes, and learners hailing from child-headed families. Learners' learning environments tended to impact negatively on the way learners do their homework, and overall, on the way they performed in Mathematics.

The issue of the importance of passion for teaching Mathematics emerges very strongly from the interview data sets. This finding supports my argument that content and pedagogical content knowledge are not the only qualities that describe teacher quality. Passion for something breeds dedication, motivation and commitment to it. This applies to passion for teaching Mathematics as well. It does not matter how high the levels of content and pedagogical content knowledge amongst teachers are, if such teachers do not have a passion for teaching, the chances of them delivering quality teaching are very unlikely. It takes passion for qualified and experienced Mathematics teachers to be innovative and constructive in their teaching practice.

Consistency and continuity

It is very important for teaching and learning to have a sense of consistency and continuity. Consistency and continuity assists teachers in making appropriate and relevant interventions and follow-ups. A teacher who works with the same learners for a long period of time has a better chance of getting to know his/her learners better, especially in terms of their weaknesses and strengths. This knowledge guides him/her in how best to deal with each and every individual learner. At some former white schools, the system of progression from one grade to the other is organized in such a way that generally, a teacher 'progresses' to the next grade together with his/her learners.

At former black schools, interview data paints a different picture. It appeared that chopping and changing of teachers on annual basis is the order of the day. This is depicted by the frustrations of one interviewed teacher, who said:

> I think it is because of the foundation which they had for Mathematics. There is a new teacher in every grade now and then. For Grade 4 they were taught by somebody else, Grade 6 somebody else, there is no continuity. You see them for that one year, and as you get to know them better, as to who's weak, who's good, end of the year they have to go (FBS, T2, M).

Teaching OBE-centred Mathematics

All interviewed teachers mentioned that they were comfortable teaching OBE-centred Mathematics. This is contrary to the generally held view that OBE is a problem for teachers in South Africa. Both former white schoolteachers interviewed mentioned that they were comfortable teaching OBE-centred mathematics. Comments included: "I

understand the principles behind OBE" (FWS, T1, M) and "I enjoy the fact that some of the things are very practical" (FBS, T1, F).

None of the interviewed teachers seemed to have any problem or negative attitudes towards the OBE policy, despite the fact that the generally poor teaching and learning outcomes paint a totally different picture. However, the introduction of OBE and the National Curriculum Statement (NCS) appeared to have made the 'old' subject matter knowledge acquired during the apartheid era 'irrelevant'. In specific terms, the diversion of teacher focus from the basics (reading, counting and writing) by, amongst other things, too much unnecessary paper work, designing learner materials themselves, and expecting training workshops to close the gap between the old apartheid syllabus and the new curriculum, has not 'improved' education. This has ultimately led to the 2009 National Curriculum Review report (see Department of Education, 2009). The essence of this report is the need to reduce teacher workload and go back to the teaching and learning of the basics of education.

School culture

The culture of a school can be enabling or a stumbling block to teaching and learning. As discussed earlier, Jansen (2008) writing in The Times argues that when schools admit learners, they don't just admit learners, but they also admit 'cultures'[51] In other words, when learners are admitted to a school, they come with different cultural attitudes and behaviours, either from their homes or from their previous schools. This applies to the massive influx of black learners into former white public schools seen since 1994. Jansen (2008) argues that most of these former white schools attract black learners from severely dysfunctional township schools. And unfortunately, these learners can bring along to their new schools, a dysfunctional culture of teaching and learning. In other words, cultures or sub-cultures associated with dysfunctional schools, when transferred to functional schools carry with them negative influences for those schools; and which, in a worst case scenario may as a result compromise positive practices.

[51] Jonathan Jansen defines the educational context in which he uses the word 'culture' as meaning learners' attitudes towards learning and authority (The Times, 13 November 2008).

The consequence of admitting learners from township schools (most of which are known to be dysfunctional) in big numbers to formerly all-white schools is that the culture of teaching and learning in some formerly all-white schools has come under threat. However, according to my interview data, the culture of teaching and learning appeared to be intact in the sample of former white schools. It is a difference in school culture that appeared to make the difference between the two sets of schools in the study. As Jansen argues, both teachers and learners in former white schools seem to have "a common cultural understanding of education and a resolute work ethic that keeps the school functional" (Jansen, 2008:7*)*.

Some teacher union representatives interviewed had the following to say about why the culture of teaching and learning remains intact in former white schools:

> It may be the attitude of white teachers. They are more committed than black teachers. They are used to doing things in a certain way. They (black teachers) still need to adapt to that (FWS, TUR2, M).
>
> Well, I think it is the attitude. I think learners in white schools have better attitude towards Mathematics than our learners (FBS, TUR4, M).

What emerges from interview data is that former white schools could be facing the threat of destruction of their school culture by admitting black learners from dysfunctional schools. At most former black schools, the continuing dysfunctional culture seemed to be a serious threat to the project of improving learner performance in those schools. Too much damage seems to have been done to the culture of teaching and learning in the late 1980s and early 1990s when schools were made ungovernable. It is the dysfunctional culture at former black schools that seems to influence the perpetuation of learner performance disparities (see Jansen, 2008). It is for reasons such as this that I argue in this study that our education system is still riddled with huge inequalities, hence persistent learner performance disparities between former white and former black schools.

6.5. Emerging trends

Several themes emerged out of the analysis of lesson observation and interview data sets. These themes, in turn, gave rise to trends that appear to explain the persistent learner performance disparities between former white and former black schools.

One trend is the persistent disparity in teacher quality between former white and former black schools in Gauteng Province. There appears to be an unequal distribution of teacher content and pedagogical content knowledge between former white and former black schools. Teachers' CK and PCK seemed to be higher amongst Mathematics teachers at former white schools (middle-income or higher quintile schools) than amongst their counterparts at former black schools. This difference is largely because former white schools continue to attract and retain better qualified teachers. Data generated from the test scores also seems to confirm lower levels of both content and pedagogical content knowledge amongst learners and teachers at former black schools compared to their counterparts at former white schools.

There seems to be a correlation between learner performance or test scores and teacher qualification. Learners taught by more highly qualified teachers (at former white schools), performed better in the Mathematics test than their counterparts at former black schools. The type of institutions of initial teacher training that teachers' attended also seemed to impact on the level of both teacher content and pedagogical content knowledge. Teachers who qualified from universities (and held degrees) seemed to have higher levels of both CK and PCK than those who had qualified from colleges of education.

Teachers in former black schools spend much of their lesson time circulating around the classrooms or checking learners' work rather than doing actual teaching when compared to their counterparts in former white school classes. This means that there are reduced opportunities for curriculum coverage, and in turn, reduced OTL provided for learners at former black schools than that provided at former white schools.

Another trend that emerges from the data is a more teacher-centred approach in former black schools, and a general lack of group work across all the sample schools, despite the call by the OBE curriculum for teaching and learning to be learner-centred. This lack

of group work appeared to be more prevalent in former black schools than in former white schools where there is serious engagement and debate amongst learners, though not well-organized into appropriate group discussions.

There were also higher levels or incidences of ill-discipline and disturbances, especially noise, observed during lessons at former black schools than was the case at former white schools. Poor management of 'transition'[52] during lessons also seemed to compound the situation in classrooms at former black schools. This poor management impacted on their chances to learning more and do more in terms of curriculum coverage.

The unequal distribution and use of learning and teaching support material is another trend highlighted by the data. Despite pro-poor school funding policies, former white schools continue to enjoy better school resources. While some former white schools display state-of-the-art facilities and 'luxuries', some former black schools are still in desperate need of basic educational resources. There were also variations in the use of LTSM. For instance, learners at former black schools, for whatever reason, do not have full access to, or make full use of their Mathematics textbooks. Mathematics textbooks are kept and used at school only, which obviously impacted on learners' homework opportunities and Mathematics practice after school hours.

Variations also emerge around issues of training workshops for teachers. While attendance at departmental training workshops is relatively similar across all the sample schools, former white schools, because of their financial resources, also organized their own additional training workshops at school level. There is no doubt that this is one of the reasons why their CK and PCK levels were higher. Despite a number of challenges – including admitting working class black learners from dysfunctional schools – former white schools seemed to operate within a good school culture, and have a well-established culture of teaching and learning and work ethics amongst their teachers and learners than former black schools.

[52] This is where learners suddenly and temporarily change their focus from one activity to another. This can be time wasting; for instance, taking out workbooks, cleaning the board, etc.

Schools with higher socio-economic conditions, most of which were former white schools, seemed to perform better than those with lower socio-economic conditions, most of which were former black schools. Again, both CK and PCK seemed to be higher in schools with higher socio-economic conditions and lower at schools with lower socio-economic conditions.

It also emerges very clearly from the data analyzed that the language of teaching and learning of Mathematics indeed impacts on and determines learner performance (see Fleisch, 2008). Competence levels in the language of teaching and learning also has an influence on learner performance disparities between the two school groups. Learners at former white schools, where white teachers still dominated management and staff composition, seem to be more competent or to have a better proficiency in the language of teaching and learning (English) than their counterparts in former black schools.

6.6. Conclusion

What emerges very clearly is that there has been a paradigm shift in terms of the focus and emphasis of the Department of Education. The emphasis on external inputs and processes (resources, etc.) seems to have shifted to classroom practice as the heart of learner performance of which teacher quality occupies centre stage. Closing the gap in learner achievement has increasingly become a focus for many countries. However, what is also clear is that closing the achievement gap is not possible unless the gap in teacher quality is closed. There is general consensus in the education sector that teacher quality has to form an integral part of any attempts aimed at achieving this goal. In other words, the level of teacher quality, to a large extent, determines the performance of learners in a particular school, as has emerged from the data analyzed for this chapter.

This chapter sought to investigate whether teacher quality differs between former white and former black schools and whether this contributes to learner performance disparities between the two school groups. What emerges very strongly is that there are indeed differences in terms of teacher quality between the former white and former black schools that form the sample for this study. Persistent disparities in terms of the

distribution of teacher quality across schools seem to be the main explanation of the differences between the two sets of schools.

Variation in the levels of content and pedagogical content knowledge amongst teachers emerges as the main factor that accounts for teacher quality differences. However, teacher identity[53], which breeds passion for teaching, emerged as one of the most crucial driving forces in influencing teacher quality and in particular, teacher CK and PCK. What this suggests is that without teachers being able to identify with the teaching profession – which enables them to develop their passion for teaching – their chances to produce quality education and learner performance in particular, could be compromised. In other words, it is teachers who identify themselves with the teaching profession who are able to make a meaningful contribution in improving learner performance.

It does not seem to depend on whether schools have good resources or not, or whether they have highly qualified teachers or not. In fact, having a teacher certificate on its own is just not enough. What is crucial is for teachers to identify with the profession and 'become teachers'. It is only when this happens that they will execute their duties with love and passion, and make the best of the resources they have. It is this passion that will propel them to be more creative, supportive and to improvise even in resource short school conditions.

That there are still massive challenges that the education system needs to deal with in order to achieve the goal of teacher quality for all schools in Gauteng and the country at large, cannot be denied. And these include challenges such as the equal redistribution of educational resources across all schools; massive educative and sustainable training workshops for teachers; rebuilding the culture of teaching and the work ethics amongst all teachers; improving the proficiency and competency of learners in the language of teaching and learning; and ensuring access and optimal use of learning and teaching support material across all schools in the system. Most importantly, teachers at former black schools also have to develop a sense of teacher agency in terms of initiating their own training workshops and mobilizing educational resources rather than to wait for the

[53] The ability of teachers to identify themselves as true professional teachers with passion, as opposed to just working as teachers (without the passion).

state to provide everything for them. If former white schools can do it, there is no reason why former black schools cannot do it. It is by addressing challenges such as these that variation in teacher quality and the learner achievement gap between low- and middle-income schools can be addressed.

CHAPTER SEVEN
TEACHER SUPERVISION AND EVALUATION

7.1. Introduction

The purpose of this chapter is to provide an account of the dimension of the research that relates to issues of teacher supervision and evaluation and how they impact on learner performance. For Carnoy (2007) teacher supervision and evaluation is one of the main factors that contribute to exceptional academic performance by Cuban learners. This chapter investigates the level and nature of disparities between teacher supervision and evaluation in former white and former black schools in the Gauteng Province, and it also examines how such disparities impact on learner performance in the two sets of schools. In particular, the chapter seeks to investigate the availability, the execution (administration) and sustainability of teacher supervision and evaluation in both former white and former black schools, and to determine how these account for academic learner performance disparities in Mathematics.

The other side of the coin is teacher accountability, and this is vital in these matters. In Cuba, for instance, the state is hands-on in terms of ensuring that teachers are accountable –one of the main reasons the Cuban education system functions better than many systems in the world. Thus another objective of this chapter is to focus on the extent of disparities in teacher accountability between the former white and the former black schools and the effect these differences have on learner performance.

The main question which this chapter asks is: Does teacher supervision and evaluation differ and significantly contribute to disparities in learner performance between former white and former black schools? What I argue in the chapter is that the level of teacher development and accountability amongst unionized teachers at former black schools is poor and unfortunate. The sources from which the chapter draws its data are school principals, site stewards or union representatives and unionized teachers in their capacity as individuals.

The rest of the chapter is structured as follows: Section two provides an explanation of the notion of teacher supervision and evaluation. Sections three and four provide an

account of teacher supervision and evaluation during the apartheid era and during the post-apartheid era respectively. Section five discusses the theoretical location of the chapter. Section six discusses debates around the focus of the South African version of teacher evaluation. Section seven presents information on the status of teacher supervision and evaluation in schools. Section eight analyses patterns emerging from data presented in this chapter. Section nine provides concluding remarks for the chapter.

7.2. Making sense of the notion of teacher supervision and evaluation

As mentioned in chapter Two, during the apartheid education era, teacher supervision and evaluation in South Africa was generally referred to as 'inspection'. The International Institute of Educational Planning (UNESCO) (2007:4) defines supervision as a system that combines three roles: control, support and liaison within two dimensions, namely; pedagogical and administrative. Sullivan and Glanz define supervision as the process of engaging teachers in instructional dialogue for the purpose of improving teaching and increasing student achievement (Sullivan and Glanz, 2005:27). Bernard and Goodyear, on the other hand, choose to define it as an intervention provided by a more senior member to a more junior member or members of that same profession (Bernard and Goodyear, 2004:8). According to Kilminster et. al. (2007), educational supervision is the provision of guidance and feedback on matters of personal, professional and educational development in the context of a trainee's experience taking place (Kilminster et. al. (2007:2).

Evaluation, on the other hand, is defined as collecting and using information to judge (Darling-Hammond et al, 1983:290). What one reads in the literature is that supervision and evaluation is an intervention into the working activities of an employee in order to assess their efficacy. The intervention should inform the nature of the performance improvement strategy that is needed.

In recent years there has been a remarkable shift from a bureaucratic inspectional form of supervision and evaluation towards a more democratic and participatory one. Teacher evaluation, according to Wise et al (1984), should serve four basic purposes: individual staff development; school improvement; individual performance decisions; and school status decisions (Wise et al, 1984:1). For purposes of accountability, teacher evaluation

processes must be capable of yielding fair objectives, and standardized and externally defensible information about teacher performance.

In South Africa, contestations and arguments in the education sector, especially amongst teacher unions, revolve around the need for a more developmental and participatory kind of supervision and evaluation, as opposed to the apartheid-kind of inspection. A tug of war between teacher unions and the Department of Education around the implementation of teacher supervision and evaluation has been going on for sometime now. This battle is discussed in more details later in this chapter. It is because of contestations of this nature that Sullivan and Glanz, claim that teacher supervision and evaluation looks set to remain of foremost concern for both supervisors and educators well into the 21st century (Sullivan and Glanz, 2004:27).

7.3. Teacher supervision and evaluation during the apartheid era

The apartheid system of teacher supervision and evaluation was of a divisive nature. A differentiated system of inspection, control and appraisal existed in which inspection was characterized by bureaucratic control in black schools and a light advisory function in white schools (see HSRC, 2005). The system was used to control teachers in black schools and to punish those who failed to comply with the apartheid education rules. It was punitive and vindictive rather than being supportive and developmental (see Wits EPU, 2005). Punitive measures used by this system included transferring defiant teachers to remote rural areas, constant harassment of defiant teachers and in some instances, dismissal (Wits EPU, 2005). So the system was not only uneven, unequal and unmanageable, but it was also conducted along racial lines (See Mokgalane et al, 1997 cited in Jansen, 2004:2). Jansen (2004) further describes inspection as coordinated control and regulation for white teachers, on the one hand, and benign neglect and paternalism for black teachers, on the other hand.

Between 1955 and 1979, the task of inspection in black schools was carried out by school boards. These boards were selected and appointed by the apartheid government. School boards were later replaced by an inspectorate comprised of white-only officials. Their main task was to ensure compliance with the prescripts of apartheid policy at black schools and amongst black teachers in particular. In 1981, the first black circuit inspector

was appointed, but he had to work under the supervision of a white circuit inspector (see Jansen, 2004; Chisholm, 2004).

The system of supervision and evaluation was not uniformly implemented in the various departments of education and across schools. White schools were better resourced materially and in terms of more highly qualified inspectors, whose main role was mainly to assist white schools and teachers in carrying out their functions. Black schools and African schools in particular, were subjected to an autocratic regime of inspection (See HSRC, 2005).

Central to the apartheid inspection system was a panel inspection. A group of inspectors would descend on a particular school to conduct whole-school inspection. The goal was to monitor and enforce compliance with the apartheid system's educational policies. The African National Congress described this type of teacher supervision (inspection) as:

> …largely inspectoral and bureaucratic; summative rather than formative; a top-down, closed, hierarchical with authoritarian character; and focusing on compliance with departmental regulations rather than engaging teachers about their work (African National Congress, 1994:32).

The South African Democratic Teachers Union (SADTU)[54] criticized the apartheid supervision system for its political bias. Other factors included victimization of teachers; the unchecked power and abuse of patronage wielded by inspectors; incompetence; difficulty in challenging the inspectorate's assessment; once-off visits; secrecy; irrelevant evaluation criteria; absence of contextual factors and arbitrariness in the appraisal processes; and abuse of merit awards (ANC, 1994:32). According to the ANC, the system lacked legitimacy and professional respect, not only for teachers, but for others in the education system as well (ANC, 1994:32). As a result, the autocratic nature of the apartheid inspection system bred antagonism towards school inspectors and education officials in general amongst black teachers, especially after the 1976 Soweto student uprisings.

[54] SADTU is the biggest teacher union in South Africa, with a membership of not less than 230 000 teachers.

Resistance to and the eventual collapse of the apartheid system, coupled with the political changes of the early 1990s, fueled the levels of discontent and antagonism against inspection and education officials. Levels of resistance and resentment reached unprecedented heights in the early 1990s. This situation culminated in a widespread resistance towards all educational officials, a complete rejection of the inspection system, and the barring of inspectors and advisors from entering school premises. Ultimately, the inspection system in black, coloured and Indian schools collapsed, but particularly in African schools. There was a void created in the place of a teacher supervision and evaluation system. This void has since proved very difficult to fill, even now in the post-apartheid era.

Essentially unions and teachers tended to classify anything that vaguely appeared to take the form of supervision and evaluation under the umbrella of 'autocratic inspection'. Whilst I do not condone the undemocratic approach of education officials tasked with inspection under the old order, there is no disputing the fact that proper inspection of teaching and learning ensures that teachers' developmental needs are identified, and they are assisted to become responsible and accountable for their teaching activities. Ultimately, the collapse of inspection in South African black schools in the early 1990s led to the total collapse of a sense of responsibility and accountability amongst black teachers in general, and amongst unionized teachers in particular.

7.4. Teacher supervision and evaluation in the Post-apartheid era

The 1994 collapse of the apartheid regime in South Africa hammered the last nail in the coffin of any form of autocratic, judgmental and summative teacher inspection system. In particular, South African Democratic Teachers' Union (SADTU) was opposed to any system which aimed at 'disciplining and victimizing teachers' (see SADTU website, 2001). Education transformation was one of the top priorities on the ANC's agenda when it took over power from the Nationalist Party. Overhauling the inspection system was an important component of transformation.

Amongst other education policy proposals, the ANC wanted teachers and their organizations (unions and associations) to be involved in the process of developing a new system of teacher assessment, evaluation, management and support (see ANC,

1994). The proposal was for a new system that would encourage peer assessment and collegial co-operation in performance review and professional development processes. The aim was to facilitate the devolution of appraisal functions to local and institutional levels and to schools. The idea was that this would lead to the introduction of a 'whole school review' rather than the contextual appraisal of individual teachers. The system was also to emphasize formative evaluation rather than summative evaluation, with the focus on identifying and overcoming shortcomings (see ANC, 1994).

After the political upheavals and school unrest that characterized the early 1990s, the newly formed South African Democratic Teachers' Union mobilized and led a participatory process of discussions towards the development of a new teacher appraisal system, within the prescriptions of the ANC Education Policy. The newly formed Education Labour Relations Council (ELRC) became a neutral platform where both educational authorities and teacher unions met to debate, discuss and take resolutions on educational matters. Intense debates over the best way to evaluate teachers took place within the ELRC, mostly characterized by many years of contestations and disagreements (see HSRC, 2005).

The teacher appraisal system born out of this process was the Developmental Appraisal System (DAS). This system was based on the philosophy of support and development for teachers. As a result of its consultative approach and developmental nature, DAS initially enjoyed massive support amongst teachers because they saw it as aiming at developing teachers rather than victimizing them; but the instrument was not successfully implemented. Whole School Evaluation (WSE) was also introduced. WSE emphasized the need to look at the system as a whole as opposed to individuals within the system. The teacher unions, particularly SADTU, rejected WSE.

Some of the reasons given by SADTU for the rejection of WSE were that: WSE had massive overlaps with DAS; the instrument had the possibility of 'old style' intrusive 'inspection' (SADTU, 2000); and the policy was more punitive than supportive and developmental. WSE was suspected of being "nothing more than the Trojan horse of accountability infringing on and eroding the autonomy of the teaching profession" (Jansen, 2004:57). The system was seen in some circles as another version of a bureaucratic control mechanism (see Jansen, 2004).

Another instrument that was introduced as per Resolution no. 1 of 2003 was the Performance Measurement System (PMS). PMS aimed at evaluating teachers for salary progression, grade progression, affirmation of appointments, and rewards and/or incentives. One of the main criticisms, according to Gardiner (2003) was that, the instrument was based on managerialism that did not acknowledge the ability of teachers to forge their own development paths. Like the other two instruments, PMS was also not successfully implemented, largely because of resistance by teacher unions, SADTU in particular.

The next instrument aimed at reviving teacher supervision and evaluation in South Africa was the Integrated Quality Management System (IQMS) (Resolution 8 of 2003). IQMS was an integration of DAS, WSE and PMS; once again this instrument was rejected by teacher unions, particularly SADTU. SADTU's main arguments for rejecting the IQMS were that: there was no development or training of teachers going on; the success of IQMS was undermined by the lack of support and commitment from the provincial departments of education; the IQMS sounded good on paper but was very problematic in its implementation – it was confusing and too technical. SADTU also warned: "if teachers are not taken on board in these processes, it will not succeed" (SADTU website, 2001).

Some of the most severe criticisms of the IQMS came from Gardiner (2003). Gardiner critiqued the instrument for privileging managerial priorities at the expense of the needs of teachers and for bringing together three instruments that were morally and philosophically different. Gardiner questioned the practicality of the instrument's objectives that included identifying appraisal needs, providing support, rating the performance of teachers, and evaluating the entire system of education. Gardiner drew the conclusion that the instrument was a tool to control teachers, but was sugar-coated to make it palatable.

Another complaint about IQMS was that it was ahead of teachers. The instrument was viewed as assuming that teachers had reached a high degree of professionalism through which they could be assessed. It was largely for this reason that teacher unions challenged it (see SADTU website, 2001). As a result, IQMS suffered the same fate as the other teacher appraisal systems discussed above.

In 2009, the Department of Education and teacher unions reached an agreement on the introduction and implementation of the latest teacher appraisal instrument, Occupational Specific Dispensation (OSD). However, the critical part will be the actual implementation of the new instrument. Whilst the Department develops one teacher appraisal instrument after another, teacher unions seem to be sticking to a strategy of resistance. The outcome is that, since the collapse of the apartheid inspection system in the early 1990s and more than 15 years into democracy in South Africa, there has not been any effective monitoring and evaluation of teachers, especially in African schools. What this has meant is that, after 15 years of democracy, our system of teacher supervision and evaluation is still undergoing a process of recontextualization, it is still being negotiated. More than a decade and half after the advent of democracy in South Africa, the system of teacher supervision and evaluation is still non-existent at former black schools.

7.5. Theoretical Underpinnings

The theoretical thinking that informs this chapter draws on the work of Monyatsi et al (2006), which deals closely with the issue of teacher supervision and evaluation. According to Monyatsi et al (2006), there are two approaches or models – professional and accountability models – that are generally used for employee or staff supervision and evaluation. However, Monyatsi (2003) uses these models specifically for teacher appraisal.

The professional model operates as a two-way process between the appraiser and the appraisee, within an atmosphere of trust and confidentiality. This model emphasizes negotiation in its operation, with the belief that teachers naturally wish to improve their performance in order to improve quality. What is good about this model is that, it is very supportive of both teaching and managerial development; and it ensures full participation and contribution by teachers in appraisal processes such as instrument development, procedures to be followed, as well as in initiating innovative ideas. In this model, teachers are involved in almost all processes, so that they feel part of the whole process and have a sense of ownership. The model promotes reflective practice amongst teachers, thereby cultivating a culture of continuous self-assessment in the quest to improve performance. This model promotes a democratic and inclusive type of appraisal.

The accountability model on the other hand, sounds to me to be more of a bureaucratic model. Its key characteristics include traditional approaches to employee appraisal. The model is more judgmental in nature. It tends to check on teachers' competencies without any development plans. The focus is on improving the relationship between pay, responsibilities and performance without any integration of an element of development. The model tends to encourage disciplinary measures against non-performing teachers by providing evidence for disciplinary procedures. Essentially the emphasis is on inspection and control of teachers. This model sounds too autocratic, particularly for the South African context, as it has all the characteristics of a dictatorial supervision and appraisal system, and will always face stiff resistance from teacher unions. Of interest is the Cuban model, which seems to represent a synthesis of the two models. However, in Cuba, teachers have a very little say on matters of teachers supervision and evaluation.

Elmore (2004) classifies accountability into internal and external accountability. According to Elmore, "internal accountability precedes external accountability and is a precondition for any process of improvement" (Elmore, 2004:114). In other words, for schools to have good performance or educational achievement, they need to start by developing their own internal accountability systems. Once this is in place and is well-established, schools are able to deal with and respond positively to external accountability. In other words, there has to be control by the state and compliance on the side of teachers.

The situation in South Africa is binary. On the one hand, the Department of Education's approach entails performance assessment and accountability. On the other hand, the teacher unions' approach focus is on teacher development and support. Both these approaches are discussed in detail in the next section.

7.6. Teacher supervision and evaluation: for accountability or development?

Should teacher supervision and evaluation aim at evaluation for performance assessment and accountability or at evaluation for teacher development and support? How does the Department get to know teachers' developmental needs without evaluating them first? Why should teachers be evaluated before being developed? These are some of the questions that have been raised either by the Department of

Education or by teacher unions in South Africa. The bone of contention between teacher unions and the Department of Education is the issue of teacher development versus teacher accountability. Teacher unions argue that the Department needs to evaluate teachers for purposes of teacher development and support before it can evaluate them for accountability purposes (see SADTU, 2009). Teacher unions accuse the Department of Education of being obsessed with evaluating them for performance assessment and accountability while it fails to develop them. SADTU argues:

> …increased monitoring and inspections – if not linked to a positive programme of teacher development – will lead to further demoralization of the profession (SADTU, 2009:1).

The development of several appraisal instruments and the rejection by teacher unions as explained in section 7.4., bear testimony to the tension that exists between teacher unions and the Department of Education. It is a clear testimony of a long history of disagreements as to which evaluation approach should be used in teacher evaluation: evaluation for performance assessment and accountability, or evaluation for teacher development and support? The Department's argument has been that it needs to evaluate teacher performance in order to identify teachers' strengths and weaknesses so that it can be in the position to provide teachers' developmental and support needs (see Department of Education, 2009).

I think the solution lies in the fusion of the two models, professional and accountability models, as described earlier. There is a group of scholars who argue that the fusion of teacher accountability and development functions can enrich and complement one another and will have a greater impact on schools and teachers (see Middlewood and Cardno, 2001; Piggot-Irvine and Cardno, 2005). According to Campbell et al (2004), appraisal fulfils two goals, namely, accountability and professional development; although the two goals are often seen as being in opposition to one another (Campbell et al, 2004:18). Fusion can in itself cause tensions which need to be managed and mediated at school and district level in order to ensure that accountability and support will work together to assist schools to improve (see Department of Education, 2009).

While it is vital for teachers to be developed so that they can become more effective and productive in their teaching, it is equally vital for them to be accountable for their

teaching activities. There is therefore a need to harmonize and strike a balance between the two instruments (monitoring and evaluation; and developmental appraisal instruments). Professional teacher development needs to be complemented by accountability on the part of teachers, for the benefit of learners and the education system as a whole. Prioritizing one model over the other will certainly lead to problems. As long as there is poor or lack of accountability amongst teachers, as is the case in most South African schools, learner academic achievements and teacher quality will continue to be poor. Equally, where there is poor or lack of teacher development, learners' academic achievement and teacher quality will continue to be poor. So the dominance of one model over the other is a recipe for disaster. The end-result is likely to be unending teacher protests and resistance, and continued poor teaching and learning in schools. In the words of Campbell et al (2004):

> [W]here accountability dominates, appraisal systems are likely to attract some hostility and often lead to teacher going through the motions (Campbell et al, 2004:127).

The Cuban education system provides the most pertinent example of a system that creates a balance between the two models. Cuba has tightly controlled and close supervision of classroom teaching by principals and vice-principals, hence the good performance by Cuban learners by international standards (see Carnoy, 2007). The model of teacher supervision and evaluation employed in Cuba is very clear – its focus is on the socialization of teacher unions into teaching. The Cuban education system applies a set of non-negotiables namely: absolute control by the state, whose role is to supervise and steer, and where necessary, demand accountability, and provide rewards and sanction.

Interestingly, in 2008 the ANC government reached an agreement with teacher unions on a set of non-negotiables: teachers should be in school, in class, on time, teaching, no abuse of learners and no neglect of duty (see Zuma, 2008:8). As well-intentioned as these non-negotiables are, they do not, unfortunately, address the challenge of teacher supervision and evaluation. The difference between Cuba and South Africa is clear when it comes to matters of teacher supervision and evaluation. Within the Cuban education system there is a solid expression of strong state presence. This presence is possible largely because of the weak role of unions and professional bodies who have

been co-opted into the education system. This is the challenge that the South African government must face if it is to take charge of education and ensure that its presence is felt throughout the education system. Both teacher development and accountability are terribly lacking amongst the majority of South African teachers, especially highly unionized teachers, most of whom are attached to former black schools. The former state president of South Africa, Thabo Mbeki, once complained about this lack of accountability when addressing SADTU Congress on 6 September 1998:

> [A]ccountability to the people is one of the defining elements of our movement. And yet the strange reality is that the most militant opponents to any system of supervision and inspection are to be found among the members of SADTU (Mbeki, 1998: SADTU website).

7.7. The state of teacher supervision and evaluation at school level

In order to gain a better understanding of how the two groups of schools compare with regard to supervision and evaluation, I focused on the salient features of supervision and evaluation. The identification of such features was guided by questions raised during the interviews with principals, teacher union representatives and Mathematics teachers. A number of key themes emerged from the research interviews. These are discussed below.

Recognition of the value of the teacher supervision and evaluation

While the system of supervision and evaluation seemed to be fraught with all sorts of troubles and discrepancies, as discussed above, the importance and need for supervision and evaluation in Gauteng public schools emerged very strongly in my study. This need was echoed by all respondents[55] across all the sample schools. Though teachers in former black schools are generally resistant to teacher supervision and evaluation (see Ramphele, 2009), both white and black Mathematics teachers interviewed clearly indicated that they think that there is a need for supervision and evaluation in the education system. In other words, despite their resistance to teacher supervision and evaluation systems, interviewed unionized teachers still saw the

[55] School principals, Mathematics teachers and teacher union representatives who formed the interview base for this chapter.

importance of a supervision and evaluation system in teaching and learning. This view is reflected in the extracts below:

> I think it is helpful and necessary because if, for instance, you teach, a learning area which you never did at college, through supervision and evaluation, I can see where I am going wrong if I am going wrong and where I am going right if I am right, where should I improve if I need to improve (FBS, T2, M)[56].

> I think it plays a vital role, because how do you know you are on the right track if no one is evaluating you and telling you what you are doing is right or wrong (FWS, T2, F).

Despite the highly publicized and generally perceived levels of resistance towards supervision and evaluation by teacher unions in South Africa (Bloch, 2009; Ramphele, 2009; Department of Education, 2009; Mbeki, 1998), the data that emerged from interviews with teacher union representatives painted a different picture. Interviewed individually, teacher union representatives from both former white and former black schools indicated in no uncertain terms the necessity of and their support for supervision and evaluation initiatives of the Department of Education:

> You cannot just work without being supervised. How will you know if you are going on the wrong path? (FBS, TUR4, M).

> …it makes you more aware of your learning area. It prepares you for the kids, it makes you do your research and, it actually keeps you on your toes, I think (FWS, TUR2, M).

Similar sentiments were echoed by school principals from both former white and former black schools, most (if not all) of whom were union members themselves and, in some instances, union leaders. The quotes below from the principal interview data depict not only recognition of a strong need, but also a sense of yearning for supervision and evaluation amongst principals at both former white and former black schools:

> Yes, it is (necessary). If there is no monitoring, it is very much difficult to check as to whether there is progress or not (FBS, P1, M).

> Yes, it is (necessary). It is helpful because advice can be given if necessary, ideas can be shared, it is important for teamwork, and also that people teaching the same learning areas are present…to encourage and motivate one another

[56] See Appendix E for all the interview codes.

(FWS, P2, F).

All the respondents were requested to choose options for a question as to whether a supervision and evaluation system was *very helpful, fairly helpful* or *not helpful at all*. The respondents chose the option 'very helpful'. This choice can be interpreted as a clear declaration of support for, and an indirect call for, the restoration of supervision and evaluation by these crucial stakeholders in education.

Attitudes towards lesson observation[57]

Aligned to the necessity of supervision and evaluation in schools is the need to establish a positive attitude of principals, teachers and unionized teachers towards lesson observation. While interview data showed a huge support and appreciation for supervision and evaluation generally in Gauteng public primary schools, it painted a mixed picture when it comes to attitudes towards lesson observation specifically. Interviewed teachers and teacher union representatives from former white schools indicated that they had no problem at all about being observed (either by school principals or educational officials). This attitude is reflected in the following responses to the interview question: *Would you feel comfortable being observed by the school principal or educational officials while offering lessons, and why?*

> Yes, because it is only somebody who is looking at you who can tell you where is your shortcoming, and the weaknesses and the strengths. That person can advise you to… maybe use like alternative methods or tell you where your weaknesses are or where your strengths are, not yourself (FWS, TUR1, F).

> Yes…because I am used to being around here, you know, if you know your learning content why should you be scared of someone sitting in here (FWS, TUR2, M).

> Well, I feel comfortable. I really don't have a problem with that honestly speaking, because…like I have just said now, it is always good to have an opinion from outside, I can over-assess myself or underestimate myself. However, if I've got someone from outside really to tell me that these are your' strengths, these are your weaknesses, I have to take that feedback positively, constructively. So really, I don't have a problem with anyone observing my lessons (FWS, T1, M).

> Yes, I don't have a problem, anyone can come and observe me.

[57] Lesson observation entails teaching being watched for supervision and evaluation purposes.

> Sometimes some of the parents also would like to come and see what I am doing with the kids because may be they didn't understand some of the things in my teachings. I tell them they are welcome to come and sit in, because I am passionate and I got lots of experience. I have been teaching Maths for thirteen years now (FWS, T2, F).

Both teacher union representatives and Mathematics teachers from former white schools thus showed high levels of confidence, and that they were comfortable with having their lessons observed. Mathematics teachers, in particular, displayed high confidence levels; besides having no problem with being observed by principals and educational officials, they said they were even prepared to welcome their learners' parents to come and observe them while they taught, if parents desired to do so. Such high levels of confidence are rare amongst teachers in general. The International Association for the Evaluation of Educational Achievement (IEA) (2000), attributes high levels of confidence to high levels of learner achievement.

In contrast, interview data with teacher union representatives and Mathematics teachers from former black schools reflected mixed feelings towards lesson observation. While there were those who were equally as confident about inviting others into their classrooms to observe lessons as their white counterparts were, there were others who were reluctant about being observed while teaching. They were not totally against lesson observation, but they displayed a sense of ambivalence about the idea as is reflected in the comments below:

> No. I won't feel comfortable being observed by the school principal while teaching. In the first place, does the school principal have maths knowledge? After such lesson observation, will he be able to say you have a shortcoming here, if you can do this you can improve? In that way it would be better (FBS, TUR1, F).

> I don't have a problem. [Laughter] As long as he told me in time so that I can prepare for his lesson observation. I am going to teach what I shall have prepared. Personally I have no problem. I think I know what I am doing, ja (FBS, TUR3, M).

> I don't have a problem. I think if you are confident enough of what you are doing and you also need support, what's the use of locking yourself up in a shack when you are doing wrong things, when you can be open so that people cans see what you can do and what you cannot do? (FBS, T2, M)

Availability and effectiveness of supervision and evaluation

Differences in terms of the availability and effectiveness of supervision and evaluation between the two groups of sample schools also emerged. Interview data with teacher union representatives attached to former white schools overwhelmingly indicate that teacher supervision and evaluation was still very much alive and kicking in former white schools (see Ramphele, 2009). The data revealed a sense of a deeply entrenched culture of supervision and evaluation, not only at the school level, but also at the level of Mathematics teachers (themselves) as reflected in the following quotes:

> …here I must tell you, everybody supervises their class as required (FWS, TUR1, F)

> I don't know if it happens in all the schools, but in our school we're very strict, we stick to the rules, we normally follow policy and that's it (FWS, TUR2, M)

> It [supervision and evaluation] is still there. In the school that I am at it is still there. They still supervise, they still check (FWS, TUR3, F)

Interview data with teacher union representatives also indicated that supervision and evaluation, to a certain extent, was existent in former black schools. However, this emerged more as a sense of complaint or dissatisfaction about the way teacher supervision and evaluation was being handled and implemented in former black schools. The unionized teachers' main concern appeared to be about the nature or approach of the system of supervision and evaluation. They felt it was there to criticize rather than advise or develop teachers. This attitude is clearly echoed by the following words of one of the interviewed teacher union representative attached to a former black public school:

> We don't have a problem when officials from district or elsewhere come to supervise us, as long as the evaluation is supportive. If I didn't do my work they must be able to say, look, you didn't do your work, can you please do one, two, three, rather than criticizing you without advising you what to do and how to do it. Supervision and evaluation should be supportive (FBS, TUR1, F)

While data showed the availability of supervision and evaluation in both former white and former black schools, albeit at different levels, sentiments such as those raised in the above paragraph by one interviewed teacher union representative, cast some doubt on

the effectiveness of supervision and evaluation in former black schools. Although teacher supervision and evaluation appeared to exist in former black schools, it appeared that it was met with a degree of reluctance and reservation amongst unionized teachers due largely to the fact that it is seen as a form of criticizing teachers rather than developing them. What was clear from the interview data was that unionized teachers, especially those attached to former black schools, were only interested in the appraisal (supportive) aspect of the system of supervision and evaluation and not on the accountability aspect.

Interview data with Mathematics teachers from former white schools reflected the availability and effectiveness of the system of supervision and evaluation at the sampled former white schools. Data indicated that lesson observations, at both school and district level, actually take place at former white schools. In the words of one of the interviewed Mathematics teachers:

> They [education officials] do come. They do come. For example, we've had observations on certain learning areas from the district. District officials do drop in now and again here at school. So, ja, we see them (FWS, T1, M).

In contrast, at the former black schools, observations seemed to be limited to observation of teachers' files and learners' workbooks. This fact emerged as one of the main differences in the implementation of supervision and evaluation between the two sets of schools. Data showed that, although it was easy for educational officials to access former black schools for supervision and evaluation purposes, accessing classrooms, specifically for purposes of lesson observation, remains difficult. As some of the interviewed teachers at former black schools said:

> Week before last they were here, but they only observe our files, learners' books, but they don't get into classes because of unions, and educators are not allowed to do that because of this new IQMS which is in place (FBS, T1, F).

> Never in classes, but quite often at school (FBS, T2, M).

The main reason for the difficulty in accessing classrooms for lesson observation purposes in former black schools appeared to be the impasse or disagreement between teacher unions and the Department of Education with regard to the implementation of teacher supervision and evaluation. The Integrated Quality Management System

(IQMS)[58] seems to be the main obstacle to the participation of a certain section of the teaching staff in former black schools. However, there are also financial benefits to be gained (by well performing teachers) from taking part in IQMS, hence the involvement of other teachers at these schools. Nevertheless, the implementation of IQMS was still limited to scrutiny of documents in some schools. It excludes observing the actual teaching and learning activities taking place in the classroom (lesson observation). Lesson observations of some kind appear to take place in former black schools. However, this is in the form of teachers choosing a peer and a head of department (HOD) from amongst the teaching staff of the same school to come and observe them as is reflected in the following response by a teacher attached to a former black school:

> This new thing, IQMS, where you as an individual teacher you choose a peer and head of department (HOD) to come and observe you, what you are doing in class. We do that (FBS, T1, F).

The implication is that IQMS was being implemented differently in former white and former black schools. It appeared that, in former white schools, there was little or no union influence opposing the implementation of IQMS, unlike in former black schools. This difference is reflected in the words of one interviewed teacher union representatives attached to a former white school:

> Our union [NAPTOSA] does not have any issues with it (IQMS).
> We are happy with it, because we feel it is to the benefit of the child
> (FWS, TUR2, M)

A crucial question arises: Why is it that, in spite of differences in opinions between the unions and the Department of Education, supervision is still taking place in former white school classrooms? I think a fair answer to this question lies in the fact that the system of teacher supervision and evaluation in former white schools was never affected by school unrest in the early 1990s in the way that former black schools were. Former white schools that were visited in both the main study and this study were largely unaffected by the collapse of the inspection system that was experienced at most of the former black schools. The culture of teaching and learning together with that of supervision and

[58] IQMS is one of a number of teacher supervision and evaluation instruments which the Department of Education has introduced. The instrument is an integration of three instruments: Developmental Appraisal System, Whole School Evaluation and Performance Measurement System.

evaluation has thus remained intact in former white schools. Also, white schools' relationship to departmental supervision was very different from black schools. There was a light supervision and evaluation of white schools and teachers – the supervision was internal rather than external, conforming to the notion of professionals who control themselves.

Administrative frequency of teacher supervision and evaluation

The administration, consistency, and frequency of teacher supervision and evaluation by educational officials are undoubtedly key ingredients for a successful, sustainable teacher supervision and evaluation programme. These ingredients emerge as another powerful theme in the chapter. Teacher supervision and evaluation is usually conducted by school principals and/or heads of department (HODs) at school level, and by educational officials at district, provincial and national levels. This study looks at how often both school principals or HODs and education officials conducted teacher supervision evaluation in the sample schools. In the case of school principals/HODs, the focus was specifically on how often they conducted lesson observations of teachers teaching. Three possible options were provided to interviewees, namely: *quite often, sometimes* and *never*. According to interview data with Mathematics teachers, lesson observations by school principals/HODs in both former white and former black schools 'sometimes' occurred. This is indicated by responses provided by some of the interviewed Mathematics teachers:

> *Sometimes*: Well, we wish it could be often while we are trying to implement this development appraisal system. We do observe one another's lessons, and due to time constraints, it is not as often as we would like it to be, because there is lot of admin work. But what we are doing I think is enough, within the given time (FWS, T1, M)
>
> *Sometimes***:** Because they [principals and HODs] are also engaged in classes (FBS, T2, M).

Principal interview data shows a mixed picture of the frequency of lesson observations in the sample schools. Data indicated that in some former white schools, observations took place at least once a term, in other words, four times a year. Other interviewees said they took place quite often for IQMS purposes. In contrast, the data shows that in former black schools, some principals conducted lesson observations quite often but only for purposes of IQMS, while other interviewees said they never had lesson observations

owing to the constant stand-off and tension between teacher unions and Department of Education. In short, the data suggests that, in former white schools, lesson observations are conducted quite often (at least once every term) both for purposes of improving teacher performance and for purposes of the IQMS. In former black schools, observations were carried out for IQMS purposes only, and never for teacher performance purposes. Some of the school principals outlined the different processes in the following extracts from interviews:

> Well, on invitation or IQMS they invite you where a group attends a lesson or if there is a problem. Or if a parent brings a problem to my attention or if I notice that there is a problem through my HODs or through my deputy. Teachers are at any time encouraged if they are presenting something and they would like me to come and watch, look at, be part of it, I am there (FWS, P2, F).
>
> Quite often, because this must be done through IQMS (FBS, P1, M).
>
> We used to do it (lesson observation) before this thing of unions. Before the new laws by unions, teachers were observed in class, but since unions came in to say that when the district officials come to schools they are not actually developing teachers, they are intimidating teachers, then we had to step back a little bit…to say we will only observe teachers during IQMS. They will only monitor the books, teachers will bring whatever books are needed, not really going to class (FBS, P2, F).

As far as the frequency of teacher supervision and evaluation by education officials was concerned, teachers from former white schools interviewed for the study mentioned that "district officials do drop in now and then" (FWS, T2, F) at their schools for teacher supervision and evaluation purposes. However, the general consensus amongst teachers attached to former white schools was that education officials only came to their schools 'sometimes'. The data indicates that education officials also visited some former black schools 'sometimes' whilst others visited 'quite often'. The difference is that, according to some interviewed Mathematics teachers at former black schools, education officials never entered their classrooms. The main reason for this was teacher union resistance against teacher supervision and evaluation, as already explained.

The issue of education officials visiting schools, but being unable to enter classrooms or observe lessons, also emerges from principal interview data – in both former white and former black schools. It is clear from the principal interview data that, unlike school principals and HODs, who had access to classroom for IQMS purposes, education

officials did not have this access. This was the case in both former white and former black schools. Although school principals chose the options 'sometimes' in some schools, and 'quite often' in others, to rate the frequency of their visits to both set of schools "because of IQMS" (FBS,P2, F), most school visits started and ended in the principal's office, with document checking as the main focus of the visit. This limitation is clearly illustrated in the following statements by school principals:

> *Quite often*: We've just had the office of standards in our school, which was here for a week. But it is not often that the district officials visit us in the classroom itself. They only visit the principal during the IQMS process. It is for learning areas and to check if teachers are not following procedure and protocol, but not in the classroom visits (FWS, P1, M).
>
> *Sometimes*: When education officials come to schools it is for support which they give in a learning area or in a phase. It is not specifically that they come for a teacher. They come to the principal or for a group of teachers but they don't go into a class (FWS, P2, F).
>
> *Sometimes*: They end up in the office of the principal. Like I said, the stance of the union is to say they will come to the schools when the unions reach an agreement with them [the departmental officials] (FBS, P2, F).

Reasons behind resistance to lesson observation

What was clear was that some aspects of the teacher supervision and evaluation system, such as checking teacher and learner documents and workbooks, appeared to be more acceptable and less difficult to achieve. Observation of lessons by education officials in particular, proved to be non-existent or very limited if it occurred at all – in both former white and former black schools. The principal interview data, as presented under the previous theme, as well as other data, attest to this fact. Questions that begged to be answered were: Why is there such resistance to lesson observation? What makes some teachers so determined to keep their lesson presentations private and confidential, whilst other teachers are open and welcoming? What makes some teachers to close their classroom doors to school principals and education officials while other teachers keep them wide open, and are even prepared to allow parents to come and observe them teaching? These questions are discussed below.

Unionized teacher interview data shows that resistance to lesson observation did not exist at former white schools. In other words, teachers at former white schools did not resist lesson observation because "[n]ormally the teachers are quite comfortable with

that…" (FWS, TUR2, M). It was clear that lesson observation was still intact at former white schools, as is illustrated in the following interview extracts:

> Resisting lesson observation does not exist in this school (FWS, TUR1, F).
>
> We've never heard of any incidence of somebody refusing lesson observation. No, not in this school (FWS, TUR3, F).
>
> We don't have that (resistance to lesson observation) in our school (FWS, TUR2, M).

Non-resistance to lesson observation at former white schools was also supported by data generated from interviews with former white school principals, as is illustrated by the following extracts:

> We've never had such a problem. Lesson observation is done correctly according to policy and we've never had a problem where somebody is refused entrance into a class (FWS, P1, M).
>
> I have never had that experience (teachers resisting lesson observation). None of my teachers resist observation at all. None of them (FWS, P2, F).

Similar sentiments were expressed by former white school Mathematics teachers, as is illustrated by the following interview extract:

> No, not our teachers, we haven't had that…not in our school (FWS, T2, F).

While data shows that resistance to lesson observation was simply not a feature at former white schools, the same could not be said for former black schools. Interview data with unionized teachers strongly indicates high levels of the prevalence of resistance to lesson observation in former black schools. The following section discusses some of the key reasons provided for such resistance to lesson observation:

Lack of confidence: Some interviewed teacher union representatives pointed to the lack of confidence amongst teachers as one of the main reasons that teachers at former black schools resisted lesson observation. "They don't feel confident…if you know that you are doing your job why be scared?" asked one unionized teacher at a former white school. This unionized teacher then went on to say that there was resistance "because people know they are not doing their job or people are not confident enough that they

are doing the right thing" (FWS, TUR1, F). Some teacher union representatives saw it from a different angle. They attributed a lack of confidence only to new teaching staff in the system, as is indicated in the following extract:

> Some of them [teachers] are still new in the field, they need to be guided first, they are not sure of themselves, that's why sometimes they resist to be observed, especially if they are observed by someone who is superior to them (FBS, TUR2, F).

Former white school Mathematics teachers similarly linked the resistance to a lack of confidence amongst teachers:

> I think it is all about one's image, one's self-esteem, one's confidence. It is not nice, from a general point of view, it is not a nice thing to be observed by someone else. It really depends on one's individual self-esteem or confidence (FWS, T1, M).

Surprise visits by school principals: Another reason attributed to the rejection of classroom visits as expressed by interviewed unionized teachers was that some principals made unannounced visits to classes. Interviewed unionized teachers from both former white and former black schools were unanimous in raising their objection to this approach. Their concern is revealed in the following interview extracts:

> I think the reason could be that some of the principals have to get an invitation, you have to invite them. If they say they want to come, according to our unions, we should give permission for that, and if you don't they don't have the right to come into your class. And what most of the principals do, they just come. They just barge in and that is not right. I think you should in a way know. There should be transparency when it comes to stuff like that. I don't want surprise visits. I don't want somebody just to walk into my class (FBS, TUR1, F).

> [A]s long as the principal informs the people well in advance that I am coming to your class, there's going to be a visit, then it's fine, people don't have a problem (FWS, TUR2, M).

Inspection approach: The general feeling amongst both teacher union representatives and teachers attached to former black schools was that education officials who conducted lesson observations still used the old 'inspection' approach to supervision of teachers' work. This antagonism was evident in the harsh words interviewees used to refer to the system. For example, interviewees referred to inspection as a 'witch-hunt',

'policing', 'fault-finding' and 'judgmental'. Although some of the interviewed teacher union representatives might not have experienced the harshness of the old apartheid system themselves, their dislike of the system of inspection was unquestionable.

Such forms of expression as used above were a clear indication of the levels of resentment that teachers and union representatives still have towards the current form of teacher supervision and evaluation. They complained that rather than being supportive and developmental, the system was manipulated by education officials and used to criticize and judge them. Teacher union representatives still perceived the system "as inspection, like it used to be, that they will be judged" (FBS, TUR4, M).

What emerged strongly from the interviews with teacher union representatives was that teachers do not take kindly to education officials who criticize them through the supervision and evaluation process. For example, interviewees said:

> Some teachers don't want to be criticized. If you observe their lessons, you must be positive, give them positive results. You must never criticize them, if you criticize them then they will refuse to be observed (FBS, TUR2, F).
>
> They don't want inspection, to be judged because they say once the principal or district official come, they are looking for faults rather than developing them (FBS, TUR4, M).
>
> The main reason is that supervision is not supportive, instead they criticize you and that demoralizes you. It should be supportive so that you can be able to improve if there is something which you are doing wrongfully. Even if there is something which you are doing wrongfully, they need to criticize you constructively (FBS, TUR1, F).

The same feeling was echoed by Mathematics teachers attached to former black schools who made it very clear that "we do not want to be policed" (FBS, T1, F).

The above are some of the main reasons provided by both teachers and teacher union representatives as to why they resisted teacher supervision and evaluation processes such as lesson observation. It seemed, however, that the main problem was fear. Teachers feared that the implementation of the new system would be similar to the apartheid one. It became very clear that unionized teachers were not in favour of the accountability dimension of supervision and evaluation. Instead, they appeared to be in favour of the development or support aspect. Why? I argue that this is because, after

being developed and appraised, they are entitled to a salary increment. Some school principals attributed the challenge of getting teachers' cooperation to poor communication with teachers and a 'lack of guts' amongst some school principals to stamp their authority in line with education laws. This view is illustrated in the following responses by school principals:

> May be it is just the attitude in addressing the teacher. It is not to inspect, it is for support. I think it is a mindset (FWS, P2, F).

> It shows lack of knowledge in that (as the principal) you've got all the right in the world to attend and do classroom observation, and if you are being refused you must just follow procedure. By law he (the principal) is a responsible person and he should act accordingly (FWS, P1, M).

Teacher union opposition to supervision and evaluation: The militancy of teacher unions is another factor attributed to teachers' resistance to lesson observation. As already mentioned in Chapter Three, one of the challenges faced during some of data collection processes was the public sector strike[59] that lasted for almost a month. The view of teacher unions as being largely responsible for teachers' resistance to lesson observations was echoed by teacher union representatives at both former white and former black schools.

> Teacher unions are opposed to the kind of supervision and evaluation which is aimed at criticizing teachers and finding faults about them rather than developing them in a supportive way (FBS, TUR2, F).

> Teacher unions have a stance when it comes to issues of supervision and evaluation. They want the process to be transparent and developmental. They want teachers to be informed about class visits in advance. And anything contrary to that always leads to teacher union's rejection of supervision and evaluation (FWS, TUR3, F).

A critical, fault-finding, non-supportive and non-developmental system is one that teacher unions feel hostile towards. As stated previously, the contestation appears to be more around implementation issues than about the theory behind a supervision and evaluation system. The role of teacher unions in the rejection of lesson observation is of concern for school principals attached to former black schools, because resistance is still

[59] See section 3.7. for more information on the public sector strike that took place during data collection processes.

rampant. In their view, teachers' resistance to lesson observation emanates from the impasse between teacher unions and the Department of Education around issues of teacher supervision and evaluation. This perception is evident in the following extracts:

> The disagreement between the Department (of Education) and the unions for teachers not to be visited, it has been a challenge for quite sometime (FBS, P1, M).

> They are going to follow what unions say…because they belong to unions (FBS, P2, F).

While most former black schools have a tough time with teacher unions in relation to issues of supervision and evaluation, most white schools seem to experience no problems with the teacher unions to which their teachers are affiliated. The hostility towards teacher supervision and evaluation appears to differ from one teacher union to another; as is suggested by the following quote from an interview with a principal of a former white school:

> I have never had any problem with the teacher unions. Not at all (FWS, P2, F).

Teachers' failure to prepare for lessons: Another reason attributed to teachers' resistance to lesson observation is that some teachers "do not prepare for lessons" (FBS, TUR4, M). This comment was echoed by teacher union representatives from both former white and former black schools. The general feeling amongst teacher union representatives across all the sample schools is that one reason why teachers rejected lesson observation is because they know that they are not doing their job. As a result, they are not confident and "they are afraid of being victimized" (FWS, TUR1, F). The following responses further clarify this assertion, which is also supported by the views of teachers:

> Some teachers resist lesson observation…because they are not prepared… they are not doing what they are supposed to be doing and they fear that the principal and education officials will see that (FWS, TUR3, F).

> I don't think if somebody's work is up to date, it is up to standard, he/she will refuse class visits (FBS, T1, F).

Classroom as a private space: While the right to privacy is one of the fundamental rights enshrined in and guaranteed by the Constitution of the Republic of South Africa, public

schools, including classrooms remain public entities. Under normal circumstances, education officials should have access to them, as long as the intended visit is properly communicated to the teachers concerned in advance. The teacher interview data in the study shows that there are some teachers who think of the classroom as “their private space” (FBS, T2, M). As a result, they did not want “their space to be broken into, lest one’s weaknesses are exposed” (FWS, T1, M).

7.8. Emerging trends

The themes emerging from the interview data in this chapter clearly demonstrate the importance of teacher supervision and evaluation in relation to learner performance. Despite the discrepancies that exist between former white and former black schools – in terms of the implementation of teacher supervision and evaluation – all the interviewed stakeholders were unanimous and unambiguous in confirming the importance and need for teacher supervision and evaluation for teaching and learning. This finding provides a clear affirmation of Carnoy’s (2007a) three factors or determinants of learner performance, where supervision and evaluation forms an integral part of these factors (see Figure 1). What the finding suggests is that public schools, whether former white or former black, should attach a great value to teacher supervision and evaluation.

Both teacher union representatives and teachers agree that they did not have any problem with the teacher supervision and evaluation as a system. They see teacher supervision and evaluation as an opportunity to assist them in identifying their weaknesses and develop strategies to deal with them. However, the contestation appeared to be about the implementation dimension of the system. Teachers attached to former black schools wanted the system to be implemented in their own way – an approach that linked supervision and evaluation only to development and support and not to accountability. This implies that, although teacher unions appeared to be supportive of the policy or system of teacher supervision and evaluation, in practice they did not appear to be prepared for their teachers to be accountable for their teaching activities and actions before being fully developed by the Department of Education.

A counter-argument to that of the teacher unions could be that development has to be carried out in stages, and has to suit to the profile of teachers. It has to form an integral

part of teaching and learning, and it has to be freely and responsibly implemented whenever there is a need to do so. It would however be difficult for the Department of Education to make informed developmental interventions, as demanded by teacher unions, if it does not have information about the teaching and learning activities inside the classroom because of teacher union resistance to lesson observation.

Discrepancies

In answering a central question of this chapter, analysis of interview data indicates some notable discrepancies between former white and former black schools. There are discrepancies in the ways in which teacher supervision and evaluation is implemented at former white and former black schools. Although teacher supervision and evaluation occurred across all sample schools, there are notable discrepancies in the processes and levels at which the system of supervision and evaluation takes place. In the former white schools, teacher supervision and evaluation forms an integral part of the culture of learning and teaching. This is what Christie, Butler and Potterton (2007) describe as the organizational capacity of school development. Once the organizational capacity of a school is well organized, the internal accountability systems within the school are more likely to be in place.

It is evident from the data that the former white schools have very strong internal accountability systems; a culture of supervision and evaluation in line with official policy was still intact and functioning. Essentially, the system of supervision and evaluation, despite the presence of various teacher union representatives at the former white schools, was implemented in its totality. The system included both developmental and accountability aspects. It was for this reason that teachers and unionized teachers in particular at former white sample schools had no problem accepting and coping with teacher supervision and evaluation, at school, district and national level.

The Department of Education White Paper on Education and Training in South Africa (see Department of Education,1995) calls for the restoration of a culture of accountability in schools. What this means is:

> [T]he development of a common purpose or mission amongst students, teachers, principals and governing bodies, with clear, mutually agreed and understood responsibilities, and lines of cooperation and accountability (Department of Education, 1995:22).

Former white schools appear to have well-established and well-functioning internal accountability systems. This makes it easier for them to deal with external accountability. In other words, there is evidence of a sense of a well established accountability, discipline and work ethic amongst staff at former white schools.

Former white schools implement the teacher supervision and evaluation process holistically. The process includes checking teachers' files and learners' workbooks as well as observing lessons. At former black schools only teachers' files and learners' workbooks were checked. This checking was done for purposes of the IQMS, and because of the financial benefits attached to the IQMS. Lesson observation at former black schools especially by education officials, was very difficult if not impossible to achieve. In contrast, teachers at white schools appeared to have no problem with lesson observation at all, even when the observations were conducted by education officials. In the very few instances where lesson observations took place at former black schools, they were conducted by peers and HODs:

> [B]ecause at the end of the day, you get evaluated by your own colleagues…and you discuss, you have a pre-evaluation discussion where you tell them about your weaknesses and so on (FBS, T2, M).

These findings indicate that no amount of pressure, whether from the inside or the outside, will force schools without well-established internal accountability systems to perform. Elmore (2004) expresses this differently, arguing that externally administered incentives, be it rewards or sanctions, will not automatically result in the creation of effective performance improvement within schools and school systems. This argument is informed by the conviction that the effect of incentives depends on the organizational capacity that determines how a school receives the message of the incentive, how it translates it into a course of action and finally, how it executes such an action. In short, what Elmore says is that, as long as schools do not have internal accountability systems, their chances of benefiting from external accountability and its incentives are very slim.

The report of the Ministerial Committee on the 'Schools that Work' shows that some schools have a problem with IQMS because it is linked to remuneration or salary and because peer review is not the most valuable form of staff development (see Christie, Butler and Potterton, 2007). What is clear from my study is that IQMS was being

implemented differently in former white and former black schools, i.e. holistically in former white schools and only partially in former black schools. This difference certainly had an impact on the effectiveness of the system (teacher supervision and evaluation) in achieving its objectives. Given the situation in former black schools, especially that supervision and evaluation is largely limited to checking documents, it is very difficult for the system to be effective in addressing learner performance challenges.

There were also discrepancies in the attitude of teacher union representatives and Mathematics teachers towards lesson observation. Mathematics teachers in former white schools seemed to have a positive attitude towards lesson observation. Mathematics teachers in former black schools, on the other hand, exhibited a very hostile attitude towards the lesson observations. This attitude raised questions about the status and organization of their schools' internal accountability systems, as well as its support of teacher supervision and evaluation system in practice.

It seemed clear that while both sets of schools have systems of teacher supervision and evaluation in place, there were differences in maturity or developmental levels of the system in the two groups of schools. This difference suggested disparity in terms of the organizational capacity of the systems in the two groups of schools. Both teacher union representatives and teachers attached to former white schools appeared relaxed, welcoming, and comfortable about all aspects of teacher supervision and evaluation, including lesson observation. In contrast, the attitudes of teachers at former black schools were mixed. There were teacher union representatives who were welcoming and comfortable with the idea of lesson observation, and there were those who displayed a high level of negativity towards having their lessons observed, especially where observations were conducted by education officials.

Another theme that shows up a number of discrepancies between former white and former black schools is the reasons for the resistance of lesson observation. Lack of confidence amongst teachers in former black schools emerged as a prime reason provided for teachers' rejection of lesson observation. These teachers insist that their classrooms are a private space. A contributing fact to teachers' lack of confidence could be that school managers and education officials, because they do not have access to classrooms, cannot assist teachers who need help. Teachers with high content and pedagogical content knowledge are more likely to feel confident about their teaching,

and therefore less likely to resist lesson observation. It goes without saying that teachers with low confidence levels are less likely to open up to outside intervention or observation than teachers with high confidence levels. Equally, teachers with poor confidence levels as a result of their poor teaching quality are less likely to want to be accountable for their work.

Differences in the ways in which teachers at former white and former black schools viewed teacher supervision and evaluation largely arose out of the way teacher supervision and evaluation was experienced and conducted during the apartheid era. The kind of inspection system which former black schools were subjected to in South Africa during the apartheid era had an adverse effect on them. The system was used as a means of oppression of teachers. It was largely out of this experience that teachers developed a negative attitude towards the instruments of supervision and evaluation. This attitude ultimately led to the total rejection of inspection amongst former black schools in the early nineties (as discussed in section 7.3 above).

Finally, interview data, to a large extent, confirms the widely held view that teacher unions are largely responsible for the failure and poor functioning of teacher supervision and evaluation in former black schools in South Africa. However, one of the main reasons that account for teacher resistance to supervision and evaluation appeared to be lack of confidence amongst teachers. The data analyzed in this study shows overtly or covertly that the lack of confidence was born out of low levels of content knowledge and pedagogical content knowledge amongst most teachers serving former black schools (see chapter 6). It was overtly this lack of confidence amongst some teachers serving former black schools that compromised their internal and external accountability systems.

Most Mathematics teachers and teacher union representatives from former black schools defended the actions of teacher unions by indicating that teacher unions were resisting teacher supervision and evaluation because it was aimed at criticizing teachers rather than developing and supporting them. There is a clear discrepancy between former white and former black schools in terms of the involvement of teacher unions and unionized teachers in issues of teacher supervision and evaluation. Former white schools support a cooperative stance about issues of teacher supervision and evaluation

taken by their teacher unions. The two differing approaches are a clear explanation of the discrepancy.

It was clear from the different stances taken by teacher unions in the two set of schools with regard to teacher supervision and evaluation that different teacher unions operate in these schools. Most of the teachers in former white schools were members of teacher unions that had catered for white teachers only in the past. Actually they are not 'unions', but 'associations' – unions bring a worker orientation whereas associations bring professional orientation. Teacher associations are widely known to be less militant and anti-strike actions. At any rate, there was no reason for these organizations to be militant during the apartheid era because the apartheid education system benefited them at the expense of their black counterparts. There were no serious challenges that warranted them embarking on strike action. Their emphasis was on teacher professionalism and less on unionism (Heystek and Lethoko, 2001).

Given the long established tradition of teacher supervision and evaluation in former white schools – which led to well-established internal accountability systems – there was no reason for teachers to be hostile towards teacher supervision and evaluation. Most teachers attached to former white schools never experienced the humiliation and victimization experienced by their counterparts at historically black schools under the system of inspection. They did not suffer the consequences and the ills of this system hence it was easy for them not to associate or confuse teacher supervision and evaluation with the victimization-oriented inspection of the apartheid era (see ANC, 1994).

To sum up, there are differences in terms of policy and attitude towards teacher supervision and evaluation between different teacher unions in Gauteng Province. These differences are carried forward into the current teacher supervision and evaluation disparities at school level. A question that comes up is: what has made black (Grade 6) teachers at former white schools change their attitude towards teacher supervision and evaluation as soon as they joined former white schools? The school culture and its socio-economic conditions, as argued by Jansen (2008:6), seems to play a big role in changing the attitude of black teachers attached to former white schools.

7.9. Conclusion

Clearly tensions between the Department of Education and teacher unions arise out of the fact that teacher unions in South Africa have too much power (see Ramphele, 2009). Signs of lack of discipline and lack of professionalism amongst unionized teachers attached to former black schools are evident everywhere. While the undemocratic and intimidating style employed by some education officials cannot be tolerated in this day and age, teacher unions also seem to be ducking and diving around the issue of teacher supervision and evaluation. Unionized teachers at both former white and former black schools do not seem to be totally hostile to teacher supervision and evaluation generally, as illustrated in this chapter. However, historically black teacher unions do not appear to be prepared to allow their members to be monitored and evaluated.

The data presented in the chapter depicts some of the challenges that pose a real threat to the success of teacher supervision and evaluation in South Africa. These challenges included the demand by teacher unions for supervision to be implemented selectively by focusing only on developmental issues and not on accountability issues. Other challenges that emerge from engagement with the interviewee data include difficulties faced by education officials in accessing classrooms for supervision and evaluation purposes in former black schools and conducting lesson observation; the unending stand-off between the main teacher unions and the Department of Education over issues of teacher supervision and evaluation.

As pointed out at the beginning of this chapter, teacher supervision and evaluation is critical for quality teaching and learning. Just as a three-legged pot cannot stand properly when one leg is missing or broken, so teaching and learning cannot function effectively when teacher supervision and evaluation is not properly organized. Eliminating learner performance inequity has emerged as one of the priorities of the ANC government. For government to achieve this vital task, it has to come up with working strategies as a matter of urgency. The state has to ensure that a well-organized and well-functioning teacher supervision and evaluation system in education forms an integral part of its overall strategies. It also has to ensure that there is a balance between a political and professional space. Most importantly, the state has to ensure that teacher

unions and unionized teachers accept and embrace not only the developmental part of teacher supervision and evaluation, but also the accountability dimension.

There is a need for both teacher unions and education officials to align themselves with the new educational dispensation, to become part of solution-seeking attempts, and most importantly, to be professional in their conduct and practices. Both parties need to understand that the country has entered a new era –an era of transformation, development and accountability. There is no doubt that unionized teachers do not want to be held accountable for their teaching-related actions largely because of low confidence levels stemming from poor teacher development initiatives. The solution to the contestations between teacher unions lies in the integration of professional and accountability models. There is a need for key stakeholders in education to work together for the benefit of learners. There is a need to eradicate persistent learner performance disparities between former white and former black schools. Fixing a dysfunctional system of teacher supervision and evaluation is one vital means for doing this.

CHAPTER EIGHT
LEARNERS' EXPERIENCES AND PERCEPTIONS OF TEACHER KNOWLEDGE

8.1. Introduction

Learners are important stakeholders in the teaching and learning processes. They are located at centre stage and are well suited to providing valuable information about issues of learning and teaching. Unfortunately, many studies tend to ignore or overlook learners' opinions and judgments in this regard (see Farley-Lucas and Sargent, 2007; O'Connor, 1971). The tendency may omit a crucial information base – learners' perspectives or inputs based on their daily experiences in the classroom situation. This study probed learners' views and assessment of teaching, and in particular, their opinion of their teachers' content and pedagogical content knowledge. The results of the bigger HSRC-Stanford study indicate that Grade 6 Mathematics teachers in the sample schools generally had low levels of both content and pedagogical content knowledge (see Carnoy, Chisholm et al, 2008). Teacher knowledge was an important component of my investigations in this study. The learners' perceptions added a unique vital dimension to my attempt to understand the classroom situation, and therefore they cannot be left out.

The main purpose of this chapter was to gain a better understanding of how teacher competence, or the lack of it, contributes to the persistent disparities in learner performance between former white and former black schools. The main question this chapter seeks to answer is: What are learners' perceptions of teachers' competence or knowledge levels, at both former white and former black schools? The sources that this chapter draws on are data from interviews with 40 Grade 6 learners in the form of focus groups (see Chapter Three). My argument in this chapter is that former white schools perform better because they have better organized, committed and accountable Mathematics teachers with higher levels of teacher knowledge than those of former black schools.

Following on the introduction, this chapter is organized as follows: Section two explains the significance of learners' perceptions of the sensitive issue of teacher knowledge. Section three tries to locate the issue of learners' perception within a relevant theoretical framework. Section four discusses learners' experiences of the teaching and learning

processes in the classroom situation. Section five uses findings emerging from learners' experiences to formulate learners' perceptions of a good Mathematics teacher. Section six discusses patterns emerging from the data analysis. Section seven provides concluding remarks for the chapter.

8.2. Why learner perceptions of teacher knowledge?

Perception, according to Allport (1966, cited in Adediwura and Tayo, 2007:165), is the way we judge or evaluate others. Eggen and Kauchak (2001) define perception as the process through which people attach meaning to experiences. Baron and Byrne (1997, cited in Adediwura and Tayo, 2007:165) refer to perception as 'social perception' and define it as the process through which we attempt to understand other persons. My understanding of 'perception' in the context of my study would be the meaning which one attaches to another's actions or behaviours after observing him/her for a certain period of time.

If there is anyone who has 100% access to and experience of classrooms and lesson observations, it is the learner. Apart from being at the centre of teaching and learning, learners occupy a strategic position in that they have the rare opportunity of observing their teachers for five days a week, and for not less than seven hours a day in South African public schools. This time enables them to observe their teachers offering lessons, to communicate with their teachers, to see the good and bad sides of their teachers, to laugh and argue with them, and to participate in other interactions dictated by the learner-teacher relationship. Unlike researchers, who in effect spend very little time with teachers through interviews or observations, learners usually spend a minimum period of a year in the company of their teachers. This is a long time and makes it difficult for teachers to fake their true behaviour and hide their actual way of teaching in the classroom. Learners thus have a very good opportunity to observe the natural conduct of teachers in a way that is not generally possible for outsiders such as researchers, school principals and education officials.

As far back as the 1950s and 1960s, learners' perceptions of their teachers' competence has been regarded as invaluable. According to Evans (1951) cited in Kwok-Lun and Lew, (1981):

> [S]tudents as raters of teachers have the merit over other raters for their evaluation is based on regular observation over a long period of time and thus can know more (Evans, 1951, cited in Kwok-Lun and Lew, 1981:50).

According to Veldman and Peck (1969), again cited in Kwok-Lun and Lew (1981):

> [A] reliable description of the typical behaviour of the teacher has to be based on many hours of classroom observation; and the obvious sources are the students (Veldman and Peck, 1969, cited in Kwok-Lun and Lew, 1981:50).

As discussed in the previous chapter, South African teachers are generally highly unionized[60] and known to be hostile towards supervision and evaluation in general and lesson observation in particular. As a result, teacher supervision and evaluation in most of South African public schools, especially in schools serving black communities, remains inadequate and ineffective. As a consequence, few people are better positioned than learners in terms of observing teachers in the classroom, and being able to make observations about how they go about their teaching. According to Fraser (1994:494) learners have the advantage in terms of being able to make judgments about teachers in their classrooms; and because they encounter so many different classroom environments and spend so much time in classrooms. This experience enables them to form accurate perceptions. Learners are well-situated in terms of offering fairly reliable assessment of their teachers' competence and general teaching knowledge. It is for that reason that this chapter focuses on learners' perceptions.

8.3. Theoretical underpinnings

The main purpose of teaching at any level should be to achieve desirable results in relation to learners' knowledge acquisition, such as reading, writing and problem-solving. According to Alausa, teachers act as 'filters' between teaching materials and learners (Alausa, 1999:1). While teachers are well-positioned for grooming learners for their future roles, learners are well-positioned for giving credible and well-informed feedback on teachers' subject matter knowledge and teaching skills. In fact, they are well-situated

[60] Most South African teachers belong to teacher unions which have shown themselves to be militant and hostile towards many of the decisions taken by the Department of Education. In other words, most teachers in schools are highly politicized as union members.

to provide feedback on the general conduct and behaviour of teachers within the classroom. A good Mathematics teacher (as discussed later in this chapter) is one who possesses knowledge of content, pedagogical content knowledge and general pedagogical knowledge (see Adediwura and Tayo, 2007). This chapter uses these three knowledge types as theoretical lens for examining learners' perceptions and experiences.

Content knowledge refers to the subject matter knowledge of a particular subject or learning area that teachers ostensibly obtain or acquire mainly during their initial training. In the context of this study the term is used to refer to Mathematics subject matter knowledge. Adediwura and Tayo define pedagogical content knowledge as an understanding of ways of representing the subject that make it comprehensive to others and an understanding of what makes the learning of specific topics easy or difficult (Adediwura and Tayo, (2007:166). Koppelman (2008:125-126) refers to it as a practical way of knowing the subject matter used by (instructors) teachers when teaching. General pedagogical knowledge would, in this context, include teaching techniques and skills such as the giving of homework, provision of extra lessons, use of resources, motivating learners, and eliciting parental support, all described later in this chapter. In other words, general pedagogical knowledge refers to all other related teaching techniques or skills besides content and pedagogical content knowledge. By definition, an effective Mathematics teacher is one who possesses content knowledge, pedagogical content knowledge and general pedagogical knowledge.

8.4. Learners' experiences

This section discusses the experiences of Grade 6 learners in the classroom in both the former white and former black schools in the sample. Data on learners' experiences is organized under five themes. These themes are: teacher content and pedagogical content knowledge, teachers' general pedagogical knowledge; time on task[61]; language of learning and teaching; and lesson observations. Each emerging theme is discussed below.

[61] This is actual instructional time. In other words, the actual teaching time spent teaching learners.

Teacher content and pedagogical content knowledge

The first interview question that was posed to learners related to matters of teacher quality and sought to establish their views about the qualities of teachers who possessed both content and pedagogical content knowledge. The question that related to the issue of teacher content and pedagogical content knowledge or teacher quality was put to learners in the form of their description of a 'good Mathematics teacher'. In the words of the majority of interviewed learners, a good Mathematics teacher was a teacher who:

> …should be able to explain clearly and help you understand if you don't understand something in Maths (FWS, L1, F).
>
> …should be friendly to us. He/she should be active…explain to us when we are writing something and we do not understand. He/she must make sure we understand (FBS, L1, F).
>
> …should be able to explain and you should be able to understand what she/he is talking about, and also ask questions about what is this and that so you could understand what is going on and why is that (FBS, L2, M).

Learners' seemed to emphasize that a teacher with Mathematics content and pedagogical content knowledge is someone who teaches and explains work in such a way that learners understand it. In other words, he/she should be able to impart or transfer Mathematics knowledge to learners in a clear and comprehensible way. This suggests that learners from both former white and former black schools had a fairly accurate picture of what a good Mathematics teacher is.

Another interview question dealt with how learners' Mathematics teachers actually taught Mathematics in both former black and former white schools. Learners' responses at the former white schools were unanimous. They answered in chorus with excited little faces clearly expressing feelings of approval of, confidence in, and satisfaction with their teachers' Mathematics teaching abilities. These learners' responded intuitively and spontaneously. The question required learners to rate the teaching performance of their teachers in terms of *good, fair* or *poor.* However, the word 'excellent' was a dominant response from learners at both the former white schools. In the words of some of the interviewed learners:

> Excellent. Excellent. He explains well. He does everything well (FWS, L4, M).
>
> Excellent, because she makes it fun for us and she makes it really, really understandable (FWS, L7, F).

The responses of learners at historically black schools to the same question were mixed at the outset. Rather than agreeing on one option, learners chose a mixture of the three options (*good, poor* and *fair*). After responding, they would then look at each other (making eye contact) as if to ask: 'Is he/she (their teacher) not hearing us? 'Which rating do we really agree on?' It was only after making eye contact with each other and making sure that there was no one else listening that they settled for *good*. However, their body language clearly suggested that they wanted to say something totally different. An interpretation of their body language suggested that the correct answer would either be *poor* or *fair*.

In a more general sense, there was an element of an outcry against the inadequacy, teaching calibre, subject matter knowledge and capabilities of the their teachers from learners in former black schools. One learner based in a former black school called upon the government to change the situation in their school: "The government must employ more teachers that are more clever, that are not lazy" (FBS, L4, M). Another learner said:

> Good teachers are those that don't shout us and teach us well. And when you don't understand, they explain (FBS, L4, M).

These, and other similar comments, signaled learners' disapproval of the teaching and learning situation that they were subjected to – a motion of no confidence if you like.

When learners call for the appointment of effective and conscientious teachers, it suggests that the teachers that they actually have are the opposite of this. Such a call points to their existing teachers' unsatisfactory levels of content and pedagogical content knowledge as confirmed in the pilot study by Carnoy and Chisholm et al (2008). This finding further confirms the assertion made elsewhere that most former black schools are dysfunctional (see Van der Berg, 2005; Van der Berg, 2009; Ramphele, 2009; Bloch, 2009).

General pedagogical knowledge

There was one question in the interview that asked how often teachers gave homework, and how often teachers marked or corrected it. The dominant response amongst learners in former white schools was *quite often*. Responses indicated that former white school learners were given homework frequently and that homework was frequently marked. At former black schools, the dominant response was *sometimes*, suggesting that the giving and marking of homework in former black schools was not done regularly.

The response from learners at former white schools showed that homework tasks formed an integral part of the daily programme. Homework and marking of homework was clearly done on a regular basis. This is a clear indication of Mathematics teachers' professionalism and good work ethic. It also shows the high level of the general pedagogical knowledge amongst Mathematics teachers at former white schools. In contrast, the fact that homework was given and marked only *sometimes* at former black schools, suggests that there was no consistency in carrying out these important tasks. Homework is usually a catalyst between classroom and home-based school support (HBSS)[62]. Inconsistency and lack of homework, compromises this important relationship. Homework is also a way of extending time on task.

It is through learners doing homework and parents assisting them that most parents get a sense of what their children are learning at a particular time. Homework also gives parents an opportunity to get involved in their children's schoolwork. It also acts as a communication link between teachers and parents since it enables the parties to communicate about learners' progress and areas that are posing challenges for learners. The provision of extra lessons is another aspect which emerges from learner interview data. There is increasing empirical evidence that points to the fact that extra lessons influence positive results (Aronson, Zimmerman and Carlos, 1998; Prinsloo, 2008). Cuban learners' good performance is, for instance, attributed, amongst other factors, to their full day of learning (from 08h15 to 16h20) and their teachers' good attendance at lessons. The implication is that Cuban learners spend more time with their teachers,

[62] This simply refers to any form of support, be it academic or financial, given to schools and learners by any family member.

which means that they (Cuban learners) have more opportunities to learn than learners in many other countries, including South Africa[63].

Learners attached to former white schools – some of whom had had the experience of attending township and rural schools before moving to former white schools – highlight the two different school worlds that exist and the huge disparities in terms of the *modus operandi*[64] at the two sets of schools. These differences are reflected in the response below:

> If you are battling with mathematics, there are extra-classes and in black schools you find that they don't have this (FWS, L6, M).

What the data portrays, in as far as the provision of extra lessons are concerned, is that at former white schools, apart from their ability to motivate their learners, teachers also go the extra mile by ensuring that their learners are provided with extra Mathematics lessons.

The situation at former black schools paints a different picture in as far as the provision of extra lessons is concerned. That there is a lack or inadequate provision of extra lessons is corroborated by one interviewed learner attached to a former black school. This learner bemoaned the fact that "they (former white schools) have extra classes which we do not have" (FBS, L2, M). Extra lessons provide both teachers and learners with the opportunity to work on aspects of work which learners did not understand well or had missed, for example because of non-academic extra-curricular activities. Extra lessons also improve the chances of curriculum coverage. The fact that learners at former white schools had additional opportunities to learn, in comparison with their counterparts at former black schools, provides another explanation for academic disparities.

Time on task

Chickening and Gamson (1987) argue that there is no substitute for 'time on task' and that learning to use one's learning time well is critical for both students and

[63] The official working hours for teachers in South Africa, according to the Educator's Employment Act of 1998, are seven hours.

[64] This is a Latin phrase meaning modes of operation/ ways of operating.

professionals. There is empirical evidence showing a correlation between time on task and learner achievement (see Vosskuhler and Issman, 2003; Carnoy, 2007a; Clariana, 2008; Positive Action, 2009). In the words of Clariana, "[t]ime on task is an important variable in schools that directly relates to students' learning and achievement" (Clariana, 2008:1). South African educators spend an average of 16 hours (out of the possible 41 hours) a week teaching, the rest is taken up by school and non-school related activities (see Chisholm et al, 2005).

What emerges very clearly here is that it is crucial to maximize instructional time -time on task. However, the dysfunctionality in many historically African schools, one of the enduring legacies of apartheid education, poses a serious threat to any attempts aimed at improving time on task. Data from the interviews shows learner dissatisfaction in former black schools about poor teaching standards, teachers' inconsistent or infrequent class attendance, poor classroom management, and ill discipline amongst learners. This dissatisfaction is clearly captured in the words of two learners attending a former white school, both were black learners hailing from a black community, who said:

> Some of the location [township] teachers, when you go there you see children playing in class and they don't listen, but when you come in our school, you find that they [teachers] are always teaching (FWS, L4, M).
>
> They [former black school teachers] sit and relax while white schools give us education the best that they can (FWS, L1, F).

Language of learning and teaching

The issue of the language of learning and teaching (LoLT) or language of instruction, versus the home language instruction, is one that is increasingly being raised in international, regional and national learner achievement studies (see Chapter Two). There is ample empirical evidence suggesting that the language of learning and teaching and the test language have an impact on learner performance gains (see Bosman, 2000; Roseberry-McKibbin and Brice, 2000; Setati, 2002; Setati, 2004; Alidou et al, 2006). Some studies suggest that when the language of learning and teaching is not the one spoken at home or amongst friends or learners at school or in class, this tends to affect teaching and learning processes. According to Alidou et al (2006), the use of a language different to the one spoken by learners tends to affect the teaching technique, leading to the lesson becoming teacher-centred. The implication is that language, in one way or

another, plays a crucial role in learning and teaching and ultimately impacts on learner performance. It is for this reason that Wolff (as quoted in Alidou et al, 2006:50) argues that “language is not everything in education, but without language, everything is nothing in education”.

The language of instruction at all the sample schools was English. This was the case despite the fact that almost all learners were black and second language speakers of English. What learner interview data seems to point to is that learners from both former white and former black schools are concerned about the quality or standard of English, as the language of instruction, in former black schools. The quality of English as the language of instruction was given as one of the main reasons for black learners attending former white schools rather than attending former black schools. And the good standard of English as a language of instruction was one of the main reasons given by former black school learners when they expressed their desire to move to former white schools. In the words of one former black school learner: “I would like to go and learn in a former white school so that I can improve my English” (FBS, L1, F).

Disparities in English competency – as the language of instruction – between teachers in former white and former black schools appears to be another factor that contributes to disparities in learner performance at the two sets of schools. This factor was confirmed by data generated from interviews with teachers (as discussed in Chapter Six). However, as outlined in Chapter Six, the use of mother tongue as a language of teaching and learning has both advantages and disadvantages.

Occurrence of lesson observation

Learners’ responses to questions about issues of teacher supervision and evaluation, and on the occurrence of lesson observation seemed to corroborate the findings of different studies conducted in South African public schools (see for instance, Christie, Butler and Potterton, 2007; Carnoy, Chisholm et al, 2008, Department of Education, 2009) that there are sharp contrasts in monitoring and evaluation processes at the two sets of schools. As shown in Chapter Seven, lesson observation is part of the teaching and learning programme at former white schools. There is little or no lesson observation conducted at former black schools; when supervision is undertaken, it is mostly for

purposes of IQMS-related salary increments, and is conducted by peers and the heads of departments (HODs).

The responses of learners attached to former black schools confirm little lesson observation occurring at their schools. The options *never*[65] and *sometimes* were selected by former black school learners, in response to the question that sought to establish the frequency of lesson observation by principals or HODs. At former white schools, the option *quite often* emerges as the strongest response amongst learners, confirming that lesson observation does take place at former white schools in line with the data discussed in Chapter Seven.

8.5. Learners' perceptions of a good Mathematics teacher

Learners' perceptions of what the qualities of 'a good Mathematics teacher' are, to a large extent, reveal the calibre of the teaching staff they are exposed to on daily basis. If learners are provided with a secure environment where they feel that confidentiality is guaranteed, the chances are that they will feel sufficiently at ease to describe their teachers' capabilities as they experience them (thereby providing insights into their teachers' conduct and ways of doing things). According to the interview data, there was consensus amongst learners from both former white and former black schools around the characteristics of a good Mathematics teacher. Learners from both sets of schools described 'a good Mathematics teacher' as a teacher who is able to explain mathematical concepts and problems in such a way that learners are able to understand clearly. A good Mathematics teacher is one whose Mathematics lessons do not leave learners feeling uncertain because of ambiguities that cause further confusion and frustration and ultimately results in poor performance.

There is much empirical evidence that suggests a strong relationship between what teachers know and how well they teach their subjects (see Adediwura and Tayo, 2007). It is obviously difficult, if not impossible, for teachers to teach what they themselves do not understand. By implication, good teachers are those who have a clear understanding of the content or subject matter, coupled with teaching experience and skills. According

[65] This was one option that indicated the non-occurrence of lesson observations at former black schools.

to Adediwura and Tayo (2007), teacher effectiveness is hampered if the teacher is not familiar with the body of knowledge being taught; this is largely because teacher effectiveness is 'subject-specific'.

The call by a learner at a former black school for the Department of Education to employ teachers that are "more clever" and "not lazy" (see previous section) indicates that these learners currently do not have the kind of Mathematics teachers they wish for. Essentially the call for Mathematics teachers who are "clever" and "not lazy' is a call for smart[66] Mathematics teachers, and one does not normally call for something that one already has. The call is thus a clear indication that the calibre of Mathematics teachers that former black school learners currently have does not live up to their description of 'clever and not lazy'. It is a clear vote of 'no confidence'. Teachers at the sample of former black schools are not seen by their learners as effective Mathematics teachers. This could be the reason why learners in both focus groups at former black schools were not unanimous in rating their teacher's performance. Their engagement in what I call 'eye contact negotiations' before hesitatingly rating their teachers' performance as *good* was a sign of some doubts or disapproval. An interpretation of this hesitancy is that the learners do not have a good Mathematics teacher, and this is the fact that appears to be corroborated by their call for clever teachers who are not lazy.

Whilst learners from the two former black schools showed dissatisfaction about the performance of their Mathematics teachers, learners from one of the former white sample schools rated the performance of their Mathematics teacher as 'excellent'. What is surprising is that 'excellent' was not even amongst the options provided (the options were *good, fair and poor*). They rated the performance of their Mathematics teachers so highly that they felt that the description *good* simply was not good enough, and expressed a need for the additional option of 'excellent'. The word 'excellent' was said loud and clear, in chorus and accompanied by beaming faces and nodding heads. The fact that their response was made spontaneously without any hesitation or 'eye contact negotiation' is an indication of their approval and endorsement of their Mathematics

[66] In academia, the word 'smart' is generally used to refer to academics who are clever and competent in their academic work. In this context, the word is used to refer to clever and competent Mathematics teachers.

teachers' performance. Their attitude implied that their Mathematics teacher possessed a high level of subject matter knowledge and Mathematics teaching expertise. While teachers at the former black schools did not appear to be that good as seen through the eyes of their learners, the two former white schools appeared to have good Mathematics teachers.

8.6. Emerging patterns

Several key patterns or trends emerge from learner interview data, as contributing towards explaining learner performance disparities between former white and former black schools in Gauteng Province. The first trend is that, while former white schools have good Mathematics teachers with high levels of content and pedagogical content knowledge, former black schools have Mathematics teachers who are not as good, and who may have 'suspect' levels of content and pedagogical content knowledge. This finding is confirmed by the average teacher test scores presented in Chapter Six.

The above finding has implications for the ANC government's broad project of equitable redistribution of learning opportunities across all schools. Much still needs to be done in terms of a relative equalization of the distribution of good Mathematics teachers across all schools. The Department of Education needs to redouble its effort in terms of skilling and up-skilling maths teachers in former black schools. Far more support and resources – both human and material – need to be channeled towards improving former black school teachers' content and pedagogical content knowledge if a comparison between former white and former black teachers is to be fair and balanced.

The second trend emerging is that homework is consistently given and marked in former white schools, whilst in former black schools this seems to happen only occasionally. The implication is that the Department of Education still has a long way to go in terms of cultivating professionalism, responsibility and a good work ethics amongst some of our teachers in former black schools. The finding also raised questions about the capability of school managers to supervise and manage effective teaching and learning in these schools.

The third trend emerging out of the data is that lesson observation appears to be conducted *quite often* in former white schools as compared with *sometimes* and *never* in

former black schools. The implication of this for the government, and the Department of Education, is that the system of supervision and evaluation that collapsed in the early 1990s, needs to be revived, transformed and effectively implemented in ways that cultivate a spirit and sense of accountability amongst black teachers at former black schools. A further implication is that the Department of Education needs to forge a working relationship with teacher unions, because it is union resistance that is largely seen as being responsible for the continued dysfunctionality of the supervision and evaluation system.

A fourth trend is that former white schools appeared to have regular extra lessons, and this seems to have a positive influence on the performance of learners. The official working hours for teachers in South African public schools, in terms of the Employment of the Educators Act of 1998, is seven hours. Since this policy came into effect, most of the highly unionized teaching staff – the majority of whom serve low-income learners in rural and township schools – have been reluctant to work for more than seven hours. The challenge therefore is for both the Department of Education and teacher unions to encourage and give incentives for teachers to provide extra lessons, especially in schools serving low-income learners, in the interests of achieving educational equity.

A fifth trend is that both former white and former black sample schools use English as a language of learning and teaching Mathematics, but it is learners in former white schools who seem to have a better understanding of, and higher levels of competence in the language of instruction. By implication, the Department of Education needs to speed up the implementation of mother tongue education in primary schools.

8.7. Conclusion

All learners – whether they are at entry level (Grade R), where the admission age is six years, or at the Grade 6 level, where they are about 12 years old – are not objects, but human beings who can see, hear, talk and read between the lines. They should be treated as such. Disregarding their judgments and opinions about issues related to teaching and learning in the classroom is an unfortunate tendency in many studies. This chapter shows that learners' perceptions provide an invaluable source of information. The investigation into learners' perceptions of teaching and learning in this study has

generated important insights that contribute towards explaining disparities in Grade 6 Mathematics learner performance between former white and former black schools in South Africa.

What emerges – through the eyes of the learners – is that there are still worrying differences between teachers' commitment, accountability and work ethics in former white and former black schools. While Mathematics teachers at former white schools appeared to be more organized and committed, learner interview data paints a different picture about teaching at former black schools as clearly shown in this chapter. It is for that reason that I argue in this chapter that former white schools have better (organized, committed and accountable) Mathematics teachers than former black schools.

CHAPTER NINE
CONCLUSION

9.1. Introduction

The question that drives this study is: *Why does South Africa continue to have disparities or variation in learner performance between former white and former black schools in spite of huge educational investments and significant policy changes since 1994?* The question set in motion a challenging and complex journey in which interesting discoveries were made while reshaping my own personal, academic and professional identity. The result is that I now have a radically different and improved understanding of the issues entailed in this question following the journey one had to travel in order to find valid answers and the knowledge that these answers have added to our understanding of the research problem. This chapter represents a systematic retrospective reflection on this journey and its outcomes, or more precisely the theoretical contribution that the study has made to our understanding of the interplay of factors, dynamics and processes that reproduce disparities between former white and former black schools in Gauteng Province of South Africa after more than a decade of democracy.

9.2. Looking back: the journey and its intricacies

Looking back where this journey started, I saw persistent unequal academic performance between former white and former black schools in South Africa - as clearly demonstrated by studies such as SACMEQII and TIMSS 2003 - despite massive educational investments embarked upon by the ANC government since the dawn of democracy in 1994. While school disparities occurred across all former departments of education (racially divided) as demonstrated by Table 1 in Chapter One, the huge disparity was between former white and former black schools, which justifies my focus on the two ex-departments in this study.

My preliminary impressions or explanations of the problem were initially limited to and revolved around the effects of apartheid policies and in particular the Bantu education policy. But as I engaged with the international literature my impressionist understanding was challenged. It became clear that behind school disparities in other contexts were

forces such as the negative impact of poverty on the academic performance of learners, unequal distribution of good teachers across the school system - with good teachers opting to teach in well-resourced schools as opposed to dysfunctional and poor schools, a terrible lack of accountability amongst unionized teachers, especially in historically black schools, the collapse of the culture of teaching and learning in most former black schools leading to dysfunctional schools and the negative impact of poor family background (household resources and parents' educational level) on learner performance.

Having mapped out key national debates, it also became clear that, depending on regional and institutional complexities, the problem of learner performance disparities goes beyond the effects of apartheid policies. There is a whole range of other salient factors that explain learner performance disparities between schools in South Africa such as poor monitoring of student progress by school principals in historically black schools; teacher absenteeism and poor teacher quality in historically black schools; differences in school and learner SES in the two types of schools; lack of resources, teacher development, school infrastructure and upgrading; and curriculum development in former black schools. More interesting were the conceptual tools and methodological bases that these debates pointed to for someone asking hard questions about these disparities.

From my own study the following theoretical bases were critical: improved learner performance can best be achieved if the state: (i) ensures that the social environment within which schools operate and learners learn is optimally conducive and supportive of learning for all learners equally; (ii) ensures that there is adequate and focused instruction in all classrooms on quality subject matter material; (iii) ensures that the teaching force carrying out instruction is well-trained and regularly supervised for purposes of both development and accountability; (iv) ensures that efforts are made to improve the family backgrounds of learners in order to ensure that all learners have adequate social capital to draw on for their learning responsibilities; and (v) finally ensures that the teaching and learning of particularly Mathematics is done through the language which is best understood by most learners.

With these theoretical and methodological bases, the challenge was to develop suitable strategies to access relevant data that could enable me to tackle my research problem in its complexity – why do we continue to have persistent learner performance disparities or variation between former white and former black schools in South Africa despite huge educational investments and policy changes since 1994? In this regard, a number of hurdles had to be crossed, which I did successfully. These include demonstrating the possibility and success of locating a PhD study within a bigger study (the challenge here was to make a clear distinction between the main or bigger HSRC-Stanford study and this one) ; successfully using lesson filming in environments and amongst teachers who are highly politicized; and successfully using multi-research methods (literature review, observation, interviews, testing and document analysis) for data collection purposes. This made the data to be multi-dimensional in that it was drawn from different sources. In essence, this assisted a lot in triangulating data and improving the quality of the findings.

There were, however, some challenges that were encountered in this journey. Amongst these were the need to comply with the demanding and bureaucratic Gauteng Department of Education research requirements; getting consent letters from parents of learners at former white schools; and filming lessons especially at highly unionized, historically black schools. Persuasion strategies played a vital role in this study. I had to persuade teachers to agree to have their lessons filmed – a data collection technique that teachers generally find intimidating. This requires researchers to be able to make teachers feel comfortable about being filmed. However, my experience as a teacher for more than ten years and as a trade unionist helped a great deal in successfully carrying out these responsibilities.

Some key discoveries also emerged from the empirical chapters or data of this study. These discoveries included a revelation and confirmation of a clear correlation between learners' and schools' socio-economic status and learner performance; inadequate learner access to and insufficient use of textbooks; unequal distribution of competent and skilled teachers across the public schooling system; the greater capacity of former white schools to attract and retain good teachers than former black schools; the state of dysfunctionality in most former black schools as opposed to state of functionality at former white schools – though there were also some signs of a shift from conservative to liberal behaviours amongst learners in former white schools, especially in terms of

school culture; and poor levels of both teacher development and accountability amongst most of the unionized teachers attached to former black schools.

The effort paid off and interesting patterns and trends emerged from the study that provide an explanatory basis for my research question. Empirical data revealed for example the following: higher levels of time on task (actual instructional time) at former white schools than at former black schools; higher levels of teacher content knowledge (CK), pedagogical content knowledge (PCK) and general pedagogical knowledge (GPK) amongst teachers attached to former white schools than their counterparts at former black schools; significant correlation between teacher content and pedagogical content knowledge and learner performance; unequal distribution between home capital[67] and social capital[68] across public schools; discrepancy in the ability to mobilize financial resources between the two school groups; better understanding of the subject matter by learners whose first language is the language of teaching and learning than by second language speakers; and better financial capacity by former white schools to organize extra workshops at school level as well as stronger professional (teacher) identity amongst teachers attached to these schools in comparison to those of their counterparts at former black schools.

9.3. Key theoretical insights

The following are some of the most interesting theoretical insights that can be drawn from the study:

- *The side-effects of budget driven teacher education reform: unwarranted teacher retrenchments.* Studies on teacher demand and supply highlighted an apparent oversupply of teachers, which gave a rationale for education departments concerned with the increasing expenditure on teachers to introduce a retrenchment strategy. The introduction of the poorly planned voluntary severance packages led to the loss of good teachers and school managers.

[67] The amount of education parents have (Carnoy, 2007a)

[68] The amount of effort that parents put into their children's education (Carnoy, 2007a).

While this was not targeted only at historically black schools, it resulted in the shrinking of the pool of teachers that could have contributed to addressing the backlogs faced by these schools.

- *Expenditure, resource allocation and physical infrastructure: how do they feature in disparity reduction*? Particularly in the South African context where the expenditure for the racially divided education departments was unprecedentedly unequal, there seems to be a tendency to fetishize or reify the significance of material inputs such as budgets, infrastructure and educational resources over classroom practice and teacher development. The problem with such an approach is that it tends to lead to the neglect of less visible factors that contribute to school improvement discussed in this study. A balance is needed between these two dimensions.

- *Teacher redeployment as a school improvement strategy*: While the main aim of teacher rationalization and redeployment was to redistribute teachers to schools where they were most needed, unfortunately, this programme yielded undesired results, which hit former black schools, the most. Former white schools were not adversely affected by rationalization and redeployment for several reasons. For example they benefitted from more advanced curriculum practice; they were able to generate funds through exorbitant school fees, as well as the fact that they were able to employ more teachers through SGB appointments, which have assisted them in maintaining lower teacher: learner ratios. This failure of the rationalization and redeployment project points to a shortcoming on the side of government's redress strategy by addressing one thing while exacerbating the other.

- *Busing school kids and intercultural exchange in schools*: The de-racialization of schools that led to the opening of the doors of former Model C schools to all learners in South Africa was one of the key educational achievements of the post-apartheid South Africa. However, the movement of learners, largely from black or township schools to former white or middle schools, comes with its own intercultural challenges. Jansen argues that when former white (middle-income) schools admit learners from former black (township) schools, they admit them

with their dysfunctional behaviours from township schools which becomes a challenge for the receiving schools (Jansen, 2008). Cultural clashes then become a challenge that the receiving school has to deal with. This is an important consideration but in line with the argument pursued in this study the most critical effect is the loss of the best learners from black schools, which aggravates the situation.

- *The gap between policy development and policy implementation*: The analysis of educational policy pointed to the gap between policy formulation and actual implementation. Essentially, very few of the massive educational policies developed so far have translated into actual practice or meaningful change in teaching and learning in schools. Put differently, while huge policy changes have been made in the South African education system, not many of these changes have translated into reduced disparities in learner performance between former white and former black schools. In some instances, some of the educational policies seem to have brought about unintended negative results. For instance, whilst the de-racialization or desegregation of schools led to more learners from historically black schools gaining access to former white (Model C) schools, it also led to the exodus of white learners from former Model C schools (see Chapter Five) to private schools.

- *Content knowledge and pedagogical content knowledge amongst teachers: how do they feature in learner performance disparity?* This thesis confirmed the unequal levels of both content knowledge (CK) and pedagogical content knowledge (PCK) amongst teachers. Tecahers' CK and PCK appeared to be higher amongst Mathematics teachers in former white (middle-income) schools than amongst their counterparts in former black schools. Most importantly, interviewed learners went to the heart of the matter by indicating that what is important about a teacher is not just the content knowledge, but how it is explained and understood by the learners.

- *The opportunity to learn (OTL) vis-à-vis the quality of learning experience:* Without disputing the crucial role that the opportunity to learn (OTL) plays in improving learner performance, what emerged strongly from this thesis suggests

that curriculum coverage and curriculum exposure alone are not sufficient. It became clear that what matters most is the opportunity to quality learning (OTQL). What matters most is the quality of the opportunity to learn or the quality of the learning experience.

9.4. Overall: What to make of this study?

Reducing disparity and inequality requires a concerted effort across all relevant sectors and stakeholders. It requires factors beyond material inputs, e.g. behaviour and cultural change of schools - enabling environment, teacher accountability over and above training knowledge and skills, and learner commitment that includes learners learning to value the school as an important institution in their lives. For the South African Department of Education to successfully address complex and intense legacy of inherited inequalities, it needs to be conscious of the long-term effect of such inherited inequalities. The study also demonstrates that if government departments do not tie up loose ends, and put tight control measures in place when implementing educational policies, unnecessary tensions will be created within the policies as well as a gap between such policies and their actual implementation. An oversight in this regard can lead to worsened situations as shown in Chapter Five.

School resources and educational materials alone, without a proper school culture and a conducive learning and teaching environment, cannot improve learner performance. In addition, this cannot be achieved without teachers with good training, and who are properly monitored and evaluated. Clearly, the conditions under which learner testing is carried out are still characterized by high levels of inequalities in terms of school resources, teacher quality, parents' education, teacher supervision and evaluation, the culture of teaching and learning, and the language of teaching and learning. In essence, the playing field is not yet leveled.

A distinct impression is that the government is being carried away by the excitement of learner testing and in the process taking its eyes off the project of redress. I argue that this path has the potential of diverting the Department of Education from its primary focus that should be on equitable redistribution of opportunities to quality education for all. There is nothing wrong with aiming high and being results-oriented, but this goal

should be preceded by adequate spade work and the provision of a solid foundation. This is not to downplay the need and importance of competition amongst schools and learners. However, for South Africa to compete effectively and confidently, it needs to overcome inequalities first and ensure educational equity for all schools. It is for that reason that Jansen (2001) describes the South African government as 'being obsessed with the results' while there is still much to be done in terms of providing the basics in previously disadvantaged public schools.

My view is that a period of fifteen years of democracy is reasonably long enough for a government to have begun to make a serious dent on the inherited legacy of inequalities. Considerable progress in attempts to eradicate educational inequalities should be clear and visible at this stage. There is no need at this stage to go all out to achieve outputs at the expense of the still-needed inputs. Rooting out educational inequalities should be the main focus of the South African education system. Only once this noble goal is achieved, will the good results start trickling in on their own. It is therefore for that reason that I argue in this study that there are still huge inequalities in teaching and learning processes and schooling environments, hence learner performance disparities. I must emphasize that if inequalities within the education system and the schools are not adequately eliminated, it will become very difficult to attain educational equity.

9.5. Implications of the findings

The reality of dysfunctional schools and school cultures at this point in time is a most worrying and discomforting situation for the Department of Education and the nation as a whole. The discipline and work ethics of staff and learners in most of the former black schools has 'gone to the dogs' (see Jansen, 2009). The high number of dysfunctional schools, coupled with severely compromised school cultures, means that the conditions in most of our former black schools are simply not conducive to effective teaching and learning. In this regard, the study has the following policy, research and practical implications:

- The Department of Education needs to stay focused on the task of eradicating stumbling blocks towards its resolve to undo the injustices of the past, and avoid

the temptation of becoming distracted by focusing merely on achieving quick results. My view is that the Department of Education needs to continue dismantling the bedrock of apartheid education that remains largely intact and unshaken. In essence, the government needs to be steadfast in its resolve to eradicate educational inequalities if the war on learner performance disparities is to be won.

- The evidence of resource inequality as it emerges in this study is a clear call to policy makers to come up with a more decisive policy reorganization strategy. Such a strategy should be able to ensure that policies do not address one aspect of the problem while exacerbating other aspects as illustrated in the study.

- If persistent learner performance disparities across schools are to be eradicated, it is imperative for the Department of Education to ensure that teachers strike a balance between content knowledge and the necessary pedagogical knowledge for sound teaching and learning practices. Besides adequate training, schools must have sufficient supply of textbooks; learners must have adequate access to the textbooks; teachers must improve their understanding of LTSM, particularly effective use of textbooks.

- It is also imperative for the Department of Education to come up with an intervention strategy that will attract good teachers to poor (township and rural) schools. There should be attractive and sustainable incentives that facilitate the movement of effective teachers to the previously disadvantaged schools. Without such incentives, it will be very difficult if not impossible to equalize the distribution of teacher knowledge across South African schools.

- The question of school discipline must also be brought to the centre of the agenda, a matter that concerns both teachers and learners. The call is for the Department of Education and the ANC administration in general to urgently restore discipline and effective school cultures. Unless good discipline and school cultures are in place, we can forget about the project of educational equity and equalizing learner performance in South Africa.

- Organizational capacity of schools also emerged as an important issue in this thesis. There is a clear disparity in terms of organizational capacity between the former white and former black schools that form part of this study. The Department of Education, therefore, has to ensure that the organizational capacity of schools across the education system and former black schools in particular, is improved.

- Poor teacher monitoring, evaluation and development is another thorny issue that the Department should address as a matter of urgency. Whereas section 23 of the Constitution of the Republic of South Africa gives every worker the right to strike, section 29 gives everyone the right to education, including poor learners (Republic of South Africa, 1996b). By implication, by exercising their right to strike, teacher unions need to be very careful that they are not infringing on learners' right to education. Both the ANC administration and teacher unions – as important stakeholders in education and most importantly as members of the ruling tripartite alliance – need to find common ground around the issue of teacher supervision and evaluation.

- It is imperative for teacher unions to transform and shift from their monotonous preoccupation with bread and butter issues, at the expense of teaching and learning obligations. While it is essential for teacher unions to be proactive and concerned about labour issues, it would be irresponsible on their part to disregard professional (teaching and learning) issues.

- Similarly, as the main employer of teachers the Department of Education needs to start dealing with issues of teacher development and teacher supervision and evaluation with a sense of maturity and with more determination. While it is crucial for teachers' knowledge to be developed through effective training programmes, it is irresponsible for teachers to continue to refuse to be held accountable for the services they are expected to render to their employer, the Department of Education. Equally, it would be irresponsible for the Department of Education to continue to delay its obligation to address the inherited massive teacher development backlogs through effective teacher development programmes.

- Teachers in former white schools that were visited in this study demonstrated a sense of agency and the ability to initiate and organize constructive training workshops and to develop extra learner material such as study guides for their learners. Unfortunately, this teacher agency seemed to be lacking or rare in amongst teachers in former black schools. It is therefore very crucial for teachers in former black schools to develop and improve their sense of teacher agency.

- For learner disparities to be successfully reduced, learners also need to play their part, particularly in former black schools. It is crucial for learners to learn to value a school as a vital institution in their lives and to improve their commitment towards education.

- This study has demonstrated that it is possible for PhD studies to be located within a bigger study thus drawing and benefiting from its vital resources, expertise of experienced researchers and free access to data sets. The study also demonstrated the success of using technologically advanced equipments such as video cameras for data collection and data analysis purposes, in particular lesson filming. This is a significant data collection innovation which the research fraternity, in particular the educational research fraternity, may want to popularize and enhance.

REFERENCES

Abedi, J., Courtney, M., Leon, S., Kao, J. and Azzam, T. (2006). English Language Learners and Math Achievement: A Study of Opportunity to Learn and Language Accommodation. CRESST/UCLA, Los Angeles.

Abouchaar, A. (2003). The Impact of Parental Involvement, Parental Support and Family Education on Pupil Achievements and Adjustment: A Literature Review. Department of Education and Skills, Nottingham.

Academy for Education Development (AED). (2005). Quality Teaching: Building a Flexible and dynamic Approach. AED, Washington, DC.

Adediwura, A.A., and Tayo, B. (2007). Perception of teacher's knowledge, attitude and teaching skills as predictor of academic performance in Nigerian secondary schools. *Educational Research Review,* 2(7), 165-171.

African National Congress (ANC). (1994). ANC Education Policy: Discussion Document. ANC, Johannesburg.

African National Congress (ANC). (1955). Freedom Charter. ANC Communications, Johannesburg.

Alausa, Y.A. (1999). Teachers' feedback through the learners: A case of my Biology class.
http://www.nied.edu.na/publications/journals/journal10/Journal%2010%20Article%201.pdf-. Retrieved August 2008.

Alidou, H., Boly, A., Brocl-Utne, B., Diallo, Y.S., Heugh, K., and Wolff, H.E. (2006). Optimizing Learning and Education in Africa – the Language Factor. A Stock-Taking Research on Mother Tongue and Bilingual Education in Sub-Saharan Africa. Association for the Development of Education in Africa (ADEA), Paris.

Alliance for Quality Teaching. (2008). Guide to Teacher Quality.
http://www.qualityteaching.org/Documents/guide.pdf

Anderson, K.G. (2000). Family structure, parental investment, and educational outcomes among black South Africans. University of Michigan, Michigan.

Aronson, J., Zimmerman, J. and Carlos, L. (1998). Is It Just a Matter of Time? West Ed, San Francisco, CA.
http://www.wested.org/wested/papers/time and learning/2_history.html. Retrieved August 2008.

Association for the Development of Education in Africa (ADEA). (2002). Striving for Quality: Next starts. *ADEA Newsletter, Special Issue*, 16, 16(1).

Au, W. (2005). Teacher Quality: Conversations on Quality. University of Wisconsin-Madison. Madison.

Babbie, E. and Mouton, J. (2002). The Practice of Social Research. Oxford University Press, New York.

Baloyi, H.G. (2002). Exploring the experiences of parents serving in a rural school governing body: A case study of a rural school governing body with keen interest on the experiences encountered by parent members. University of the Witwatersrand, Johannesburg.

Barton, P.E. (2003). Parsing the achievement gap. Educational Testing Service, Princeton, NJ.

Beckman, J. (2002). The emergence of self-governing schools in South Africa: devolution of authority or disguised centralism? *Education and the Law*, 1469-5774, Volume 14 (3), 153-166.

Bernard, J.M. and Goodyear, R.K. (2004). Fundamentals of Clinical Supervision. MA Allyn and Bacon, Boston.

Black, P and Williams, D. (1998). Inside the black box. G.L. Assessment, London.

Bloch, G. (2009). Lessons must be learned: Outcomes Based Education has failed. *Sowetan*, 16 September 2009*,* p.17.

Bosman, N. (2000). South Africa' Culture of Non-Learning – a Byproduct of Non-Mother Tongue Education? *SAALT Journal for Language Teaching*, 34(3), 221-228.

Botha, R, N. (2002). The introduction of a system of OBE in South Africa: Transforming and empowering a marginalized and disenfranchised society. University of South Africa, Pretoria.

Boyle, B., While, D. and Boyle, T. (2003). A Longitudinal Study of Teacher Change: What makes Professional Development Effective? Working Paper no.1. Institute for Political and Economic Governance (IPEG), Manchester.

Bredeson, P.V. (2000). The school principal's role in teacher professional development. *Professional Development in Education*, 26(2), 385-401.

Brooks, E. (1968). Apartheid. Barnes and Noble, New York.

BuaNews (Tshwane), 8 January 2008.

Bullock, C.C. (2007). The Relationship between School Building Conditions and Student Achievement at the Middle School Level in the Commonwealth of Virginia. Virginia Polytechnical Institute and State University, Blacksburg.

Burns, J. (2001). Inheriting the future: The role of family background and neighbourhood Characteristics in Child Schooling Outcomes in South Africa. Paper presented at the DPRU/FES conference held in Johannesburg, 15-16 November 2001.

Campbell, J., Kyriakides, L., Muijs, D. and Robinson, W. (2004). Assessing Teacher Effectiveness: Different Models. Routledge, London.

Carnoy, M. and Marshall, J. (2005). Cuba's Academic Performance in Comparative Perspective. In Comparative and International Education Society (CIES) (Ed). *Comparative Education Review*, 49 (2). The University of Chicago Press, Chicago.

Carnoy, M. (2007a). Cuba's Academic Advantage: Why Students in Cuba Do Better in school. Stanford University Press, Stanford.

Carnoy, M. (2007b). Lessons from the past two decades: Investment choices for education and growth. *Southern African Review of Education*, 13(2), 5-26.

Carnoy, M. (2008). What Latin American Countries Can Learn from Cuba's Academic Success. A paper presented at the CIES Conference held in New York, 17-22 March 2008.

Carnoy, M., Chisholm, L., et al. (2008). Towards Understanding Student Academic Performance in South Africa: A Pilot Study of Grade 6 Mathematics Lessons in South Africa. Report prepared for the Spencer Foundation. HSRC, Pretoria.

Center for Assessment and Evaluation of Student Learning (CAESL). (2004). Achievement Gaps in Our Schools. *Assessment Brief,* 8, January 2004, 1-5.

Centre for Applied Legal Studies. (2008). Gauteng Quintile 3 Schools to be free. http://www.law.wits.ac.za

Chickening, A.W. and Gamson, Z.F. (1987). Seven Principles for Good Practice in Undergraduate Education. The Johnson Foundation, Wisconsin.

Chisholm, L. (1992). Policy and critique in South African Educational Research. *Transformation*, 18-22, 149-160.

Chisholm, L. (1998). Education policy developments, September 1997 to January 1998. *Wits EPU Quarterly Review of Education and Training in South Africa.* Education Policy Unit, University of the Witwatersrand, Johannesburg.

Chisholm, L. (Ed). (2004). Changing Class: Education and Social Change in Post-Apartheid South Africa. HSRC Press, Cape Town.

Chisholm, L., Soudien, C., Vally, S and Gilmour, D. (1999). Teachers and Structural Adjustment in South Africa. *Educational Policy*, 13 (3), 386-401.

Chisholm, L; Volmink, J; Potenza, E; Muller, J; Vinjevold, P; Malan, B; Ndhlovu, T; Mahomed, H; Lubisi, C; Ngozi, L & Mphahlele, L. (2000). A South African Curriculum for the Twenty First Century: Report of the Review Committee on Curriculum 2005. Department of Education, Pretoria.

Chisholm, L., Hoadley, U., Kivilu, M., Brokkes, H., Prinsloo, C., Kgobe, A., Mosia, D., Narsee, H. and Rule, S. (2005). Educator Workload in South Africa. HSRC Press, Cape Town.

Christie, P. (2001). Improving school quality in South Africa: a study of schools that have succeeded against the odds. University of Queensland, Brisbane.

Christie, P., Butler, D. and Potterton, M. (2007). Ministerial Committee: Schools that work. Department of Education, Pretoria.

City Press, 12 November 2006

Clariana, R. (2008). Meaningful time on task: Practical guidelines for implementing CompassLearning software.
http://www.wikispaces.com

Cohen, L and Manion, M. (1994). Research Methods in Education. Routledge, New York.

Cohen, L. (2009). Schooling 'a national disaster'. *Sowetan*, 16 September 2009, p.7.

Coleman, J.S., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfeld, F and York, R. (1966). Equal Educational Opportunity. US Government Printing Office, Washington, D.C.

Collier, V.P. and Thomas, W.P. (2004). The Astounding Effectiveness of Dual Language Education for All. *NABE Journal of Research and Practice*, 29 (1), 1-20.

Craig, H., Kraft, R. and Du Plessis, J. (1998). Teacher Development: Making an Impact, USAID, Washington, DC.

Creswell, J.W. (1994). Research Design: Qualitative and quantitative approaches. Sage, London.

Cross, M. (forthcoming). On Becoming and Remaining Teachers: A Case Study of Limpopo Teachers.

Crouch, L. (2005). South Africa equity and quality reforms: possible lessons. *Journal of Education for International Development*, 1(1), article number 2.
http://www.equip123.net/JEID/articles/1/1-2.pdf

Darling-Hammond, L., Wise A.E. and Pease, S.R. (1983). Teacher Evaluation in the Organizational Context: A Review of the Literature. *Review of Educational Research* 53(3), 285-328.

Department of Agriculture (DoA). (2005). A profile of Gauteng: demographics, poverty, inequality and unemployment. Provide Project.
http://www.elsenburg.com/provide

Department of Education (DoE). (1995). White Paper on Education and Training in South Africa: First steps to develop a new system (White Paper One). Department of Education, Pretoria.

Department of Education (DoE). (1996a). Education White Paper 2: The Organization, Governance and Fundraising of Schools. Department of Education, Pretoria.

Department of Education (DoE). (1996b). National Norms and Standards for School Funding, 1999. Department of Education, Pretoria.

Department of Education (DoE). (2003). Plan of Action: Improving Access to Free and Quality Basic Education for All.
http://www.education.gov.za

Department of Education (DoE). (2004). Review on School Governance: Report of the Ministerial Committee. Department of Education, Pretoria.

Department of Education (DoE). (2005a). Rights and responsibilities of parents, learners and public schools: Public school Policy Guide 2005.
http://www.education.gove.za

Department of Education (DoE). (2005b). EMIS DATA 2005.
http://www.education.gov.za

Department of Education (DoE). (2006a). Monitoring and Evaluation Report on the Impact and Outcomes of the Education System on South Africa's Population: Evidence from Household Surveys. Department of Education, Pretoria.

Department of Education (DoE). (2006b). Norms and Standards for School Funding as amended, no. 869 of 2006. Department of Education, Pretoria.

Department of Education (DoE). (2007). National Policy Framework for Teacher Education and Development. Department of Education, Pretoria

Department of Education (DoE). (2008). Annual Report 2007/08. Department of Education, Pretoria.

Department of Education (DoE). (2009). Final Report of the Ministerial Committee on a National Education Evaluation and Development Unit. Department of Education, Pretoria.

Duke, D.L. (2008). The little school system that could: Transforming a City School District. State University of New York Press, New York.

Earthman, G.I. (2004). Prioritization of 31 criteria for school building adequacy. American Civil Liberties Union Foundation of Maryland, Baltimore.

Educational Laws Amendment Act, no.24 of 2005

Educational Testing Service (ETS). (2004). Where We Stand on Teacher Quality.
http://www.ets.org/Media/Education_Topics/pdf/teacherquality.pdf

Education Trust. (2003). Improving Your Schools: A Parent and Community Guide to No Child Left Behind.
http://www.edtrust.org.

Education Trust. (2006). The funding gaps 2006. Education Trust, Washington, DC.

Eggen, P. and Kauchak, D. (2001). Educational Psychology: Windows on classrooms. Prentice Hall Inc, New Jersey.

Elmore, R. (2004). School reform from the inside out. Harvard University Press, Cambridge.

Even, R. (1993). Matter Knowledge and Pedagogical Content Knowledge: Prospective Secondary Teachers and the Function Concept. *Journal for Research in Mathematics Education*, 24(2), 94-116.

Farley-Lucas, B. and Sargent, M.M. (2007). "Checking Out Mentally": Faculty Misbehaviors and Impact on Students. A paper presented at the Improving University Teaching 2007 Annual Conference, Jaen, Spain

Ferguson, R. (2002). Addressing racial disparities in high-achieving suburban schools. NCREL *Policy Issues*, 1, 3-11.

Fiske, E.B. and Ladd, H.F. (2004). Racial Equity in Education: How Far Has South Africa Come? Terry Sanford Institute of Public Policy, Durham.

Fiske, E.B. and Ladd, H.F. (2005). Elusive Equity: Education reform in post-apartheid. Brookings Institution, Washington, DC.

Fleisch, B. (2008). Primary Education in Crisis: Why South African Schoolchildren underachieve in reading and mathematics. JUTA, Cape Town.

Fleisch, B. (2009). Common sense is about to make a classroom comeback. *Sunday Times*, 18 October 2009.

Flyvbjerg, B. (2006). Five Misunderstandings About Case-Study Research. *Qualitative Inquiry,* 12(2), 219-245.

Ford, D.Y., Grantham, T.C. and Whiting, G.W. (1998). *Urban Education*, 43(2), 216-239.

Forster, P. (2006). Observational Research. In R. Sapsford and V. Jupp (Eds). *Data Collection and Analysis* (pp.57-92). Sage, London.

Fraser, B.J. (1994). Research on classroom and school climate. In D. Gabel (Ed.), *Handbook of research on Science Teaching and Learning (p.493-541)*. Macmillan, New York.

Gardiner, M. (2003). Teacher Appraisal: a tale in two parts. *Quarterly Review of Education and Training in south Africa*, 10(4), 27-29.

Gauteng Department of Education. (2008a). Annual Performance Plan 2007/2008 to 2009/2010.
http://www.education.gpg.gov.za

Gauteng Department of Education. (2008b). Circular 24 of 2008: Public Ordinary Schools. The declaration of schools in quintile 3 as 'no fee' schools. Gauteng Department of Education, Johannesburg.

Gillian, B. (2000). Case Study Research Methods. Continuum, London.

Goodnough, K.C. and Hung, W. (2008). Engaging Teachers' Pedagogical Content Knowledge: Adopting a Nine-Step Problem-Based Learning Model. *The Interdisciplinary Journal of Problem-based Learning, 2(2),* 61-90.

Govender, L.V. (2008). Teachers's Participation in Policy Making: The Case of the South African Schools Act. University of the Witwatersrand, Johannesburg.

Govender, P. (2009). Single-sex institutions lead field, girls smarter than boys in our survey. In Sunday Times of 18 October 2009.

Hakuta, K., Butler, Y.G. and Witt, D. (2000). How long does it take English learners to achieve proficiency? University of California Linguistic Minority Research Institute, Santa Barbara.

Harber, C. (2000). State of transition. Post-Apartheid educational reform in South Africa, Oxford; Symposium Books.

Harrel, J., Bradley, C., Dennis, J, Frauman, A. and Criswell, E. (2000). School-based research: Problems of access and consent. *Journal of Pediatric Nursing*, 15, 14-21.

Heffner, C.L. (2004). Research Methods.
http://allpsych.com/researchmethods/validityreliability.html Retrieved 24 January 2008.

Heystek, J. and Lethoko, M. (2001). The contributions of teacher union in the restoration of teacher professionalism and the culture of learning and teaching. *South African Journal of Education,* 21(4), 222-228.

Higgins, S., Hall, E., Wall, K., Woolner, P. and McCaughey, C. (2005). The impact of school environment: A literature review. The Design Council, London.

Hirsch, E.D. (1999). The schools we need: and why we don't have them. Anchor Books, New York.

Howell, J., Miller, P., Park, H.H., Sattler, D., Schack, T., Spery, E. Widhalm, S and Palmquist, M. (2005). Reliability and validity.
http://writing.colostate.edu/guides/research/relval/. Retrieved 24 January 2008.

Human Research Ethics Committee. (2005). Application to the Human Research Ethics Committee (non-medical) for clearance of research involving human subjects. University of the Witwatersrand, Johannesburg.

Human Sciences Research Council (HSRC). (1997). School Register of Needs, 1996. HSRC Press, Pretoria.

Human Sciences Research Council (HSRC). (2005). Educator Workload in South Africa. HSRC Press, Cape Town.

Ingvarson, L. and Rowe, K. (2007). Conceptualizing and Evaluating Teacher quality: Substantive and methodological issues. Paper presented at the Economics of Teacher Quality conference, Australia National University, 5 February 2007.

Inter-Agency Commission (UNDO, UNESCO, UNICEF, WORLD BANK).1990. World Conference on Education for All: Meeting Basic Learning Needs. UNICEF House, New York.

International Association for the Evaluation of Educational Achievement (IEA). (2000). TIMSS 1999 International Mathematics Report: Findings from IEA's Repeat of the Third International Mathematics and Science Study at the Eighth Grade. International Study Centre, Boston College.

International Institute for Educational Planning. (2007). Alternative Models in Reforming School Supervision. UNESCO, Paris.

Jacobs, J.K., Kawanaka, T. and Stigler, J.W. (1999). Integrating qualitative and quantitative approaches to the analysis of video data on classroom teaching. *International Journal of Educational Research,* 31(8), 717-724.

Jansen, J.D. (1997). Essential Alterations? A Critical Analysis of the State's Syllabus Revision Process. Perspectives in Education, 17(2), pp. 1-11.

Jansen, J.D. (1998). Curriculum Reform in South Africa: a critical analysis of outcomes-based education (1). *Cambridge Journal of Education*, 28 (1998) 321-331.

Jansen, J.D. (2001). On the politics of performance in South African education: autonomy, accountability and assessment. *Prospects*, XXXI (4), 553-564.

Jansen, J.D. (2004). Autonomy and accountability in the regulation of the teaching profession: a South African case study. *Research Papers in Education*, 19(1), 51-66.

Jansen, J.D. (2008). An educated guess: Integration needs special care. *The Times*, 13 November 2008.

Jansen, J.D. (2009). An educated guess: Nun so good in a classroom. *The Times*, 30 September 2009.

Jansen, J.D. and Taylor, N. (2003). Educational Change in South Africa 1994-2003: Case Studies in Large Scale Education Reform. *Country Studies Education Reform and Management Publication Series*, 2(1), October 2003.

Jansen, D., Colditz, P., De Clerq, F., Dipholo, M., Lubisi, C., Lolwana, P., Matthews, P., Miller, S., Roman, M., Roux, S. and Sanger, A. (2009). Ministerial Committee on National Education Evaluation and Development Unit. Department of Education, Pretoria.

Jencks, C., and Phillips, M. (Eds.). (1998). The Black-White test score gap. Brookings Institute, Washington, DC.

Johnson, C and Kritsonis, W.A. (2006). The Achievement Gap in Mathematics: a Significant Problem for African American Students. http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1b/d8/3c.pdf
Kilbourn, B. (2006). The qualitative doctoral dissertation proposal. *Teachers College Record, 108(4),* 529 – 576.

Kilminster, SM., Jolly B., Van der Vleuten, C. (2007). A framework for training effective supervisors. *Med Teac 24*, 385-389.

Koppelman, H. (2008). Pedagogical Content Knowledge and Educational Cases in Computer Science: An Exploration. University of Twente, Enchede, Netherlands.

Kozol, J. (1991). Savage inequalities. Crown Publishers, Inc., New York.

Kwok-Lun, C. and Lew, W.J.F. (1981). The criteria of teacher competence as perceived by students, student-teachers and serving teachers in Hong Kong. *CUHK Education Journal*, 9(1), 47-64.

Lam, D. Ardington, c and Leibbrandt, M. (2006). Schooling as a Lottery: Racial Differences in School Advancement in Urban South Africa. University of Cape Town, Cape Town.

Lamb, J., Puskar, K. and Tusaie-Mumford, K. (2001). Adolescent research recruitment issues and strategies: Application in a rural school setting. *Journal of Pediatric Nursing*, 16, 43-52.

Law, S. and Glover, D. (2000). Educational Leadership and Learning: practice, policy and research. Open University Press, Buckingham.

Lee, V.E. and Burkham, D.T. (2002) Inequality at the starting gate: Social background differences in achievement as children begin school. Economic Policy Institute, Washington, DC.

Leigh, A. (2007). How can we improve teacher quality? *The Melbourne Review*, 3(2), 31-37.

Lethoko, M.X. (1997). Restoring the culture of teaching and learning in secondary schools in the Pretoria area. M.Ed dissertation. University of Stellenbosch, Cape Town.

Louw, M., Van der Berg, S. And Yu, D. (2007). Convergence of a kind: Educational Attainment and Intergenerational Social Mobility in South Africa. *South African Journal of Economics, 75, September 2007, 548-571.*

Malcolm, C., Keane, M., Hoohlo, L., Kgaka, M. and Ovens, J. (2000). Why some disadvantaged schools succeed in Mathematics and science: A study of 'feeder' schools. Research report by RADMASTEC Centre. University of the Witwatersrand, Johannesburg.

Marks, R. (1990). Pedagogical Content Knowledge: From a Mathematical Case to a Modified Conception. *Journal of Teacher Education*, 41(3), 3-11.

Marlow, I. and Inman, D. (1993). Protecting a valuable resource: teachers at risk. *Education*, vol.114, 1993.

Melhuish, E., Sylva, C., Sammons, P., Siraj-Blatchford, I. and Taggart, B. (2001). Social behavioural and cognitive development at 3-4 years in relation to family background. The effective provision of pre-school education, EPPE project. The Institute of Education, London.

Middlewood, D. and Cardno, C. (eds.). (2001). Managing teacher appraisal and performance: a comparative approach. Routledge, London.

Mkhantshwa, S. (1997). Speech delivered at Culture of Learning and Services Campaign Consultative Conference, 22-24 August.

Mokgalane, E., Carrim, N.; Gardiner, M and Chisholm, L. (1997). The National teacher Appraisal Pilot Project Report. Education Policy Unit, University of the Witwatersrand, Johannesburg.

Moloi, M. and Strauss, J. (2005). The SACMEQII Project in South Africa: A study of the Conditions of Schooling and the Quality of Education, Ministry of Education, Pretoria.

Monyatsi, P., Steyn, T. and Kamper, G. (2006). Teacher Appraisal in Botswana secondary schools. *South African journal of Education*, 26(2), 215-228.

Moore, K.A. and Redd, Z. (2002). Children in poverty: Trends, consequences and policy options (Research Brief no 54 of 2002). Child Trends Inc, Washington, DC.

Motala, S. (1997). Contested visions. *Wits EPU Quarterly Review of education and Training*, 4(1). Education Policy Unit, University of the Witwatersrand, Johannesburg.

Motala, S. (2007). We need equality in schools. *The Star*, 14 June 2007

Motshekga, A. (2008a). Budget Vote Speech by the MEC for Education, Ms Angie Motshekga, Gauteng Provincial Legislature, Johannesburg.
http://www.education.gpg.gov.za. Retrieved August 2008.

Motshekga, A. (2008b). Quarterly Media Briefing by MEC for Gauteng Department of Education, Ms Angie Motshekga.
http://www.info.gov.za/speeches/2008/08071712451003.htm.Retrieved August 2008.

Murphy, E., Spiegal, N and Kinmonth, A.L. (1992). 'Will you help me with my research?' Gaining access to primary care settings and subjects. *British Journal of General Practice*, 42, 162-165.

Ocampo, M.L. (2004). A Brief History of Educational Inequality from Apartheid to the Present. In *Global Perspectives in Human Language*: The South African Context. http://www.stanford.edu.

O'Connor, M. (1971). Children talking about teachers. In Kemble, B. (Ed). *Fit to teach,* Hutchison Educational Ltd., London.

Olsen, W. (2004). Making Realism Work: Realist Social Theory and Empirical Research. Routledge, London and New York.

O'Neil, B. (2002). A Nations' Most valuable Resource. http://www.designingnations.com/pdf.

Organization for Economic Co-operation and Development (OECD). (2008). Reviews of National Policies for Education: South Africa. OECD, Paris.

Palmese, R. (2008). Pathways to the Future: Linking Curriculum to Green Careers. http://www.green-technology.org/green_technology_magazine/ti.htm.

Peske, H.G., and Haycock, K. (2006). Teaching inequality: How poor and minority students are short-changed on teacher quality. Education Trust, Washington, DC.

Piggot-Irvine. E. and Cardno, C. (2005). Appraising performance productively: integrating accountability and development. Eversleigh Publishing LTD, Auckland.

Pirsig, R.M. (1974). Zen and the Art of Motorcycle Maintenance. Bantam books, New York.

Positive Action. (2009). Academic Achievement. http://www.positiveaction.net.

Prinsloo, CH. (2008). Extra classes, extra marks? Human Sciences Research Council, Pretoria.

Prouty, D. (2000). Teachers as Miracle Workers – Stepping Stones to Success: *The Quality Link – Newsletter of the Improving Educational Quality Project*, 3, pp 1-3.

Ramphele, M. (2009). Our house on fire. http://www.mg.co.za

Reddy, V. (2005). Cross-national achievement studies: Learning from South Africa's participation in the Trends in International Mathematics and Science Study (TIMSS). Human Sciences Research Council, Pretoria.

Reddy, V. (2007). Mathematics and Science Achievement at South African schools in TIMSS 2003. Human Sciences Research Council Press, Cape Town

Reeves, C.A. and Bednar, D.A. (1994). Defining Quality: Alternatives and Implications. *The Academy of Management Review,* 19(3), 419-445.

Reeves C.and Muller J. (2005). Picking up the pace: variation in the structure and organization of learning school mathematics. *Journal of Education,* 37:103-130.

Reis, R. (2010). Strengths and Limitations of Case Studies. http://tomprofblog.mit.edu/2010/04/06/1013-strengths-and-limitations-of-case-studies

Republic of South Africa (RSA). (1996a). South African Schools Act, no. 84 of 1996. Republic of South Africa, Pretoria.

Republic of South Africa (RSA). (1996b). The Constitution of the Republic of South Africa, Act 108 of 1996. Republic of South Africa, Pretoria.
Rice, J.K. (2003). Teacher Quality: Understanding the effectiveness of teacher attributes. Economic Policy Institute, Washington, D.C.

Rice, M., Bunker, K.D., Kang, D., Howell, C.C. and Weaver, M. (2007). Accessing and Recruiting Children for Research in Schools. *Western Journal of Nursing Research*, 29(4), 501-514.

Roseberry-McKibbin, C. and Brice, A. (2000). Acquiring English as a Second Language. *The ASHA Leader*, 5(12), 4-7.

Rothstein, C.M. (2004). Overcoming Apartheid Policies Yesterday: An interview with a former Bantu Education Student and Present-Day Activist.
http://www.stanford.edu

Sayed, F. (1999). Discourses of the Policy of Educational Decentralization in South Africa since 1994: an examination of the South African Schools Act [1][2]. *Compare*, 29(2), 141-152.

Schneider, M. (2002). Do schools facilities affect academic outcomes?
http:/www.edfacilities.org/pubs/outcomes.pdf.

Segall, A. (2004). Revisiting pedagogical content knowledge: the pedagogy of content/the content of pedagogy. *Teaching and teacher education*, 20(5), 489-504.

Setati, M. (2002). Researching Mathematics Education and Language in Multilingual South Africa. *The Mathematics Educator*, 12(2),6-20.

Setati, M. (2004). Mathematics education and language: Policy, research and practice in multilingual contexts. Free download from
http://www.hsrcpress.ac.za

Setati, M. (2008). Mathematics education and language: Policy, research and practice in multilingual contexts. *South African Journal of Education*, 28, 103-116.

Setati, M., Adler, J. and Venkat, H. (2007). Long-term Vision is necessary to achieve excellence in Maths. *Sunday Times*, 30 May 2007.

Sharp, K. (1998). The case for case studies in nursing research: The problem of generalization. *Journal of Advanced Nursing*, 27, 785-789.

Shulman, L. (1986). Those who understand: Knowledge growth in teaching.
Educational Researcher, *15* (2), 4-14.

Smith, D.C. (2000). Content and Pedagogical Content Knowledge for Elementary Science Teacher Educators: Knowing our Students. *Journal of Science Teacher Education*, 11(1), 27-46.

Soares, F. (2004). Quality and Equity in Brazilian Basic Education: facts and possibilities. In C. Brock and S. Schwartzman (2004), *The Challenges of Education in Brazil* (pp. 69-88). Cambridge University Press, United Kingdom: Symposium Books.

South African Democratic Teachers' Union (SADTU). (1998). Speech by Mbeki at Congress of SADTU, 6 September 1998.
http://www.sadtu.org

South African Democratic Teachers' Union (SADTU). (2000). Ten years of struggle – Where to now SADTU?: Notes for SADTU 10th Anniversary Celebrations. http://www.sadtu.org.za

South African Democratic Teachers' Union (SADTU). (2001). Quality Teachers for Quality Education: National SADTU World Teachers' Day Celebration, North-West Province, Rustenburg.
http://www.sadtu.org.za

South African Democratic Teachers Union. (2007). SADTU rejects OSD offer. http://www.sadtu.org.za.

South African Democratic Teachers Union. (2009). SADTU response to the NEEDU Report: Top heavy on evaluation, light on development.
http://www.sadtu.org.za.

South African Institute of Race Relations (SAIRR). (2007). Provincial Highs and Lows. SAIRR, Johannesburg.

Southern Africa Consortium for Monitoring Educational Quality (SACMEQ). 2003. SACMEQII.
http://www.sacmeq.org

Statistics South Africa (StatsSA). (2001). Population Census 2001.
http://www.statssa.gov.za

Statistics South Africa (StatsSA). (2007). Key Municipal Data: Community Survey 2007. Statistics South Africa, Pretoria.

Sullivan, S. and Glanz, J. (2005). Supervision that improves teaching: strategies and techniques. Sage Publishers, London.

Sylva, K., Melhuish, E., Sammons, P. and Siraj-Blatchford, I. (1999). The Effective Provision of Pre-School Education (EPPE) Project: technical paper 2; characteristics of the EPPE Project sample at entry to the study. University of London Institute of Education, London.

Tatto, M.T. (2000). Teacher Quality and Development: Empirical Indicators and Methodological Issues in the Comparative Literature, Paper Commissioned by the Board
Taylor, N. and Vinjevold, P. (1999). Getting Learning Right. Joint Education Trust, Johannesburg.

Taylor, N., Muller, J. and Vinjevold, P. (2003). Getting school working: Research systematic school reform in South Africa. Pearson Education and Maskew Miller Longman, Cape Town.

Taylor S, and Yu, D. (2009). The importance of socio-economic status in determining educational achievement in South Africa. University of Stellenbosch, Cape Town.

Trachoma, W.M.K. (2006). Research *methods knowledge base*. http://www.socialresearchmethods.net/kb/intval.php Retrieved 8 July 2008

Tuchman, B.W. (1980). The Decline of Quality. New York Times Magazine, 2 November 1980 p.38-41.

Uline, C. and Tschannen-Moran, M. (2008). The Walls Speak: The Interplay of Quality Facilities, School Climate and Student Achievement. *Journal of Educational Administration,* 46(1), 55-73.

USAID. (2005). EQUIP 2: Working Paper. http://www.equip123.net

US Department of Education. (1999). Teacher Quality: A Report on the Preparation and Qualifications of the Public School Teachers. National Centre for Education Statistics, Washington, DC.

US Department of Education. (2006). No Child Left Behind Act of 2001: Highly Qualified teachers for every child. http://www.ed.gov/nclb/methods/teachers/stateplanfacts.html

Van der Berg, S. (2001). Resource shifts in South African schools after the political transition. *Development Southern Africa,* 18(4), 309-325.

Van der Berg, S. (2005a). How effective are poor schools? Poverty and educational outcomes in South Africa. University of Stellenbosch, Cape Town.

Van der Berg, S. (2005b). Apartheid's enduring legacy: Inequalities in Education. University of Stellenbosch, Cape Town.

Van Der Berg, S. (2008). Poverty and Education. *Education Policy Series*. 10, 1-28.

Van der Berg, S. (2009). Poor educational quality in South Africa: Issues of equality and efficiency. Paper presented at the HSRC Seminar Series held in Pretoria, 5 May 2009.

Van der Berg, S. and Burger, R. (2002). Education and socio-economic differentials: A study of school performance in the Western Cape. University of Stellenbosch, Cape Town. A paper presented at the conference on *Labour Markets and Poverty in South Africa*, Johannesburg, 22-24 October 2002.

Van der Berg, S. and Louw, M. (2007). Lessons from SACMEQII: South African student performance in regional context. University of Stellenbosch, Cape Town.

Vosskuhler, M.L. and Issman, S. (2003). Raising Standards Test Scores and the Role of Peace Builders: Climate Shift. Paper presented at the 12th International Safe Communities conference on 18 March 2003.

Wenglinsky, H. (2004). Closing the racial achievement gaps: The role of reforming instructional practices. *Educational Policy Analysis Archives*, 12(64), 23 November 2004. http://epaa.asu.edu/epaa/v12n64/. Retrieved 15 May 2009

West Rand District Municipality (WRDM). (2006). Annual Report 2005/2006. http://www.wrdm.gov.za

West Rand District Municipality (WRDM). (2008). http://www.wrdm.gov.za

Wilson, S. (2004). Taming the Constitution: Rights and Reform in the South African Education System. *South African Journal on Human Rights*, 20(3), 418-447.

Wise, A.E., Darling-Hammond, L., McLaughlin, M.W. and Bernstein, H.T. (1984). Teacher evaluation: a study of effective practices. Rand, Santamonica.

Wits University Education Policy Unit. (2005). The State of Teacher Professionalism in South Africa. Wits University, Johannesburg.

Woods, L, and Roberts, P. (2003). Requesting access for research purposes: issues and guidelines. Nurse Researcher, 10, 38-47.

Woolman, S. and Fleisch, B. (2008). Democracy, social capital and school governing bodies in South Africa. *Education and Law,* 20(1), 47-80.

World Bank. (1995). Madagascar: Towards a School-based Strategy for Improving Primary and Secondary Education. The World Bank, Washington, DC.

Wren, S. (2006). Highly-Qualified Teachers Are Not Necessarily High-Quality Teachers. http://www.balancedreading.com/teacherquality.html

Yin, R. (2003). Case Study Research. Sage, London.

Zuma, J.G. (2009). Sate of the Nation Address by his Excellency J.G. Zuma, President of the Republic of South Africa, Joint Sitting of Parliament, CapeTown 3 June 2009. http://www.parliament.gov.za

APPENDICES

Appendix A: Request letters

I. TO GAUTENG DEPARTMENT OF EDUCATION

Mallele Pitje
Director-General: Gauteng Department of Education
PO Box 7710
Johannesburg 2000
Fax: 011 333 5546
5 April 2007

Dear Mr Pitje

Request for consent to conduct research in Gauteng schools for pilot of research project on regional achievement

I am writing to ask permission to conduct research in schools for a project on regional achievement that is being conducted by a team of researchers drawn from the HSRC, Stanford University, Wits University, UKZN and UCT. HEDCOM approved the overall project in 2006 and I attach that letter.

The original proposal that was presented at HEDCOM was revised in the light of recommendations from that meeting, the Department of Education (national), Treasury and the Spencer Foundation (one of the donors). As part of the overall goal of attempting to understanding South African learner performance, we are investigating a range of issues in 40 schools in each, selected province and country. Language issues will be examined by giving half the respondents a choice of language in which to fill in the questionnaires, and giving the other half the questionnaire in English.

We would like to conduct the pilot in Gauteng. This will mean:

- Administering a learner questionnaire in grade 6 Maths classes in May (scheduled tests are 16th and 17th);
- A teacher questionnaire in July in the same schools;
- A principal questionnaire in July in the same schools;
- Interviews with the provincial Deputy Director-General and Director responsible for Teacher Education
- Administering a follow-up learner questionnaire in October in the same schools

Although we have your approval through HEDCOM, we would appreciate your specific consent to conduct the research before we approach the school principals, and also the names of the Deputy Director-General and Director for Teacher Education whom we should interview. The usual procedures of consent and anonymity will be followed in the conduct of the research. We will also pay maximum attention to no disruption of schools.

I can be contacted on 011 302 2008 (tel), 011 302 2901 (fax) or LChisholm@hsrc.ac.za

I look forward to hearing from you.
Yours sincerely,

(Prof) Linda Chisholm
Director

II. TO DISTRICT MANAGERS

Education, Science and Skills Development
Research Programme (ESSD)
Human Sciences Research Council
Postal address: P Bag X41, Pretoria 0001
134 Pretorius Street, Pretoria 0001

Dear District Senior Manager

RESEARCH STUDY: **QUALITY OF EDUCATION AND LEARNER OUTCOMES IN SOUTHERN AFRICA**

Human Sciences Research Council (HSRC) in partnership with Stanford University and three South African universities (Wits, UCT and KZN) have initiated a research study on the quality of education and learner outcomes in Southern Africa. Permission of the study has been granted by the Gauteng Department of Education and the study has been endorsed by the Heads of Education Departments (HEADCOM), (See attached letter of approval)

This project seeks to investigate quality of education and learner performance in grade 6 maths in Southern Africa. Apart from understanding teacher quality and learner performance within and between provinces in South Africa, the researchers also aim at extending this project to other Southern African countries such as Botswana, Namibia and Swaziland.

A number of schools within your district have been randomly selected for inclusion in the study. Two visits will be made to each selected school in the study in 2007. The first visit will be in July immediately after the winter vacation. Hlengani Baloyi, a doctoral intern at the HSRC and the coordinator for the visit, will make arrangements for the first visit (dates, time, etc.) during the first two weeks of June. During the first visit, the school study team administer a mathematics test to grade 6 maths learners, and a questionnaire to the grade 6 mathematics teachers. These two activities will run concurrently and will require approximately 60 minutes.
The second study visit will take place at the end of the third quarter. During this visit, the study team will administer a second test and questionnaire.

This study will make a significant contribution towards understanding mathematics teaching and mathematics achievement in South African public primary schools.

In anticipation, we would like to thank you for your cooperation and support in this important venue.

Sincerely

(Prof) L. Chisholm
Director: Education Unit
Education, Science and Skills Development research programme
Human Sciences Research Council
Tel: 27 012 302 2208
Fax: 27 012 302 2901
Email: LChisholm@hsrc.ac.za

III. TO SCHOOL PRINCIPALS

Education, Science and Skills Development
Research Programme (ESSD)
Human Sciences Research Council
Postal address: P Bag X41, Pretoria 0001
134 Pretorius Street, Pretoria 0001

Dear School Principal

DETAILS OF THE PROJECT: QUALITY OF EDUCATION AND LEARNER OUTCOMES IN SOUTHERN AFRICA

The Human Sciences Research Council (HSRC) in partnership with Stanford University and three South African universities Wits, UCT and KZN intend to conduct a study over the next three years on the quality of education. HEADCOM and the GDE have approved this research (See attached letters of approval from the GDE). This letter seeks your cooperation and provides information on the intended research in your school.

Purpose of the research project

This project seeks to investigate quality of education and learner performance in grade 6 maths in Southern Africa. Apart from understanding teacher quality and learner performance within and between provinces in South Africa, the researchers also aim at extending this project to other Southern African countries such as Botswana, Namibia and Swaziland.

Our Request

The project is being piloted in 2007. Gauteng province is the selected province for the pilot. Your school forms part of the school sample to be surveyed in this project. The team would like to make two visits to your school this year (2007). The first visit will be in July immediately after the winter vacation. Hlengani Baloyi, a doctoral intern at the HSRC and the coordinator for this visit, will make arrangements for the first visit (dates, time, etc.) during the first two weeks of June. We would like to administer a grade 5 maths test (i.e. a test based on grade 5 syllabus) to grade 6 maths learners. It will take roughly 45 to 60 minutes of their time.

Our second visit will be towards the end of the third quarter, and it is during this visit that we would like to administer our second set of test and questionnaires to the same grade (grade 6). We would also like to administer a questionnaire to teachers, conduct an interview with you and film maths classes.

This is another intervention by the HSRC in seeking solutions to the many challenges which continue to face our education system. We hope this study will make a meaningful contribution towards understanding some of the successes that we have made so far and challenges that we are still faced with as far as the teaching and learning of maths is concerned in this country.

Should you require any further information, or have any queries or complaints during the course of the project, please do not hesitate to contact me.

Thanking you in advance.

(Prof) L. Chisholm
Director: Education Unit
Education, Science and Skills Development research programme
Human Sciences Research Council
Tel: 27 012 302 2208
Fax: 27 012 302 2901
Email: LChisholm@hsrc.ac.za

IV. TO SCHOOL GOVERNING BODIES

Education, Science and Skills Development
Research Programme (ESSD)
Human Sciences Research Council
Postal address: P Bag X41, Pretoria 0001
134 Pretorius Street, Pretoria 0001

Dear Chairperson of the School Governing Body

DETAILS OF THE PROJECT: QUALITY OF EDUCATION AND LEARNER OUTCOMES IN SOUTHERN AFRICA

The Human Sciences Research Council (HSRC) in partnership with Stanford University and three South African universities, Wits, UCT and KZN intend to conduct a study over the next three years on the quality of education. Heads of Education Departments (HEADCOM) and the Gauteng Department of Education (GDE) have approved this research (see attached letter of approval from the GDE). This letter seeks your cooperation and provides information on the intended research in your school.

Purpose of the research project

This project seeks to investigate quality of education and learner performance in grade 6 maths in Southern Africa. Apart from understanding teacher quality and learner performance within and between provinces in South Africa, the researchers also aim at extending this project to other Southern African countries such as Botswana, Namibia and Swaziland.

Our Request

This project is being piloted in 2007. Gauteng province is the selected province for the pilot. Your school forms part of the school sample to be surveyed in this project. We deem it necessary and appropriate to inform you as the SGB of the school in a formal way about a project of this nature. The team would like to make two visits to your school this year (2007). This project looks specifically at grade 6 teacher quality and learner outcomes in Mathematics. Two visits will be made to your school this year (2007). The first visit will be in July immediately after the winter vacation. Hlengani Baloyi, a doctoral intern at the HSRC and the coordinator for this visit, will make arrangements for the first visit (dates, time, etc.) during the first two weeks of June. We would like to administer a grade 5 maths test (i.e. a test based on grade 5 syllabus) to grade 6 maths learners. It will take roughly 45 to 60 minutes of their time.

Our second visit will be towards the end of the third quarter, and it is during this visit that we would like to administer our second set of test and questionnaires to the same grade (grade 6).We would also like to administer a questionnaire to teachers, conduct interview with you and film maths classes.

As one of the most important stakeholder in education in general, and in this school in particular, it would be wrong and inappropriate for us to make a mistake of overlooking you as we proceed with this project in a school which is directly under your governance. Your contribution in ensuring our smooth access to the school to conduct this study will

always be commended. This project poses no danger or any risk of some kind to all participants. This is another intervention by the HSRC in seeking solutions to the many challenges which continue to face our education system. We hope this kind of study will make a meaningful contribution towards making us understand some of the successes that we have made so far and challenges that we are still faced with as far as the teaching and learning of maths is concerned in this country.

Your cooperation during the course of our field trips will therefore be highly appreciated. Should you require any further information or have any queries or complaints during the course of the project, please do not hesitate to contact me.
Thanking you in advance.

(Prof) L. Chisholm
Director: Education Unit
Education, Science and Skills Development research programme
Human Sciences Research Council
Tel: 27 012 302 2208
Fax: 27 012 302 2901
Email: LChisholm@hsrc.ac.za

V. TO PARENTS/GUARDIANS

Education, Science and Skills Development
Research Programme (ESSD)
Human Sciences Research Council
Postal address: P Bag X41, Pretoria 0001
134 Pretorius Street, Pretoria 0001

Dear Parent

DETAILS OF THE PROJECT: QUALITY OF EDUCATION AND LEARNER OUTCOMES IN SOUTHERN AFRICA

The Human Sciences Research Council (HSRC) in partnership with Stanford University and three South African universities, Wits, UCT and KZN intend to conduct a study over the next three years on the quality of education. Heads of Education Departments (HEADCOM) and the Gauteng Department of Education (GDE) have approved this research (see attached letter of approval from the GDE). This letter seeks your cooperation and provides information on the intended research in your school.

Purpose of the research project

This project seeks to investigate quality of education and learner performance in grade 6 maths in Southern Africa. Apart from understanding teacher quality and learner performance within and between provinces in South Africa, the researchers also aim at extending this project to other Southern African countries such as Botswana, Namibia and Swaziland.

Requesting your consent for your child to take part in this study project

This project is being piloted in 2007. Gauteng province is the selected province for the pilot. Your school forms part of the school sample to be surveyed in this project. The team would like to make two visits to your school this year (2007). This project looks specifically at grade 6 teacher quality and learner outcomes in Mathematics. Two visits will be made to your school this year (2007). The first visit will be in July immediately after the winter vacation. Hlengani Baloyi, a doctoral intern at the HSRC and the coordinator for this visit, will make arrangements for the first visit (dates, time, etc.) during the first two weeks of June. We would like to administer a grade 5 maths test (i.e. a test based on grade 5 syllabus) to grade 6 maths learners. It will take roughly 45 to 60 minutes of their time.
Our second visit will be towards the end of the third quarter, and it is during this visit that we would like to administer our second set of test and questionnaires to the same grade (grade 6). We would also like to administer a questionnaire to teachers, conduct interview with you and film maths classes.

We deem it necessary not only to furnish you with the details of the project in advance, but also to request that you as a parent to our learners, give them your permission and blessing to take part in this study. According to the law, children who are still minors do not have any legal right to give consent for a study of this nature, it is for that reason that we ask you to give such consent on their behalf.

Your quick response in the form of a written consent will ensure our smooth access to the schools to conduct this study, and your contribution in this regard will always be commended and highly appreciated. This project poses no danger or any risk of some kind to all participants, your children included. In fact, this kind of tests will go a long way towards improving the mathematical literacy of your children. It will be a good maths practice to them in preparation for their final exams at the end of the year. This is another intervention by the HSRC in seeking solutions to the many challenges which continue to face our education system. We hope this kind of study will make a meaningful contribution towards making us understand some of the successes that we have made so far and challenges that we are still faced with as far as the teaching and learning of maths is concerned in this country.

NB: A consent letter has been prepared for you in the next page, all you need to do is to read it carefully and thoroughly and fill in your details and then append your signature IF AND ONLY IF YOU VOLUNTARILY CONSENT THAT YOUR CHILD/CHILDREN MAY TAKE PART IN THIS STUDY PROJECT.

Should you require any further information or have any queries or complaints during the course of the project, please do not hesitate to contact me.

Thanking you in advance.

(Prof) L. Chisholm
Director: Education Unit
Education, Science and Skills Development research programme
Human Sciences Research Council
Tel: 27 012 302 2208
Fax: 27 012 302 2901
Email: LChisholm@hsrc.ac.za

CONSENT LETTER FROM A PARENT

I, ……VOLUNTARILY AND WITHOUT ANY FORM OF COERCSION OR PRESSURE, HEREBY GIVE CONSENT FOR MY CHILD/CHILDREN IN THE NAME OF……. TO TAKE PART IN THE HSRC-SPENCER CONSORTIUM PROJECT IN THE FORM OF WRITNG THE TWO MATHS TESTS PREPARED FOR THIS PROJECT.

FOR ANY QUERIES OR CONCERNS I CAN BE CONTACTED AT THE FOLLOWING

CONTACT DETAILS:

1. POSTAL ADDRESS:……..

   ……

   ……

2. TELEPHONE NUMBER:……...

3. CELL NUMBER:……

SIGNATURE OF PARENT:……..

Appendix B: Interview instruments

I. LEARNER INTERVIEW INSTRUMENT

1. Do you enjoy learning mathematics, and why?

2. How should a good maths teacher be?

3. How would you rate the teaching performance of your maths teacher? Choose: **Good, Fair, Poor.** WHY? (please explain)

4. How often does your maths teacher teach you during the maths lesson? Choose: **Quite often, Sometimes, Never.**

5. How often does your maths teacher give you homework? Choose: **Quite often, Sometimes, Never.**

6. How often does your maths teacher mark/correct your homework? Choose: **Quite often, Sometimes, Never.**

7. How often do you write maths tests? Choose: **Weekly, Monthly, Quarterly**

8. How often does your school principal visit your class to observe while your teacher teaches you maths? Choose: **Quite often, Sometimes, Never.**

9. Do you have your own maths text book(s) or study guides?

10. What do you think are some of the challenges/factors at home that hamper your effective learning of mathematics?

11. What do you think are some of the challenges/factors at school that hamper your effective learning of mathematics?

12. What do you think are some of the factors at home that improve or contribute to your effective learning of mathematics?

13. What do you think are some of the factors at school that improve or contribute to your effective learning of mathematics?

14. Would you be willing to learn in former white/black school? WHY?

15. In your opinion, what are some of the current differences between former white and former black schools?

16. In your opinion, why are learners in former white schools performing better than learners in former black schools in maths?

15. What do you think needs to be done to improve maths performance of learners in former black schools?

II. TEACHER INTERVIEW INSTRUMENT

1. Do you enjoy teaching grade 6 maths and why?

2. What are some of the challenges that you encounter in teaching grade 6 maths?

3. What do you think needs to be done to address challenges mentioned in the previous question?

4. Do you have enough maths text books/study guides for yourself and your learners?

5. How would you rate the performance of your grade 6 maths learners? Choose: **Good, Fair, Poor.** WHY? (please explain)

6. How comfortable are you teaching OBE-centred grade 6 maths? Choose: **More comfortable, Fairly comfortable, Not comfortable**. WHY? (explain)

7. How would you rate the contribution made by your initial training as a teacher in the development of your content knowledge? Choose**: Very helpful, Fairly helpful, Not helpful at all.** Why? (please explain)

8. To what extent are in-service training workshops for grade 6 maths assisting you to develop your pedagogical content knowledge? Choose: **Very helpful, Fairly helpful, Not helpful**. WHY? (please explain)

9. What are some of the socio-economic factors which you think hamper the performance of grade 6 learners in mathematics?

10. What do you think should be done to address such socio-economic factors (if any)?

12. Do you think teacher supervision and evaluation is necessary/ helpful in improving learning and teaching

13. Do you feel comfortable being observed while teaching grad 6 maths and your work supervised? WHY? (please explain)

14. How often does the school principal or Head of department (HOD) observe you while teaching? Choose: **Quite often, Sometimes, Never.**

15. How often do education officials visit your school to do teacher supervision and evaluation? Choose: **Quite often, Sometimes, Never. Why?** (please explain).

16. What could be the reasons for some teachers to resist lesson observation and supervision?

17. What do you think should be done to improve teacher supervision and evaluation?

18. Would you be willing to teach in former white/black schools and why? (please

explain)

19. In your opinion, why do former white schools continue to perform better than former black schools in maths?

III. TEACHER UNION REPRESENTATIVE INTERVIEW INSTRUMENT

1. As a teacher union representative, an important stakeholder in education, how do you feel about the supply of grade 6 learner-teacher support materials such as text books, mathematical equipments and so on?

2. What are some of the main challenge(s) your school encounters in the learning and teaching of grade 6 mathematics?

3. How would you rate the contribution made by teachers' initial training as teachers in the development of their content knowledge? Choose: **Very helpful, Fairly helpful, Not helpful at all. Why?** (please explain)

4. To what extent are in-service training workshops for grade 6 maths assisting in the development of teachers' pedagogical content knowledge? Choose: **Very helpful, fairly helpful, Not helpful**. **Why?** (please explain)

5. What are some of the socio-economic factors which you think hamper the performance of grade 6 learners in mathematics?

6. What do you think should be done to address such socio-economic factors (if any)?

7. Former white schools continue to do better than (former) black schools in grade 6 maths, what do you think could be the reasons?

8. What do you think needs to be done to improve maths performance in former black schools?

9. Teacher supervision and evaluation in most schools seem to have collapsed together with apartheid education. What is your take on that?

10. To what extent do you think lesson observation and teacher supervision contribute in improving teacher pedagogical content knowledge (teaching expertise)? Choose: **Very much, Fairly, Not at all**. **Why?** (please explain)

11. Would you feel comfortable being observed by the school principal while offering lessons, and **why**? (please explain)

12. How would you rate teacher supervision and evaluation by education officials in your school? Choose: **Good, Fair, Poor. Why?** (please explain)

13. What could be the reasons for some teachers to resist lesson observations by school principals?

14. What could be the reasons for some teacher unions to resist teacher

supervision and evaluation?

15. What do you think should be done to improve teacher supervision and evaluation in South African schools?

16. What lessons can former black schools learn from their white counterparts which help them improve their maths performance?

IV. PRINCIPAL INTERVIEW INSTRUMENT

1. Do you have enough grade 6 text books/study guides for your grade 6 learners?

2. What are some of the challenges your school encounters in learning and teaching of grade 6 mathematics?

3. How would you rate the performance of your grade 6 learners in maths? Choose: **Good, Fair, Poor. Why?** (please explain)

4. How would you rate the teaching performance of your grade 6 teachers? Choose: **Good, Fair,** and **Poor**. Why?

5. How would you rate the contribution made by teachers' initial training (as teachers) in the development of their content knowledge? Choose: **Very helpful, Fairly helpful, Not helpful at all**. Why? (please explain)

6. To what extent are in-service training workshops for grade 6 maths assisting in the development of teachers' pedagogical content knowledge? Choose: **Very helpful, fairly helpful, Not helpful**. Why? (please explain)

7. Do you think that lesson observation is necessary/helpful in improving learning and teaching, and why do you think so?

8. How often do you do lesson observation while your grade 6 maths teachers are teaching? Choose: **Quite often, Sometimes, Never**, Why (please explain)

9. What could be the reasons for some teachers to resist lesson observation?

10. What could be the reasons for some school principals to fail to do lesson observation while their grade 6 maths teachers are teaching?

12. To what extent does teacher unions' resistance to teacher supervision and evaluation hamper your lesson observation and supervision duties? Choose: **Greatly, Partly, Not at all**. Why (please explain).

12. What could be some of the reasons for teachers/teacher unions to resist supervision and evaluation?

13. How often do education officials visit your school to do teacher supervision and evaluation? Choose: **Quite often, Sometimes, Never. WHY?** (please explain)
14. What do you think should be done to improve teacher supervision and

evaluation?

15. Would you be willing to manage a former white/black school, and why?

16. In your opinion, why do former white schools continue to perform better than (former) black schools in maths?

17. What do you think needs to be done to improve maths performance in former black schools?

18. What lessons can former black schools learn from their white counterparts which help them improve their maths performance?

Appendix C: GDE requirements

UMnyango WezeMfundo **Lefapha la Thuto**
Departement van Onderwys **Department of Education**

BRIEFING DOCUMENT TO ALL RESEARCHERS THAT WISH TO CONDUCT RESEARCH IN INSTITUTIONS and/or OFFICES OF THE GAUTENG DEPARTMENT OF EDUCATION

1. GENERAL INFORMATION

1.1 The prescribed GDE Research Request form must be completed by all categories of researchers i.e. undergraduate and postgraduate students, academics, organizations, agencies and research teams that seek to conduct research in the Institutions and/or offices of the department. Agencies that have been commissioned by the GDE to conduct research must also complete the said form.

1.2 The form is designed to ensure that all applicants provide the GDE with all relevant details pertaining to the research study to be undertaken. Not all sections of the form may be relevant to all applicants and those sections that are deemed irrelevant may, unless otherwise advised, be omitted.

1.3 The Prescribed Research Request form requires the following sets of information:

- Particulars of the researcher/s
- Details of the proposed research to be undertaken
- The proposed research methodology to be utilized
- The GDE organ (Institution/s and/or District/s and/or Head office Directorate/s, Division/s and/or Branch) that would be involved
- A formal declaration by the researcher and the supervisor and/or promoter of the research to authenticate the information provided and to agree to abide by the conditions as prescribed by the GDE

1.4 All prospective researchers must submit the following documents before any research request may be entertained:

- The full Research Proposal i.e. a full and detailed outline of the research plan
- A full list of the institutions and/or offices that would be participating in the study (a list of the names and addresses of all GDE institutions and offices is available from the Department of Education on a paper cost-recovery basis)
- Copy/ies of questionnaire/s and interview schedules to be utilised in the study

1.5 Where research is still in the planning stage, permission “in principle” may be sought. The Policy Coordination Directorate must however still be provided with

all the relevant documents before the researcher/s may be granted access to the institutions and/or offices, as required.

1.6 All prescribed forms are available electronically and prospective researchers are encouraged to utilise electronic means of communication (e-mail) when both requesting and forwarding any information related to their research request. The sole proviso in this respect relates to those pages that require the original signatures of the researcher and his/her supervisor or promoter.
These pages may be faxed to the relevant office only after the researcher has communicated with the Policy Coordination Directorate and has acquired a reference number. The reference number must be quoted when forwarding all outstanding information by fax.

2. SPECIFIC RESEARCH REQUIREMENTS

2.1 Educators, learners and officials are not to be involved in any research activity at the beginning of the academic year in January nor during the last quarter. All research processes may only commence from the beginning of the second week of February and must be concluded by the end of the third quarter of the academic year. This provision may be waived for all research commissioned and paid for by the Gauteng Department of Education itself.

2.2 Permission to conduct research in GDE institutions i.e. school/s, district/s office or Head Office must be sought from the Office of the Senior Manager:
Policy Coordination, Monitoring and Secretariat Services.

2.3 A maximum of 21 days from the date of receipt has been allocated for the Policy Coordination Directorate to collect input from within the department before making a decision around granting approval. Applicants are therefore encouraged to apply for permission to conduct research at least two months prior to the start of the actual undertaking. This provision may however be waived for all research commissioned and paid for by the Gauteng Department of Education itself.

2.4 The test / questionnaire / structured interview schedules / frameworks for interviews or other materials which are intended to be used must accompany the research request application form. Where more than one language is to be used, the translated version/s must also be submitted.

3. EXCEPTIONS TO THE REQUIREMENT FOR THE SUBMISSION OF RELEVANT DOCUMENTS:

- Where permission “in principle” is being sought; or
- In the case of standardized tests (where it is sufficient to supply only the name(s) of the instruments on the form.

4. CRITERIA IN RESPECT OF RESEARCH INSTRUMENTS

The questionnaires / structured interview schedules / interview frameworks / tests should meet the criteria of:

- Education accountability
- Proper research design
- Sensitivity towards participants
- Correct content and terminology
- Acceptable grammar
- Absence of non-essential / superfluous items

In the case of postgraduate students the supervisor / promoter must confirm in writing that the proposed research meets all the above requirements. This statement has to be attached to the application.

If different languages are to be used in the research, care should be taken to ensure that each test item corresponds exactly in the alternative language used.

5. RESTRICTIONS & OBLIGATIONS PLACED ON THE RESEARCHER/S

5.1. All research efforts that involve schools and offices of the Gauteng Department of Education may only commence from the second week in February and must be concluded by the end of the third term. This provision may be waived for all research commissioned by the GDE itself.

5.2. Only in exceptional circumstances will the Gauteng Department of Education grant permission for research to be conducted during school hours. It must however be noted that the consent of the Principal and the SGB (if at a school) and the relevant Senior Manager (if at a district/head office) must be obtained when determining appropriate time/s for conducting research. This provision may also be waived in respect of all research commissioned by the GDE itself.

5.3. The senior manager of the relevant office and both the principal and SGB of each institution must be notified by the researcher, in writing, about the study being undertaken within their respective offices and/or institutions respectively. The official letter issued by the Senior Manager: Policy Coordination, Monitoring and Secretariat Services granting approval for such a request must be attached to the letter of notification sent by the researcher/s.

5.4. The written consent of parents is a mandatory condition that researcher's are expected to acquire before involving any learner/s in their research study.

5.5. The researcher/s must undertake to supply the Senior Manager: Policy Coordination, Monitoring and Secretariat Services with one bound hard cover copy and one ring bound copy of the final, approved research report, thesis or dissertation.

5.6. The researcher/s must also undertake to supply the Senior Manager: Policy Coordination, Monitoring and Secretariat Services with an electronic copy of the research abstract, summary and/or annotation relating to the research study. The title and abstract/summary/annotation will be placed on the GDE website to be accessed by the broader public while the bound hard cover copy will be placed in the GDE Library located at Head Office where it may be accessed by all users of

the Library. Only in very special circumstances will the Research Report be loaned out to users of the Library.

5.7. The researcher/s may be expected to provide short presentations on the purpose, findings and recommendations of his/her research to both GDE officials and the schools concerned.

5.8. Should the researcher have been involved with research at a school and/or a district/head office level, the Senior Manager concerned must also be supplied with a brief summary of the purpose, findings and recommendations of the research study.

6. APPROVAL OF RESEARCH REQUESTS

6.1 The Gauteng Department of Education will interact with the research proposal, and when satisfied that all the required criteria have been met, will issue an approval letter, that would serve as a formal contract between the Department and the researcher. The approval letter will contain a GDE registration number that will be used for tracking, monitoring and database maintenance purposes.

6.2 A Research Request Approval letter would only indicate that a researcher has been granted permission to conduct research within the GDE. The final decision would however rest with the Principal and School Governing Body of an institution and the Senior Manager in charge of any office. Once the Principal and SGB and/or District/Head Office Senior Manager have granted permission for the research to proceed, all research processes may only commence from the beginning of the second week of February and be concluded by the end of the third quarter of the academic year.

6.3 Listed below are some key considerations for a researcher to bear in mind once permission has been granted:

- All Social Research Ethics must be honoured
- The researcher must utilise his/her own resources to complete the study.
- The name/s of the official/s, school/s, principal/s, educator/s, SGB member/s and learner/s may not appear in any research report without the written consent of each of the individuals (or their parents if relevant) and/or the structures listed.
- The senior manager of the relevant office (head office or district) and both the principal and SGB of each institution must be notified by the researcher, in writing, about the study being undertake within their respective office/district and institution respectively.

6.4 Researchers are requested to apply for permission at least 2 months before the actual research investigations are to be conducted at any site within the GDE. During this time the Research Coordinator would interact with all the relevant documents submitted by researcher and canvass the assistance of relevant line managers to assist in making a decision around whether approval should/should not be granted.

6.5 The Department is involved, on an ongoing basis, of developing and updating its own list of Research Priorities and is prepared to engage with prospective researchers around adopting these research topics that are of importance to the organisation. A full list of the GDE Research Priorities will be made available to all prospective researchers on written request.

7. CONCLUSION

Should you require any additional information pertaining to research activities within the GDE, kindly contact the following officials from the Policy Coordination Directorate: Ms Nomvula Ubisi and/or her assistant Ms Ntombi Maswanganyi
(See contact details below).

Tel: (011) 355 0483/0488

Fax: (011) 355 0512

Street Address: Room 904/910, 111 Commissioner Street, Johannesburg, 2000

Postal Address: P.O. Box 7710, Johannesburg, 2000

Appendix D: Interview codes

FWS	– former white school
FBS	– former black school
FWS, P, M	– former white school principal, male
FWS, P, F	– former white school principal, female
FBS, P, M	– former black school principal, male
FBS, P, F	– former black school principal, female
FWS, T, M	– former white school teacher, male
FWS, T, F	– former white school teacher, female
FBS, T, M	– former black school teacher, male
FBS, T, F	– former black school teacher, female
FWS, TUR, M	– former white school teacher union representative, male
FWS, TUR, F	– former white school teacher union representative, female
FWS, L, M	– former white school learner, male
FWS, L, F	– former white school learner, female
FBS, L, M	– former black school learner, male
FBS, L, F	– former black school learner, female

Appendix E: Time Segment instrument

SEGMENT TYPE	Time "clicks"	SUM
1. Seat Work		
1a. Copying Instructions/Problems		
1b. Solving problems Individually-Teacher Circulating		
1c. Solving problems Individual-Teachers on other task		
1d. Checking Work Individual (working)		
1e. Checking Work Individual (stopped)		
2. Recitation		
2a. Q-A Whole class Individual		
2b. Q-A Whole Class Chorus		
2c. Q-A Whole Class Groups Reporting		
2d. Individual/Whole Class Read Orally		
2e. Solve at blackboard		
3. Group Work		
3a. Individual solving (Quiet)-Teacher Circulating		
3b. Individual solving (Quiet)-Teacher on the other task		
3c. Individual solving (Talking)-Teacher Circulating		
3d. Individual solving (Talking)-Teacher on the other task		
3e. Group Discussion		
3f. Group Solving		
3g. Checking Work Group (working)		
3h. Checking Work Group (stopped)		
4. Whole Class Instructions Demonstrations, Lecture, Review …..(Teacher Only)		
5. Transition		
6. Interruption/Discipline/disturbances		

7. Engagement (Degree to which whole class is on task at different periods of class)

Not engaged : Numerous insistences of side conversations, horsing around, spacing out. General sense of non-engagement

Moderately Engaged : Some kids on task, some are non-engaged, hard to tell with others.

Engaged : Almost all kids are on task, or at least paying attention to goings-on without necessarily actively participating.

Very engaged : Almost all are very engaged and working and/or discussing with group members, etc. If in Whole Group actively participating in recitation, raising hands, watching others.

The overall level of engagement during the lesson:

Not Engaged_____
Moderately Engaged_____
Engaged_____
Very Engaged_____

8. Homework/class work: Given_____ Not Given_____

9. Does class include? Review of work completed today:
Checking Some Work :
Marking of home/classwork :
Motivational strategies for learners:

10. Noise level amongst learners

No noise (very conducive environment for teaching and learning):
Low noise (reasonably conducive for teaching and learning):
High noise level (environment not conducive for learning and teaching):

11. Learner participation during lessons

Very few/no questions asked of students:
Simple, repetitive questions to individual or class chorus (Yes/No):
Give examples, short answer:
Learners asking questions: Yes or No

12. Overall Degree of Discipline

Low (Many instances of kids talking out of turn, not being quiet when asked by teacher, getting up and moving about and horsing around, teacher repeatedly telling students to sit down, stop talking, etc.):

Adequate (Some instances of talking out of turn or moving about room, teacher not always obeyed immediately):

Good (Few instances of talking, horsing around, moving about room, but respond quickly to teacher requests to stop):

High (Kids are very quiet or discussions are orderly, teacher doesn't have to ask them to be quiet, etc.):

13. Student-initiated Activity

None (Teacher-directed class, students watch teacher and very little (engaged) interaction between students, teacher-student
interaction is form of simple questions put to individuals or whole class chorus):

Students ask some questions for clarification, raise hands, but generally teacher-centred class:

Students freely ask questions, approach teacher physically, ask/respond to each other:

Student-centred class marked by high degree of student control of discussion, asking and responding to each other, teacher
mainly supervising discussion, not leading it:

14. Hand-outs/manipulables

Written Materials Used		No	Yes
Textbook	No	Yes	
Workbook	No	Yes	
Study guides	No	Yes	
Other Worksheets	No	Yes	
Counting materials	No	Yes	
Mathematical instruments	No	Yes	
Shapes		No	Yes
Learning Games/Activities	No	Yes	

Describe:_____

15. Physical situation within classrooms

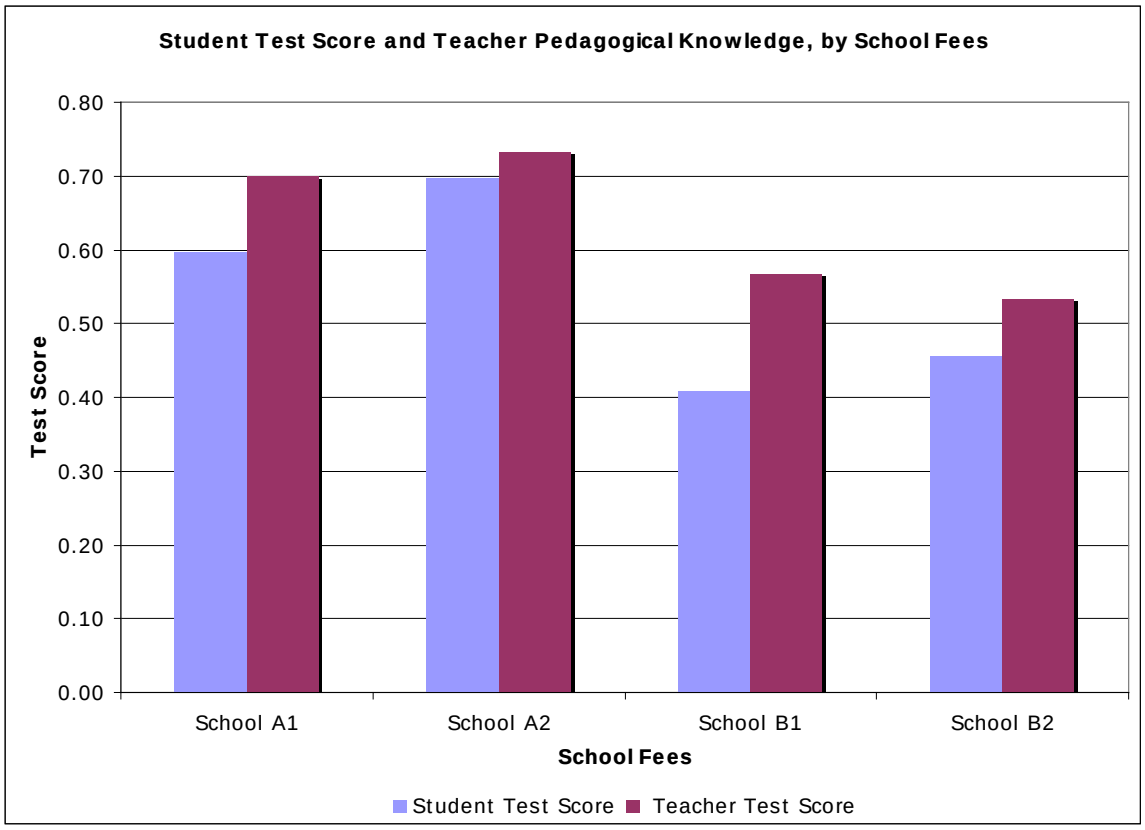
Space (room is big enough)	Poor:	Adequate:	Good:	Excellent:
Lighting	Poor:	Adequate:	Good:	Excellent:
Desks and chairs (sufficient, space)	Poor:	Adequate:	Good:	Excellent:
Heating (during winters)	Poor:	Adequate:	Good:	Excellent:
Air conditioning	Poor:	Adequate:	Good:	Excellent:
Sound (noise from without)	Poor:	Adequate	Good:	Excellent:
Intercom device	Poor:	Adequate:	Good:	Excellent:

16. Teaching and learning aids or pictures on the walls: None :
Few :
Many :

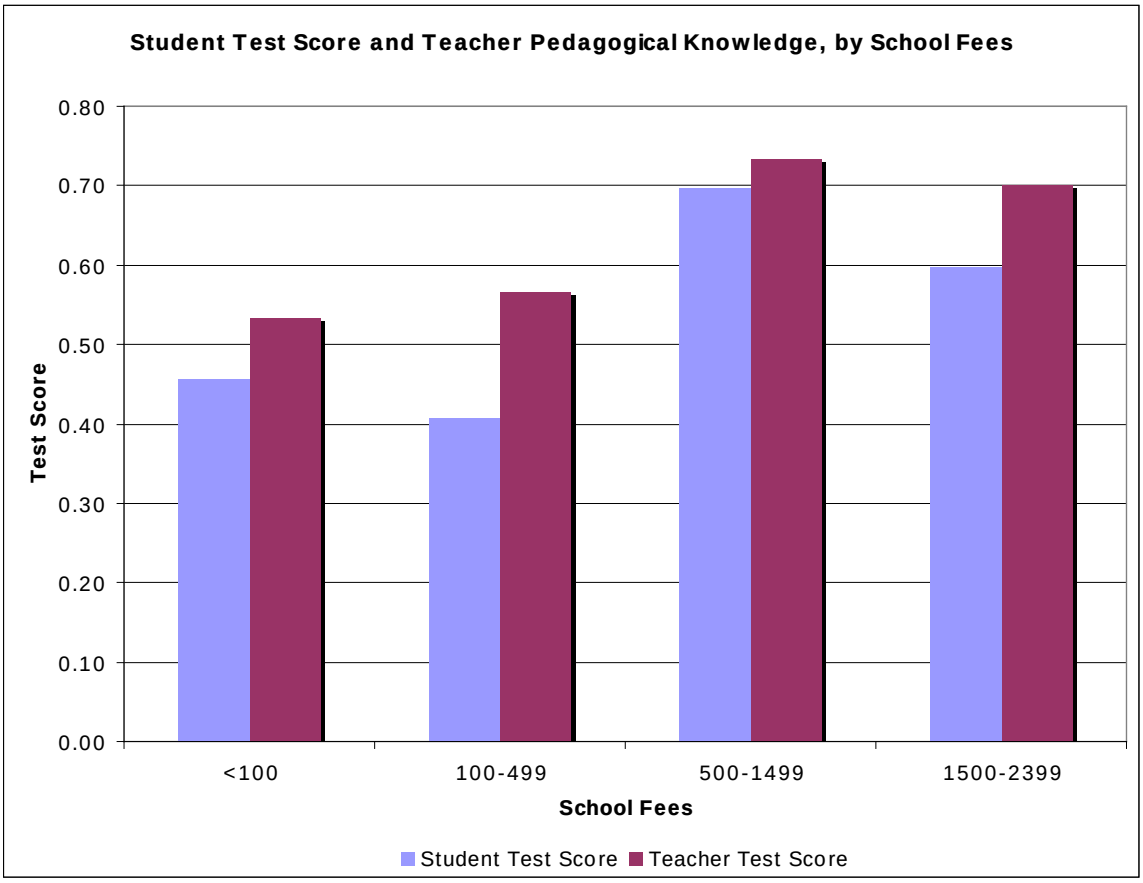
17. Time spent on actual teaching and learning per lesson period :

Appendix F: Graphs Illustrating Quantitative Performance Data Sets

Graph 1: Learner test score and teacher knowledge score according to school fees.



Graph 2: Learner test score and teacher pedagogical content knowledge according to the amount of school fees charged by schools



Graph 3: Learner test score and teacher knowledge score according to school SES level/quintile

