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Possibilities and constraints for improvement in rural South African schools

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STUDENT: CRAIG PAXTON

SUPERVISORS: PAM CHRISTIE

                            HEATHER JACKLIN

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ABSTRACT

Possibilities and constraints for improvement in rural South African schools

Rural South African schools face a complex mix of challenges, which make improvement a daunting task. Not only do schools deal with the time, place and space issues that face rural schools worldwide, but in addition they contend with a legacy of severely deprived schooling under the apartheid system. Using the framework of the Five Essential Supports, developed by the Consortium on Chicago School Research, together with Bourdieu's notions of *habitus* and *doxa,* this thesis examines what improvement might mean in this deeply disadvantaged context. The five supports – leadership, learning climate, school-community ties, ambitious instruction and professional capacity – are contextualised to account for both the rural setting and the peculiarities of education in South Africa's former homeland communities. Alongside this largely quantitative framework, Bourdieu's conceptual tools are brought to bear, offering an alternative perspective that makes sense of the complex forces produced by history and rurality.

This thesis examines a set of 25 schools located in a rural district of the Eastern Cape Province. It makes use of extensive surveys of teachers and students to generate measures of school 'organisation for improvement', which are then compared with student performance data. Observations at these schools, combined with interviews of fifteen teachers from five schools, provide a more textured representation of the Five Essential Supports at work in this context. This data also lends itself to a Bourdieusian interpretation, locating rural schools in the *field* of education in South Africa. Their position in the field shapes the uniquely rural *habitus* of teachers and *doxa* of schools, and offers some explanation for their persistent low performance.

Strong evidence was found for the applicability of the Five Essential Supports framework in a rural, developing country context – in other words, that strength in these supports is strongly linked with student performance. At the same time, the location of rural schooling on the periphery of the *field* of education in South Africa suggests that unless this overwhelming structural adversity can be shifted, developing strength in these supports at any significant scale is unlikely.

Craig Robert Paxton   August 11, 2015

Dedication

The final months of the writing of this thesis were saddened by the loss of three great men from my wider 'community', who all meant a great deal to me in different ways. This thesis is dedicated to their memory.

Firstly, *Thulile Makhwazeni*, an exemplary student and 'Paragon' to his peers. He epitomized the kind of rural grit and commitment that it takes to succeed when little else supports learning. His gentle spirit and dedication encouraged many - alas, for too short a time - but his legacy lives on in the programme he helped name and found, and in our memories of a stand-out character.

Secondly, *Mr. Thobeka Petse*, a rural principal without peer. His forceful, visionary leadership was the inspiration behind much of my description of strong rural leadership in this thesis. In hindsight I consider myself incredibly fortunate to have spent two hours interviewing him only a few months before his death, hearing his life story and his take on rural education and leadership. I will treasure the recording. The incredible personal drive that took his school so far bursts out of every quote. He is the kind of unsung hero that makes South Africa great.

Finally, my father-in-law, *David Lawrence*. The handing in of this thesis is bittersweet without someone to check my commas. His interest in me and in this work, so far from his own field of expertise, said much about the kind of man he was. I would have loved to talk through this thesis with him and feel sure he would have asked me about every tiny detail. His high standards of work and commitment to his family set the bar for me, and I miss his wise counsel and friendship. Our lives feel much emptier for his passing.

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Abbreviations, acronyms and contextual vocabulary

'the department'   Most teachers I interviewed referred simply to 'the department', which could mean literally the National Department of Basic Education, but could equally be the Provincial or District offices.

ANA   Annual National Assessments

ASIDI   Accelerated Schools Infrastructure Delivery

Bachelor's pass   Grade 12 students writing the National Senior Certificate can pass with a Higher Certificate Pass, Diploma Pass or Bachelor's Pass. In theory the latter implies access to bachelor's degree (university level) study.

Bhisho   The capital and administrative centre of the Eastern Cape Province

CAPS   Curriculum Assessment Policy Statements

Chiefs, Headmen   'Traditional/tribal authorities' is perhaps a better term for local leaders, but since this term was seldom used… I have adopted those that were.

EDO   Education Development Officer

LTSM   Learner Teacher Support Material

Matric   Grade 12, the final year of secondary/high school

Model C   State schools reserved for the white population prior to 1994

Mthatha   A major town located approximately an hour and a half drive from the schools in this study. The District Office for most of the schools is located there.

NSC   National Senior Certificate, the Grade 12 exit certificate

SMT   Senior Management Team

US   United States

Wits   The University of the Witwatersrand

Chapter 1:   Introduction

A field is a structural social space, a field of forces, a force field. It contains people who dominate and people who are dominated. Constant, permanent relationships of inequality operate inside this space, which at the same time becomes a space in which the various actors struggle for the transformation or preservation of the field.

- Pierre Bourdieu, *On Television* (1998a:40-41)

Superstar lawyers and math whizzes and software entrepreneurs appear at first blush to lie outside ordinary experience. But they don't. They are products of history and community, of opportunity and legacy. Their success is not exceptional or mysterious. It is grounded in a web of advantages and inheritances, some deserved, some not, some earned, some just plain lucky - but all critical to making them who they are. The outlier, in the end, is not an outlier at all.

— Malcolm Gladwell, *Outliers: The Story of Success* (2008)

1.1 A story of outliers, triumph and wonder

In his school-leaving examinations at the end of 2014, Bahle[1] achieved 90% for mathematics. He is the product of twelve years of disrupted schooling in overcrowded classrooms, with scant resources and little support from home. In Grade 10 he seemed on course for a normal rural school career, finishing the year with 37% for mathematics, so his climb over two short years seems to make him a true outlier. For the community in which he lives, he represents a tiny fraction of the seven hundred odd students who wrote the matriculation examinations at the end of 2014 to achieve a bachelor's pass with mathematics and physical science as subjects – a rough predictor of tertiary study prospects. In the Eastern Cape Province more widely, only about one hundred of the seventy thousand students who wrote the examinations will have achieved above 90% for mathematics[2], and of these, only a handful – about 0.01% - will have come from schools like his. Yet he did it. Despite overwhelming odds, despite atrocious conditions, despite lacking almost every one of what would broadly be considered the 'essential elements' of quality education, he did it.

In a sense this thesis echoes Bahle's story. On the one hand is the *triumph* of one student realising his potential. Herein is the motivation for this research: each year there are two hundred thousand rural students with the potential to follow in Bahle's footsteps[3]. Statistically speaking there should be many more mathematicians awaiting discovery, let alone the engineers, musicians, scientists and artists that South Africa and the world so badly need. On the other hand is the *wondering* caused by the other 99.99%. Herein is the research problem. Is Bahle truly an outlier, or are there hidden school factors that led to his success? Why are so many students 'lost' in rural schools along the way? Why do school change efforts seem to bear so little fruit? And what is it about the apparent outliers – the exceptional schools, teachers and students like Bahle – that enable them to achieve in spite of their circumstances?

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[1] All names of schools, students and teachers in this thesis have been changed in order to protect their identity.
[2] Estimates based on 2013 National Senior Certificate (NSC) data (Eastern Cape Department of Education [ECDE], 2014:25)
[3] This is an estimate based on Statistics South Africa (2014a) and World Bank (2015) data suggesting about 40% rural and historical averages of about 550 000 students writing the NSC examinations each year (Department of Basic Education [DBE], 2014:66).

The aim of this thesis is to understand the possibilities and constraints for school improvement in the context of rural South African schools. To do so requires a deep understanding of the people that make up these schools, as well as a firm grounding in how schools organise themselves in this particular setting. Discovering how Bahle's teachers, and the schools that he and his peers attend, work towards improvement is a critical issue not just for South Africa, but for much of the developing world, where rural students still make up a significant segment of the population[4]. This thesis thus aims to make a unique contribution to the limited international scholarship on rural school improvement and to provide insights for South African policy makers and practitioners concerned with growing quality rural education.

1.2 The case for rural schools research

South Africa's education "crisis" is well-documented. The country underperforms comparatively poorer African countries in international benchmark assessments and has seen little return, in the form of improved learner outcomes, from the substantial investment in the sector over a number of years. The problems tend to be worst in township and rural areas, with South African educationist Graeme Bloch (2008:1) summarising the situation as follows:

> *Half of all black learners drop out. By any measure, 60-80% of our schools are dysfunctional, achieving poor education outcomes. It is largely black, rural and poor learners who suffer.*

Since the transition to a democratic government in the early 1990s, a substantial amount of research has been done in identifying and describing the issues. Despite this interest and the depth of involvement by government, business and civil society at solving these problems, progress on a broader scale has been negligible, and the same issues seem to plague the schooling system nearly twenty years on. A possible reason for this is that very few studies seem to get at the "why" and "how" that lie at a deeper level to the "what" questions that have typically been asked by research (some notable exceptions are Christie (1998), Fleisch (2008), Jansen (2004) and Langhan (2012)).

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[4] The World Bank (2015) estimates that in India and China the rural population constitutes 68% and 47% respectively of their total population – a not insignificant number of people.

This gap in the literature appears particularly significant when it comes to understanding the issues that face rural schools, which, despite urbanisation, still educate roughly 40 % of the nation's children (Sabata, 2008:3; World Bank, 2015). While sharing some characteristics of schools in township communities, rural schools have particular strengths and challenges that make them quite different from the types of schools familiar to most urban-based researchers[5]. Very few South African school improvement studies (again, there are exceptions: Balfour, Mitchell and Moletsane, 2008; Christie & Gordon, 1992; Jacklin, 1995; Wright, 2012a) have looked specifically at rural schools. This despite broad agreement that these schools face tremendous challenges, and despite considerable media coverage of the textbooks, toilets and mud schools controversies that have unfolded in rural provinces in recent years (John, 2013; Nkosi, 2013). Indeed, much of the current pressure experienced by township schools is as a direct result of the urban migration of students away from poorly performing rural schools to perceived better quality education in the cities (Western Cape Education Department [WCED], 2014).

There is therefore a clear scholarly mandate for school improvement research on rural schools. A PhD by its nature, however, is as much shaped by these intellectual considerations as it is by the practical goals and personal interests of the researcher (Maxwell, 2005:16). An undertaking of this magnitude is unlikely to be sustained without personal curiosity and drive, and so this research is as much a story of my own journey into education and rural schools, as it is a response to the academic concerns highlighted above.

1.3 A strange route in to rural schools

I came to this research through the roundabout route of chemical engineering. After a number of frustrating years out in the wilderness of unfulfilling work, in 2002 I found myself surprisingly at home in the classroom while doing a Postgraduate Certificate in Education. In July of that year, full of fresh energy from the discovery of this new world, I arrived in a remote corner of the KwaZulu-Natal Province to do my second teaching practice at a dynamic rural school. What followed were six of the most stimulating weeks of my life. I thrived on the challenges of teaching for understanding across a substantial language barrier, with minimal resources and little more than my wits to go by.

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[5] I expand on the characteristics of and challenges facing rural schools in a discussion of rurality in Chapter 2.3.1

I loved the unpredictability that forced me to think on my feet, and the broad dimensions of the job, that included assisting the principal in building new accommodation for staff and solving water and electricity supply crises. Most of all, the undiluted energy and hunger for learning of the students left a deep impression on me: here was immense talent lying dormant, simply waiting to be sparked to life by the right materials.

The vastness of the rural education challenge excited and called to me. I felt as if I had stumbled on something that could hold my attention for years to come. It also left me puzzled. I could see that living and working rurally was hard to sustain. Living conditions were fairly basic and nightlife limited. Attracting great teachers to this exciting new school seemed possible in the short term, but keeping them there was another thing entirely. As I played football in the community and went on longer rambles to surrounding villages, I became aware of the large number of schools in the area. Changing one school seemed a daunting, but at least ultimately a feasible project, but what about the thousands of students at other schools? There seemed to be a host of additional challenges that made rural school life both richer and more complex than my experiences in urban schools, and it was hard to see where to start making changes that would result in improvements on a wider scale.

Thirteen years later I remain as intellectually intrigued and emotionally engaged in these issues as at this first encounter. I have spent the better part of the intervening years thinking about and, more recently, actively involved in rural school improvement through my leadership of a non-profit organisation based in the rural Eastern Cape. In many ways, this thesis is the culmination – at least on an intellectual level – of this journey from engineering to rural schools, and thus its outcomes hold more than pure academic interest to me. At the same time, my hope has been that my learning through this research would have practical implications for the work our organisation does - and for rural schools more broadly. The goals for this research thus arise from an interweaving of personal, intellectual and practical concerns that centre on understanding the possibilities and constraints for rural school improvement.

1.4 Education in the rural Eastern Cape

The locus of this study is a small village in the former homeland of the Transkei in the Eastern Cape Province of South Africa. The village is located in one of the poorest districts in South Africa, in a deeply rural area. Apart from a local hospital, where considerable development has taken place over the last ten years, the area has been largely neglected: unemployment has been estimated at 80%; average per person income is less than US$3 per day (ZiBFUS, 2014); and over 89% of people have not completed secondary school (Statistics South Africa [StatsSA], 2014b). The nearest metropolis is the town of Mthatha, approximately one and a half hours' drive from the village. Surrounding the hospital there are a large number of schools – nearly 150 within a 25 km radius – and the area is densely populated.
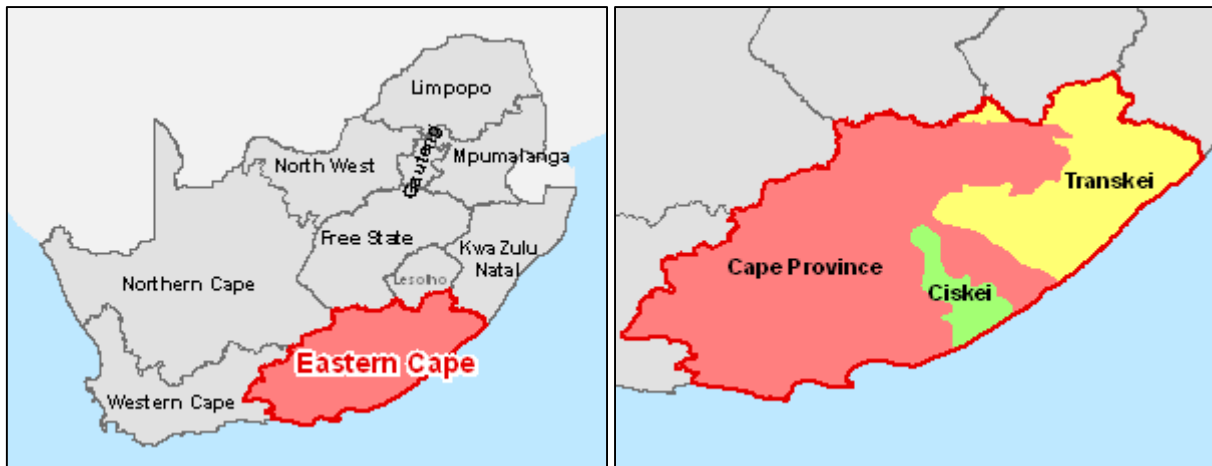
Figure 1.1: The Eastern Cape Province, with Figure 1.2: The former homelands of the Transkei and Ciskei

Under the apartheid government, homelands (also known as Bantustans) such as the Transkei, characterised by large swathes of densely populated rural land, were created to promote the policy of separate development for Black Africans (Alexander, 2002:34; Westaway, 2012). They were governed as independent entities, but were marked by corruption, deeply problematic migrant labour schemes, and vastly inferior investments in social services (Hendricks, 2012). Education for Black Africans in these homelands was, by design, limited to a dumbed-down curriculum and very little infrastructural support (Wright, 2012b:1; Hendricks, 2012:20; and Lemon, 2004:269). The extent of educational deprivation in the former Transkei has been summarised powerfully by Cole et al.:

On virtually every single one of these measures of provision, education in the Transkei stood out as being the most devastatingly neglected and deprived....These inequalities in inputs resulted in massive differences in educational outcomes. Educational performance in the Transkei, more than anywhere else in the country, was marked by low participation rates; high drop-out, failure and repetition rates; high out-of-age enrolment; low primary and secondary completion rates; poor throughput rates, and poor pass rates at the final exit points of the school system (2006:24).

One of the first tasks tackled by the African National Congress (ANC) government was the reintegration of the homelands into the provinces in order to eradicate this unequal, race-based distribution of resources; however, the legacy of apartheid is evident in the homelands today, 20 years after their absorption into the provinces. The OR Tambo District, where schools in this study are located, was the weakest district municipality in the country when surveyed by MunicipalIQ in 2009 (Westaway, 2012). According to 2001 census figures (Cole et al, 2006:27), roughly 65% of the province lives rurally and 67% live in the former homelands of the Ciskei and Transkei. More recent figures place poverty levels in the Eastern Cape Province at 70% and unemployment at 51% (StatsSA, 2012:46). Poverty, disease, and in particular HIV, with its attendant social and familial consequences, continue to strip communities of their health and vigour (Hendricks, 2012:25; Fleisch, 2008), making the context of schooling one of deep disadvantage.

The Eastern Cape also suffered at a systemic level. As South Africa transitioned to a democratic state in the early 1990s, the Eastern Cape Department of Education had the complex task of merging a number of different educational districts and departments with very different capacities and needs – from privileged suburban school districts with well-educated administrators to neglected deep rural districts in the Ciskei and Transkei homelands. The department was rife with challenges, including "grossly inadequate financial, information and human resource management systems, chronic shortages of skilled staff, a lack of discipline and the prevalence of fraud and theft in many departments (Lemon, 2004:273)". In recent years attempts at transformation have been stymied by resistance from unions and political leaders that have required intervention from national government (Wright, 2012b:9).

Over a number of years, South Africa has performed poorly in a number of international assessments of learning, such as the Trends in International Mathematics and Sciences Surveys (TIMSS 2003); the Progress in International Reading Literacy Study (PIRLS 2006); and in the Southern And East African Consortium for the Monitoring of Education Quality (SACMEQ I, II and III) survey, South Africa was outperformed by other African countries that are considerably less affluent (Spaull, 2012; Taylor, 2011; van der Berg, 2008). In this context of poor performance by international or benchmarked standards, the Eastern Cape Province has consistently performed among the worst provinces on the National Senior Certificate, South Africa's school-leaving examination (DBE, 2014). The Mthatha and Dutywa education districts, under which schools examined in this study fall, both find themselves in the bottom half of districts in the province (ECDE, 2014).

The location of this study thus finds itself, from an educational perspective, in an underperforming country, in one of this country's worst performing provinces, in a former homeland area characterized by the worst socioeconomic deprivation, and within this homeland in some of the worst performing districts (Lemon, 2004:277). In the broader *field* of South African education, this particular corner of the Eastern Cape is positioned on the periphery, with little in the way of economic or cultural (at least in the form of valued educational outcomes) capital. It is this complex, conflict-ridden context that provides this research with its 'burning platform' (Kotter, 2008) – an urgent mandate for change. It also burdens this thesis with a requirement to provide sufficient depth of analysis to deal authentically with the complexity.

1.5 Understanding improvement: an exercise in depth and application

At the heart of this research enterprise is a desire to understand the dynamics of rural schools in a deeper way than has been possible to date. My contention is that at the core of schools are people, and that the history of South Africa and, in particular, the former homelands, has had a profound effect on the way people think and relate. So in order to understand deeply why schools function the way they do, a sociological analysis of rural teachers (their *habitus)* and the unique cultures (or *doxa*) of the schools they teach in, is required. Alongside this desire for depth and authenticity, is a

desire for the research to have practical traction. In other words, a vehicle is needed that will allow the research to meaningfully apply to the particular practice of schools. These two research goals are not without conflict, and thus part of the challenge for this thesis is to coherently weave together two different approaches to research in a way that strengthens, rather than compromises, the end results.

With these broad goals of achieving both depth and application in mind, this study's central questions are captured in two parts:

- **What are the possibilities and constraints for improvement facing the particular schools examined in this study?**
- **What are the implications for rural school improvement in South Africa more broadly?**

To achieve depth the research draws on Bourdieu's (1977a) concepts of *habitus* and *doxa* to generate an explanation for the persistent poor performance seen in rural schools – essentially of how external conditions, with their continuing disadvantage, have become internalised in people. As a vehicle for application to schools, Bryk et al.'s (2010) *Organising schools for improvement* provides a framework that I adapt for a rural South African context, which allows some grounding of the research in the particular practice of schools. These two frameworks operate in tandem so that a sense of the possibilities and constraints for rural schools emerge on two different levels.

My location in the rural Eastern Cape provided an easily accessible sample of rural schools in which to learn more. Surrounding the village where I live are more than one hundred and fifty schools, which were narrowed down to a feasible number in which to conduct research[6]. All of these schools bear the scars of the severe marginalisation and deprivation that characterised the homelands under apartheid, and has largely continued to the present day. They form a subset of the 5 700 schools in the Eastern Cape, and of the approximately 10 000 schools that could be classified as rural in the country[7]. Naturally, from such a small, specific sample of schools many of the findings of this research may only apply to this particular grouping of schools. However, this

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[6] Chapter 3.3 contains more details of the sampling logic.
[7] Estimates based on 40% rural population (World Bank, 2015) and Department of Basic Education school master lists (DBE, 2015b&c).

group of schools provided fertile ground to field test Bryk et al.'s (2010) conceptualisation of school improvement in a new and very different context, and in so doing provides some warrant for learning about school improvement in South Africa more generally (Maxwell, 2005:116).

1.6 Design, methods and sources of data

In order to address this complex research agenda, a variety of data sources are drawn on. The *Organising schools for improvement* (Bryk et al., 2010) framework requires a mapping of the *field* through an examination of the performance of schools on external assessments, as well as measures of their 'organisation for improvement'. The performance data is taken from 2012 Annual National Assessment data for Grade 9 and National Senior Certificate data for Grade 12, and blended into single measures of maths and English performance for the 25 schools in the study. Surveys of teachers and students at these schools are used to generate organisational and contextual measures, using a well-established set of instruments that have been adapted for the rural South African context. Additional health and socioeconomic data is taken from the Zithulele Birth Follow-Up Study (ZiBFUS). Statistical interactions between these two different sets of data – performance indicators and organisational measures - can then be examined to suggest possible connections.

An important difference in this study is that the school performance data available to me enable only a single snapshot of school performance – rather than improvement over time – so my use of the word *improvement* is tied to the school improvement framework I have adopted, not to any empirical measures of improvement in school performance. There is no assumption made that schools are working towards improvement, or that there are specific improvement projects active in these schools. Rather the idea is to understand the possibilities and constraints that might enable or inhibit improvement in this context.

While this 'first take' analysis, tied to Bryk and colleagues' (2010) framework, is almost exclusively quantitative in nature, to tackle the second level of analysis – about the deeper reasons why things are the way they are, and the effects of habitus and doxa - requires a combination of qualitative and quantitative data. Observations at all of the 25 schools as well as interviews of fifteen key teachers at five of these schools provide data that is used to generate a picture of habitus and doxa.

The connections between organisational measures and school performance uncovered in the statistical analysis are used as starting points for a deeper exploration using the qualitative data. These complementary forms of data provide sources of triangulation, as well as the means to move from tentative connection to stronger statements and inferences. These moves enable me to address my second question, regarding the more general implications of this study.

1.7 Thesis outline

The design of this thesis thus combines components of both quantitative and qualitative methodology, as well as two different levels of analysis, and the structure of this thesis broadly mirrors a 'bouncing ball' movement between these different elements. Foregrounding the design and rationale for the study, Chapter 2 moves between an examination of the international and local literature on school improvement and rurality, and Bourdieu's key concepts of fields, capitals and habitus in order to produce a coherent conceptual framework that combines all these elements. An outline of the methodology (Chapter 3) and the procedures used for data collection and analysis (Chapter 4) are provided next.

The contextual understanding developed briefly in this introductory chapter is made more specific in Chapter 5 by a detailed look at the connections between school performance and organisational capacity, for the 25 schools included in this study. In Chapter 6 this picture is given more depth using survey, observation and interview data in order to develop a sense of the habitus of teachers and the prevailing doxa in schools. Finally, the findings from these various forms of analysis are brought together in Chapter 7 to draw out some of the possibilities and constraints for improvement in this context, addressing my first research question. This chapter also summarises some of the key implications for rural school improvement more generally, and suggests recommendations for school change practitioners and policy makers, as well as for further research.

Throughout these chapters I trust the reader will stay alert for the recurring melody of Bahle's story. Like any good music, it is seldom without dissonance – consisting in part of triumph, in part the plaintiff tenor of lost opportunity. I hope it will be at least partly resolved by the time this thesis is complete. Sadly, for the most part it may be the note of frustration and lost potential that

dominates, but I hope too, that the more major tones of clarity and possibility will emerge towards the end.

Chapter 2:   Developing a conceptual framework for rural South African schools

There is nothing so practical as a good theory.

- attributed to Kurt Lewin (1951) in Tolman (1996:31)

2.1 Introduction

The location of this study described briefly in the previous chapter suggests a complex, interacting system of challenges for school improvement, with spatial, political and social dimensions – to name a few. In order to authentically and meaningfully understand and address these, in this chapter I motivate for the use of multiple theoretical lenses. I have chosen these words carefully. For research to be *authentic*, I suggest that it needs to move beyond description of problems, and even beyond theoretical models, so that it has a depth and 'trueness' to it. Building on definitions of authentic intellectual work (Newmann, Bryk and Nagaoka, 2001) and authentic leadership (George and Sims, 2007) that associate authentic with sustained value, I suggest that authentic educational research should yield insights that hold long-term value for the understanding of complex social and educational phenomena. To be specific, authentic research should accurately account for and explain profoundly intractable issues such as race and class reproduction in a way that, for example, traditional school improvement frameworks can seldom do.

Authentic research might not be *meaningful*, however, if the findings, the modelling, the lenses, do not provide a means of translation to the particular field of practice - in this case rural schooling. In order to understand *and* to apply, there is a need to move from existing practice of schooling to more abstract understandings of people and society, and back to practice in a way that has traction and meaning for that practice (Shay, 2012:321). I'm not suggesting that there is no value in developing abstract understanding in and of itself; I'm simply saying that I would like the acid test of *this* piece of research to be that it has both the theoretical depth to properly account for complex phenomena *and* the relationship to particular practice that allows meaningful action to result.

In order to achieve these goals I suggest a three-stage approach. Firstly, understanding what the current status of schools is: where is there strength? Where are there constraints? What is happening at these schools? What factors seem to be important? Secondly, a deeper examination is needed of some of the reasons why this might be the case. In particular, by drawing on Bourdieu's notions of habitus and doxa, a better grasp is sought of how the people that make up schools think and behave, and the collective ways of being and doing that influence the way schools are run. Finally, I am seeking to understand how improvement might happen by examining the

evidence for associations between variables, and the possible levers that can be applied to policy and practice. In this process, there is an attempt to move from particular practice to the more general and abstract, and back again, in a way that brings enhanced understanding and insight to the improvement of that practice.

The challenge for this chapter, then, is to develop a set of theoretical tools that will provide both a plumb-line to authentic depth and a through-line to practice. I begin by looking at the school effectiveness and improvement literature, first from a global perspective, then at a local level, suggesting that these tools provide a useful mechanism for mapping the practice of rural schooling. I then outline some of the reasons why further analysis is needed, and propose that a theory of rurality, together with Bourdieu's concepts of habitus and doxa, provide the means to achieve this authentic 'second take' analysis. Finally, I outline how these contrasting theoretical tools can be combined in a coherent conceptual framework that will enrich the research of rural[8] schools.

2.2 Understanding the status quo: mapping the terrain of practice

2.2.1 Global school effectiveness and school improvement research

Although there is a small, but growing body of local research available, the majority of existing school effectiveness and school improvement (SESI) research is drawn from the developed world. Much school effectiveness research typically examines lists of factors - such as leadership, quality of teaching or school culture - that are found to be important in "good schools" (among many others: Edmonds, 1982; MacBeath & Mortimore, 2001; Muijs, 2006; Sammons, 1995; Townsend, 2001). School improvement on the other hand, has tended to be more concerned with the processes of *how* schools improve, generally adopting a qualitative slant (Elmore, 2004; Fullan, 2001; Hargreaves, 1995; Hopkins, 2005; Stoll, 2009). There is some indication of these two distinct approaches coming together in recent years (Creemers et al., 2007; Stoll & Sammons, 2007), and

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[8] Throughout this thesis I use the terms "rural schools" and "schools in rural areas" interchangeably, but here want to acknowledge the diversity that exists across the spectrum of rurality, and point the interested reader to section 2.3 where this concept is discussed at greater length.

indeed evidence of both the growth in the field and this confluence over the past fifty years can be seen in the journal *School Effectiveness and School Improvement,* now a major international research publication. This thesis describes one attempt at articulating a framework for bringing these two approaches together in order to utilize the strengths of both.

An on-going goal of school effectiveness research has been to generate lists of characteristics of effective schools and, since I will be developing a similar set of features for productive rural South African schools, these factors are worth exploring here. Edmonds (1982), one of the early researchers in the US, lists five factors, which are a useful starting place:

1. *The principal's leadership and attention to the quality of instruction;*
2. *A pervasive and broadly understood instructional focus;*
3. *An orderly, safe climate conducive to teaching and learning;*
4. *Teacher behaviours that convey the expectation that all students are expected to obtain at least a minimum level of mastery;*
5. *The use of measures of pupil achievement as the basis of program evaluation (1982:1).*

This list has remained largely intact over the intervening thirty years, with the common threads of **leadership, instructional focus, teacher capacity and school climate/culture** reappearing in different forms throughout the research. Stoll and Sammons (2007), for example, in more recent research on effective school improvement in the UK, chose to examine six factors: leadership, teaching and learning, external involvement and critical friendship, self-evaluation and use of data, pupil involvement, and capacity building. Similarly, Muijs et al. (2004) in their extensive review of the international literature on school improvement include: external resources and support, continuous professional development and creating an information-rich environment, in addition to the characteristics highlighted above.

If school effectiveness has often been characterised as quantitative and large-scale, school improvement has tended to be qualitative and smaller in scale and attempts to counter some of the criticism aimed at the former school of thought by making sense of the context, culture and meaning of school settings (Alexander, 2008). In the UK, this strand of research emerged in the 1980s as a product of school-based practitioners exploring ways to improve schools (Sammons and Stoll, 2007). In North America, school improvement formed part of the broader school reform

movement, where Darling-Hammond (2007, 2009), Elmore (2004), Fullan (2001), Levin (2008) and others have made significant contributions. School improvement is concerned with the change processes and the internal operations of schools that lead to better outcomes for students, rather than the lists of input factors that characterises school effectiveness (Hayes et al., 2011:182). More recently the focus has been on systemic approaches that will impact large numbers of schools (Frempong, Reddy and Kanjee, 2011; OECD, 2012; Sahlberg, 2007; Sui-Chu and Willms, 1996; Taylor and Prinsloo, 2005).

Missing from the above sets of factors is any acknowledgement of the interaction between the school and the broader school community. Levin (2008:92) generates his own list of 'Nine essential practices for improved outcomes' and includes two practices that address this shortcoming: strong positive relationships with parents, and effective engagement of the broader community. As Fullan (2001:198) notes: "The closer the parent is to the education of the child, the greater the impact on child development and educational achievement", so a broad view of the *school community* also seems to be important for improvement, and is a good launching point for the specific framework I take up in the next section.

2.2.2 Organising schools for improvement

A fine example of school effectiveness and improvement research is O*rganizing schools for improvement* (Bryk et al., 2010), where Bryk and colleagues at the Consortium on Chicago School Research (CCSR) developed a robust set of indicators or "Five Essential Supports" for schools, and a theory of how these supports work together to drive improvement (see Figure 2.1, below).
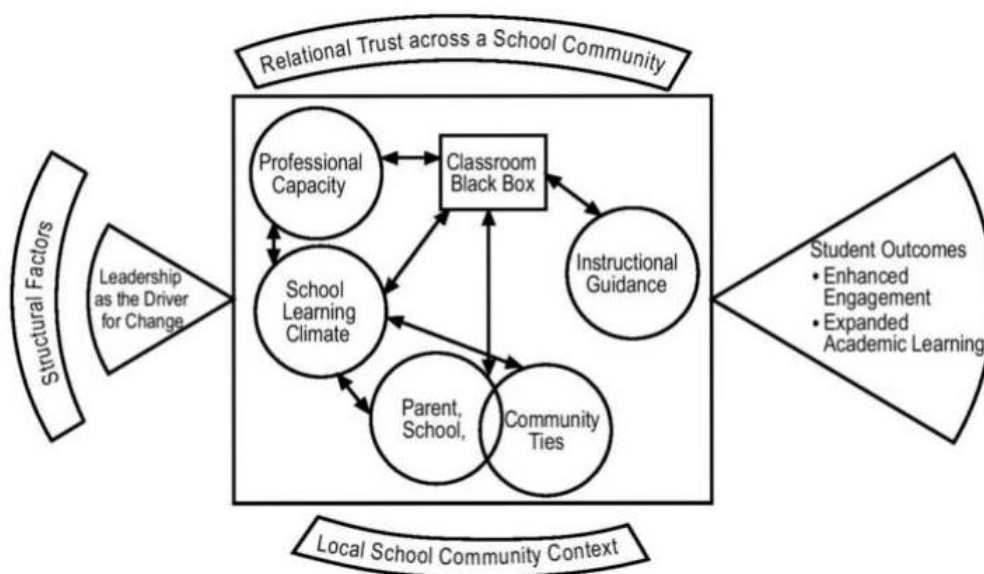
Figure 2.1: Bryk and colleagues' conceptual framework of essential supports in the wider school-community context (2010:69)

Their framework contains many of the factors highlighted in the review of the international literature (for example Edmonds, 1982; Stoll and Sammons, 2007; Levin, 2008): **leadership**, relationship with the broader **school community**, **teacher capacity**, **school culture/climate** and **instructional focus**. What is perhaps most striking about these *enabling supports* is that they translate fairly readily from an inner-city Chicago setting to the rural Eastern Cape. The wealth of research data that supports their framework, as well as the resonance with much of the South African literature and my own experiences working in these schools, combine to make a compelling case for their use as a starting point in the development of my conceptual framework.

Bryk and colleagues at the Consortium on Chicago School Research developed their framework out of what they call a large "natural experiment" in school improvement that occurred in the early 1990s in Chicago, when school control was decentralized to Local School Councils. This provided them with extensive longitudinal data on school improvement and an opportunity to test their framework with data from school results, socioeconomic indicators and a number of surveys over a seven-year period. I list the Five Essential Supports here as they are key to the discussion going forward (note the similarities with the five recommendations for *Supporting disadvantaged students and schools* (OECD, 2012), as well as in *Schools that Work* (Christie et al., 2007), which follows in the next section on page 24):

1. **School leadership** *or* **Effective leaders** (the principal works with teachers to implement a clear and strategic vision for school success)

2. **School-community ties** *or* **Involved families** (the entire staff involves families and communities to advance student learning)

3. **Professional capacity** *or* **Collaborative teachers** (committed teachers collaborate to encourage professional growth and school success)

4. **Learning climate** *or* **Supportive environment** (the school is safe, orderly and supportive, with high expectations for students)

5. **Instructional guidance system** *or* **Ambitious instruction** (classes are academically demanding and engaging) (Consortium on Chicago Schools Research [CCSR], 2015)[9]

Bryk and colleagues (2010:51) unpack each of these factors into sets of subsidiary elements, summarised in Figure 2.2, below, which they develop measures and statistical indicators for. The *Instructional guidance system* consists of the organisation of the curriculum (content, pacing, integration), together with the academic demand (combined with appropriate support) placed on students. The *Learning climate* comprises the level of safety and order in the school, combined with teachers' expectations of and standards set for students, as well as the norms and support students can expect from their peers. The factor *School-community ties* includes the quality of relationships between the school and parents, the wider community and partner organisations. *Professional capacity* consists of the quality of human resources; the quality and frequency of professional development activities; and the degree to which a professional community has been established at the school (including features like developing norms around public classrooms, collective responsibility, and reflective dialogue, amongst others).

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[9] Bryk et al. (2010) and the CCSR website (2015) have slightly different names for each of the supports. I include the latter since they are slightly clearer, but work with the former from here on for consistency.
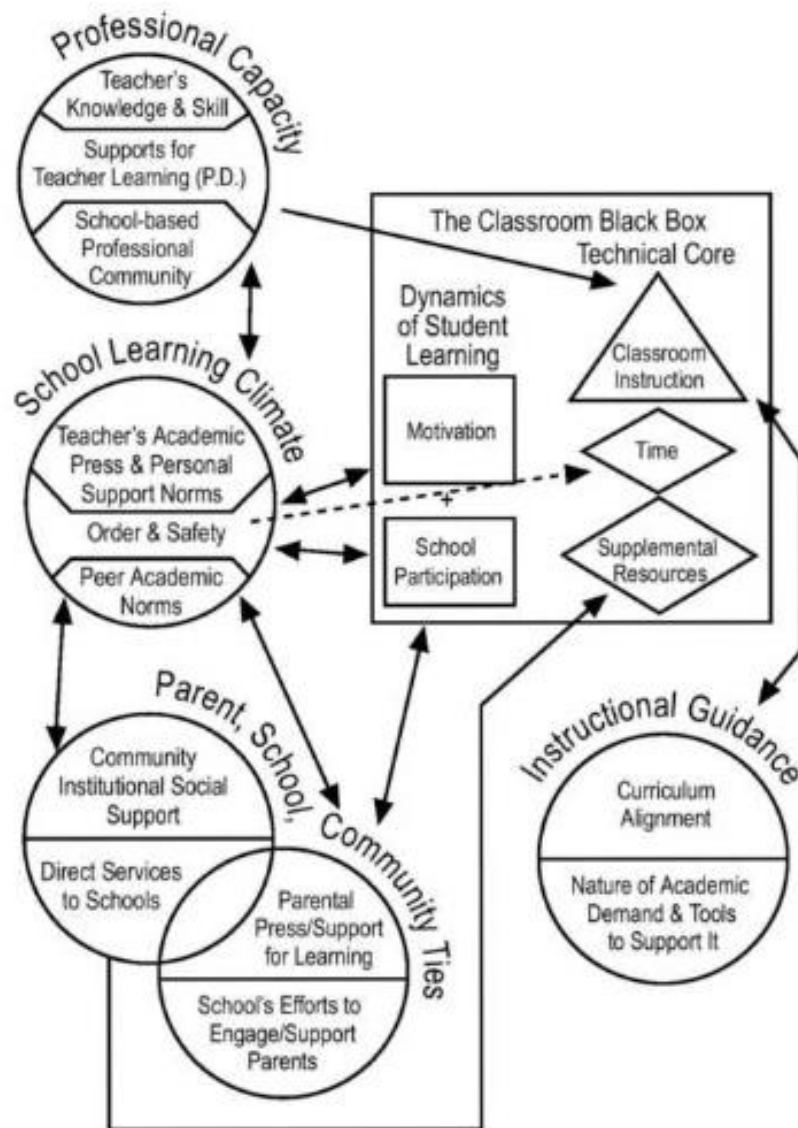
Figure 2.2: The influence of the essential supports on learning (Bryk, 2010:51)

School leadership plays a central role in their framework. Not only does it need to be present for improvement to occur, but it is referred to as the 'Driver for Change' (2010:126) - a precursor and catalyst for any real change effort. Again, Bryk et al. tested this hypothesis against their data and found convincing evidence that improvement did not merely correlate with high levels of leadership, but was caused by it. Since leadership seems to be such an important part of their framework, it is worth looking at what Bryk et al. mean by this:

Specifically, leadership attention focuses on strengthening the professional capacity of the faculty, the coherence and academic demand of the school's instructional programs, and the overall normative environment that surrounds and infiltrates the daily work of adults and students. Finally, at a much more basic level, effective operations management is critical. Especially in times of change, when innovations are being attempted and multiple new activities put into motion, an inability to support effective daily school operations can quickly grind these change processes to a halt (2010: 126).

In addition to the above factors, Bryk et al. suggest that *relational trust* – a measure of the social and relational health of an organisation – is an important feature of improving schools (Bryk et al., 2010:137; Bryk & Schneider, 2002). They examine relational trust between teachers and students, teachers and parents, teachers and teachers, and teachers and principals. Various South African authors comment on the lack of trust in schools (Jansen, 2004; Taylor, 2011:4-7), and so this feature of their framework seems to provide further support for its applicability to South African rural schools.

Bryk and colleagues suggest that these supports are preconditions for improvement. In fact, they take it one step further by adding a condition of *essentiality*. As the name 'essential support' suggests, they make the claim that improvement is extremely unlikely in any school where one of the five supports is weak or not present - and they back this claim up with compelling evidence from their study of Chicago schools (2010:88-92). Conversely, where all five supports are strong, improvement is much more likely to occur. In addition, Bryk and colleagues claim that the five supports operate as an interactive system, so that it would be unlikely to find significant strength in one area and not in the others.

The final finding from *Organising Schools for Improvement* worthy of discussion here is for schools that they term 'truly disadvantaged'. These schools are described as having high numbers of students living in poverty, in foster care, or in other demanding home situations. They found high proportions of these students in 'stagnating schools', where there was very little evidence of improvement. Closing their analysis of 'truly' disadvantaged schools, Bryk and colleagues draw a sobering conclusion about the complexity of improvement in these conditions: "Under these extreme conditions, sustaining the necessary efforts to push a school forward on a positive

trajectory of change may prove daunting indeed" (2010:187). One could argue that Chicago's 'truly disadvantaged' schools constitute the majority of schools in South Africa; in that case, the implications for improvement efforts in this country are grave indeed.

2.2.3 Making adjustments for developing country and South African SESI research

One of the criticisms of research from developed countries is that it is often 'exported' to very different contexts in the developing world, without due consideration for the significantly different conditions and forces that are at work (Hargreaves, 2012; Jansen, 1995). Indeed, some have argued that these are different, incompatible paradigms (Gallie, 2014; Harber & Muthukrishna, 2000). In this section, research from developing countries, and in particular South Africa, is summarised with a view to adjusting the Bryk et al. framework.

Heneveld and Craig's (1996) seminal study of school improvement in developing nations indicated that schooling played a significant role in enhancing student outcomes in developing countries. They developed a framework that includes a number of 'supporting inputs' and three school level factors: 'school climate', 'enabling conditions' and 'teaching/learning processes'. Their framework differs substantially from the international literature discussed above in a number of places, the most pertinent for this thesis being in the supporting inputs: the acknowledgement of external system factors such as *effective support from the system* and *adequate material support* (textbooks, teacher development, adequate facilities) that impact the school. These are often assumed to be in place in developed settings, but certainly cannot be taken for granted in South Africa. Figure 2.3 shows their conceptual framework.

1.0 SUPPORTING INPUTS

Strong Parent and Community Support

Effective Support from the Education System

Adequate Material Support

    Frequent and Appropriate Teacher Development Activities

    Sufficient Textbooks and Other Materials

    Adequate Facilities

CHILDREN'S CHARACTERISTICS

3.0 SCHOOL CLIMATE

3.1 High Expectations of Students

3.2 Positive Teacher Attitudes

3.3 Order and Discipline

3.4 Organized Curriculum

3.5 Rewards and Incentives

2.0 ENABLING CONDITIONS

2.1 Effective Leadership

2.2 A Capable Teaching Force

2.3 Flexibility and Autonomy

2.4 High Amount of Time-in-School

4.0 TEACHING/LEARNING PROCESS

4.1 High Amount of Learning Time

4.2 Variety in Teaching Strategies

4.3 Frequent Homework

4.4 Frequent Student Assessment and Feedback

5.0 STUDENT OUTCOMES

5.1 Student Participation (attendance, promotion, graduation, continuation)

5.2 Academic Achievement

5.3 Social Skills

5.4 Economic Success after school

CONTEXTUAL FACTORS

Socio-Cultural

Political

Economic

Figure 2.3: Heneveld and Craig's Conceptual Framework: Factors that determine school effectiveness (1996:22)

While lacking the large-scale, well-funded school improvement studies that are relatively common in developed contexts, South Africa does have a significant tradition of school improvement research (a good overview is provided by Taylor, 2007). Fleisch's *Primary education in crisis* (2008) is a comprehensive summary of the situation in primary schools, examining health, poverty, teaching and learning in the classroom, expenditure and language as likely contributors to the weak state of the system. His examination of the effects of ***poverty*** on schooling are supported by several South African and other developing country researchers (Frempong, Reddy & Kanjee, 2011; Gustafsson, 2005; Leibbrandt et al, 2010; Smith, 2011; van der Berg 2008, Willms, 2006), and socioeconomic status remains the single most significant determinant of student performance in this environment. Witten (2010) argues for a broader role for the school in this setting, so that learning becomes integrated within the social context of the community.

Also highlighted in Fleisch's work is the role that ***language*** plays in students' understanding of other subjects such as maths and science, particularly in rural contexts where English could be considered a foreign language (Fleisch, 2008:111; Wright, 2012a:114). Although the country has eleven official languages, all students are required to write their final exams in either English or Afrikaans, which remain the dominant languages of the economy. For many rural students, who grow up hearing and seeing very little of these languages, this has major implications for their performance on school exit exams and their consequent access to tertiary study or work opportunities.

Fleish (2008), Taylor (2011) and several other authors (Crouch & Mabogoane, 2001; Fleisch & Christie, 2004) identify a number of the challenges that South African schools, teachers and students face, which combine to make for ***systemic dysfunction*** (Bloch, 2009). However, underlying these obstacles to improvement, significantly more complex forces seem to be at work. Fleisch and Christie (2004) make the point that South Africa has been, and perhaps still is, a country in transition. The authors claim that countries in transition, such as South Africa's movement from the Apartheid regime to democratic governance, require a different theoretical lens to understand school improvement. They argue that political authority and legitimacy are prerequisites for lasting changes in schools, and that these have been largely absent in many schools.

Christie (1998) develops further this idea that the apartheid years continue to have severe consequences for the functioning of schools, this time on an organisational level. She uses the term "(dis)organisations" to describe schools where the usual rituals of time and space, healthy social relations and disciplined learning and teaching have largely broken down. The situation may be better now, some years down the line, but there is no doubt that deep psychological scars still mar the 'normal' functioning of many schools so that dysfunctional practices have become embedded in institutional systems and cultures, and this holds significance for the discussion of *habitus* and *doxa* that follows.

Jansen (2004) takes another look at the implications of South Africa's troubled history for school improvement. He argues that the defiant school cultures developed during the struggle against apartheid make it very difficult to now move towards a system of external accountability and evaluation, widely seen as a precondition for improvements in teacher and school quality. Building

on this notion, Langhan and colleagues (2012) suggest that South African schools have made little progress since 1994 because of the disconnection between post-1994 policies and the pre-1994 attitudes (compliance and distrust) that continue to pervade schools and the teaching profession. They view a lack of agency as playing a central role in the stagnation that has characterized the majority of South African schools over the past two decades.

Some schools that seemed to be able to overcome these significant social, historical and cultural challenges were examined in *Schools that Work* (Christie et al., 2007). Christie and her team looked at 18 schools from a variety of socioeconomic and historical backgrounds that all produced sound end-of-school (matric) results. From this investigation of schools that seemed to be functioning at a reasonably high-level - in spite of the many constraints common to schools across the country – the research team were able to identify four shared characteristics at all 18 sites:

1. *all of the schools were focused on their central tasks of teaching, learning, and management with a sense of responsibility, purpose and commitment;*
2. *all of the schools carried out their tasks with competence and confidence;*
3. *all had organisational cultures or mind sets that supported a work ethic, expected achievement, and acknowledged success;*
4. *all had strong internal accountability systems in place, which enabled them to meet the demands of external accountability, particularly in terms of Senior Certificate achievement (2007:5).*

These characteristics suggest that in many South African schools, establishing a degree of 'normalcy' – regular rhythms and routines; cultures of responsibility, accountability and professionalism – is a profoundly challenging task. Why this is the case deserves examination. They also suggest that there is a significant gap between the 'ideal' school that policy is designed for, and the actual 'mainstream' or majority school where conditions are far from ideal (2007:123).

Christie and Langhan both identify the **_agency_** of people in schools as pivotal. Bryk and colleagues capture this too: "the faculty must bring a sense of agency to their work that embodies a belief that they have something important to contribute" (2010: 55). This seems to be the very thing, according to Langhan et al., that is missing in South African schools because of pre-1994 dispositions and attitudes that linger on. Taken together, the research from Witten, Fleisch,

Christie, Jansen and Langhan make a compelling case for research that in the first place takes context seriously, and secondly, looks beyond an organisational or 'factors' analysis, such as the *Organising schools for improvement* framework (Bryk et al., 2010), to examine in more depth the people and cultures that make up these organisations. These points are reinforced by the discussion of rurality in the next section.

2.3 Understanding the reasons why: a search for depth

2.3.1 Rurality: strengthening the case for depth

This research is about *rural* schools. International research (for example: Alliance for Excellent Education, 2010; Hao et al, 2014:510; Lyons, 1981) suggests that these schools require a distinct analytical approach - they possess unique attributes that have the possibility to both enrich and complicate improvement efforts - and I would argue that in South Africa this is particularly the case. In this section, I attempt to better define this concept of 'rural' by building on a theory of rurality developed by Balfour, Mitchell and Moletsane (2008). In so doing I illustrate that indeed rural schools face serious structural and social constraints that make improvement challenging, lending further weight to my argument that this research must have the requisite *depth* to make sense of this context.

Many authors have suggested the need for a contextualised understanding of rurality (Balfour, Mitchell and Moletsane, 2008; Christie and Gordon, 1992; Department of Education, 2005; Jacklin, 1996; Seroto, 2012) that moves beyond thinking about rural in opposition to urban, and beyond even listing characteristics of rurality, such as 'isolated', 'undeveloped', or 'sparsely populated'. Indeed, in South Africa many rural communities are very densely populated, so the word 'rural' may not convey adequate meaning unless we develop it further. It is also insufficient to talk about rural schools as 'underprivileged', 'under resourced' or 'dysfunctional', since many schools located in urban townships share these characteristics (although one could argue not to the same degree). The term 'rural schools' conveys a particular meaning that is different to 'schools in rural areas'. So what do we mean when we talk about South African rural schools?

At the heart of conceptualizing rurality is an understanding that rural implies periphery. The geographical and spatial location of rural communities far from government, academic and

business centres, is mirrored by a 'peripheriness' to power and influence (Jacklin, 1995; Bourdieu, 1999:124; Westaway, 2012). To use Bourdieu's terms (2011), in the overarching field of power, rural communities are lacking in the forms of capital – economic, social and cultural – that hold value in wider South African society. Without capital, rural schools and teachers face a constrained set of choices about such key issues as deciding who teaches where; what funds are available; and how these funds might be spent. Indeed, Bourdieu might suggest that the predominant habitus and doxa have been so powerfully structured by this marginalisation that many schools and people feel they have no choice in these matters. While there is danger in creating a 'deficit mentality' (Department of Education, 2005:2), rural schools' position in the field is undeniably on the periphery, with a severely constricted range of choices.

A number of researchers (for example Lyons, 1981; Jacklin, 1995; and Balfour, Mitchell and Moletsane 2008) highlight that a study of rural schools must take into account this socio-political and economic marginalisation of rural life. Rural schools, particularly in the former Bantustans, have been significantly underfunded in comparison to urban schools (Seroto, 2012:83; Sabata, 2008:5). Smith (2011), using SACMEQ II data, demonstrated the damaging effects that socioeconomic disadvantage when combined with inferior schooling - as is the case particularly in the rural/isolated schools in her study - have on student learning.

The ambivalence towards rural development by those who hold power extends to the realm of education research and policy, which is almost exclusively based in urban locales. Howley (1991:76) points out that rural teachers tend to view the supposedly neutral ideas of school improvement initiatives with a large amount of scepticism, given their typically metropolitan origins. Similarly, Kallaway (2001:22, 28) notes that the interests of the rural poor have been neglected in favour of market-oriented policies, and that there is a need for policies and curricula developed with the rural village at their centre. A common thread through most of the research on rural development and education is thus a plea for the generation of a louder rural voice, perhaps typified by the publication of *Emerging Voices* (HSRC, 2005), which seeks to bring to light the perspectives of rural students, teachers and communities.

If rurality can be associated with 'life on the periphery' of society, what does this imply for our understanding of rural schools? Balfour, Mitchell and Moletsane (2008) argue for a 'dynamic and

generative' theory of rurality that takes into consideration forces (space, place and time), agencies (movements, systems and will) and resources (situated, material and psychosocial). Working as they did from experiences and research with the Rural Teacher Education Project in KwaZulu-Natal (a neighbouring province of the Eastern Cape sharing many of the same characteristics), their theory holds rich potential for application here. They base their ideas on the tenet that rural, by its very nature, is transformative so that, for example, when teachers are placed in rural schools, their practice and indeed their way of being is changed through the encounter. Thus they suggest that the rural environment behaves as an active force requiring a dynamic, generative conceptualisation. It is worth trying to understand the central strands of their theory by looking at an example of a rural teacher issue from my own context, that of 'taxi schools' (Jacklin, 1995:12).

The term 'taxi schools' refers to the fact that many rural teachers do not live near their schools and thus catch public transport (known as 'taxis') to school (Jacklin, 1995). In Balfour, Mitchell and Moletsane's terms, this is because there is often little available accommodation (space, in a literal sense) with running water and electricity (material resources), and because rural areas are associated with backwardness and ignorance (characteristics of the place) they would prefer (a disposition or will) to live elsewhere, and indeed would prefer to teach elsewhere if given the choice (it often – but not always - tends to be the least experienced, least sought after teachers that end up in rural schools). The consequences of this are that many teachers spend as long as three hours (time and space in a rural context means great distance and long travelling times) commuting (movements) to work each day, remain disconnected to the local school community (which would be a valuable resource for improvement), and spend the best hours of each day in a taxi (loss of potential agency to change). Any efforts to improve either themselves (growing agency) or their school (agency of the system) involve accessing either local or urban/district (situated) material or psychosocial resources like people, training or technology, and is made almost impossible by the constraints of time, space and place.

Balfour, Mitchell and Moletsane (2008:101) argue that rural schools are able to both shape and be shaped by agents through these forces and resources that are at work in their communities. However, the degree to which agents are able to influence their surroundings tends to be less in rural areas due to the constraints of space, place and time, and the lack of multiple kinds of resources. This is not to say that rural school communities are deficient across the board – indeed

many are able to draw on much stronger social and community resources than their township counterparts; rural students tend to be motivated and less distracted by the temptations found more commonly in townships; and, there are multiple forms of formal and informal authority to draw on (HSRC, 2005; Sabata, 2008) – but when viewed as a whole, rural schools are characterized by what Bryk et al. (2010) might term 'deep disadvantage'. Bryk and colleagues suggest that different improvement strategies may be required for these kinds of schools, and it is not a large leap in thinking to propose that markedly different approaches are needed for rural schools than even comparative schools in the townships.

Again, to contextualise these concepts of forces, agencies and resources, my experiences of working with rural teachers over the past five years suggest that they find it enormously difficult to take up opportunities to learn and improve their teaching (taking hold of *resources)*. This seems as much about personal or internal constraints (*agency)* as it is about the environmental or external constraints of time, space and place (*forces)*. For instance, developing communities of practice that meet regularly to look at content and reflect on practice has proven exceptionally difficult simply because committing to a set time or day is virtually impossible in the last-minute, continually-disrupted world of rural schools. At the same time, the internal motivation – the belief that things can improve, that this is a job worth doing well, that great things can happen in my classroom because of me - that might drive these communities to overcome the physical and logistical challenges, seems largely to be absent. Add to this the singularly demotivating physical conditions of every facet of their day – from the long, squashed journeys to and from school in a taxi on bumpy, winding roads; to teaching in a classroom full of potholes and sagging ceilings, broken windows and a hodgepodge of vastly inadequate desks and chairs for students to sit on; to their time in a hot (or cold), cluttered staff room sitting behind desks piled high with books – and it is no wonder that teachers find it difficult to find the motivation to take up these 'opportunities'.

A theory of rurality should thus include: acknowledgement of the location of rural schools ***on the margins*** of the field of play with limited ***support***, ***choice*** and ***voice***; the ***very different set of resources*** available to rural school communities; the ***constraints that space, place and time*** impose on agents in this field; and the interplay between these ***agents and the forces exerted by the environment*** they find themselves in. Kimberley Porteus (in Lawrence & Moyo, 2006:177) describes developing a sense of agency as the starting point for the social change model that her team has

developed at the Nelson Mandela Institute for Rural Schooling and Development. She defines human agency as "the thoughts and purposeful actions people take – individually and collectively – to change their worlds to navigate better lives and a better world". The constraints implicit in Balfour and colleagues' (2008) examination of forces and resources, make it very difficult for rural students, teachers and schools to successfully exercise their agency to change their worlds for the better. In the next section I suggest that understanding the habitus of the people in rural schools will be a critical feature of my study, since it is inextricably linked to their agency and the opportunities for improvement in their schools.

2.3.2 Tools to handle complexity: habitus and doxa

Since my unit of analysis is the school, I am interested in the unique arrangements that people make in order to 'do' school in rural areas – the culture or *doxa* of rural schools – as well as the effect that the people themselves – their outlook, worldview or *habitus* - have on schools. Hopefully by now - after an examination of the troubled history of the rural Eastern Cape, a review of the South African and global school improvement literature, and a discussion of rurality as 'life on the periphery' - it has become clear that the use of orthodox school improvement frameworks to understand improvement in this context would be deeply insufficient. This is because at the heart of schools are people, and there are few analytic tools available in this paradigm that give sufficient grasp to the complex historical and sociological issues at play.

In contrast, Bourdieu's notions of *doxa* and *habitus* are exceptionally useful tools for conceptualising the institutional and individual constraints seen in many South African schools – a point I will return to in more detail in Chapter 6. In the Eastern Cape, perhaps more so than anywhere else, the history of the country, the region, the school and the individual shape and delimit the boundaries of what is possible in schools. I suggest that in rural schools in the Eastern Cape it is the habitus of professional staff and, at an organisational level, the doxa (or institutional habitus) of the institutions themselves, that seems to make improvement such a challenging task. In this section I examine Bourdieu's concepts of habitus, field and capital; I develop and apply these to rural schools in the Eastern Cape; and, I suggest ways in which habitus and doxa connect to Bryk et al.'s (2010) work and form part of my overall study.

2.3.2.1 Capitals, fields, habitus and doxa

Central to an understanding of Bourdieu are his inter-related concepts of *habitus, fields* and *capitals.* Bourdieu is not the first person to use habits or habitus in social theory (Camic, 1986), so it is important to understand his thinking around this concept. In *An outline of a theory of practice* (1977) Bourdieu describes in some detail what he means by the term *habitus*:

> *The structures constitutive of a particular type of environment (e.g. the material conditions of existence characteristic of a class condition) produce habitus, systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures, that is, as principles of the generation and structuring of practices and representations which can be objectively "regulated" and "regular" without in any way being the product of obedience to rules, objectively adapted to their goals without presupposing a conscious aiming at ends or an express mastery of the operations necessary to attain them and, being all this, collectively orchestrated without being the product of the orchestrating action of a conductor (1977:72).*

There are a few points worth consideration here. Firstly, for Bourdieu habitus is created out of experience of societal and environmental structures (it is a 'structured structure'). Thus particular histories produce particular habitus, but there will inevitably be shared elements across family, class, gender or region. Secondly, habitus unconsciously shapes the range of options or choices that are considered reasonable and these tend to reinforce the status quo (it is also a 'structuring structure'). Since habitus is durable and transposable, although it continues to be shaped by experience in later life, it is early history that most influences the particular habitus in a particular setting. Finally, although habitus plays a constraining role on the range of choices available to people, Bourdieu steered away from a purely deterministic view of habitus (Bourdieu, 1990:116; Jenkins, 2002:82; Reay, 2004:432).

> *I define a field as a network, or a configuration, of objective relations objectively defined…* (Wacquant, 1989:39)

Bourdieu's notion of *field* is both wider and tighter than the use of the word in everyday language. He refers to fields as domains where certain forms of capital – for example economic, social,

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cultural or symbolic - hold power. They consist of autonomous regions of *practice* with their own 'rules of the game' in which agents hold positions relative to each other according to the capital they possess and the dominant forms of capital in the particular field. Fields may overlap each other – for instance, the field of power is seen as an overarching field which touches all others – but each field values different forms of capital differently (Lingard, Hayes & Mills, 2003:64). Significantly for this study, Bourdieu suggests that the social space of the field is often mirrored by physical space, so that those players with high capital cluster together (think high-end shopping streets), while those lacking in capital are consigned to the margins (Bourdieu, 1999:124). Examples of fields might be the economic field, the academic field, the cultural field or even the field of an organisation, as is discussed further on.

As can be seen, it is difficult to discuss field without referring to *capital*, since they are interrelated concepts. Economic capital is perhaps the most familiar, as 'capital' has long been associated with monetary value, but Bourdieu argues that this is only one form of capital and that these forms can be exchanged and traded. Cultural capital refers to the degree to which an agent possesses what constitutes legitimate knowledge and is thus linked to the habitus, since these values are influenced by one's upbringing, education and qualifications. The cultural capital that school leaders and teachers bring to their schools could be another way to think about two of Bryk et al.'s (2010) factors discussed previously, **School leadership** and **Professional capacity**. Social capital is thought of as the network of social relations and the relative positions of these relations in the field of play (Lingard & Christie, 2003:324). Again, to begin to draw the different theoretical frames together, social capital would feature prominently in Bryk et al.'s **School-community ties** as well as in constituting part of a school's **Learning climate.** Symbolic capital is about prestige and honour (Jenkins, 2002:85). It is important to note that capital only has value in relation to the field, and the struggle for positions of dominance in the field is also a struggle for determining which forms of capital are most valued.

Habitus and field are connected through two mechanisms (Wacquant, 1989:44). Firstly, the field structures the habitus through an agent's interaction with and experience of the objective relations of the field. Secondly, the field itself is constituted through the cognitive properties of the habitus. In other words, a field only has meaning through its construction out of multiple agents' habitus. An agent's habitus provides them with a unique understanding (largely tacit) and ability to respond to

a field – they develop a *feel for the game* or *practical sense*, which enables them to naturally navigate and make *strategic* (though often not consciously so) decisions (Bourdieu, 1998b:25; Wacquant, 1989:42). This 'game' has rules, which are largely determined by the interplay between players, their capital and the positions they take up in the field, as well as the influence of other, more powerful fields on the field in question. These rules of the game (objective structures of the field) come together with the feel for the game (internalised structures of the habitus) to create *doxa* – taken-for-granted assumptions and understandings about the world and its limits (Bourdieu, 2001:1; Jenkins, 2002:70). It forms part of the habitus of an individual, but can transcend individuals so that one can talk about family-doxa or school-specific doxa or, in my case, a rural Eastern Cape schooling doxa, where members of these groups share common beliefs and understandings of the world.

2.3.2.2   Thinking about rural teachers using habitus, fields and capitals

Bourdieu's concepts of habitus, fields and capitals are inter-related and should be examined as a whole, as Emirbayer and Johnson (2008:4) point out. However, for the research I have undertaken, it is the concept of habitus (and its relationship to doxa) that seems to hold the most potential for exploration. A focus on one of the three is not unprecedented – Dobbin (2008:54) has pointed out that to examine all three is a daunting task, not well suited to the length of the traditional journal article or book, and hence most American sociologists have focused on one of the three areas. I thus hold the concepts of fields and capitals in the background, while narrowing my focus to look at habitus, from two perspectives.

South Africa's history, and particularly the history of the former Bantustans, must surely be a powerful shaper of the habitus of people who have grown up, lived and worked in these areas. Limited horizons, distrust of and at the same time unhelpful respect for hierarchies, and an inferior formal education all characterize their upbringing. Bourdieu suggests that such a collective habitus can stretch along class lines or along other delineations:

> *Since the history of the individual is never anything other than a certain specification of the collective history of his group or class, each individual system of dispositions may be seen as a structural variant of all the other group or class habitus, expressing the difference between trajectories and positions inside or outside the class (1977:86).*

The real strength of the notion of habitus for an examination of rural educators is in its ability to be both a 'structured structure' and a 'structuring structure'. The backgrounds of teachers shape who they are, reflecting the history of their area and their country, their experiences of schooling and tertiary education, and of working in organisations. For teachers in the rural Eastern Cape these experiences are all too similar: many have come through the kinds of schools they now teach in, having attended a local university or teacher training institution where they were exposed to little better than what they received at school. There are parallels here with Bryk et al.'s (2010:73) findings that the weakest teachers in Chicago tended to be those who had grown up in the city, had attended local colleges and returned to teach at local schools. The habitus is both cause and result of this inability to expose themselves to 'other' worlds.

2.3.2.3   Thinking about rural schools using habitus and doxa

Habitus thus represents a powerful lens for analysing the dispositions and behaviours of people in schools. There is similar potential, however, for an examination of what researchers have variously called the *institutional habitus* or *doxa* of schools themselves. At this point, I take note of the on-going scholarly debate around this notion (Reay, 1998; Atkinson, 2011; Burke, Emmerich & Ingram, 2013; Atkinson, 2013), and without entering into it to any great depth, want to draw out the elements that I feel will be most useful for this study. Jenkins (2002:89) suggests that one of the weaknesses of Bourdieu's sociology is the lack of discrimination between actors and organisations, with there being little in his writings in the way of an articulated theory of institutions. Emirbayer and Johnson (2008:19) caution that, indeed, there are dangers of reification when one looks at a term such as institutional or organisational habitus, but see its usefulness in pointing out that organisations, like people, 'play the game' differently depending on the positions they occupy in the field and the capital they possess[10]. I want to hold onto the idea that organisations are active,

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[10] "Perhaps part of the confusion here lies in the assumption that, if habitus and field are mutually constitutive, and if institutions are placed in the (primary, secondary or higher) education field, then they must have a habitus. But I would argue that the habitus corresponding to the different fields of education are still those of human agents – namely, those within the various school (etc.) fields – as the field effects still only operate as they are internalised as schemes of perception and dispositions. When, like Bourdieu (1996), one plots particular institutions in fields, then, the names should be understood as *shorthand* for the school/university sub-fields and doxai they designate and that mediate the effects of the field of education." – Atkinson (2011:345)

though sometimes unwitting, participants in the game of rural schooling – through the people that make them up - and that their capital and positions in the field matter.

Atkinson (2011, 2013) fairly vigorously suggests that *doxa* is a better, or more accurate, rendering of Bourdieu's terms than institutional or familial habitus (although Burke and colleagues, 2012, may not agree). He suggests that, while belonging to the habitus of individuals, it has transcendent qualities that allow it to represent beliefs and understandings of the world held in common by a particular group of people. This doxa then becomes part of the 'structuring structure' that shapes the development of the habitus of people in schools. It is a sense of this doxa – taken-for-granted assumptions about the world – of the rural schools I am examining, that I am hoping to capture in this study. I'm interested both in the pervasive doxa that seems common across rural schools *in general*, as well as the characteristics of doxa at *specific* schools, particularly where these differ from the norm.

In many ways, organisational *culture* might be an appropriate synonym for this latter notion (Schein, 1992; Prosser, 1999). Schein (1992:3) thinks of culture as the 'shared basic assumptions' that a group has developed through its experiences of solving problems together. He suggests that organisational culture is shaped by experiences, particularly early in an organisation's history, and one can hear echoes in this conceptualisation of how Bourdieu describes habitus formation. He also proposes that culture operates at three levels: artifacts (the visible), espoused values (the stated), and basic underlying assumptions (the unconscious, taken-for-granted beliefs). I'm not suggesting that institutional doxa and culture are interchangeable, but it may help to make the association here to aid clarity later. In order to maintain some conceptual coherence, I will continue to use the term doxa to refer to both organisational doxa (with the word 'culture' occasionally used as a descriptor or flag) and a broader sense of doxa across schools, but will do my best to clarify the difference as I go along. There are also strong parallels between doxa and Bryk et al.'s ***Learning climate***, when viewed in the particular context of schools.

Habitus and doxa can be seen in the arrangements, meanings and practices they produce (and are produced by). Where these are shared practices, such as extended meal times in the staff room or communally organised taxi transport, they become examples of doxa made manifest in the culture of an organisation. These are shaped not only as a result of similar experiences and backgrounds of

the teaching staff, but also in response to on-going conditions and events. For instance, in the face of what many teachers consider to be overwhelming departmental paperwork, such as at the annual IQMS deadline, teachers reach tacit agreements to put teaching aside and spend their time in the staff room completing the required forms. This arrangement makes sense only when viewed in the context of the particular 'rules of the game' at play in these schools.

As with the notions of doxa and institutional habitus, Bourdieu's concept of field has also been interpreted differently by different authors. Some consider the use of field only to refer to large, macro-level 'fields of practice' such as the field of education or art (Jenkins, 2002:85). Others, such as Emirbayer and Johnson (2008; see also Atkinson, 2011), have suggested that organisations can be viewed as a field in themselves. This is a contested understanding and, again, for conceptual coherence, in this thesis I suggest that while there are indeed these large, overarching fields – capital letter 'Fields' if you like – within these there are also sub-fields, each with its own field-specific doxa. This extends all the way to the level of the organisation, a field in itself, with its own organisational doxa. Just as the macro-level fields are 'fields of struggle', or 'force fields' with players taking up positions in the field, so the sub-fields and organisations are also battlefields with the various players contesting for position. I believe this conceptualisation of fields is consistent with the organisation-level understanding of doxa proposed by Atkinson (2011, 2013), and that I have adopted here.

There is another side to this of course. Individuals' experiences of organisations contribute to the shaping of their individual habitus. Emirbayer and Johnson (2008:29) note that "people acquire the taken-for granted understandings that inform their practical action not only in the class conditions surrounding their early lives but also in the organizational settings in which they are active later in life". Since schools are instrumental in the shaping of early life (Bourdieu, 1977:87; Bourdieu, 1974), they play a dual role for teachers, as 'past-tense' shapers of habitus and as 'present-continuing tense' shapers too.

I would suggest that in a context of dysfunction, these early experiences of organisations represent one of the few opportunities for people to move beyond the limits imposed on them by their disadvantaged background. If these early experiences as a new teacher in a school are stretching yet supportive, there may be opportunities for the teacher to shift in a new direction, or disrupt,

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the habitus acquired to this point in their life. However, if these experiences merely reinforce features of the habitus already present, there is little hope for significant change. In this way there is substantial two-way play between the habitus of the individual and the doxa of the organisation, which in a sense is moulded by the interactions between the individual habitus' of its people. Together these notions of habitus and doxa provide conceptual tools to understand South Africa's rural schools in an authentic way, and I will return to these ideas in Chapter 6.

2.4 Understanding change: in search of depth and meaning

At the beginning of this chapter I suggested that the acid test of the theoretical tools employed in this thesis would be whether they could both authentically account for complex phenomena, as well as provide impetus for meaningful action when applied to a particular practice. In other words the tools needed to be able to move from particular practice to the more general and abstract, and back again to practice in a way that brought valuable practical and policy insights to school improvement. I believe Bourdieu's notions of habitus and doxa provide the sociological sophistication to present an accurate and 'deep' account of rural teachers and their schools: a plumb-line[11]. However, my fear with this frame is that analyses could tend to stay in the abstract – or at least that a further step is required to move from more general sociological understandings to the practice of schooling. The school improvement paradigm, and in particular the tools taken from *Organising schools for improvement* (Bryk et al., 2010) and adjusted for the unique considerations that rurality brings, may help to ground the research in what schools do: a through-line to practice[12]. In this section I take up the challenging task of working these complementary, but quite different tools, into a coherent conceptual framework.

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[11] The term 'plumb-line' refers to a tool used to determine the depth of water or the verticality of a wall. Traditionally it consists of a line with a heavy weight at the end. Builders would use a plumb-line to ensure walls are built straight.
[12] The term 'through-line' is usually used in literature to refer to a theme or idea that runs throughout a story. It connects the various characters and sub-plots so that a continuous thread is maintained from start to finish.

2.4.1   Organising rural South African schools for improvement

Bryk et al.'s five enabling supports (***Leadership***, ***School-community ties***, ***Professional capacity***, ***School learning climate*** and ***Instructional guidance system***) need no alteration – in my opinion they accurately reflect what is needed for improvement in any system. Similarly, the ***Relational trust*** across a school community is as vital in South Africa as it is in Chicago. However, the discussion of rurality in Chapter 2.3.1 provides more detail about the ***Local school community context***. It is characterized by:

- *Deep disadvantage* – materially and in terms of the complex social phenomena that accompany poverty, such as HIV, teenage pregnancy and child-headed households.
- *Constraints of space, place and time* – these affect a range of issues from the lack of local accommodation, to commuting teachers and the distance from home to school.
- *Unique rural resources* - where these relate to system resources, they are discussed below, but while deep disadvantage suggests a lack of material resources, there are also unique resources available to rural schools, such as the strong social fabric of their local communities and the motivation of students.

In the same way, the ***Structural factors*** Bryk et al. examine (small school size and stable student population) are not particularly relevant to the rural South African context. Rather, based on the developing country and South African school improvement literature, I suggest that two ***Structural factors*** (*language* and *class size*) and two ***System factors*** (*material support* and '*distraction*') seem particularly salient in this context. *Language* is a critical structural issue affecting both teachers and students. As I've pointed out, for most rural students, learning English is comparable to learning a foreign language and this forms a major barrier to learning content in other subjects (Fleisch, 2008). Teachers are reluctant to use English in the classroom despite the fact that it is the official language of instruction, and this has implications for students' exposure to and performance in what is the language of commerce and of most tertiary institutions in South Africa. Similarly, large *class sizes* are characteristic of many schools in the Eastern Cape (Hendricks, 2012:21). Despite a lack of conclusiveness linking class size to performance in much of the international literature (Greenwald, Hedges & Laine, 1996; Hanushek, 2002; Kruger, 2003), this remains an important consideration in rural schools.

Some of the critical forms of *material support* offered to schools by the district include the provision of a) textbooks and other materials, b) the frequency and appropriateness of professional development activities and c) adequate facilities (Heneveld & Craig, 1996). Other research has suggested that in the Eastern Cape the **system** that supports schools at the district and provincial level is often dysfunctional and cannot be relied upon to provide these types of external material support (Wright, 2012b). While this material support can be considered as the kind of additive support that districts should be providing to schools, district support can also be subtractive. Needless administrative tasks, bureaucratic paperwork and meetings at venues far away from the school all take teachers and principals away from their core task of instruction. I have termed this subtractive support '*Distraction'.*

To summarise, the research I've reviewed suggests that the following **additional contextual factors** need to be included in a framework developed for rural South African schools:

- *Local school community context:* characterised by *deep disadvantage, unique rural resources* and dimensions of *space, place and time.*
- *Structural factors: language* and *class size*.
- *System factors: material support* from the department and the level of *distraction* experienced by schools.

2.4.2   A conceptual framework for rural school improvement

A conceptual framework for school improvement in rural South Africa is now emerging. The final aspect to consider is how the *habitus* of people and the *doxa* of institutions relate to the pieces of the model illustrated in Figure 2.4. As my review of the South African literature suggested, the country's *history and experience of schooling* has created people and institutions with ways of 'doing school' that do not produce strong academic results. For many black Africans, schooling under Apartheid had more to do with resistance and defiance, than it had to do with learning, and much of this culture survives in schools today (Jansen, 2004). The additional situational consideration of rural schools **'on the periphery' in** *the field of schools*, as well as in the economic and political fields, shapes the Eastern Cape schooling space so that its own unique *doxa* is at play, structured by and at the same time structuring the *habitus* of people in the system. In addition, I've

indicated that rural schools are characterised by: limited *support*, *choice* and *voice*; the *very different set of resources* available to school communities; the *constraints that space, place and time* impose on agents in this field; and the interplay between these *agents and the forces exerted by the environment* they find themselves in.

Making use of these additional theoretical tools is not as simple as adding additional bullet points to a list of factors to measure and consider. They form a far more comprehensive, grounding role. The best analogy I can draw is to suggest that it is as if habitus and doxa are the medium in which all of these other factors are situated, so that there are two layers of construction. Where habitus and doxa have been shaped by the aspects of rural South African experience in the field discussed earlier, this sub-surface medium is less well understood, making the 'construction' of improvement on the surface exceptionally difficult.
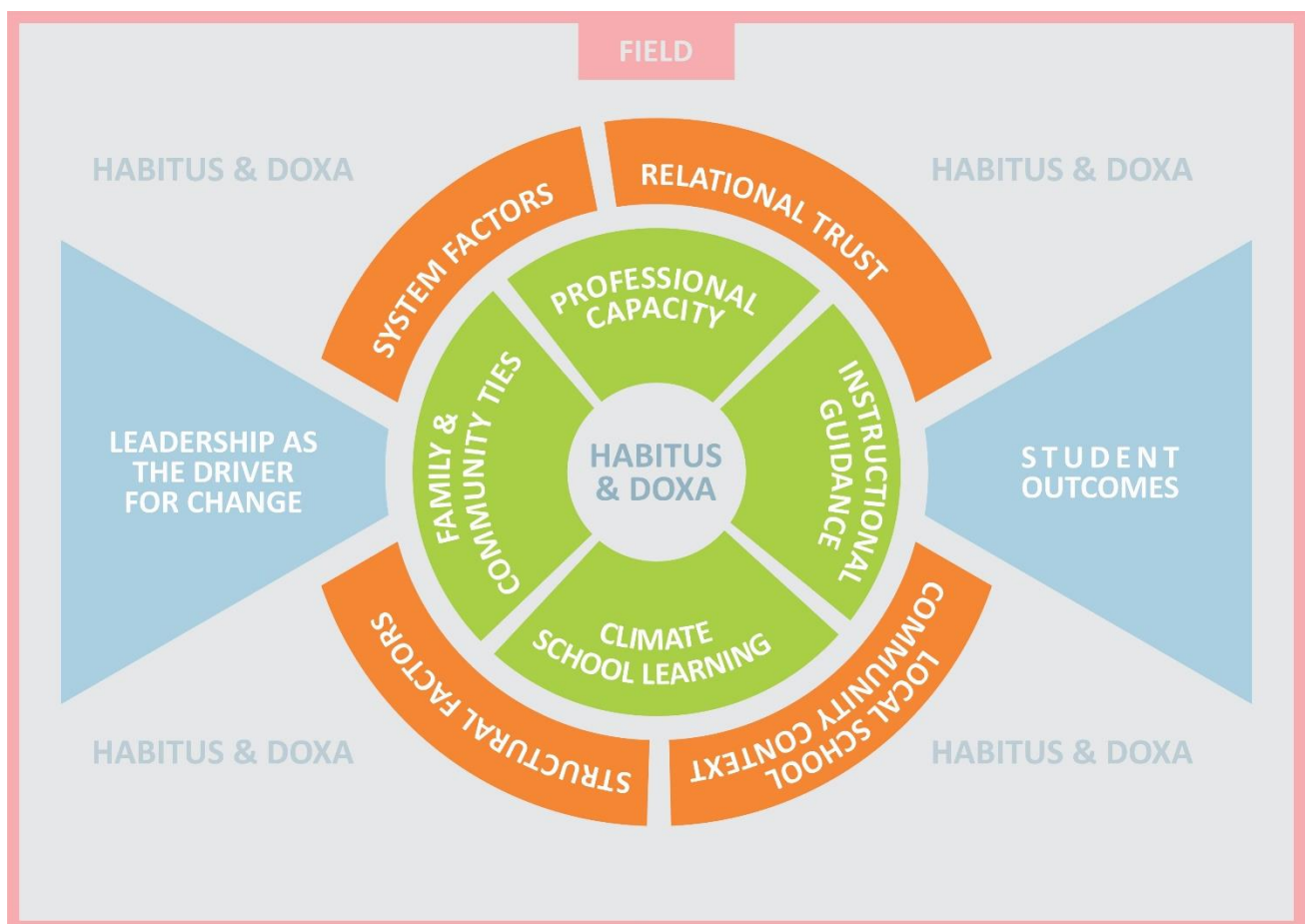
Figure 2.4: A conceptual framework for improvement in South African rural schools

For instance, *leadership* and *professional capacity* (in many senses *cultural capital*) are profoundly constrained by the habitus of teachers in the system. If teachers have limited conceptions of what is possible for their own lives and for their students, it is unlikely that they will bring high expectations to their classrooms. Similarly, the doxa at work in schools will dictate what kind of *learning climate* exists, and whether an *instructional guidance system* has any chance of gaining traction. A doxa of fear and hierarchy is unlikely to produce the kinds of *relational trust* (*social capital* has some parallels here) required for meaningful *school-community* partnerships to develop. On the other hand, school doxa that encourage and support parents to make valuable contributions to the school and to their childrens' education open up a world of possibilities.

It is not that these uncertain foundations of the deeper layer cannot be transformed into solid ground, but rather that there is first a great deal of understanding required about how people think and view the world, and about prevailing ways of doing and being. Once some firmness around these understandings has been gained – some depth of insight that deals authentically with the complexity involved - the surface factors included in Figure 2.4 can be examined with more confidence. These factors provide a well-established route back to the practice of schooling so that the journey from particular practice, to abstraction, back to practice is completed in a way that has meaningful outcomes for this practice. To articulate the 'mode of travel' on this journey I next turn to a discussion of the design and methodology of this study.

Chapter 3:   Research design and methodology

…it is the clarity, comprehensibility and comprehensiveness of the researcher's description of methods – as they fit into the larger methodological framework of the project – that constitutes the report as 'research'. It is the defensibility of these methods as technologies for reasoning our way from the research questions to the conduct undertaken by the researcher and on to the production of findings that can count as answers to the original questions that defines the reliability, significance and value of the project. It is the ability of method to act as the bridge from questions to reasonable answers that distinguishes research from other ways, perhaps perfectly reasonable ways in other terms or settings, of asserting knowledge and opinion about education.

- Peter Freebody, *Qualitative Research in Education: interaction and practice* (2003:68)

3.1 Introduction

I opened this thesis with an account of Bahle, a real life hero of mine, who seemed to have overcome overwhelming odds to achieve great things. As much as I was encouraged by his remarkable turnaround, I was intrigued by the school factors that contributed to his success, yet seemed to be absent in the rural schools attended by so many of his peers. Was this simply a story of one outlier, or are there particular school strengths or 'enablers' which allow students and teachers to flourish?

This study seeks answers to questions about school improvement in the rural Eastern Cape. The bridge that enables the research to move from these questions to defendable answers is provided in this chapter (Freebody, 2003:68). My central questions ask about the possibilities and constraints facing the particular set of schools I am working with, and about the implications that these findings might have for a broader set of rural schools. In Chapter 2 I argued that multiple analytical lenses are required in order to provide authentic and meaningful answers to these questions. In this chapter I extend this argument to suggest that a blend of quantitative and qualitative methods is necessary to furnish the kinds of data from which these answers can be generated. Since there are two levels of questions being asked – one to do with 'what' evidence there is of the possibilities and constraints, and one to do with 'how' and 'why' these came about – I have taken two distinctive approaches:

- The first involves examining school results data for a larger pool of schools against survey, socioeconomic and community health information and is thus largely quantitative.

- The second uses observations and interviews from a smaller sample to map the processes, changes and players involved in schools to uncover a deeper picture of doxa and habitus at these schools.

This chapter first provides a detailed discussion of the design of this study. It then deals with considerations around sample selection, ethics, research relationships and instrumentation design, before closing with implications for the validity and generalizability of this study. Where this chapter deals primarily with design and methodology considerations, Chapter 4 discusses data collection and analysis procedures. The intention is that by the end of this chapter the reader will

be left with a clear idea of why the study has been designed the way it has, and have confidence in the strength of the findings that might be generated from this research.

3.2 Research design

The design of this study has been guided largely by the interactive approach outlined by Maxwell (2005; 2012). Greene (2008:13) suggests that there is wide agreement in the research community that 'methods (should) serve inquiry purposes'. In Maxwell's approach the goals of the research, the research questions, conceptual framework, methods and validity form an interactive system. Thus my choice of methods is inextricably tied to what has been developed in the preceding chapters of this thesis, just as the kinds of conclusions that might be drawn at the end of it are influenced by the methods outlined here.

This study uses different lenses to examine different aspects of the same phenomenon: rural school improvement. Yin (1984:84) suggests that a combination of case studies and surveys can be helpful in uncovering causal processes in the smaller group and then checking on the prevalence of the phenomenon across a wider set. In this study, the reverse is true, with the wider lens used to assess the general terrain and guiding the choice of what to ask and where to look more carefully, particularly for the exceptional cases that may prove most insightful (Maxwell, 2005:90 & 2012:142).

To be more specific, a combination of survey data, based largely on the instruments developed by Bryk et al. (2010), school results data, and community health data provide a macro-level picture of the interactions between school 'organisation for improvement' and school performance. These data sets are amenable to quantitative analysis techniques and should provide an indication of the applicability of the Five Essential Supports framework to a rural South African context, as well as providing a guide for a more detailed qualitative investigation. Essentially these methods should produce evidence that connects strengths in school organisation to higher school performance.

From this macro level vantage point, observations and interviews provide a finer grained view that aims to uncover some of the 'rules of the game' in the Eastern Cape schooling context, and how different people navigate these rules. By examining how people think and behave, I hope to understand more clearly how the habitus of people and how the dominant doxa of schools connect

to rural school improvement. Finally, by bringing the quantitative and qualitative parts together, I aim to probe for connections that will help me to make suggestions about school improvement 'enablers' and 'levers'.

The design of this study is thus a combination of quantitative and qualitative methods, aiming to use the strengths of each to answer different kinds of questions. As Miles and Huberman (1984:20) point out, it is rare to find research these days that is not a blend of both quantitative and qualitative paradigms. Greene (2008:20) makes a compelling case for this approach: "…a mixed methods approach to social inquiry distinctively offers deep and potentially inspirational and catalytic opportunities to meaningfully engage with the differences that matter." Various authors have pointed out that along with these opportunities for more advanced research comes an increased responsibility for conceptual and design clarity, particularly around the purposes for using mixed methods (Bryman, 2006:15; Fielding, 2012:9; Greene, 2008:14). Hence let me be clear about my rationale for choosing this approach:

Firstly, the different conceptual lenses I am using lend themselves to different methods of application. For instance, Bryk et al. (2010) apply a strong quantitative framework to their work, while a Bourdieusian analysis of habitus *may* be better examined qualitatively (although indeed Bourdieu often drew on macro-level statistics as a starting point for his analyses, and I use similar statistics to create a picture of the habitus of rural teachers). Secondly, as I've pointed out, the goals of this study require both quantitative and qualitative methods in order to provide answers with sufficient authenticity to handle complexity, as well as application to practice. Another reason is that the different phases of collection and analysis allow the findings from one facet of the research to inform the design of the next. In practice, this had less influence than I would have liked since the timeframes for analysis and collection were very tight and overlapped considerably. Nevertheless, there were certainly findings from the quantitative analysis that, for example, influenced the selection of interview participants. Finally, the different perspectives offer opportunities for robust validation in the form of triangulation – not just across interviews sites, but between one set of results (for example, statistical correlations between organisational measures) and another (such as interviewee reflections on these same organisational measures).

With these considerations in mind, the data was produced using the following strategies: students (Grade 9 or 12), teachers and principals from twenty junior secondary schools and five senior secondary schools completed surveys based on instruments developed by Bryk et al. (2010). This generated data suitable for Rasch[13] analysis and statistical comparison with the ANA and NSC results from these schools. Fifteen teachers from five of these schools were selected for interviews, using an open-ended interview guide that was informed mainly by aspects of habitus and doxa. Observations were recorded at all 25 of the schools visited, using a framework structured by the survey instrument.

3.3 Site and person selection

The aim in doing this study was to learn more about school improvement in a rural context. In order to do so, the schools selected as participants needed to typify the kind of rural schools I have described in the discussion of rurality in the previous chapter. They should be 'playing the game on the periphery' and their marginal position in the field should have been definitively shaped by the historical forces at work in the country. So for instance, Queen's College in the rural Eastern Cape town of Queenstown, or Hilton College in the KwaZulu-Natal midlands, may be located in rural areas, but would not qualify by my definition since they occupy places of privilege in the field.

Typically for quantitative research using the approach of Bryk and colleagues (2010), a sample of hundreds or even thousands of schools, preferably spread throughout the country and chosen at random, would be common. However, my aims are different[14], and given the constraints of resources and time for a PhD study, a sample of between 20 and 30 schools seemed sufficient to *pilot* this well-established set of instruments in a new and very different context. The qualitative portion of this research placed no such obligations of quantity on the sample selection; however, it did place a demand of *quality* in terms of sites that had the potential to yield interesting findings about these specific schools in this particular geographic region – and it is this aspect of site

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[13] Rasch analysis is a form of Item Response Theory (IRT) modelling that enables survey responses to be placed on statistically comparable scales. This is discussed in much greater detail later in this chapter and in the next.

[14] As outlined in Chapter 1 and Chapter 3.8, I am aiming to adapt and pilot this model in a different setting, using non-random, convenience sampling, at one instance in time, with the associated limitations in terms of generalizability. Bryk and colleagues have aimed to produce data that is far more generalizable, given their vast sample sizes over multiple years.

selection, rather than the sheer scale of the enterprise, that offers the most promise for the kinds of findings that might be generated.

There were thus three requirements for site selection: schools must meet my definition of *rural*; secondly, the area needed to have *sufficient numbers* of these rural schools for a small- to medium-sized sample; and finally, there should be strong indications of the potential for *interesting qualitative findings*. Convenience then entered the equation. Given that I had been working for some time with a set of schools that met all three criteria, it made good practical sense to choose ones close to my rural base. Furthermore, these schools had added advantages in that I had a degree of knowledge about which schools might be of *interest* and additionally some form of relationship in place with many of them.[15]

The quality of these relationships was influential in my choice of sites and participants. Since distrust and suspicion still characterise the relationships of many rural schools in the former-Transkei to outside authorities, including universities, I wanted to increase the likelihood of successful responses, as well as the honesty of those responses by working with schools that I had some form of positive prior contact with. This decision was validated by the significantly higher response rates from schools that I knew best.

The general location of the study was chosen with this in mind and determined largely by proximity to the village in which I am based in order to increase the likelihood of prior contact. There are approximately 150 schools within a 25 km radius of this village, and I chose to look at the portion of this area that was slightly more accessible. Since the infrastructural, socio-economic and social conditions of schools in this part of the Eastern Cape are among the worst in the country (Chapter 1 provided a fuller description), there is some support for why this selection may be useful more generally. In other words, they may offer an example of what is possible even in extreme settings. My claims for generalizability are thus confined by the particular number and nature of schools

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[15] A fourth criterion may have been included here, if I had been able to analyse school results data (ANA/NSC) in order to select schools at different performance levels. Unfortunately the timing of my study did not allow this, although in the case of the five senior schools involved, I knew their respective performance levels quite well from my experience of working with them. Other objective criteria are much harder to ascertain, since the very nature of rural South African schooling is that schools are typically opaque, with little data available to differentiate one from the other.

selected, to be purely theoretical, with the intention that the *framework* I develop may have application to rural schools elsewhere, but that specific claims apply only to schools in this study.

In terms of the detailed selection of schools for the first, survey-based part of the study, a larger group of five senior secondary (grade 10 – 12) and twenty-five junior secondary schools (grade R-9) were selected. I wanted both levels of school in my sample for two reasons, despite the fact that the CCSR tend to look separately at high schools and junior schools. Firstly, senior schools have a well-established, widely available and externally benchmarked exit exam, while junior secondary schools do not. Trying to connect the two levels in terms of *performance* seemed important. Secondly, based on my experience of the two levels of schools, there seemed to be markedly different forces at play, and learning more about these differences also seemed worthwhile.

There are not many more than these five senior schools in this area[16] so little discretion was needed, but the choice of junior secondary schools largely came down to where existing relationships were in place, together with the schools' centrality to the research base. In other words, my decisions as to which schools to leave out were shaped by both convenience (mainly to do with distance) and the overall validity of the study. Thus schools closest to my base were almost all part of the study, while those further away were selected based on the need to be more representative.

Again, let me be clear here by saying that I am not referring to validity and representativeness in the statistical sense, but merely that I wanted the full range of schools (and factors that may affect their performance) in the area to be included in my study. For example, it would have been easiest for practical reasons to select schools that were on the main tar road only, but that would have missed out an important issue – that of accessibility. Similarly, I tried to obtain a spread of schools both near and far from the nearest major town, with at least a couple of schools in each geographic 'pocket' (usually bounded by tar roads).

As it happened, my time allocated for collection of data ran out before I was able to see all of these schools, hence the final number of schools was 25, not 30. The five schools not included were from two regions, one in which I had already sampled a number of other schools, and one which was

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[16] A sixth senior secondary was used as a pilot school for the survey.

furthest from both my research base and the nearest town. The latter may have contained some interesting cases, although I have other schools in another direction that were a similar distance from the nearest major town. The other factor that may have been interesting to explore, was that both of the un-sampled regions were coastal hubs for tourism, and there may have been some fruit in examining the interaction of the schools with local economies (almost entirely absent in all other school settings).

I aimed to ask as many teachers as possible to complete the surveys, mindful of the criteria used by the CCSR that for meaningful Rasch measure comparisons a minimum of eight teachers (or 50% of teaching staff) from a school was needed. For the students, where achieving minimum numbers was less of an issue, I aimed for between 20 and 30 responses. In Grade 12 I chose only students taking the physical science and maths stream. I did this, knowing that this may bias my sample towards the better students, because I asked questions related to their mathematics teacher and also because I used mathematics as one of my school performance measures. In Grade 9, typically only consisting of one class at most junior secondary schools with all students doing maths, I selected students on essentially a first come, first serve basis. Where all students in a grade or class were present at the same time, I distributed surveys on a random basis, usually by moving around the room giving surveys to alternate students[17]. Teacher and student response rates are contained in Table 4.1 of the next chapter.

I now turn to considerations around the selection of interview participants. Yin (1984:48) suggests that the choice of cases should be done using a replication, not sampling logic – in other words, choosing cases that will be illustrative, rather than attempting to cover all the bases required for validity in statistical sampling. In this study, the five schools chosen for in-depth, qualitative work were selected for the differences between them or for unique qualities that made them 'interesting' to investigate further (Maxwell, 2005:89,90). These decisions were based on my observations at schools during the survey process, my knowledge of schools from my non-profit work, and were also informed by the results of the analysis of school results, so that there was some variation in performance included.

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[17] Since some Grade 9 classes contained as many as 130 students, I could not (for practical data capturing reasons) sample all students in the class, where class numbers were significantly beyond my target range of 20-30 students.

Another consideration was that I felt sure that interview participants would be more likely to speak openly with me if I had some kind of relationship in place already. Bourdieu (1999:610) suggests that in interviews "…social proximity and familiarity provide two of the conditions of "nonviolent" communication." By this he means that some familiarity or common background is necessary to minimise the intrusion of the interviewer. It was far more important to me that teachers felt comfortable to talk with me, than whether my sample was an accurate reflection of all teachers in the area. Furthermore the goals of my interview process were not to create a picture of the average rural teacher, which would have required a more random sampling process (and to a certain extent was obtained through the survey data), but to look particularly at *exceptional* cases, from which I felt I would learn the most. Having some knowledge of the teachers - and their reputation and standing at their school and more widely - was thus important, and purposive sampling most appropriate.

3.4   Designing survey, observation and interview tools

Before embarking on descriptions of the design of the various data production strategies, it is worth pointing out the differing logics that accompany quantitative and qualitative research. In most quantitative research the design of the instruments determines the analytical procedures that follow (Fink, 2003). In a sense the thinking is done up front. On the other hand, in many forms of qualitative research, designing the instruments is only one of a number of thinking steps that occur at various stages of the research process, from generating research questions, to data collection procedures, to data analysis – all requiring considerable discretion (Maxwell, 2005:91). Thus the distinction between this chapter (design and methodology) and the next (data collection and analysis) may feel slightly blurred at times, as I have attempted to deal with these different forms of data in the appropriate manner.

3.4.1   Survey design

In order to answer questions about the constraints and possibilities rural schools face, I first wanted to map the organisational terrain. I wanted to assess where schools were strong and weak, and how these strengths and weaknesses were related to their performance on external student achievement measures. To do this I used survey instruments based (with permission) on the

surveys used in Chicago schools by the CCSR. These have been used and refined for over 20 years and represent a well-respected, thoroughly-tested set of survey tools. While Chicago is a very different context to the rural Eastern Cape, the factors assessed by these instruments carry across relatively seamlessly in the common context of school organisation.

Adjustments were made to the 2011 CCSR versions of the student, teacher and principal surveys in two ways. Firstly, in line with the conceptual framework developed previously, additional questions were created to quantify the new or adjusted factors (*Local community context, Structural* and *System*) and measures (SGB participation, systems, routines, implementation, outside involvement and critical engagement) that now needed measurement. Secondly, smaller adjustments were made for language or contextual considerations in order to aid understanding. For example, the word 'instruction', commonly used in the United States, but less widely used here in South Africa, was changed to 'teaching' in most cases. Rudestam and Newton (2007) suggest that such modification is not uncommon, but that when such a process occurs there may be consequences for the validity and reliability of the instruments against established norms. I will pick up this point in the discussion of the survey analysis.

Once adjusted, the instruments were then tested through three phases. The Teacher questionnaire received feedback from English-speaking teachers within the organisation I work for. Their comments were then incorporated into a second version, which was piloted at a senior secondary school just outside the catchment area of this study. I sat with teachers while they completed the surveys and asked for detailed feedback on questions that were unclear, as well as the entire experience of sitting for the survey (time length, computer vs. paper, etc.). Finally, one of my supervisors passed the Teacher survey on to a colleague with considerable experience in designing surveys, who provided valuable feedback, which was incorporated into the final version. This was then uploaded into a software package that created a computer-based survey.

A similar process of refinement was followed for the principal and student surveys. In addition, the student survey was translated into isi-Xhosa, which I hoped would reduce possible misunderstandings, particularly from the Grade 9 students, although naturally this also introduced an additional layer of possible error. The Grade 12 Student version was piloted with a group of Grade 11 students drawn from the same five senior schools that would eventually be surveyed. The

Principal version was piloted on three Cape Town-based principals, who I felt I could approach and would provide insightful feedback. Although their contexts were obviously very different, finding principals with time and inclination to help was more important than contextual relevance.

It became apparent that all three surveys took a long time for respondents to complete, partly because of the language and context complications, but mainly because the CCSR survey was already pretty extensive and I had added a series of additional items. I thus embarked on a culling exercise, taking out all items that I deemed non-essential, being mindful of ensuring there were a sufficient number representing each measure. Once the three sets of surveys were finalised, they were split into a senior and junior version for each, although these differed by only a handful of questions - mainly to do with preparedness for secondary/tertiary study and the use of workbooks in junior school. There were thus six survey instruments in total, an example of one of which is included in Appendix C.

An important consideration was whether to go with a computer or paper-based version of the survey. The former had many advantages, the most important being that the paper-based version would require someone to capture data, costing both time and money, but more importantly introducing another layer of potential for error. Weighed against this was the fact that very few teachers, let alone students, had used a computer before and I was nervous of the time this might take. After my experiences at the first two schools, where an inordinate amount of time was taken (sometimes as much as two hours!), particularly by the teachers, I abandoned the computer-based surveys altogether.

3.4.2   Connecting factors, measures and items

As indicated previously, Bryk et al. (2010) and their team at the CCSR have compiled a mountain of evidence in support of the Five Essential Supports framework, which together with the resonance I experienced applying their work to my context, convinced me that there was merit in adapting their framework for use in rural South Africa. They make use of terminology, however, that may require some explanation for those not familiar with psychometric studies, or indeed with their work in particular. The five *factors* that constitute the Five Essential Supports each have a number of sub-factors, or *elements*, that hold together qualitatively. Beneath these elements lie several *measures*, which as the name suggests, can eventually be measured numerically using the Rasch analysis

process. For instance, in their conceptualisation of the school leadership *factor*, Bryk and colleagues propose three *elements*: inclusive facilitative leadership, operations management and instructional leadership. Each of these has *measures*, for example instructional leadership has three measures: principal instructional leadership, program coherence and school improvement plan implementation. At the lowest level, each measure is made up of *items*, which are questions on the survey. So for instance, the measure of principal instructional leadership has seven items on the 2011 teacher survey that explore different aspects of what the CCSR consider to be good instructional leadership.

Somewhat confusingly, Bryk and colleagues have then introduced an additional term, an *indicator,* which were measures or combinations of measures used for statistical procedures. In this thesis I make use only of the terms factors, measures and items. In order to minimise confusion around what can be a particularly bewildering set of factors and measures, I have indicated all **Factors** in bold italics, and all *Measures* in italics, with all factor and measure names having a capital letter. Appendix D illustrates how the survey items map onto the factors and measures developed in the conceptual framework and may be a helpful tool for the uninitiated reader to refer to on a regular basis.

3.4.3   Creating the additional survey measures

As outlined in Chapter 2, a number of additional factors - outside of those used by Bryk et al. (2010) - formed part of my conceptual framework, for which measures needed to be generated. Some of these measures could be produced from specific survey questions that had been included for this purpose. In this case, Rasch analysis[18] could be attempted if several items were used to generate a particular measure. However, since most of these new items had been piloted in only a limited fashion, very few of these additional items formed Rasch measures of sufficient reliability to include with much confidence in the final set. In cases where sufficiently robust Rasch measures could not be generated, single items were used to represent the entire measure.

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[18] Please refer to Appendix E for a more detailed description of Rasch Analysis.

Two other sources were used to obtain the additional measures. The most important of these sources to mention here is the Zithulele Birth Follow Up Study (ZiBFUS), a joint study undertaken by Zithulele Hospital, Philani and Stellenbosch University, that has followed 478 mothers and their children for the first year of the new babies' lives in order to build a comprehensive picture of infant health and mortality[19]. The data for the ZiBFUS study was collected through a series of home visits spanning 2013 and the first quarter of 2014. This data was grouped geographically according to the various clinics and by GPS information recorded at each visit[20]. This enabled me to conduct a mapping exercise to develop four school-level indicators of 'deep disadvantage', with measures of *Health*, *Socioeconomic status*, *Social well-being* and *Home resources* for the community surrounding each school. The details of this mapping exercise are included in Appendix F.

The other source of data was taken from my observations at schools, which I used to create the class size measure, based on the student enrolment information displayed in schools. A summary of these sources, the additional measures and how they were created is included in Table 3.1 below.

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[19] More information about the ZiBFUS study can be found at http://www.zibfus.org/
[20] Note that the numbers at some clinics were quite small (sometimes less than 20 mothers), which meant that small changes in the raw numbers (for example, of teenage mothers) produced large changes in the percentages for each variable.

Table 3.1: Additional Factors, Measures and their sources

Factor	Element	Measure	Indicator	Source	Comments
Local Community Context	Deep disadvantage	Health	Health	ZiBFUS – Z-score: children severely underweight at 3 months	This is an indicator of malnutrition. The one year data (best) was not available at time of writing and the 3 month data showed better variation than the 6 month data. *A higher score suggests worse community health.*
		Social wellbeing	Social	ZiBFUS: Teenage pregnancy rate	As defined by Philani Mentor Mothers: 17 years and under. *A higher score indicates more teenage pregnancies.*
		Socioeconomic	SEconomic	ZiBFUS: Per person income	Household income/number of people per household. *A higher score suggests wealthier communities.*
		Home resource	Home	ZiBFUS: Electricity at home	For the vast majority this is electricity from the Eskom grid. *A higher score suggests more people have electricity.*
	Constraints of space, time, place	Space	TSPACE	Teacher Survey: Rasch measure	Poor reliability PSI=0.57, hence additional measure DWHome. *A high score means LESS remote.*
			DWHome	Teacher Survey: Single item – Distance from Week Home	"How far are the following places from school? 2. The place where you stay during the school week." *Note: this item is included in TSPACE, above. A high score means further to home.*
		Time	TTTime	Teacher Survey: Single item – Teacher travel time	"How much time on each activity do you spend on an average school day? 1. Travelling to and from school." *Note: the Rasch measure for this indicator was extremely unreliable. A high score means higher travel time.*
		Place	SPLACE	Student Survey: Rasch measure	Poor reliability PSI=0.51, hence additional measure TPLACE. *A high score means LESS disadvantaged place.*
			TPLACE	Teacher Survey: Rasch measure	Good reliability PSI=0.77, but student response more important, hence SPLACE. *A high score means LESS disadvantaged place.*
	Rural social resources	Collective efficacy		-	I was unable to develop a measure for this
		Religious participation		-	I was unable to develop a measure for this
		Tribal/community authority	ComCon	Teacher Survey: Single item - Community consultation	"How often do the following take place? 2. Someone from your school has consulted with local leaders about a problem your school is facing. " *Note: this item is included in TTCA, below. A high score suggests good use of rural resources.*
			TTCA	Teacher Survey: Rasch measure	Poor reliability PSI=0.5, hence additional measure ComCon. *A high score suggests good use of rural resources.*

Factor	Element	Measure	Indicator	Source	Comments
Structural Factors (to do with how rural schooling is structured)	**Class size**	Building & HR use	ClassSize	Observations/ school enrolment data	Raw scores turned into categorical variables from 0 (greater than or equal to 100 students per class) to 5 (less than 25). *A high score means less students per class.*
	Language	Attitude to language	SAttLAN	Student Survey: Single item – attitude to English	"2. I would do better if all my subjects were taught in my home language." *The Rasch measures for all language items were too poor to use, hence single items used. A high score suggests students prefer isiXhosa.*
		Use of language	SUseTLAN	Student Survey: Single item – Teacher use of English	"3. Many teachers do not use the language of instruction in their classrooms. " *A high score suggests teachers predominantly teach in isiXhosa.*
			TUseTLAN	Teacher Survey: Single item – Teacher use of English	"3. Many teachers do not use the language of instruction in their classrooms." *A high score suggests teachers predominantly teach in isiXhosa.*
System Factors (to do with how the wider system supports or undermines schools)	**Material support**	Adequate facilities	TADF	Teacher Survey: Rasch - Adequate facilities	Poor reliability PSI=0.57, hence additional measure *Library. A high score suggests better facilities.*
			Library	Teacher Survey: Single item - Library	"1. Our school has a well-equipped library." *This is used as a single measure of the overall facilities of the school to compare with TADF. Note: this item is included in TADF, above – A high score suggests that the school has some form of library.*
		Professional development	ProfDev	Teacher survey: Single item – Quality of professional development	"4. I am a better teacher because of (school or district) professional development activities." *The Rasch measure was too poor to use (PSI=0.44). A high score suggests good quality professional development.*
		Textbooks and other materials	Textbook	Student survey: Single item – textbook availability	"1. I have been given textbooks for all my classes, that I am able to take home." *The Rasch measure was too poor to use (PSI=0.37). A high score suggests that textbooks are available that can be taken home.*
	Distraction	Principal time away from school	PrinTimeAway	Teacher survey: Single item – principal time away from school	"How often is the principal away from school (e.g. for department meetings, school supplies, personal reasons, etc.) for more than half a day?" *High score = high time away.*
			PDISTRACT	Principal survey: Rasch – all time away from school	4 items, PSI=0.78. *A high score suggests the principal is away from school infrequently.*

3.4.4 Observation framework design

Having established a map of school organisational strengths and weaknesses with the surveys, I then needed to develop a finer grained picture of individual schools - both to verify the survey data, and to provide some texture for a discussion of habitus and doxa. An observation framework was developed to accompany the survey during the first phase of data collection, with these purposes in mind. Surveys are a form of self-report, which have drawbacks in that the people surveyed may or may not be willing to answer honestly; further, there is a gap between what people may actually be doing and what they say they are doing. This is particularly the case in the context of this study, where teachers tend to be distrustful of outsiders and of any questionnaires that may be attempting to 'show them up'. The aim of the observation framework was thus to provide a further source of evidence (or triangulation) to support the surveys (Maxwell, 2005:91).

The tool was designed to align closely with the conceptual framework developed in the previous chapter. It thus honed in on aspects of the Five Essential Supports and focussed on searching for evidence of these at work at each school. Under each essential support, several detailed questions were designed to uncover how the support played out at the school. An example of this tool is included in Appendix G. The observation framework was completed at all 25 of the schools surveyed, using a kind of 'check-list' format to record what features of 'school organisation for improvement' were evident, with additional comments elaborating on anything unusual or noteworthy.

3.4.5 Operationalising habitus and doxa for use in an interview guide

In the preceding sections I have examined the methodological rationale and instrumentation design for performing an analysis of the Five Essential Supports together with the additional factors I motivated for in the development of my conceptual framework. From these a snapshot of the first layer of school organisation should emerge. Taking the salient points from my discussion in the literature review section, my objectives for the 'second-take' analysis of habitus and doxa are to examine in an explanatory, interpretative manner:

1. ***The habitus of people in schools.*** This should become apparent through an examination of teacher background, their expectations and dispositions.
2. ***The doxa operating in individual schools.*** This should become apparent from common elements of individuals' habitus.
3. ***The prevailing doxa operating in rural Eastern Cape schools.*** This should become apparent from common elements of schools' doxai.
4. The way in which ***the doxa of schools shapes the habitus of individuals*** in schools.
5. ***The positions taken up and capital possessed by schools and other organisations in the field***.

This study seeks a sociological, not psychological, understanding of the habitus of individuals in schools, and I must briefly return to the literature to review the methodology others have used to generate this. I am interested in how the habitus has been formed – Bourdieu suggests that this happens largely during early life in the home and at school, implying that social origins are important – and how it reveals itself in dispositions, expectations and embodiment. The last of these is simply beyond the scope of this study, since a much more detailed level of observation would have been required. Dispositions, Bourdieu (1977:214) suggests, can be thought of as a way of being, a tendency or inclination to act in a certain way. Background, dispositions and expectations seem more accessible and have been operationalized elsewhere by a number of researchers (Atkins, 2000; Dumais, 2002; McClelland, 1990; Reay, 1995) and I comment briefly on some of these here, as they inform the design of my study.

Using data gathered seven years after high school graduation as part of a large-scale longitudinal study in the US, McClelland (1990:108) used social origins (in particular the father's occupation), educational qualifications, and occupational expectations to operationalise habitus. Together these capture something about background and expectations. Reay (1995) suggests four ways to think about habitus: that it is embodied; in relation to agency; as a compilation of individual and collective; and in a complex interplay between past and present. The last of these is particularly prevalent in a school system where past results have an on-going effect on the present. Reay also reminds her readers that Bourdieu considered habitus a method in and of itself. Dumais (2002) operationalises habitus as students' occupational aspirations, but recognises that this is only one dimension of a much larger concept. These researchers have used both qualitative and quantitative

approaches to capture aspects of the complexity of habitus, and I have used a combination of both.

In particular, I probe to deepen my understanding of the dispositions and expectations of teachers in schools – how do they understand the rules of the game? What motivates them? Why do they behave as they do? What are their goals and expectations? From answers to these questions, a sense of the habitus of individual teachers and the doxa present in and across schools should begin to emerge.

3.4.6 Interview design

While Bourdieu used some statistical analyses of large data sets in his own research, the best way of learning about the particular expressions of doxa and habitus seen in this context seemed to be through interviews. Questions for these interviews were developed using the rationale outlined in the previous section. While the surveys were almost exclusively taken from the school organisation for improvement paradigm, the interviews were designed to discover more about teachers' backgrounds, dispositions and expectations to inform the Bourdieu frame, as well as including several questions that probed deeper into aspects of the Bryk et al. frame.

I identified a number of key questions, tied closely to my research objectives, for which I had incomplete data after the survey phase. The logic of this procedure is outlined diagrammatically in Appendix Z. I honed in on the following areas:

1. Further description of teachers' backgrounds, dispositions and expectations.
2. Trying to understand why schools and individuals operate the way they do.
3. Trying to understand the 'rules of the game' in these schools.
4. Trying to understand what makes some schools and individuals 'different', and how people talk about these differences – particularly with reference to Bryk et al.'s Five Essential Supports.

Based on these key themes, the interview took the form of a 'general interview guide' (Turner, 2010:755), using a structured framework of questions, but with enough flexibility to

ask questions in different ways to different participants, or to ask follow up questions not originally part of the script where interesting points arose. Interviews were conducted with 14 participants in March/April 2014 using the framework contained in Appendix H. Each interview lasted approximately an hour[21]. One further interview was conducted much later on in the process when it became apparent that certain issues flagged in the analysis of the survey data required more information. This one-page set of questions on professional development and teacher/principal absence from school is found in Appendix I.

3.5 The researcher

One of the considerations in the choice of method is the fit for the researcher in terms of personality, skill set, training, etc. Indeed, for qualitative research where there may be more room for subjectivity, the personal beliefs, values and experiences the researcher brings to the project loom particularly large, and are both a valuable resource as well as a potential opportunity for bias (Maxwell, 2012:97). In my case my background as an engineer and science teacher was probably influential in my decision to adopt a 'numbers-based' approach for at least part of the design. Equally my experiences over the past five years working in schools in the rural Eastern Cape have suggested that a purely quantitative approach would prove insufficient when it comes to understanding the nuances of context and the dynamics of 'real-life' schools.

My involvement in the research has implications for almost all features of the design of the study, as well as for how the findings are interpreted and thus it is worth foregrounding some issues here. Firstly, I come to this research as a practitioner with deep interest in the practical outworking of this research for the schools my organisation works with, as well as for rural schools more generally. Throughout the research process I have been forced to remind myself that at least part of the work of research involves connecting to a level of abstraction that has been frustrating at times for its lack of direct connection to improved schooling practice. I have also had to remind myself that there is a place for dispassionate

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[21] Further details on interviewee selection and procedure are contained in Chapters 3.3 and 4.3.

observation, despite my strong feelings and concerns for the people and schools being observed. My vested interests in the outcomes of the research are worth noting.

Living and working in this community of schools for the past five years has produced my own 'feel for the game[22]'. I see things quite differently to how I did when I first arrived here. In many ways I feel closer to a participant-observer or even an ethnographer than a scientist reviewing the results of an experiment. I became increasingly conscious of the implications of this during the analysis of the interviews, where the subjective influence of the researcher has considerable weight. Many times when reviewing data I came to a piece of information that simply didn't fit with my own experiences and I was forced to seek more data, find an alternative explanation, or reject it outright as an anomaly. No matter how rigorous the application of a coding or categorisation system, in qualitative research the human 'instrument' remains hugely influential in deciding what fits. Thus the deeper the knowledge of the game, the more likely that the 'correct'[23] interpretation of a phenomenon is made (Maxwell, 2012:43); yet at the same time the further one is from having a clear, dispassionate view of this very same phenomenon. The potential for bias and reliability errors are significant.

Despite being in some ways an insider, my race, background and education have placed distinct barriers between me and the subjects of my research. Given the fraught history of race relations in South Africa, and particularly given the location of my study in the former Transkei, it is hard for teachers not to be suspicious of white outsiders and this had implications for my choice of sites and participants. Over the course of my research I also grew to realise that the barriers were mental as well as relational, and I close this section by quoting from one of my research 'memos' that captures a sense of my discovery of the 'otherness' of my thinking.

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[22] One of the ways that this feel for the game plays out is in what I call my sense of '*real* rural reality'. In other words, people in schools will describe their reality to me, but sometimes they do so in a way where it is clear they are either trying to impress me, or are toeing an acceptable 'party line' that they have been told by their superiors. Being able to sense this and tactfully discover the reality that lies underneath is part of developing my own feel for the game.

[23] I use this word coming as I do from a critical realist perspective, believing that while there is a real world, our interpretations of this world are fallible and varied (Maxwell, 2012:5).

About half-a-dozen schools into the survey phase it occurred to me that, actually, I really don't know what I'm looking for. In fact, I am distinctly ill-suited to understand rural schools. I say this because the very things that in theory should prepare me well for an analysis of school improvement - having attended and taught at progressive, good schools in Cape Town and around the world; an undergraduate degree in a highly analytic discipline; post-graduate training at some of the world's finest universities – in reality now seem more of a hindrance than a blessing.

This chain of thought was sparked, oddly enough, by food gardens… To me, coming as I do from a Western, well-off background, they felt like an absolute irrelevance, a million miles from the 'instructional core' that was supposed to be at the heart of good schooling. Yet here they were, clearly an important feature of the landscape. As I looked around at some of the other incongruity around me, this feeling of 'foreignness', of 'being at sea' in a world that I did not fully understand, was reinforced… Are my 'rules of the game' the right ones or am I the odd one out? My investigative 'sensory system' has been tuned for another world, with a different set of playing conditions, and I'm not sure what has significance in this strange other world. – Research Memo, November 2013

3.6 Research relationships

Given what I have said about my involvement with many of the schools in this study, my research relationships were perhaps more complicated than is usually the case. There have been a range of relationships: some schools I visit on a weekly basis for work, others I met for the first time during this study. While these relationships naturally varied in warmth and depth from school to school, there was little need for prior groundwork in this regard. As Maxwell (2005:84) suggests, the nature of research relationships has changed substantially in recent years, and thus the fact that I have had existing networks need not negatively impact the research, provided these are accounted for and built into the analysis. In general, since the work of my organisation is to be helpful to schools, schools where I had well-established relationships were very welcoming and supportive of my research and this was reflected in high survey completion rates. Schools that had little or no contact with my

organisation were generally cooperative and friendly, but not necessarily overly helpful. In one or two cases, schools were suspicious and unpleasant to deal with and these typically were the schools from which I was able to obtain the least data.

3.7 Ethical issues

There are a number of issues worthy of discussion in this section. The first, as I have hinted, is my role as researcher in an environment in which I have been and will continue to be an actor. While the non-profit organisation that I work for is not well-endowed with resources and influence, nevertheless my role working for the organisation may have unknowingly placed undue pressure on participants in this study. I have tried to be transparent with schools about my differing roles, but I note the potential for confusion here. Being English-speaking and white brings with it additional vestiges of power and complication, which need to be acknowledged and accounted for in my interpretation of data (Kilbourn, 2006:559). I have tried to deal with these validity threats by working critically with my interview data, knowing that much of what is said by people in interview situations can be heavily influenced by their relationship to the person conducting the interview.

Since the study examines schools and young people, permission was sought from the relevant authorities at the individual, school and provincial level, in accordance with university and departmental policies, before any surveys, observations and interviews were conducted. Before beginning sampling, I obtained ethics clearance from the University of Cape Town's Faculty of Humanity. I also requested permission to conduct this research from the Eastern Cape Department of Education, but to date have heard nothing back, despite numerous attempts. I then met with the District Directors in charge of the two districts in which the sampled schools fell. I received permission letters from both Directors (see Appendix A).

In all of my interactions with district officials and school personnel I made it clear that: participation was voluntary and anonymous; I would not interfere with teaching time, and; there would be no preferential treatment with regards to my involvement with the school through the work of my non-profit organisation. All participants received an information

and consent form, which reinforced these points and which they duly signed before I asked them to complete the survey (an example can be found in Appendix B). The specific locations of the site of the research and the schools involved have not and will not be disclosed in any publications related to this thesis. The nature of the community means that schools and people are reasonably easily identifiable even if only the general location of the study was revealed. All names of schools and people have been coded in this thesis.

3.8 Reliability & Validity

A discussion of the important issues of reliability and validity provides the final steps in the bridge that this chapter has provided to take this thesis from the questions posed in Chapter 1 to the kinds of answers that will be developed in the chapters that follow. The nature and scope of these answers is largely determined by the discussion here. Throughout this chapter I have hinted at a number of possible warning flags – mainly to do with the sample selection and my participant-observer status – so it is important to understand the potential implications. Firstly, it is not intended that, from this small group of around twenty-five schools, a comprehensive set of conclusions be generated about all rural schools – in other words, the proposed study makes limited claims about external generalizability (Maxwell, 2005:115). Rather, this study aims to check an existing, well-established construct in a new, very different context, and to use this to create a framework that may have broader applicability for rural schools.

Secondly, as highlighted in a previous section, there is scope for bias and reactivity given my prior and on-going involvement with these schools (Maxwell, 2005:108). I am what Yin (1984:86) might call a long- term 'participant-observer', which Maxwell (2005:110) suggests can provide the most complete data about events and situations. However, the situation does carry with it danger in that potential bias may affect respondents as well as my own interpretation of data. With this in mind, I attempted to have the survey administered by someone other than myself, not guaranteeing, but at least lessening the opportunities for unwanted influence. After a few such attempts, it became clear that the survey was impersonal enough that my presence was relatively irrelevant – teachers and students were focused on simply getting it done. Interviews, however, were certainly open to possible

unwanted influence given their more personal nature, but needed to be conducted by me since the questions required a fairly high level of intuition and knowledge of how responses fitted into the bigger picture. An additional hurdle was that interviews were conducted in English, a language some teachers are less comfortable with. There was undoubtedly scope for reactivity, which I flag here, and pick up throughout the interpretation of data. As Maxwell (2008:243) suggests, "… the goal in a qualitative study is not to eliminate this influence but to understand it and to use it productively."

The fact that our organisation is working with the same schools with the broad aim of 'school improvement' also creates uncertainty around changes seen in schools during the course of this study[24]. Miles and Huberman (1984:28) draw attention to this in a limited way as "C*hecking for researcher effects on the site and vice versa*". In my case, the issue raises a number of questions that are worth considering now and throughout the interpretation of results: Is the performance of schools as a result of people and processes in schools? Or is it as a result of outside forces, such as the influence of the non-profit organisation I work for? Or a combination of both? How different would schools look were it not for the organisation's involvement? And how essential is it for schools to have some form of external support? These questions are important for the validity of the study and are not easily answered, particularly considering the inherent bias of my position. However, given that the organisation is relatively small, only works with a handful of teachers and students from a few of the twenty five schools, I think it is safe to say that it is unlikely that any external effects are being seen in the results presented in Chapters 5 and 6.

A detailed discussion of reliability for the quantitative work and for some of the data collection processes is included in the next chapter. In terms of reliability for the qualitative work, I have tried to be transparent in the analytic processes described in Chapter 4.3. However, the subjective nature of qualitative interpretation, particularly in a context so

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[24] A brief background on the history and purpose of the organisation: it was founded in 2009 with the aim of 'growing talent and opportunity in rural African communities', specifically through strengthening the educational pipeline from Grade R-12. It is a non-profit (NPO) and public benefit organisation (PBO) and as such works independently from the government and for-profit private sectors. The range of activities include school management and teacher networks for professional growth; a community reading programme using local youth as Community Readers; and several after-school support programmes for motivated students.

foreign to most university-based researchers, means that it is unlikely that another researcher would see and interpret things in quite the same way that I have done. Nor, probably would a local teacher have interpreted the data as I have. To allay this somewhat, I have asked my non-profit colleagues, who have had similar experiences working with these schools, to review my writing, particularly the chapters that depict teachers and their schools in a descriptive sense, where my judgement could well be subject to error.

With this fallibility in mind some attempt has been made at validating any conclusions by looking at three different sets of data from schools, namely surveys, interviews and observations. I have also already hinted that an additional analytic tool - my own experiences working with schools - was used as an acid test for interpretation. Findings that did not fit with my own experience in schools required more robust evidence if they were to be taken further. An example of this can be seen in the additional fifteenth interview, created in part to find out more about school-level professional development, since my own experiences of professional development did not make much sense alongside the data I had gathered.

Given the relatively small sample size for a quantitative study, any correlations produced between measures or variables required some confirmation from other sources before they were investigated further. Generally, the quantitative findings were used as a guide for more detailed analysis, rather than as outright 'proof' in themselves. In addition, at various stages where interpretation was required I have attempted to consider a variety of alternative hypotheses to explain the data (Maxwell, 2008:244; Maxwell, 1992:296). The best example of this is probably my analysis of the differences in local, district and provincial averages for ANA and NSC results, investigated in Appendix AC. In summary, acknowledging the limited scope of my study and the limitations of the data sets at my disposal, I have tried to be relatively conservative in my conclusions, requiring a significant burden of proof from multiple sources before being willing to make claims or conclusions.

Chapter 4: Data collection and analysis procedures

The Rasch model is a member of the family of item-response latent-trait models. Using a set of carefully selected survey items (questions), it produces an interval scale that determines item difficulties and person measures. The items are arranged on the scale according to how likely they are to be endorsed (item difficulty)…. Measures contain several related items (usually between four and eight). To create these item clusters, CCSR analysts select items that belong together according to education theory. Determinations as to which items to keep in the final measure are based on conceptual coherence as well as the statistical fit of the group of items.

- Consortium on Chicago Schools Research, *A Rasch Analysis Primer* (2015)

Any qualitative study requires decisions about how the analysis will be done, and these decisions should inform, and be informed by, the rest of the design…. For novices, data analysis is probably the most mysterious aspect of qualitative research.

- Joseph A. Maxwell, *Qualitative Research Design: An interactive approach* (2005:95)

4.1 Introduction

In the previous chapter the design and methodology of this research were presented. I suggested that these components of this study provided a bridge between my research questions - concerning the constraints and possibilities experienced by the schools in my sample, and the implications these might have for rural schools more broadly – and the answers to these questions. To some extent the previous chapter was thus concerned with providing the first part of a sound justification for any conclusions that might emerge from this study of 25 schools in the rural Eastern Cape.

If this first level of justification was primarily to do with validity, the second level revolves around the issues of reliability and replicability. While the results of this study may not be reproducible to the degree that results of a science experiment are - since every school is unique and is made up of a set of quirky, human individuals - one would hope that similar themes and findings would emerge if the study was repeated with these schools[25]. Key to this replicability is the application of the methods of data collection and analysis described in this chapter.

The goal of this chapter is thus to describe the procedures of collection and analysis in sufficient detail for others to be able to repeat this study. Additionally, where decisions have been made regarding how best to analyse certain sets of data that do not conform to conventional procedures, this chapter provides the rationale for these decisions. Three forms of data were collected: responses to surveys of approximately 600 students and 160 teachers; texts recording observations at 25 schools; and, recordings of interviews with 15 teachers. Analysis involved a range of techniques, including Rasch analysis to create measures from survey items, statistical description, and qualitative categorisation of interview data. The chapter is arranged so that I look first at the survey data – both collection and analysis – and then at the interview data. The observation data is included

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[25] Of course, this is a dynamic issue, so in theory one would have to return to the same time as well as to the same place to test replicability.

with the survey data since it occurred as a parallel process. Throughout this chapter I pick up on the critical issues of reliability and validity raised at the end of the previous chapter.

4.2 The first phase: surveys and observations

4.2.1 Survey administration and school observations

Survey administration and observations began in May 2013 and lasted approximately six months, with over a hundred individual visits to the 25 schools. I strived for consistency from school to school in my collection of data. This consistency was compromised by three factors: practicalities, school conditions, and my own development as a researcher. For example, in terms of practicalities, I aimed to arrive at each school between 08h00 and 09h00 in order to establish a sense of what the start of the school day looked like. However, if the school was further away, leaving my home in good time was not always easy. Plus there were often logistical considerations in terms of stops on the way at other schools to prepare the ground for later visits.

Secondly, schools responded to me in different ways. While I was explicit that I did not want my surveys to interfere with teaching time, often schools would drop everything in order to complete the surveys then and there. I grappled with the ethical dimensions of this practice, since it was certainly not my intention to further compromise what is already a disrupted learning environment. However, there was little that I could do to persuade principals in these situations. In terms of the reliability of the data, this practice was preferable to simply leaving the surveys and collecting at a later date. The best case scenario for reliability was to be present while both students and staff completed the surveys, to be available to answer any questions, and to check each survey handed in, often returning it for correction or completion. The worst case scenario was to have no control over the quality of the hand in; in other words, for the surveys to be done 'on their own time'. Roughly half the schools fell into the best case scenario, and schools were more often than not happy to let me have a dedicated lesson with the students (again, not something I requested). Surveys collected from schools that had completed the survey on their own time tended not to have

completed it on my first return visit; or, had very low numbers of respondents; or, had a high number of incomplete surveys.

Another factor that affected the consistency of my visits to schools is that the school calendar produces tremendous variations in the 'reliability' of school taking place, more so in rural schools than is perhaps the case in urban areas. For instance, schools virtually close at the end of exam time in May, so visiting a school in May compared to August would have resulted in very different observations of school life. Similarly, visiting a school on a Monday or Friday was very different to a mid-week visit. Included in my observation field notes were comments to this effect.

The final point on consistency is that, as Rudestam and Newton (2007) suggest, in qualitative research the instrument of choice is the human observer. In the case of a PhD project, this 'instrument' is anything but consistent, since at least one of the broader aims of completing a PhD is that the student develops greater skills as a researcher. Over the course of 25 school visits, my learning trajectory as a researcher meant that my understanding and use of the observation framework changed over time. After visiting a handful of schools, it became clear that simply writing down what I saw in front of me was giving me a false sense of the 'organisation' of the school. For example, I would look for evidence on the staffroom walls of the school improvement plan. Whether the school improvement plan was visible or not should affect only marginally whether the plan was taken up, lived and breathed by the school, which was the thing I was really trying to capture. So over time I started to ask more questions of teachers and began to understand the need to probe a little deeper. This no doubt affected the consistency of my observations, but since I noted this as I went along, at least there was some frame of reference.

Having briefly touched on the issue of consistency, I now describe the procedure followed at each school. A few days before I wanted to sample a school, I arranged a meeting with the principal and negotiated a convenient date and time for my visit. I gave the principal a copy of the permission letter from the District Director as well as a 'school permission' letter (Appendix J), a copy of which the principal signed and I took away with me. I also wrote down contact information and other details that would help me plan my day at the school. I

left information and consent forms (Appendix B) for students and their parents, the signed versions of which would either be collected by a teacher or by me on my return to the school. These forms had been translated into isiXhosa by isiXhosa-speaking colleagues (and proof-read by others), but since many parents were illiterate, it became obvious that the students often signed on their behalf. There are ethical issues involved in this practice, but I took the lead from teachers, who suggested that this was the standard way that most students dealt with official forms, and there was nothing deceitful intended. The isiXhosa translations for both the consent forms and the student surveys themselves, seemed to yield no more complications or questions than the original English versions might do in an English first language context.

On the day of the survey, I would try to arrive at the school between 08h00 and 09h00 in order to gain a sense of late coming and how early in the day teaching started. I reported to the principal and asked for time slots when I could briefly address teachers and the most senior class of students. As mentioned, very often schools gave me the students for a dedicated hour or hour and a half (unrequested) to complete the survey then and there. Dealing with teachers was more complicated. They were seldom all together at one time, so I would talk to individual teachers as they came in and out of the staffroom, and leave surveys with those that were willing. Sometimes I received these back on the day, but more often it involved a laborious process of collecting surveys in drips and drabs on occasions that I drove past the school while visiting other schools.

I was clear when interacting with teachers and the principal that there was no compensation for completing the survey, that it was completely voluntary, but that they would receive a University of Cape Town pen as a token of gratitude. It was revealing to see the status and motivation that came with the pen. Sometimes I was able to check the surveys when they were handed to me and follow up with the relevant participant in case anything was unclear or incomplete, but more usually I simply received a batch of anonymous surveys with accompanying signed consent forms. There was some danger that some of these surveys may have been completed by the wrong people ('ghosts'), but since I was not paying anyone for completing the surveys and could not exert excessive pressure that might force someone to spend excessive time completing surveys in order to please

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anyone (for example, their principal), I think it unlikely that this practice occurred to any significant extent.

During the course of the morning I would take free moments to walk through the school grounds, completing the observation rubric – again striving for consistency in my routine from school to school. I would walk past the doors of classrooms at least twice during the morning to ascertain whether a teacher was present and, where possible, what kind of teaching was happening (broadly categorised as active or passive). I spent much of my time in the staff room while teachers completed the surveys, and talked with teachers when opportunities presented themselves. While my conversations were mostly in English, the language used in most staffrooms is isiXhosa. I took photos of relevant evidence that supported elements in my observation framework or that sparked ideas for further thought, such as mission statements, new buildings, or interesting documents.

I would usually leave the school between 12h00 and 13h00 or when a batch of surveys was complete (if done on the day), so that I typically had 3-4 hours available to make observations at each school, as well as additional time on follow up visits. All of the timing of my visits was recorded on an information sheet. Wherever possible I reviewed and made brief comments on my observations on the afternoon of my visit, while the experience was still fresh. It was rare that I could wrap up a school in two days (initial visit and survey visit); much more common was a series of seemingly never-ending phone calls and visits to try and collect surveys from teachers and, in particular, the principal. I began sampling in May 2013 and collected the final set of surveys from a principal in early December 2013. The intensive phase of sampling was from July to September. The vast majority of surveys were completed well *before* the writing of the ANAs or NSC exams, which may have had unwanted influence on responses (although since I use 2012 assessment data, there should not have been any implications for this study).

Table 4.1 summarises the response rates for teachers and students. Note the following:

- The actual overall response rate for teachers was closer to 40%, since the two teacher surveys for school ECZ010 were not uploaded after it was decided that too few had responded. This figure corresponds with the response rate experienced by

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CCSR in their administration of the surveys (CCSR, personal correspondence 2014, 4 March).

- The term 'response rate' is actually a misnomer for the student surveys, since in the case of big classes, only a limited number of surveys (usually between 20 and 30) were issued to students. Indeed, not all of the students 'qualified' to receive a survey, since in the senior schools I only surveyed students taking science and maths.

- Some surveys were mistakenly uploaded twice, either through computer error (in the case of ECZ001 and ECZ002) or data-capturer error. These duplicates explain the difference between 'Surveys uploaded' and 'Final survey numbers'.

- Several schools employed school governing body teachers and these are included in the total teacher numbers, so these are not necessarily a reflection of government post allocations.

- No exact teacher numbers were given at schools ECZ008 and ECZ010, so these were estimated based on information provided by the school.

- The average teacher response per school was 6.6, below the minimum of 8 (or 50 % of total staff per school) recommended by the CCSR (personal correspondence 2014, 4 March) and thirteen schools fell below these criteria. This point is picked up in discussions of reliability in Chapter 5.

- Although I obtained survey responses to the principal survey from 24 of 25 schools, I spent very little time analysing these. This was because I was primarily interested in the outcomes of the survey for each school (as opposed to *all* teachers, or *all* principals) in order to assess schools' strengths or weaknesses on the supports. With a sample size of one principal at each school, I was not convinced that Rasch analysis would tell me much about the school. The principal surveys were thus primarily used for reference purposes only (e.g. if something interesting materialised from the responses of teachers that required further digging, I might look at the response of the principal on certain questions).

Table 4.1: Survey response rates

School	Teachers					Students					Principal responses
	Total at school	Surveys collected	Surveys uploaded	Final survey numbers	Response rate	Total in grade	Surveys collected	Surveys uploaded	Final survey numbers	Response rate	
1	11	6	6	6	55%	43	17	27	17	63%	1
2	16	9	9	9	56%	57	13	13	11	23%	1
3	26	8	8	8	31%	99	27	27	27	27%	1
4	20	6	6	6	30%	147	28	28	28	19%	1
5	11	3	3	3	27%	49	33	33	33	67%	1
6	20	11	11	11	55%	56	29	25	26	45%	1
7	11	9	9	9	82%	18	13	13	13	72%	1
8	15	8	8	8	53%	35	16	16	16	46%	1
9	19	8	8	8	42%	71	16	16	24	23%	1
10	16	2	0	0	0%	27	24	21	21	78%	0
11	17	12	12	12	71%	39	23	22	22	56%	1
12	21	4	4	4	19%	53	39	34	34	64%	1
13	23	4	4	4	17%	51	25	25	25	49%	1
14	12	6	6	6	50%	55	38	35	35	64%	1
15	20	6	5	5	25%	47	19	15	15	32%	1
16	18	6	6	6	33%	71	22	22	22	31%	1
17	16	2	2	2	13%	36	34	33	33	92%	1
18	21	11	11	11	52%	187	11	11	11	6%	1
20	14	4	4	4	29%	46	35	34	34	74%	1
21	19	12	12	12	63%	65	38	37	37	57%	1
23	31	8	8	8	26%	164	39	33	33	20%	1
24	14	6	6	6	43%	55	13	12	12	22%	1
25	15	5	5	5	33%	93	22	23	22	25%	1
26	16	7	7	7	44%	29	22	20	20	69%	1
27	12	5	5	5	42%	29	21	18	18	62%	1
TOTAL	434	168	165	165		1622	617	593	589		24
AVERAGE	17.36	6.72	6.6	6.6	38%	64.88	24.68	23.72	23.56	37%	0.96

4.2.2 Survey capture

I have mentioned that, after trialling a computer-based version of the survey at the first two schools, I decided to move to a 100% paper-based system. To capture the survey data I employed three data-capturers to upload the surveys onto an online survey package called SurveyGizmo. For consistency I would have preferred to use only one data-capturer, but there was a high turn-over as they sought better jobs elsewhere. Obviously when uploading more than 700 surveys, each with over 150 items, the potential for error is high. To minimize this I tried to incentivise the data capturers by paying per survey, *but* randomly checking roughly every 25th survey for errors. If the error count was high (more than one per survey), I reduced the number of paid surveys by the number of errors greater than one. The most errors made on a survey were four. Of the 28 surveys that I checked, the average number of errors was 0.82 (or just under one item) per survey, which seems quite acceptable in the context of a large survey with 150+ items. Nevertheless, the data capturing process certainly decreased the reliability of the data and an online/offline solution would certainly be preferable in contexts with higher computer literacy rates.

4.2.3 Survey analysis

4.2.3.1 Background to Rasch analysis

Survey data of the kind collected for this study has a number of reliability and validity issues which need to be examined in order to correctly interpret the information provided by respondents. One of the issues is that it is difficult to compare or compile responses to different questions assessing similar things (such as five items assessing principal instructional leadership), since some questions will have been 'easier' for respondents to agree with and some would have been 'harder' to answer positively. A Rasch analysis takes these differences in the difficulty of items into account and provides a linear scale that has a degree of reliability associated with it.

In technical terms, the Rasch Rating Scale Analysis method uses an item response latent trait model. The relative probability of a respondent choosing a category on each item is used to create a scale for each measure. This scale is a linear measurement system that can

be used in statistical analyses (Bryk and Schneider, 2002:155). For example, the five items on the teacher survey that asked about principal instructional leadership were compiled into a measure 'TPIL' that could then be used to find statistical relationships with other measures or with school results. More technical details about the mathematics that drive the Rasch model are available in Appendix E and in the extensive literature on the subject.

4.2.3.2   *Rasch reliability statistics*

I completed an analysis of the survey data using the Rasch analysis software RUMM2030. The software creates a rating scale for each ***measure*** (such as 'safety' or 'classroom personalism') based on the survey responses to the items associated with each of these measures. The degree of fit and the reliability of each of these measures are reflected in RUMM2030 by a number of indicators:

- The ***Person-Separation-Index (PSI)*** is an indication of the ability of the model to discriminate between respondents and is also an indicator of the reliability of the fit statistics. Generally, a PSI of 0.7 is the minimum accepted level if we want to statistically differentiate between two groups of respondents. At a PSI of 0.5, the percentage variance due to error is fifty, so there is an equal chance that the variance is due to actual variance in the data and variance due to error (RUMM2030 Course notes, 2013:15). According to CCSR, who use the term 'person reliability' rather than PSI, a PSI of 0.5 can still be useful for between-school analyses (Bryk and Schneider, 2002:155; Personal correspondence, 2014, March 4).

- ***Cronbach's Alpha*** is a similar measure to PSI, but is only available when there is no missing data. 0.7 is the lowest level of acceptability.

- Item-trait interaction, indicated by ***Chi-Square probability***, is a measure of the degree of fit of the data to the model. A Chi-Square probability value of alpha greater than 0.05 suggests no statistically significant deviation between the observed and expected values. When large numbers of analyses are performed (such as the student surveys in my case), alpha could be adjusted to 0.01 (RUMM2030 course notes, 2013:14).

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Ideally a measure will meet the minimum criteria on all three of the above; however, in practice there was often disagreement. In such cases, the PSI was used as the single most important criteria. Additionally, each item within a measure can be described by its fit residual (or 'item infit') and its location (or 'item difficulty'). A summary of these statistics for each of the measures is available in Appendix K.

4.2.3.3   The Rasch process: data entry

The selection of items for the surveys has been discussed in Chapter 3.4. An important consideration in this selection process was that there were sufficient items to generate each of the measures of school organisation developed in my theoretical framework. In general, a minimum of three items were included for each measure, but most measures had many more than this. Items belonging to a particular measure were coded accordingly in the raw data for ease of use when entered into RUMM 2030.

A fairly typical process was then followed in cleaning the raw data in preparation for analysis:

- Non-numeric responses were turned into numbers or removed from the set;
- Irrelevant or empty columns and rows were removed;
- The number of complete surveys recorded in my data collection records were tallied against the number entered into the online survey collation tool, and duplicates removed;
- Since only a handful of items were different on the junior secondary and senior secondary school surveys, they were merged, with responses left blank for the questions that did not apply to the particular school level;
- Missing data was left blank;
- The data was then ordered in the required sequence for entry into RUMM, with 'Person ID' and 'Person Factors' (characteristics that described each respondent, such as school, level, etc) followed by the items themselves. Further details of the process followed for loading data into RUMM are described in the RUMM Course Notes (2013).

4.2.3.4   The Rasch process: analysis

The teacher, student and principal surveys were analysed separately. In fact, since the principal data set contained only 24 responses, representing 24 different schools with

obvious reliability concerns, very little quantitative analysis of this data was done. When particular variables measured in the teacher survey could be validated or compared with responses from the principal survey (such as the principal's time away from school), an analysis of the principal data was undertaken. Regardless of the data set used, the process followed for the analysis of each measure was identical:

- All items not relevant to the analysis were deleted from the full data set, leaving only those coded to the particular measure under investigation. In one or two rare cases, items not originally coded to a measure were included where it was felt that these added substantially to the construct.
- RUMM then performed the Rasch calculations on the data and produced a set of summary statistics for the measure. The most important of these were recorded in an Excel log file. A screenshot of the full summary statistics for the measure 'TOPS1' is included in Figure 4.1 below and Appendix L contains the summary file.
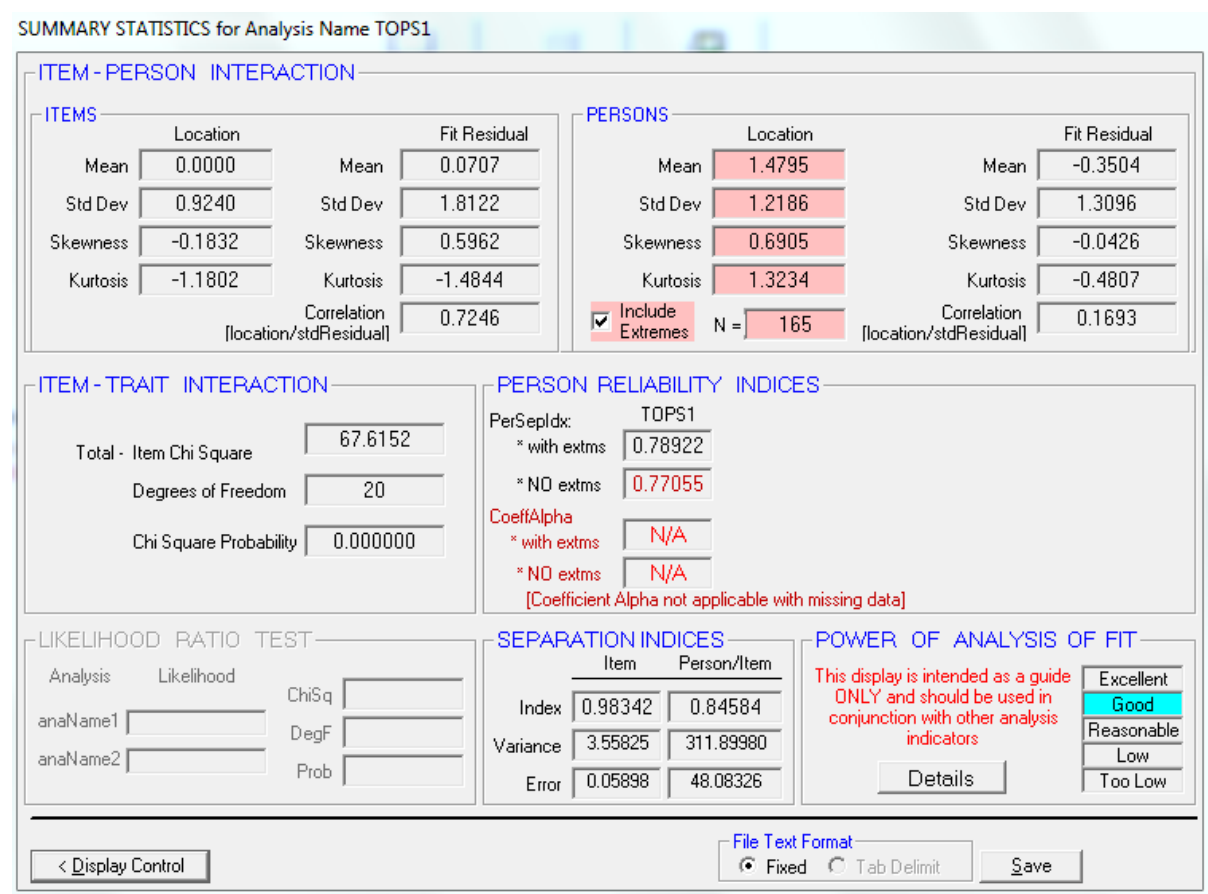
Figure 4.1: An example of RUMM2030 summary statistics for measure TOPS1

As highlighted above, the key statistics examined were the Person Separation Index (PSI), Cronbach's Alpha and Chi-Square probability. If these were all at the desired level, various other descriptions of the data were examined, such as the individual person fit, individual item fit (see Figure 4.2 below), dependency, person-item distribution, and others. Provided these fell within the guidelines recommended by RUMM, and the fit statistics were optimal, the measure could be used 'as is' for further analysis against other measures or school results.

INDIVIDUAL ITEM-FIT for Analysis Name TOPS1 - Serial Order

	Seq	Item	Type	Location	SE	FitResid	DF	ChiSq	DF	Prob	F-stat	DF-1	DF-2	Prob
1	52	I0052	Poly	-1.531	0.184	-0.706	142.60	3.843	2	0.146385	2.437	2	159	0.090649
2	54	I0054	Poly	1.248	0.124	3.036	139.96	7.933	2	0.018945	3.209	2	156	0.043082
3	55	I0055	Poly	0.317	0.132	-0.193	141.72	0.980	2	0.612489	0.419	2	158	0.658487
4	62	I0062	Poly	1.058	0.078	2.097	139.96	8.471	2	0.014475	4.786	2	156	0.009608
5	64	I0064	Poly	-0.878	0.154	-0.921	140.84	2.451	2	0.293557	1.668	2	157	0.191918
6	65	I0065	Poly	0.726	0.131	-1.072	141.72	2.919	2	0.232351	1.455	2	158	0.236530
7	66	I0066	Poly	-0.719	0.145	-1.988	140.84	13.008	2	0.001499	11.309	2	157	0.000025
8	67	I0067	Poly	-0.530	0.146	-0.739	139.96	7.542	2	0.023030	4.466	2	156	0.012994
9	68	I0068	Poly	0.612	0.119	2.628	141.72	8.072	2	0.017668	3.697	2	158	0.026975
10	69	I0069	Poly	-0.302	0.155	-1.434	141.72	12.396	2	0.002034	9.497	2	158	0.000128

	Mean	0.000	0.071	Totals	67.615	20	☐ Highlight extrm FitResid values. Set at :	+/- 2.5
	Std Devn	0.924	1.812	Total Prob	0.000000		☐ Highlight probabilities below the Bonferroni adjustment	

Selection
Item Statement: Item Statement for selected Item

File Text Format
◉ Fixed
○ Tab Delim

< Display Control   Sort Items by ... Serial Order ▼   Save   Copy   Resp Types >   Chi Squ >

Figure 4.2: An example of RUMM2030 Individual item fit for measure TOPS1[26]

If the summary statistics for a measure did not meet the minimum requirements, or if there was room for optimization, there were two options for improving the fit:

1. Deleting items – the individual item fit statistics could be used to ascertain which items had high fit residuals or had Chi-square or F-statistic probabilities below the Bonferonni adjustment. If a measure contained a large number of items, mis-fitting items could be removed from the data set, provided this did not compromise the

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[26] Note from this screen: this measure 'TOPS' (Teacher survey, measuring Operations Management of the school) has 10 items. Each item is located at different points on the scale ('Location') and various indicators provide information of the degree of reliability and fit.

qualitative coherence of the set of items. Removing items with poor fit could improve the overall summary statistics of the measure.
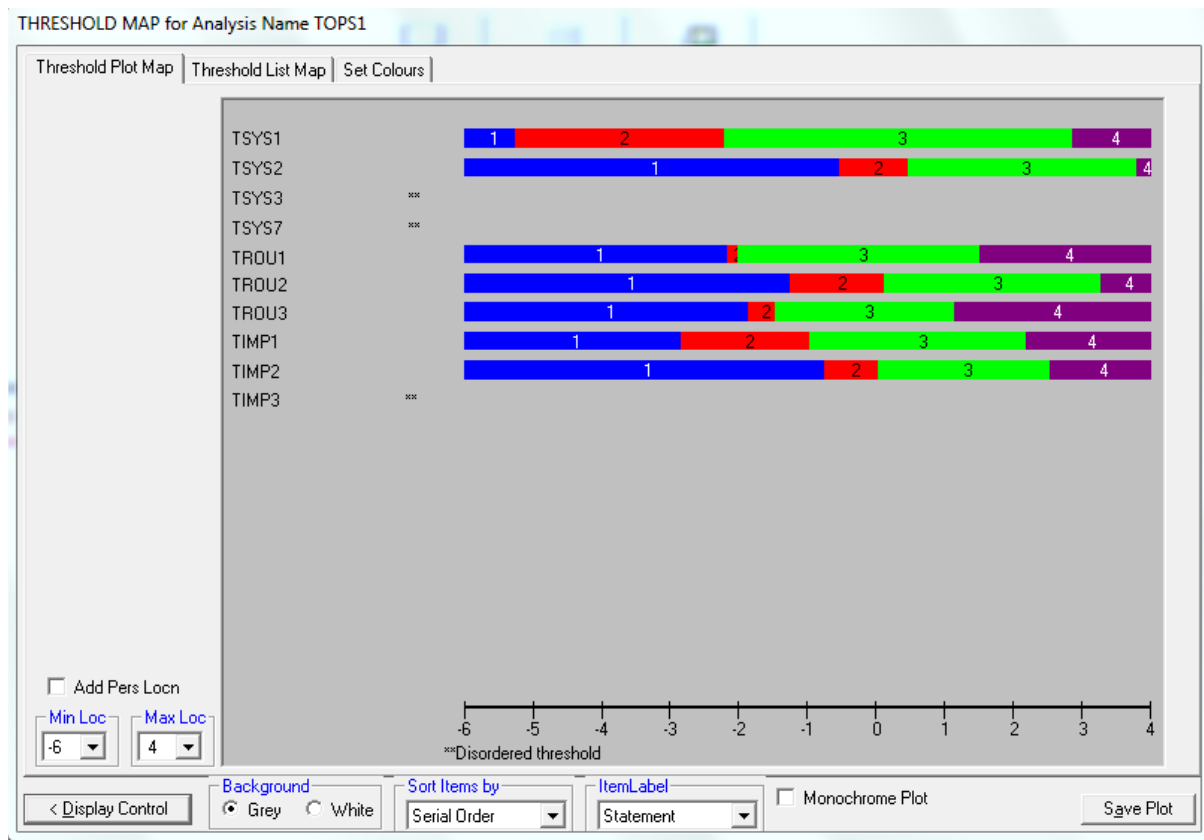
Figure 4.3: An example of RUMM2030 threshold map for measure TOPS1

2. Rescoring items – RUMM provides a *threshold map* of each item (see Figure 4.3 above), indicating where each category begins and ends. If a threshold is disordered it means that the categories are not progressing in a logical order. In other words, the item is not working correctly. The *category probability curves* (Figure 4.4) for each item reveal why this is the case, usually because one category has been subsumed into another more 'popular' category (see the example of TOPS1, below, where category 1 of TIMP3 lies below both category 0 and 2). To correct these category issues, items can be re-scored by merging categories[27], sometimes improving the overall fit statistics of the measure.

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[27]I considered it important to consider not just the mechanics of rescoring (merging the categories that seemed to overlap most), but also whether the merge made qualitative sense. For example, for a typical item with categories: 0=strongly disagree, 1=disagree, 2=agree, 3=strongly agree, it made no sense to combine categories 1 (agree) and 2 (disagree) if I could possibly avoid it, since these seemed fundamentally distinct responses. Similarly, on a frequency-type item with categories ranging from 0=never to 5=always, it seemed best to avoid merging categories 0 and 5 (on the extremes) with any of the others, since these form distinct categories of their own. In such a case I tried only to merge the middle categories.
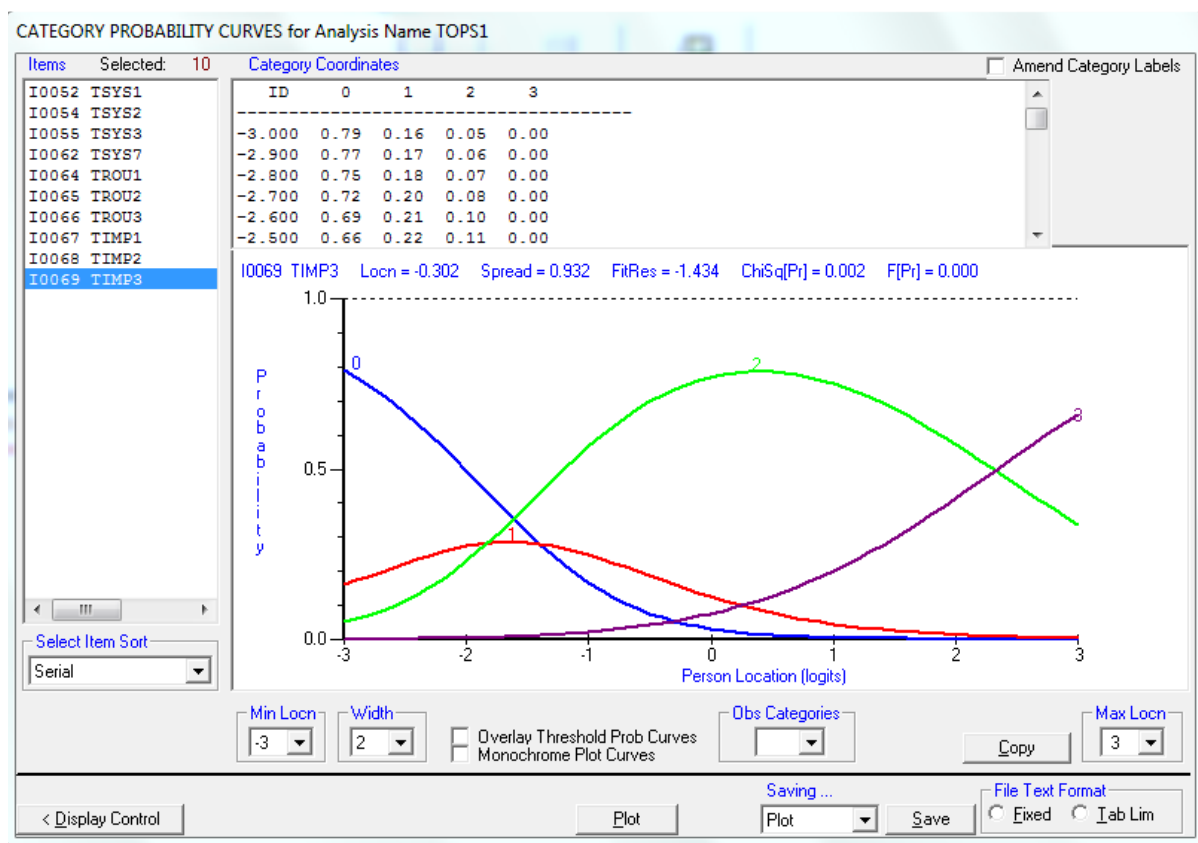
Figure 4.4: An example of RUMM2030 category probability curves for measure TOPS1

Once a measure had been optimized so that further deletion or rescoring of items reduced the fit, the relevant fit statistics were recorded and the raw scores transferred to an Excel file. These raw scores (ordinal) were then converted to a 0 – 10 logit score (interval), which could be used for statistical comparisons. The RUMM2030 course notes provide more details of this process (2013:2-29).

The raw-to-logit score conversion was used to convert all individual responses to logit scores. The mean score and standard deviation for each school could then be calculated.

4.2.3.5   *Reasons for poor fit*

Despite thorough adherence to the optimization process described above, some measures fell well below the minimum reliability criteria and thus could not be included in the overall analysis. Among possible reasons for this could be the following:

- ***Changes to CCSR items***. As discussed previously, many of the survey items were taken straight from the 2011 CCSR survey, as published on their website. However, changes were made to some of these items where language or context made them unclear in a rural South African setting. Since the original items were subject to a degree of rigour that could not be replicated in this study, even these slight language changes could have affected the sensitivity of the instruments.

- ***Lack of fidelity with item-measure grouping***. Although every effort was made to faithfully match items with the correct CCSR measure (including a significant amount of personal correspondence with the CCSR researchers themselves), there was still an element of guesswork with some items. This was particularly the case when there were differences between the measures used in *Organising Schools for Improvement* (Bryk et al., 2010) taken mostly from the early 1990s and the measures used in 2011. The instruments have obviously been significantly refined over the twenty years that CCSR have been conducting the survey, so working with the original measures, but an updated set of survey tools, inevitably allowed for some discrepancies to creep in. Where there was uncertainty about where particular items belonged a certain amount of discretion was used.

- ***Inclusion of original items***. Since this study aimed to probe particular context-specific variables, a number of new items were introduced to the CCSR survey. Some of these were included in the various organisational measures produced. While some piloting was done, this fell short of the rigour with which CCSR have tested and refined their instruments over time, and so it is natural that the reliability of these measures may not have been to the same high standard.

- ***Lack of contextual fit***. Although attempts were made to simplify and contextualise the language used in the surveys to be understandable to a rural South African audience, there may well still have been some words or phrases that seemed foreign to respondents. This lack of understanding could have influenced the reliability of some measures.

- ***Language of survey***. Similarly, a further complication was that the language of the survey (English) was a second or third language for all but a few of the teachers. As discussed elsewhere in this thesis, teachers in this area are not necessarily

comfortable communicating in English. So there was room for error here too, which may have negatively affected the reliability of some measures.

- ***Student surveys: translation, age, familiarity***. The reliability of student measures was noticeably poorer than the teacher measures (only six of nineteen were deemed acceptable), a finding consistent with the experience of CCSR (personal correspondence, 2014, March 4). This is probably due mostly to the young age of respondents reducing the reliability of responses, as well as the much higher number of respondents, which may have resulted in more 'noise' in the data. However, in this context the fact that so few students understand English meant that the surveys were translated into isiXhosa, introducing a further opportunity for error. Translations were undertaken by university students working in the community, and checked by a senior, isiXhosa-speaking health professional. Finally, while surveys may be a regular feature of school life in many Western contexts, my experiences administering the survey suggested that for many students this survey may have been their first contact with such an instrument. Certainly if the excessive time taken to complete the survey is any indicator, a lack of familiarity with survey forms may also have led to decreased reliability.

In cases where, despite best efforts to improve the fit of a measure, the PSI and other indicators remained below the minimum accepted levels, alternative means of generating a measure of a particular variable were attempted. The first of these was to merge a number of separate measures into a composite measure. *TCOLAB* was an example of this, combining measures of *Reflective dialogue*, *Peer collaboration* and *Collective responsibility* into a single composite measure of *Teacher collaboration*. Since in theory these composite measures were made up of a number of qualitatively distinct concepts, there was an increased chance of a high T-test value (indicating multidimensionality).

The second strategy was to abandon the Rasch analysis entirely and to seek a single item that would represent the variable needing to be measured. This approach was not used for the analysis of the Five Essential Supports. It was, however, useful in generating measures for the additional factors (time-space-place, rural resources, etc). For example, the items used to examine students' and teachers' attitudes to the language of instruction did not

hold together well enough to generate a Rasch measure of sufficient reliability. In this case, a single question regarding the use of English by teachers in the classroom was used as a proxy indicator. Naturally, this strategy did not offer the robustness of a series of questions probing the same measure analysed using Rasch, but in the absence of such an ideal case this seemed to offer the next best option.

Of the 24 measures analysed from the teacher surveys, six were not included in the final composite factors because of issues related to the degree of fit and reliability as discussed above. A further three were not part of the composite factors because they were additional contextual measures. TPRAC, a measure of *Classroom practice*, did not meet the minimum PSI criteria (PSI=0.58), but was included since it was the only teacher measure in the composite factor **Instructional Guidance**.

The higher number of student surveys, as well as additional complications such as language and age of respondents, meant that the fit statistics were generally worse than the teacher surveys, and of the 19 measures created, only six were included in the composite factors. SSLA, a measure of a school's ability to prepare students for life after school, was only relevant to the five senior secondary schools and was thus left out of the composite measures for the group of 25 schools. Appendix M contains a summary of the composite factors.

4.2.4   Additional data analysis: quality of human resources and school performance

All but one of the organisational measures presented in Chapter 5.2 were created using the Rasch analysis procedure described above. The exception was the *Quality of human resources* measure that Bryk et al. (2010:72) created as a combination of the cosmopolitan experience (essentially having a diverse range of teaching and other experiences outside of Chicago) and quality of undergraduate institution attended. I created my own proxy measure for this in a series of items that probed where and what work experience teachers had accumulated and where they attended university or college. I created a tiered ranking system for the quality of tertiary institutions based on three ranking systems, the details of

which are contained in Appendix N. The final *Quality of human resources* measure was a score generated by combining the diversity of work experience score and the tertiary ranking (refer to Appendix O for more on this measure).

I requested permission to use Annual National Assessment data from the Department of Basic Education in November 2013 and was duly granted access to the data for the schools in my sample in January 2014 (refer to Appendix P for the correspondence). The National Senior Certificate data for the five senior schools was obtained from the Mthatha district office for the years 2008 to 2013[28]. In addition, Dr. Stephen Taylor, Researcher and Policy Advisor to the Department of Basic Education, very kindly gave me access to the national, provincial and district means and standard deviations for both the ANA and NSC results. Since the original ANA data contained large amounts of superfluous information, substantial sorting and cleaning was required before the Grade 6 and 9 data (2012 and 2013, maths and English FAL) was in a format suitable for the analyses undertaken in Chapter 5.2. Further details of the analyses of school results are contained there and in the associated appendices.

I have described the analytical procedure for transforming the survey data into Rasch measures. This data was also used to create the statistics found in Boxes 5.1 and 5.2 (Chapter 5), describing student and teacher background. These were mostly taken from Likert-type questions from separate surveys of junior secondary and senior secondary school teachers and students. In some cases the responses have been summarised into one category for ease of reading (either merging junior and senior categories or merging response categories like agree and strongly agree). The motivation for providing these descriptive statistics was to provide some idea of the 'average' background and conditions for teachers and students, similar to the way Bourdieu makes use of statistics in some of his analyses (for example Bourdieu, 1973:490). I note, however, Maxwell's (2012:45-47, 64-66) concerns about the loss of diversity that is brought about by a view solely of 'the average',

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[28] Additional information was obtained from the 'Report on the National Senior Certificate Examination', produced annually by the DBE (2014).

but suggest that it is very much for this purpose – to contrast 'the average' with 'the exceptional' – that I use these statistics.

4.2.5   Observation analysis

The observations served two primary purposes: to capture some of the 'hard' evidence from schools in terms of things like numbers of students per grade, numbers of classrooms, etc. that would be useful for statistical comparisons; and, to provide a third evidence base for triangulation purposes. In theory there was a third purpose, originally the major purpose of the observation framework, which was to capture something of school 'organisation for improvement'. In practice, however, I found it difficult to actualise this last purpose since there was little visible evidence (for example, schools as a matter of course have vision and mission statements on their walls, but whether these translate into practice is very difficult to ascertain in one or two visits), and informal chats with teachers were inconsistent and unreliable, if they were willing to talk at all.

Perhaps where this third purpose did have effect was in the *impression* of school organisation that I left each school with. This was extremely hard to quantify or trace, but probably had something to do with the evidence I saw of 'teaching urgency' – that students and teachers were in class, on time, teaching and learning for the bulk of my time there. Since the purposes of the observations was primarily for them to be used as a secondary reference, my analysis of the observation data was limited, with no coding or categorisation undertaken. I simply referred back to my observation notes to support or clarify data that may have emerged from surveys or interviews.

4.3   The second phase: interviews

4.3.1   The interview process

Having described the collection of the survey data and its analysis, I now turn my attention to the interview data. If the purpose of the first phase of data collection and analysis was to create a mapping of school 'organisation for improvement' against current school performance, the objective for the second phase was to obtain data that might enable a

picture of habitus and doxa to emerge. This more detailed picture might then be able to make sense of and explain some of the findings from the first take analysis.

I have described the logic involved in my choice of fourteen interview participants drawn from five schools in Chapter 3. Participation was voluntary and informed consent forms were again completed by teachers involved. Interviews were conducted in April and May 2014. I used the interview guide, an example of which is found in Appendix H, to structure the interviews, but participants generally had free reign to talk as little or as much as they felt comfortable. As I imagine is natural, over time I discovered which questions led to superficial answers, and I was able to reframe and restructure the interview framework. So in a sense the interview design was an on-going process.

I exercised considerable discretion in steering the interview towards areas that were of particular interest to me. Bogdan and Biklen (1992:72-75) describe a process of conducting interviews to 'saturation' – when no new information is being uncovered in subsequent interviews saturation has been reached – and although I had a set number of interviewees lined up from the beginning, I certainly experienced this process in terms of the repetition of key ideas. Certain themes occurred again and again and as the process went on I could spend less time on these areas, and spend more time on subjects where I felt information was still lacking.

Interviews typically lasted between thirty minutes and one hour and a half, depending on how willing and comfortable the participant was. This was recorded on a dictaphone and the audio file later downloaded onto my computer. During the interviews I used some visual cues to help elicit deeper responses. For instance, when discussing the Five Essential Supports, I had a label for each support placed in front of the person to enhance their focus on this particular idea. I also asked participants to arrange a set of relational arrows between their school and various other players (such as the police, NGOs, other schools, etc.) and then asked them to talk me through their thinking. Figure 4.5 below illustrates such a relationship web.
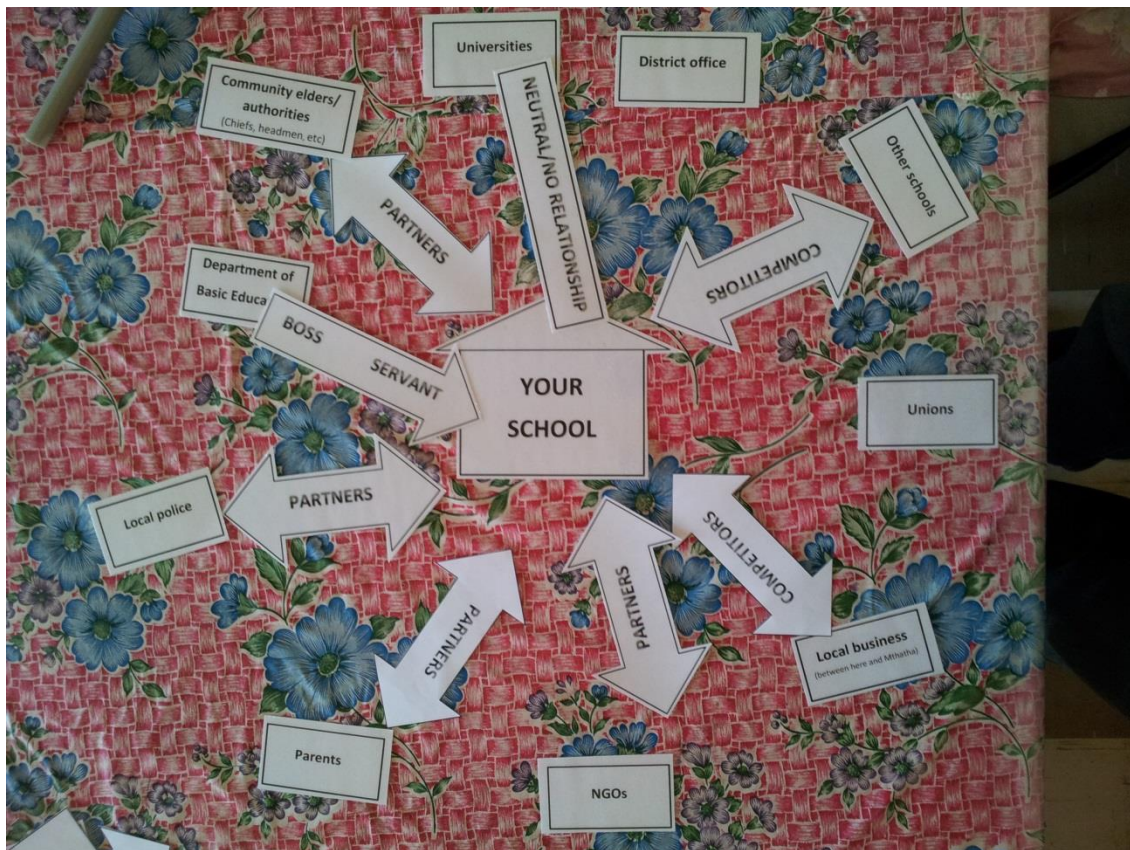
Figure 4.5: An example of a relationship web used during the interview process

Bourdieu (1999:614) describes the interview process as a spiritual experience in that it requires a forgetfulness of self. While I do not think my experiences were quite so mystical, I did strive to make the participants feel comfortable and to portray a (very genuine) interest in the story of their lives and experiences of school. As I've indicated, there is no doubt that there was some reactivity - participants telling me what they thought I wanted to hear – but where possible I used the sense of 'real rural reality' that I have developed over the past five years to push through these and to probe deeper. I also valued the relationships I had developed over time with some teachers that enabled conversations to immediately go deeper and become patently more honest. It was very clear that in cases where teachers believed I had their best interests at heart, they were more willing to share openly about their failures, frustrations and misgivings.

Three-quarters of the way through my data analysis two issues emerged about which I had very little information: professional development and principal absence from school. These came through sufficiently strongly from both quantitative and qualitative data that it

seemed negligent not to pursue further. With an eye on the limited time available, I organised to interview a teacher whose opinion I felt I could trust and who had intimate experience of the principal absence issue, since his principal was away often. There were obvious dangers in choosing only one person's take on these subjects, but since as far as possible I was seeking facts rather than opinions, and there was little reason for him to be anything but honest, I felt I was on reasonably secure ground. More interviewees would obviously have been preferable if I had had time - and I note the potential for "key informant bias" (Maxwell, 2005:91) - but suggest that any effects will be minimal. Conclusions generated from this data will naturally be limited.

4.3.2 Interview transcription and analysis

In some ways, analysis begins by framing the right questions before the interviews begin. In Chapter 3.4.6 I outlined the process for developing these questions, driven largely by the goal of operationalising habitus and doxa. I suggested that learning about teachers' backgrounds, dispositions and expectations may help to create a sense of habitus and doxa. In addition, there were several components of the Bryk et al. framework for which I required further data, so some questions were aimed directly at uncovering aspects of leadership, learning climate, professional capacity, and so on that were present at the school. To summarise, there were four themes that guided the interview design:

1. Further description of teachers' backgrounds, dispositions and expectations.
2. Trying to understand why schools and individuals operate the way they do.
3. Trying to understand the 'rules of the game' in these schools.
4. Trying to understand what makes some schools and individuals 'different', and how people talk about these differences – particularly with reference to Bryk et al.'s Five Essential Supports.

I've also included the transcription procedure of my interview data in this analysis section, since, as Bourdieu (1999:622) says, "Transcription then, means writing, in the sense of rewriting." There was certainly a sense that as I transcribed, I processed and analysed, giving more attention to some areas and glossing over others. In fact, the word transcription is probably not an entirely accurate way to describe the process I followed. Since I was not

interested in the verbatim, word-for-word transcription of interviews that might be vital if I were attempting discourse analysis (for example), and was under time pressure, I captured the gist of each answer in an Excel spreadsheet that enabled me to move smoothly between participants answering the same question. I acknowledge the opportunities for factual inaccuracy – issues of descriptive validity as Maxwell (2012:135) puts it – but suggest that these were minimised by my focus on transcribing the meaning and substance of what was said. For responses that seemed particularly pertinent or summarised a key idea very clearly, I took more care and captured the interviewee's words verbatim.

Once transcription was complete, I identified a number of themes and sub-themes that had emerged during the interviews (Box 4.1, below). It is difficult to precisely describe the logic used in this process of deciding what is 'important' and what is not, since it involved as much intuition as it did science; hence the concerns I have expressed in the previous chapter about reliability. Some categories were certainly guided by key pieces of my conceptual framework. For example, since I was attempting to describe teacher habitus, capturing teacher background, expectations and dispositions was clearly important.

However, other themes were there simply because they 'felt' important. For example, many teachers talked about 'relaxed' or 'disciplined' schools, and this emerged as a key theme. This 'feeling' that guided the discernment process was probably a combination of the literature I had read and absorbed, my experiences working with and thinking about rural schools, and absorption of the fourteen interviews now heard multiple times through the transcription process. There were undoubtedly recurrent ideas that surfaced from interview to interview, and so the process of categorizing themes was in part simply allowing me to be conscious of what these were. It was interesting to me that these themes emerged more clearly during the original interviews, and became more difficult to distinguish the more I was immersed in the interview data. If this process sounds somewhat mysterious, then this is probably accurate, since I found the analysis of the interview data the most difficult aspect of the entire project, despite helpful guides to the process such as Miles and Huberman (1994).

BOX 4.1: Key interview themes

- ***Teacher background:*** Rural area? Rural school? Parent occupation and education? Early work experience?
- ***Habitus:*** Dispositions, world view, goals, expectations of teachers?
- ***Doxa:*** Dominant culture, unwritten understandings, rules of the game in schools?
- ***Exceptions:*** Different schools and teachers? Different ways of doing and thinking?
- ***Key issues for schools:*** What did teachers refer repeatedly to?
- ***Bryk factors:*** leadership, community, professional capacity, climate, instructional guidance system
- ***Agents' role in improvement:*** What formal role did the interviewee have? What role did they seem to play?
- ***General interest:*** What other issues came up that seemed important?

Under each theme, several sub-themes developed as I began the process of collecting 'evidence' from each of the interviews. For instance, under the theme of 'Teacher background', I had categories for whether teachers had attended a rural school, what their parents did, what influence their families had on their own education, etc. This was a laborious process and I did not do it to completion, but stopped when I felt I had sufficient data about a particular theme or category. I found it exceptionally difficult to work in an area where numbers and statistics were only ever quasi-meaningful. For instance, if twelve out of fourteen teachers had attended a rural school, what did this mean? My sample was small and 'exceptional' (in that they had been hand-picked for their exceptional qualities), so it could not speak about a broader rural experience. Yet if twelve out of fourteen teachers were saying something, it clearly should carry more weight in the final analysis than if only two had mentioned it.

Ultimately these are probably concerns that every qualitative researcher has had to deal with and the number of textbooks on this subject suggests that there may be no golden rule. Having dealt as best I could with these issues, I now had an 'evidence base' from which to present the findings in Chapters Five and Six, though the final structure and grouping underwent more changes as I rationalised and incorporated stronger connections to my conceptual framework.

Chapter 5: A description of findings about rural school improvement in the Eastern Cape

We make sure that the main thing is that teaching is going on.

– Lumka, HOD and Maths teacher ECZ023

We first described each of these organizational elements as supports to signify that, while all these elements may not directly cause student outcomes, their presence makes the attainment of valued student outcomes much more likely. Taken together, these five organizational elements create conditions that substantially influence the dynamics of teaching and learning in classrooms, and ultimately student achievement. Thus, we would expect to find that contexts rich in one or more of these resources demonstrate an enhanced likelihood of improvements in student engagement and learning.

- Bryk et al., *Organising schools for improvement,* (2010:79)

5.1 Introduction

The discussions around design, methodology, data collection and analysis in the previous chapters allow me once again to take up the story of Bahle – this time with increased confidence in the 'bridge' that enables me to move from questions to answers. I have suggested that I am particularly interested in Bahle's *schools*, specifically in the factors that seem to encourage or constrain improvement in rural schools in the Eastern Cape. I've also indicated that while much of my data will apply only to the set of 25 schools included in this study, there may also be some limited scope for external generalizability in terms of the robust framework I have adapted from Bryk and colleagues (2010). In other words, I hope that Bahle's story may provide some helpful insights for school improvement elsewhere in South Africa and beyond.

This chapter, then, begins to formulate some of these possibilities, constraints and implications - although at this stage the story is more descriptive than analytical. I focus on the school as the unit of analysis and present separate descriptions of my quantitative and qualitative findings in order to create a picture of the Five Essential Supports as they appear in this particular context. In Chapter Six I then weave the two sets of data together in an analysis section that aims to make use of the strengths of both the Bryk and Bourdieusian frameworks in order to tell the kind of authentic, meaningful story I have set out to tell.

5.2 Mapping the Five Essential Supports

In this section, I begin by developing Rasch and alternative measures for the core organisational factors identified in Chapter Three. Most, but not all, of these measures are generated using the survey responses of teachers and students. I then develop a set of school performance indicators based on Annual National Assessment and National Senior Certificate data in order to examine statistical connections between these measures and student results. I close by interrogating these data sets in the light of a number of the findings from Bryk et al. (2010), namely: connections to improvement; the essentiality of the five supports; and, the systemic nature of the supports. In so doing I aim to test the

applicability of the CCSR's survey instruments and their model of the Five Essential Supports in a new and very different context.

A recurring theme throughout this section is that the limitations of my data require a number of adaptions, compromises and 'best estimates' in order to obtain results that have some meaning. If the CCSR have set the 'gold standard' with the data and analysis techniques available to them, then I am operating some way below this. I therefore am far more cautious with the generalisability of these findings, and look to my qualitative data presented in the second half of this chapter for support of any tentative conclusions and recommendations emerging from this study. Having said this, the findings from the CCSR's Five Essential Supports work are by now well established, at least in the U.S., and so the burden of 'proof' in my case is less weighty.

In an ideal world - operating at the gold standard - the surveys I conducted would have been undertaken over multiple years at a thousand schools, with at least six teachers at each school. This would have enabled school organisation to be measured with a high degree of reliability and as a dynamic quantity that changes over time. Again in the ideal world, individual student results would have been validated across years and schools, so that learning gains could be measured for each school. I would then have been able to measure school improvement or stagnation over time and have connected these gains (or losses) to the organisational measures in a way that could start to investigate cause and effect. Instead I am constrained to a steady-state 'snapshot' of school organisation and a once-off rough approximation of school performance. With this in mind, there is an important change in terminology, from the language of 'improvement' (changing over time) to 'performance' (a static measure).

Despite all of this cautiousness, the data presented in this section should provide sufficient evidence for an assessment of the applicability of the Five Essential Supports in an entirely new context, as well as providing a springboard for a more comprehensive analysis of the possibilities and constraints for school improvement for the set of schools I have examined in the rural Eastern Cape.

5.2.1 Internal measure correlations

The development of the organisational measures has been described in Chapter 3.4, where I suggested that five organisational factors, together with several additional factors, could be linked to school improvement in a rural South African setting. Each of these factors (for example, **School leadership**) contained a number of qualitatively distinct measures (such as *Principal instructional leadership*) that could be quantitatively measured using survey data of teachers and students. The first test of the validity and applicability of these survey measures is to check for internal coherence.

I ask first whether there are any relationships between the measures, and then try to assess whether there are any distinguishable patterns to these relationships. To do this I look at Pearson's product-moment correlations and Spearman's ranking for 16 survey measures of the 24[29] schools. These 16 measures were selected from a larger set of 26 measures that had reliability (PSI) of 0.5 or greater. The criteria for choosing these 16 measures were: superior reliability (PSI>0.7) and sound qualitative reasons for inclusion. In other words the measure needed to be both reliable and 'important' relative to other similar measures.

A number of relationships between measures were significant at either the 0.01 or 0.05 level on both the Pearson correlations and Spearman's ranking. Full tables of the Pearson correlations are available in Appendix Q. The four assumptions that Pearson's correlation uses were verified for each correlation pair, namely: 1) that the data is continuous; 2) a linear relationship exists; 3) there are no outliers and 4) that the data follows a normal distribution. The results of an example of this verification exercise for TPIL-TOPS are also shown in Appendix Q. Table 5.1, on the next page, summarises the Pearson Correlations for the 16 measures.

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[29] I conducted surveys at 25 schools, but at one school only two teachers responded and the principal did not respond. There were a number of other schools with teacher response numbers below the recommended minimum of eight, but since I had supporting data (student and principal data plus observations) at these other schools, I decided to keep them in the analysis pool in order to keep the sample as large as possible. Nevertheless when I analyse and interpret the data from these schools, I have attempted to keep a continual check on the survey response numbers – in particular with reference to the outliers' analysis. A table of the schools with less than six teacher responses is included in Appendix R.

Worth highlighting here are a number of interesting patterns. Firstly, there seemed to be a high degree of internal coherence within factors – every factor had at least one measure with a significant correlation between it and other measures within the factor. For example, within the *Parent-Community Ties* factor, significant correlations exist between the measure *Teacher ties to the community* and both the *Teacher outreach to parents* and *School-community partnerships* measures. This might suggest some support for the measure constructs developed under each factor – in other words that the measures 'hang together' correctly.

The second set of relationships worth highlighting have to do with the influence of school leadership. *Principal instructional leadership* and *Operations management* seemed to correlate with a similar set of measures, almost exclusively to do with the factors *Parent-Community Ties* and *Professional Capacity.* In addition, *Principal instructional leadership* was highly correlated with *Safety.* It is important to note here that correlation is not causation, so the direction of the relationship is not known, but given the vast body of work on school leadership that suggests that, amongst other things, principals influence school performance through developing the people involved in schools (Leithwood et al., 2004) these relationships are worth taking note of and will be discussed in greater detail later. Bryk et al. (2010:77) found the same pattern linking leadership with professional capacity, community ties and safety.

Thirdly, there are a number of relationships between factors that seem important. *Parent-community ties* correlates with the *Professional Capacity* measures of *Public classroom* and *Collaboration*. This seems to suggest something about the open, collaborative nature of teachers' practice being linked to a similarly open, collaborative set of relationships with parents and the community. There are also linkages between these measures and the school's learning climate, particularly the measures of *Safety, Student Responsibility* and *Classroom behaviour.* Finally, *Classroom personalism* and *Press toward academic achievement* are highly correlated with the *Instructional guidance* measures of *Teaching skills* and *Assessment and Feedback.* Note that all of these measures come from the student surveys. This would suggest that maths teachers that demonstrate good teaching and assessment practices also have the kinds of personal qualities that inspire and push students

to do their best. It could also suggest that the factor constructs *Learning climate* and *Instructional guidance* have a degree of overlap, particularly when it comes to describing teaching practice and teacher attributes.

There was one negative correlation, between *Classroom behaviour* and *Press toward academic achievement*. The analysis of outliers in Appendix S suggests that this correlation (significant only at the 0.05 level) is highly dependent on school ECZ026, a potential outlier. If it is removed, the correlation is no longer significant. This school had seven teacher responses (above the minimum of six) and 22 student responses. When the individual response data is examined, the mean measure scores are reasonably robust – in other words they are representative of the individual scores, so the means themselves were not skewed by one or two extreme values. So, while there are good reasons to keep ECZ026 in the sample for this particular correlation, the fact that it is so influential on the outcome does suggest that this relationship should be viewed with some degree of tentativeness.

Given that 45% of students surveyed indicated that they *never* had access to a place where they felt safe from violence or abuse, the measure *Safety* seemed an important one to examine further. This was complicated by two factors. Firstly, the reliability of the *Safety* measure from the student survey was so low (PSI=0.44) that it could not be used. Secondly, the teacher survey measure data did not have a normal distribution (Shapiro-Wilk sig. = 0.02), which puts in jeopardy the results of Pearson's correlations. School ECZ001 seemed to be the main culprit for the skewness of the distribution, with a comparatively low mean school score for this measure. The data comes from six teacher responses (slightly below the minimum acceptable level) and the mean seems robust, so there seems to be no reason for excluding the school from the sample. Nevertheless, I flag the issues here, so that the relationships between *Safety* and the measures of *Principal instructional leadership* and *Public classroom* are viewed with appropriate caution.

Table 5.1: Pearson's Correlations for 16 measures of school organisation

FACTOR		School leadership			Parent-community ties			Professional capacity			Learning climate					Instructional Guidance	
	MEASURE	TPIL	TPG MSIP	TOPS	TTIE S	TOPA	TSCP	TPUB	TCOL AB	QHR	TSAF	TSRE	TCLB	SPRS	SCLP	SCCS	SPDA
School leadership	TPIL – Principal instructional leadership	1															
	TPGMSIP – Program coherence around School Improvement Plan	.317	1														
	TOPS – Operations management	.809**	.316	1													
Parent-community ties	TTIES – Teacher ties to the community	.619**	.140	.686**	1												
	TOPA – Teacher outreach to parents	.820**	.312	.829**	.546**	1											
	TSCP – School-community partnerships	.273	.239	.462*	.484*	.394	1										
Professional capacity	TPUB – Public classroom	.624**	.192	.615**	.612**	.558**	.266	1									
	TCOLAB – Collaboration	.548**	.379	.599**	.351	.561**	.104	.724**	1								
	QHR – Quality of human resources	-.141	.168	-.022	.018	-.054	.166	-.096	-.024	1							
Learning climate	TSAF – Safety	.451*	-.055	.271	.381	.242	.059	.449*	.192	-.238	1						
	TSRE – Student responsibility	.254	.318	.400	.263	.245	.063	.275	.448*	.334	.170	1					
	TCLB – Classroom behaviour	.275	-.020	.297	.247	.183	-.135	.341	.462*	-.075	.554**	.632**	1				
	SPRS – Press toward academic achievement	-.062	.223	-.270	-.083	-.109	.152	-.163	-.075	.378	-.362	-.069	-.446*	1			
	SCLP – Classroom personalism	.102	-.095	-.125	.266	-.045	.000	.093	-.123	.094	.172	.025	-.107	.524**	1		
Instructional Guidance	SCCS – Teaching practice	-.116	-.071	-.309	-.027	-.173	-.185	-.062	-.074	.175	-.176	.056	-.214	.604**	.804**	1	
	SPDA – Assessment and feedback	-.283	-.215	-.379	-.143	-.396	-.394	-.112	-.216	-.023	-.091	-.272	-.286	.427*	.683**	.610**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Having highlighted some of the significant relationships between measures, I now motivate for the selection of a smaller subset of measures that will represent the entire group of eighteen in the statistical analyses that follow (in a similar way to which Bryk and colleagues (2010, Chapter 3) initially select five 'core' measures, which are later explored alongside other measures under each support). Ideally these measures should: a) reflect correlation trends seen in other measures, particularly within a factor; b) should be qualitatively 'important'; and c) have a high degree of reliability. These final five or six measures will serve as statistical indicators for each of the Five Essential Supports.

1. **School Leadership**: both *Principal instructional leadership* and *Operations management* correlate with a number of important other measures and with each other. Their reliability indicators are very similar, but *Principal instructional leadership* has a slightly higher chi square value and its T-test is below 5%.

2. **Parent-Community Ties**: The measure *Teacher ties to the community* has strong correlation with both other measures within this factor and with some other important measures. Its reliability statistics are not ideal (PSI=0.66), but with a chi square value greater than 0.05, it seems the best option. *Teacher outreach to parents* is a good alternative.

3. **Professional Capacity**: The measures of *Public classroom* and *Collaboration* are very similar. *Public classroom* has significantly better reliability.

4. **Learning Climate:** From a qualitative stand point, *Safety* seems like an important measure to include. However, given the doubts raised earlier about the normal distribution of this data, there may be value in including a second measure for this factor. *Classroom behaviour* has a significant correlation with *Safety*, correlates with other Learning Climate measures and with other outside measures. Both *Safety* and *Classroom behaviour* have acceptable reliability.

5. **Instructional Guidance**: The two measures for Instructional Guidance, *Teaching skills* and *Assessment and Feedback,* have identical internal correlations. *Teaching skills* has superior reliability.

Table 5.2: Summary of statistical indicators for the Five Essential Supports

Factor	School Leadership	Parent-Community Ties	Professional Capacity	Learning Climate		Instructional Guidance
Measure/ Statistical Indicator	*Principal instructional leadership*	*Teacher ties to the community*	*Public classroom*	*Safety*	*Classroom behaviour*	*Teaching practice*
Code	TPIL	TTIES	TPUB	TSAF	TCLB	SCCS
Analysis Name	TPIL3LHLHT	TTIES1	TPUB6	TSAF	TCLB10	SCCS1
PSI	0.75	0.66	0.85	0.81	0.72	0.80
Coefficient Alpha	-	-	-	-	-	0.84
Chi Square	0.00073	0.55	0.058232	0.91	0.02	0
T-Test (5%)	2.1	10.43	9.55	6.52	9.84	7.86

5.2.2   School Results

5.2.2.1   Introduction

The primary purpose of this sub-section is to obtain measures of school performance that can be used in statistical analyses with the survey and other measures. Since the sample of schools selected includes a mixture of senior secondary (Grade 12 exit) and junior secondary (Grade 9 exit) schools, once measures for each level have been chosen, the comparability of these measures must be assessed. Ideally, all 25 schools should be able to be ranked on the same combined scale so that their school performance can be ranked and statistically compared against their performance on the organisational measures. To do this requires first an examination of the Annual National

Assessment data for the 20 junior secondary schools in my sample, followed by National Senior Certificate data for the remaining five senior secondary schools.[30]

5.2.2.2   ANA Results

Data from the 2012 and 2013 ANAs for 30 junior secondary schools (20 from this study plus ten reserve schools from the same area) were obtained from the Department of Basic Education[31]. The data set was incomplete, particularly for 2013, with many schools and subject values missing. Grade 6 and 9 results were examined in detail, since these were the years closest to the survey respondents (Grade 9) and approximated an exit assessment similar to the Grade 12 NSC exams to which the results will be compared. Table 5.3, below, illustrates the availability of results.

Table 5.3: The number of schools with results available for each ANA

	Grade 6 Maths	Grade 6 Eng FAL	Grade 9 Maths	Grade 9 Eng FAL
2012	30	24	27	24
2013	17	11	0	0

As indicated, no results were available for the 2013 Grade 9 Maths and English FAL assessments. Only 17 and 11 schools had results for the 2013 Grade 6 Maths and English FAL respectively. The 2012 results were far more complete and thus these were selected for further analysis.

A superficial examination of the full ANA data set revealed a high degree of consistency across years, grades and subjects. For example, schools ranked in the bottom quartile on one assessment generally featured in the bottom quartile, or at least in the bottom half of the ranking, on all of the other assessments. Similarly, schools ranked in the top quartile on an assessment, generally appeared in the top quartile, or at least in the top half of the rankings, on the other assessments. A notable exception is school ECZ026, which featured in the top quartile for three of the six assessments, was in the top half of schools for another assessment, but was the bottom placed school for Grade 9 Maths in 2012 (no information was available for the sixth assessment).

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[30] Analysing senior and junior schools separately (as the CCSR do) would have been a better approach, but with only five senior schools available in my sample, and already a small number of schools in my sample in total, it seemed best to maximise this number by combining the analyses. For future studies, I would recommend a separate analysis of senior and junior schools.

[31] My thanks to Mr. Jerry Tshikororo, Dr. Stephen Taylor and others at the DBE for their assistance in supplying the ANA data.

Fortunately, this school featured as one of the schools selected for case study analysis and specific questions about this anomaly could be asked and are discussed in later sections of this chapter. Pearson correlations were obtained for the six assessments where data was available, which generally confirmed the consistency across grades, years and subjects (see Appendix T for details).

Having decided on the grounds of completeness that the 2012 results warranted further analysis; and, having gained some confidence in the consistency of the data across subjects, years and grades; I selected two school performance measures for comparative purposes. The 2012 Grade 9 Maths and English FAL assessments were significantly correlated at the 0.05 level. They also had a high number of schools represented, with maths results for all 20 schools in this study and English results for all but one school. Ideally, since the surveys were completed by the Grade 9 class of 2013, the 2013 Grade 9 ANAs should have been used. However, since there was no data available for these assessments, the 2012 Grade 9 results offered the next best alternative. Given the correlations between assessments in different years, I make the assumption that these results are more or less representative of school performance for the years on either side of 2012.

A final note on relative performance: somewhat surprisingly, the performance of schools from this area was generally about average, with roughly half the schools above and about half below the national mean. In fact, the mean score for all the schools in this study[32] was significantly better in maths and only slightly worse in English FAL than the national, provincial and district means. The fact that on the National Senior Certificate these districts tend to be some of the worst performing in the Eastern Cape and that the Eastern Cape tends to be well below the national average casts further doubt on the trustworthiness of the ANA data, and this point is discussed further in the next section. Further analysis of this ANA data would be interesting, particularly at the student level, where some indication of the nature of this data might be revealing.

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[32] Note: This mean was calculated by taking the mean of the mean school scores, not the mean of all the student scores. The assumption here is that the student numbers at each of the thirty schools are reasonably representative of a wider sample. The trend in national, provincial and district means displayed in Table 5.4 seems to support this.

Table 5.4: Relative performance of sample schools to national, provincial and district means

	Mean of sample schools	National mean	Provincial mean	District[33] mean
2012 Grade 9 Maths	17.08	12.73	14.79	16.60
2012 Grade 9 English FAL	31.97	34.73	35.14	34.91

5.2.2.3   NSC Results

As with the ANAs, I am aiming for a simple, robust measure of senior school performance that can be used for statistical analysis in conjunction with the Rasch measures of school organisation. The school performance measure most South Africans are familiar with is the ***National Senior Certificate ('matric') pass rate*** – or the percentage of students at a school that pass grade 12. This is published widely in newspapers at the beginning of each year and usually draws comment from a variety of quarters. For a number of reasons the pass rate is, however, a deficient measure of school performance (Spaull, 2013:31):

- Firstly, the *quantity* of passes can be relatively easily manipulated by schools that either hold back large numbers of at-risk students in Grade 11, or shift many students from maths to the easier subject of maths literacy.
- Secondly, it is not a good measure of the *quality* of passes. Many argue that obtaining a pass for Grade 12 does not mean much in terms of opening doors for further opportunity.

So while the pass rate is perhaps a good starting point, a more robust measure is needed that adequately captures both the maths-maths literacy manipulation and the quality issue. It should be noted that in this study, I use maths and physical science as examples of subjects that teachers tend to find challenging to teach, and thus are good measures of how well schools are doing. One possible measure could thus be the percentage of ***bachelors' passes with maths and physical science as subjects***. This would certainly capture the idea of quality, since with these challenging subjects, a bachelors pass is more likely to afford access to tertiary study. However, the criteria for

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[33] Dutywa and Mthatha combined

a bachelor's pass (four subjects above 50%, three subjects above 30%, home language above 40%) make it quite complicated to calculate the number accurately without the individual student data, which I do not have.

A third measure that better approximates the quality of school performance is ***the number of mathematics passes as a percentage of the total number of students writing grade 12***. This accounts for maths performance as a measure of quality, and penalises schools with high numbers of students taking maths literacy. Finally, the ***average maths percentage***[34] provides a good indication of the quality of maths performance. In other words, two schools with the same percentage of maths passes could have vastly different maths performance if the one has on average very low level passes and the other many students scoring in the 80s and 90s. It's important to note that this last measure should be viewed alongside the ***percentage of students taking maths***, in order to account for schools who only allow the most able of students to take maths. In effect, this last measure is less of an indicator of overall school performance, and more an indicator of how well the school is doing with the students that take maths.

Bryk et al. (2010) use a method to calculate student learning gains over time. This allows them to make strong claims about school improvement (rather than static performance). In theory, with historical NSC data from 2008 to 2013, I should be able to calculate similar measures of improvement, if not to the same level of precision since I am not able to track the same students from year to year, as they have. However, the ANA data I am using is purely a static measure. In order to have a comparable NSC measure I will be using the multiple years of data only as verification of the consistency of the results. Presented in Table 5.5, on the next page, is a summary of the various measures of NSC performance discussed above for the years 2011 to 2013.

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[34] Since student level data was not available, an approximate value for average maths percentage was calculated using the number of students in each category (0-29, 30-39, 40-49, etc.) multiplied by the median value of each category (14.5, 34.5, 44.5, etc.). This method is not entirely accurate, since it will under- and over-estimate the values on the extremes of a normal distribution, but for a rough approximation should approach the true value.

Table 5.5: Measures of NSC Performance

School	Year	Matric Pass Rate	Number of students writing	% Maths Passes of Total	Average Maths %	% Students taking Maths	Average English FAL %	% Students taking English FAL	Average Physical Science %	% Students taking Physical Science
ECZ023	2011	71.0	127.0	35%	29%	76%	40%	100%	38%	45%
	2012	80.6	129.0	37%	34%	60%	43%	100%	45%	32%
	2013	71.7	159.0	28%	30%	54%	45%	100%	40%	28%
	Average	**74.4**	**138.3**	**33%**	**31%**	**63%**	**43%**	**100%**	**41%**	**35%**
ECZ018	2011	48.0	64.0	23%	21%	100%	41%	100%	24%	42%
	2012	59.1	88.0	35%	25%	84%	42%	100%	22%	56%
	2013	34.2	187.0	15%	23%	51%	42%	100%	25%	37%
	Average	**47.1**	**113.0**	**25%**	**23%**	**78%**	**42%**	**100%**	**24%**	**45%**
ECZ024	2011	14.9	47.0	49%	32%	62%	43%	100%	17%	26%
	2012	13.2	53.0	4%	16%	100%	26%	100%	18%	38%
	2013	19.6	56.0	2%	16%	89%	36%	100%	19%	30%
	Average	**15.9**	**52.0**	**18%**	**21%**	**84%**	**35%**	**100%**	**18%**	**31%**
ECZ004	2011	50.9	106.0	11%	20%	58%	33%	100%	23%	23%
	2012	21.5	135.0	9%	19%	67%	31%	100%	25%	32%
	2013	53.2	156.0	16%	24%	58%	43%	100%	25%	38%
	Average	**41.9**	**132.3**	**12%**	**21%**	**61%**	**35%**	**100%**	**24%**	**31%**
ECZ025	2011	62.1	66.0	3%	16%	70%	42%	100%	33%	44%
	2012	30.2	96.0	6%	17%	75%	41%	100%	17%	40%
	2013	41.7	84.0	7%	18%	70%	39%	100%	27%	30%
	Average	**44.7**	**82.0**	**5%**	**17%**	**72%**	**41%**	**100%**	**26%**	**38%**

This represents an exceptionally dense set of information, which needs some simplification if I am to arrive at a comparable set to our Maths and English FAL ANA results. The goal here is to choose measures of maths and English performance that reflect school performance more generally, and are consistent with school performance in other years. A look at the data in Table 5.5 suggests that:

- 2012 appears to be inconsistent with the other two years on a number of measures (pass rate in particular) for schools ECZ004, ECZ025 and ECZ018.

- Performance on the measure *average maths percentage* seems to be reasonably consistent with other measures such as *grade 12 pass rate* and *percentage of maths passes of all*

students writing. For all of these measures ECZ023 does significantly better than other schools, and ECZ024[35] comes out worst more often than not.

- Note that in 2012, however, ECZ023 and ECZ004 have significantly lower percentages of students taking maths. This would buoy their average maths score and is another reason not to use the 2012 data.

- In 2013, however, this figure is similar (~55%) for the three big schools (>150 matric students) ECZ004, ECZ023 and ECZ018. The two smaller schools (<90 students) have much higher percentages of students taking maths, but are dealing with far fewer maths students.

- The performance of schools in English FAL is reasonably consistent across years (less so for ECZ004 and ECZ024) and in 2013 aligns nicely with the other measures placing ECZ023 at the top and ECZ024 at the bottom.

I therefore motivate for the use of the 2013[36] Average Maths Percentage and 2013 Average English FAL Percentage as measures of overall school performance that are both consistent with other measures of school performance, and with the preceding years. I note, however, the influence of the proportion of students taking maths on the average maths percentage, although I suggest that because ECZ024 and ECZ025 are dealing with far fewer maths students, this may be mitigated somewhat[37]. At the worst, the average maths percentage is a measure of how effectively these schools are teaching maths to the students that choose to do maths; at best, it may approximate a decent measure of overall school performance. Table 5.6 summarises these measures against national and provincial averages.

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[35] Note that in 2011, ECZ024 performed much better than in other years and so this affects their average performance over the three years. This school was investigated for possible exam fraud by the department that year, without any conclusive findings. I therefore view the results for this year with some circumspection.

[36] By selecting the 2013 results, this aligns nicely with the year in which the survey was taken by students, but is different from the ANA results, for which I have chosen 2012 data. Since the primary purpose of this selection is to choose a data set that is complete (in the case of the ANAs) and representative, the fact that the data sets are from two different years is of relatively minor importance.

[37] As discussed, the percentage of students passing maths of the total number of students writing matric, accounts for any differences in the proportion of students taking maths. However, this measure has two significant disadvantages. Firstly, it does not take into account the quality of the passes (which the average percentage does). Secondly, and more importantly for my study, is that it does not fit in with the kinds of data I am using with the ANAs (average scores) and available national and provincial data, to which it will be important to compare in the next section.

Table 5.6: Key NSC Measures with National and Provincial Means[38]

2013	ECZ023		ECZ004		ECZ025		ECZ024		ECZ018		Natio-nal Mean	Provi-ncial Mean
	School Subj Ave	% Taking subject	School Subj Ave	% Taking subject	School Subj Ave	% Taking subject	School Subj Ave	% Taking subject	School Subj Ave	% Taking subject		
Eng FAL	45.45	100%	42.59	100%	38.86	100%	35.60	100%	41.81	100%	53.53	48.61
Maths	29.65	54%	23.56	58%	18.05	70%	15.60	89%	23.11	51%	36.81	29.36

A final comment on the performance of sample schools against national and provincial averages: it is clear that senior schools in my sample perform well below the national average for both maths and English FAL. In the grade 12 assessment the English FAL performance for all schools is also well below the provincial mean, while only the best school, ECZ023, approaches the provincial mean for mathematics. This poor performance relative to the rest of the country and province is in stark contrast to the rosy performance of sample junior secondary schools on the ANAs, and provides a red warning flag ahead of the next section.

5.2.2.4 Combined Results

The purpose of examining school results data has been to establish measures of school performance for statistical analysis against the measures of school organisation created elsewhere. In an ideal case I would have worked only with Grade 9 results, or only with Grade 12 results, but since the ambition of this study has been to capture a picture of rural schooling generally, both levels were deemed important. Failing an investigation of only one level, the use of comparable assessments (with shared items to establish comparability, etc.) would have been next best. As pointed out, however, the ANAs are still some way from having the sophistication required for this to be true, so here I develop a combined measure that is a 'best approximation'.

I have selected two measures, of English and maths, for the twenty junior secondary schools using the ANA data and two similar measures for the five senior secondary schools using NSC data. The challenge is now to combine them in a way that is meaningful and has integrity. One possible way to do this is to take the difference of the results from national or provincial means and then divide by the standard deviation. This essentially produces a score for each school that is a number of

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[38] The national and provincial means were kindly supplied by Dr. Stephen Taylor of the Department of Basic Education.

standard deviations above or below the mean. Table 5.7 shows a combined table of senior and junior secondary schools using this method, ranked by mathematics performance. The senior secondary schools have been highlighted.

Table 5.7: School performance in English and maths

(in standard deviations from the national mean, ranked by maths performance)

School ID (ECZ0..)	Maths	English FAL
21	2.539887	0.972981
27	2.426935	0.865922
07	1.245961	0.410034
10	1.207508	-0.74406
09	0.334542	-0.22786
06	0.119171	-0.21038
15	-0.14645	0.632991
12	-0.2452	-0.51501
16	-0.24939	-0.66439
05	-0.25883	-0.12609
13	-0.32598	-0.2685
02	-0.34039	-0.9421
11	-0.34587	-1.20518
23	-0.34654	-0.68823
14	-0.3679	-0.27449
08	-0.37034	No data
17	-0.52044	-0.22129
01	-0.5843	-0.15323
03	-0.5853	-0.86522
04	-0.64178	-0.93169
26	-0.64706	-0.03776
18	-0.66359	-0.99751
25	-0.90839	-1.24932
24	-1.0271	-1.52647
20	No data	No data

The senior schools have been shaded in Table 5.7 to illustrate that there seems to be an issue with using this method of combination, since all the senior schools lie in the bottom half and four are in the bottom quartile. As has been previously flagged, this is because the performance of junior secondary schools in the ANAs was on average higher than the national mean, while the performance of senior secondary schools was much lower than the mean. This is surprising, since both my experiences of working with senior and junior secondary schools over the past few years, as well as my observations during the research period, suggest that senior schools *seemed* to be places with higher professional capacity and overall organisation. There are a few possible explanations for this, which I discuss in greater detail in Appendix AC; however, none seem sufficient in themselves.

What remains is to question the reliability of the ANA results. As I have pointed out in a previous section, the ANAs were not designed as an infallible instrument and, since marking is done at the school level, there is ample opportunity for error, whether intentional or not. So if the ANAs are unreliable, are they unreliable in a consistent way? In other words, has inflation occurred across all the schools or are there a handful of schools that distort the picture? An analysis of the normality of the data suggests that for the maths ANA there are indications of abnormality (Shapiro-Wilk $p < 0.05$) and three outlier schools buoy the average significantly, casting further doubt on the reliability of these results[39].

Fortunately, one of the tasks that I want to use the school performance data for does not require precise ranking of schools. All that is needed is a quartile ranking system, with the top and bottom quartile schools compared with school organisation measures. This is much easier to do, since it seems fair to assume that the best performing senior school (ECZ023) would feature in the top quartile of schools and the worst performing senior school (ECZ024) would feature in the bottom quartile. Of course, there may be some debate about whether the other senior schools should also feature in the top or bottom quartiles, but given the significant drop in scores from the first to the second ranked schools, and for simplicity, I will stick with this assumption[40].

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[39] See Appendix V for more details.
[40] In Appendix W I have undertaken a sensitivity analysis using a single mean for both sets of results data, adjusting the NSC data using the interquartile range for both sets. The outcome is that the quartiles are the same for Top Quartile-

Table 5.8: Top and bottom quartile schools[41]

Top Quartile: "High Performing" Maths Schools	Top Quartile: "High Performing" English Schools	Bottom Quartile: "Low Performing" Maths Schools	Bottom Quartile: "Low Performing" English Schools
ECZ023	ECZ023	ECZ024	ECZ024
ECZ006	ECZ026	ECZ026	ECZ011
ECZ009	ECZ015	ECZ003	ECZ003
ECZ007	ECZ007	ECZ001	ECZ016
ECZ027	ECZ027	ECZ017	ECZ012
ECZ021	ECZ021	ECZ008	ECZ002

5.2.3 Top and bottom quartile analysis

I now explore the relationships between school performance and school 'organisation for improvement', using the method outlined in Bryk et al (2010:81). Having split the schools into quartiles by their performance on maths and English assessments (Table 5.8), it is possible to say that the probability of any of the 24 schools being in a particular quartile is 25%. In other words, if a school was randomly selected without any information about its actual organisational dynamics, there should be a 25% chance that it would fall in any particular quartile.

Similarly, the six organisational measures selected as representative of the Five Essential Supports in Table 5.2, can be used to classify schools as 'strong' or 'weak' depending on whether they are in the top or bottom quartile of schools for each measure. If indeed these measures are predictive of school performance, we would expect organisationally strong schools to stand a much better chance of being in the high performing (top) quartile than weak schools. Similarly, we should expect strong schools to have a much smaller chance of being in the lowest performing quartile of schools. Figures 5.1 to 5.4 display the results of such an analysis.

High Performing English and Bottom Quartile-Low Performing maths, and differ by only one school for the other two quartile groupings. This does not materially change the ensuing analysis of the various quartiles. A further analysis could be undertaken by examining schools on the quartile cusp.

[41] Note that ECZ010 was taken out of the quartile ranking system as it was also not included in the Rasch measures.
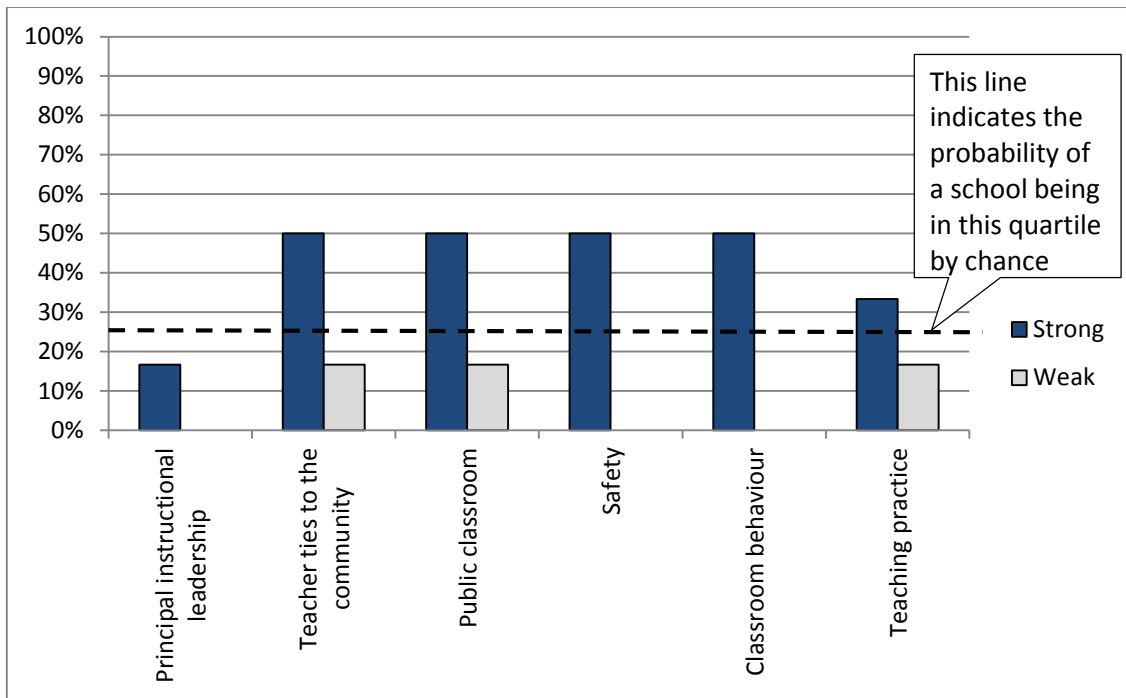
Figure 5.1: The percentage of strong and weak schools found in the top quartile for mathematics performance
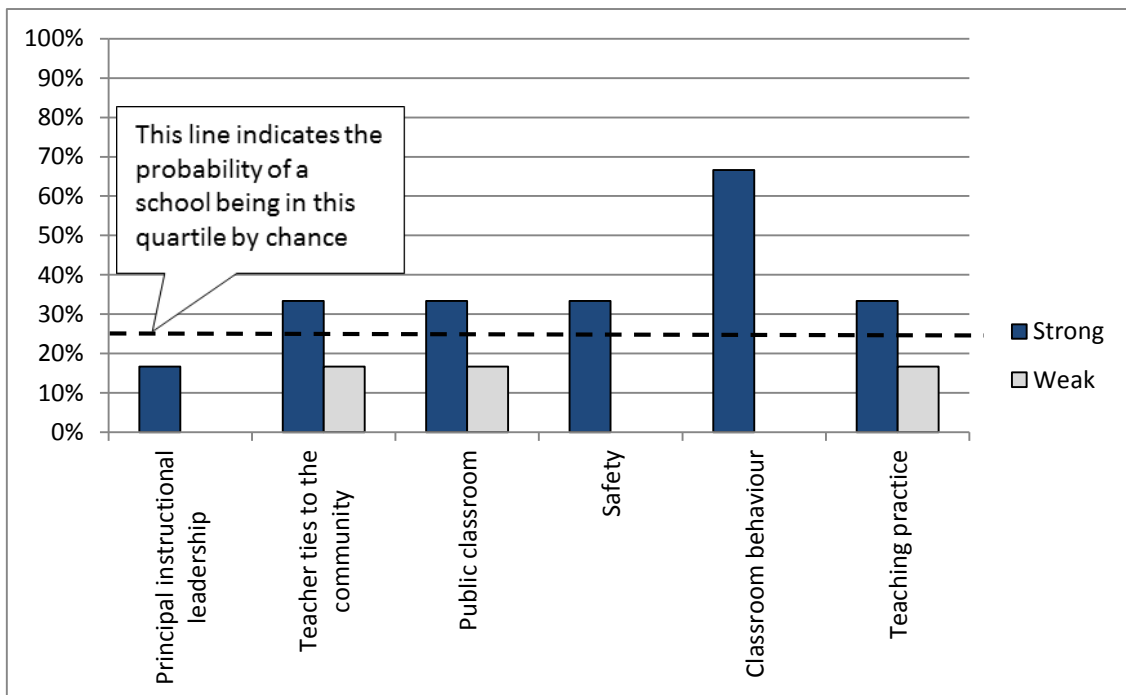
Figure 5.2: The percentage of strong and weak schools found in the top quartile for English performance

Figures 5.1 and 5.2 examine top quartile or 'high performing' schools for maths and English. There seems to be quite clear evidence for all six indicators (*Teaching practice* for maths performance is the one exception) that more strong schools lie in this quartile than weak schools. Of course, with only 24 schools in my sample, it is hard to know whether the differences here are significant (17% on the above figures represents one school), and this will be examined in the next section. For most of the measures, however, it seems at least two to three times more likely that strong schools will be in the top quartile for school performance than weak schools.
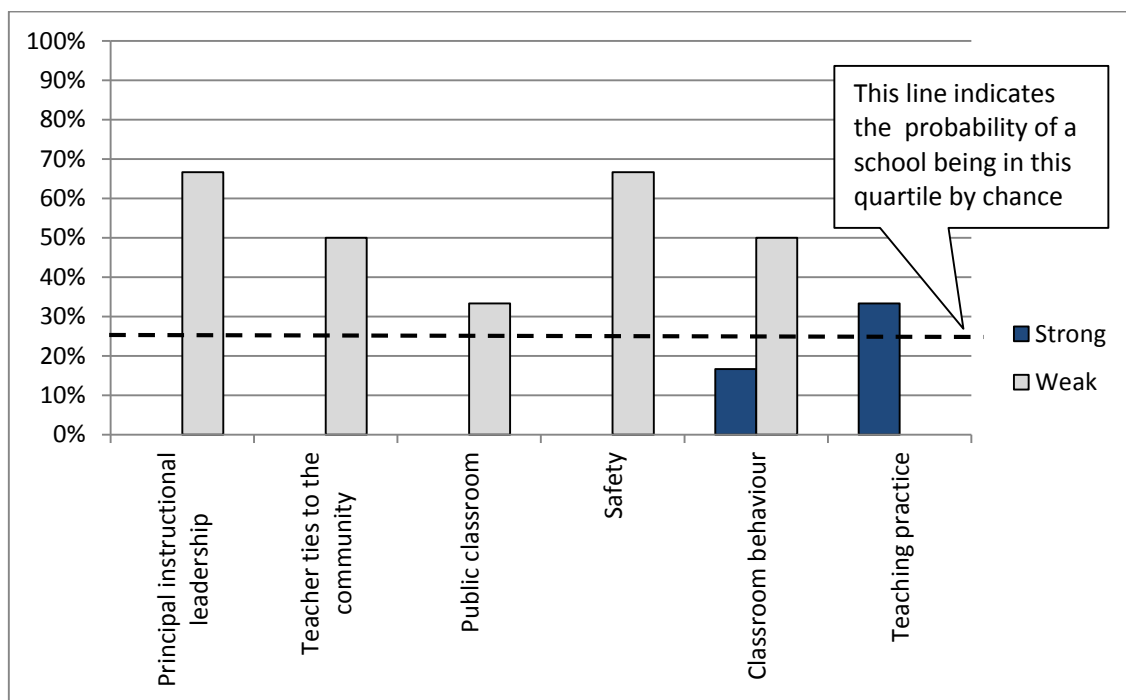
Figure 5.3: The percentage of strong and weak schools found in the bottom quartile for mathematics performance

The chart contains the following annotation:

This line indicates the probability of a school being in this quartile by chance
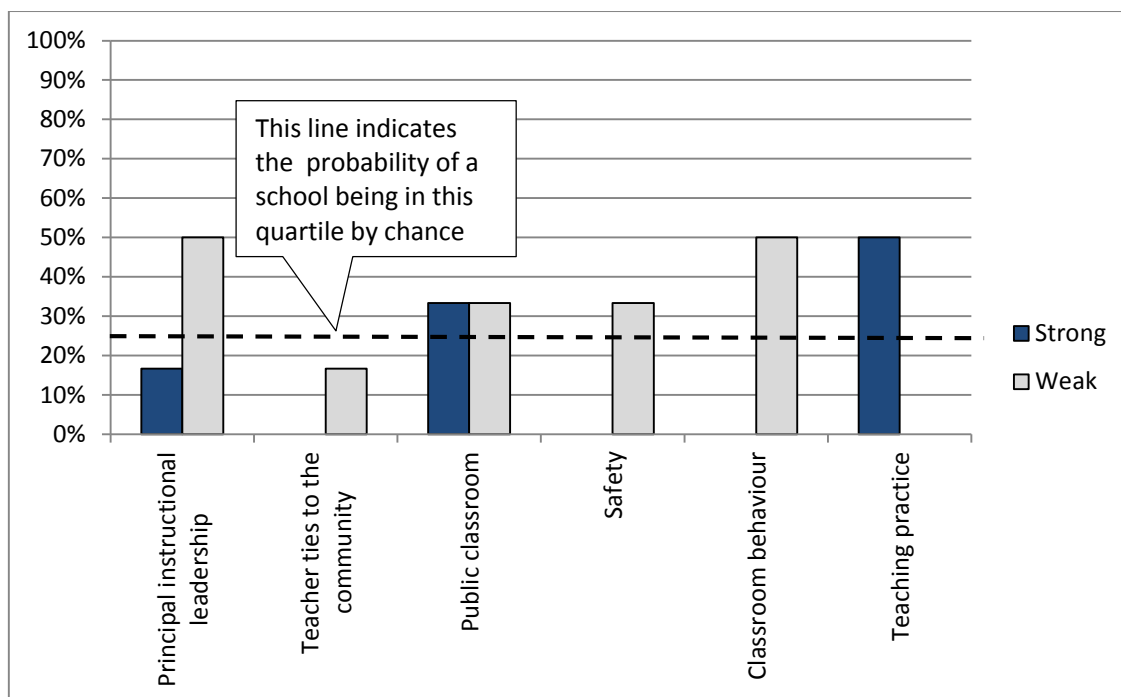
Figure 5.4: The percentage of strong and weak schools found in the bottom quartile for English performance

Similarly, figures 5.3 and 5.4 investigate bottom quartile or 'low performing' schools for maths and English, where I would expect weak schools to predominate if my hypothesis is correct. Here the evidence is more mixed, but overall seems to support the idea that weak schools on any of the organisational measures are more likely to be in the bottom quartile for school performance on maths and English. The clear exception here is *Teaching practice*, where no weak schools appear, and two and three strong schools feature for maths and English respectively. *Public classroom* for English performance also shows little discrimination, and with the random probability line of 25% lying very close, it is hard to make conclusions from this measure. Again, a detailed analysis of errors is required before more confident claims can be made. For now, however, suffice to say that there seems to be some suggestion that indeed most of the organisational measures are predictive of school performance.

5.2.4 Examination of errors and the essentiality of the supports

As indicated, it is difficult to know how much weight to give the findings of the quartile analysis in the previous section without an examination of the errors associated with this analysis. Bryk et al. (2010:88) suggest that there are three types of errors that need to be accounted for. Firstly, there

are errors associated with the reliability of the survey measures and school performance indicators. Secondly, by using six representative indicators as opposed to the full set of survey measures, there could be some misrepresentation error if the six do not accurately reflect the broader set. Thirdly, they suggest that since school development is a dynamic process, there are errors involved in reducing this to a single set of static survey measures.

To quantify the effects of the first of these sources of error, measure unreliability, Bryk et al. take a reliability estimate of 0.9 (1.0 being perfect reliability), make some reasonable assumptions about the random nature of their data, and derive a misclassification rate of 4.2% (2010:271). They then suggest that the misrepresentation error (the second consideration) would plausibly be about the same, giving an overall error estimate of between 8 and 9%. A quick re-examination of Table 5.2 suggests that the average reliability (PSI) of my survey measures is much less, somewhere between 0.75 and 0.8. Similarly, without having tested and refined my survey instruments to the degree that the CCSR have been able to do over time, the chances of misrepresentation are significantly higher in my case. I therefore suggest that an overall error estimate of around 17% - or twice that used by Bryk and colleagues – may serve as a reasonable approximation[42].

With 24 schools in my analysis, a quartile is made up of six schools and 17 % of this quartile conveniently equates to one school. So if a misclassification rate of one school per quartile is taken into account, Figures 5.1 to 5.4 can be re-evaluated to assess whether the differences are significant. Note that the error should be applied to both strong and weak schools – in other words for Figure 5.1, strong schools could be one school less and weak schools one school more for all of the six factors. A summary of the results of this exercise follows:

- **Figure 5.1:** three of the indicators appear to have a significant difference between strong and weak schools on top quartile maths performance (*public classroom, safety* and *classroom behaviour*)
- **Figure 5.2:** only *Classroom behaviour* appears to have a significant difference for top quartile English performance

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[42] It may be possible to perform a similar normal distribution analysis on my data using a reduced reliability of 0.8, but given the small number of schools and the reduced need for robustness, this approximation should suffice for my purposes.

- **Figure 5.3:** three of the six indicators appear to have a significant difference between strong and weak schools for bottom quartile maths performance (*Principal instructional leadership, teacher ties to the community* and *safety)*
- **Figure 5.4:** again only *Classroom behaviour* seems to significantly differentiate between strong and weak school for bottom quartile English performance

In summary, the data from my comparatively limited study does not provide sufficient evidence to make the kinds of claims about the essentiality of the supports that Bryk and colleagues have been able to make. However, there seem to be some measures that function particularly well (*Classroom behaviour*, *Safety*) and at least one that does not (*Teaching practice*). Given that the purposes of this study are for confirmation of the essential supports in a new context, rather than for establishing a new finding, the burden of proof is less. I would suggest that the broad trend seen in Figures 5.1 to 5.4 provides sufficient evidence to warrant further exploration in this context[43].

5.2.5   System of supports

The next set of analyses seek to confirm the findings of Bryk et al. (2010:91) with regard the functioning of the essential supports as a system. They found convincing evidence that the supports functioned together, so that it would be unlikely to find a mix of strengths and weaknesses in the supports at any one particular school. The first line of testing is to calculate the percentage of schools that were in the top quartile for at least one indicator and in the bottom quartile for at least one other indicator. Only 39 percent of schools in my sample met these criteria, a figure in the region of the 31 percent found by Bryk et al., and well below the 68 percent that can be calculated as the theoretical probability if the supports functioned independently (Bryk et al., 2010:271). This suggests some level of dependency between the supports.

Secondly, the overall organisational strength of each school can be calculated by assigning a score of +1 for top quartile indicators and -1 for bottom quartile indicators and then summing the results for all five indicators. If a school was strong across all five supports, the maximum value would be +5; similarly, a school weak on all the supports would score -5. For this exercise I chose to use

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[43] Personal correspondence with two of the authors of the CCSR study confirmed as much (Luppescu & Sebring, personal correspondence, March 2014).

Safety as the indicator for Learning Climate (previously I have used both Safety and Classroom behaviour) since much other evidence suggests that student safety is hugely important in this context (Jamieson, Lake & Smith, 2014). The results of this exercise are displayed in Figures 5.5 and 5.6, below. Note that these graphs show the percentage of the schools in a particular category that are high or low performing (*not* the percentage of all of the top or bottom quartile schools found in each category – in which case the percentages should add up to 100%).
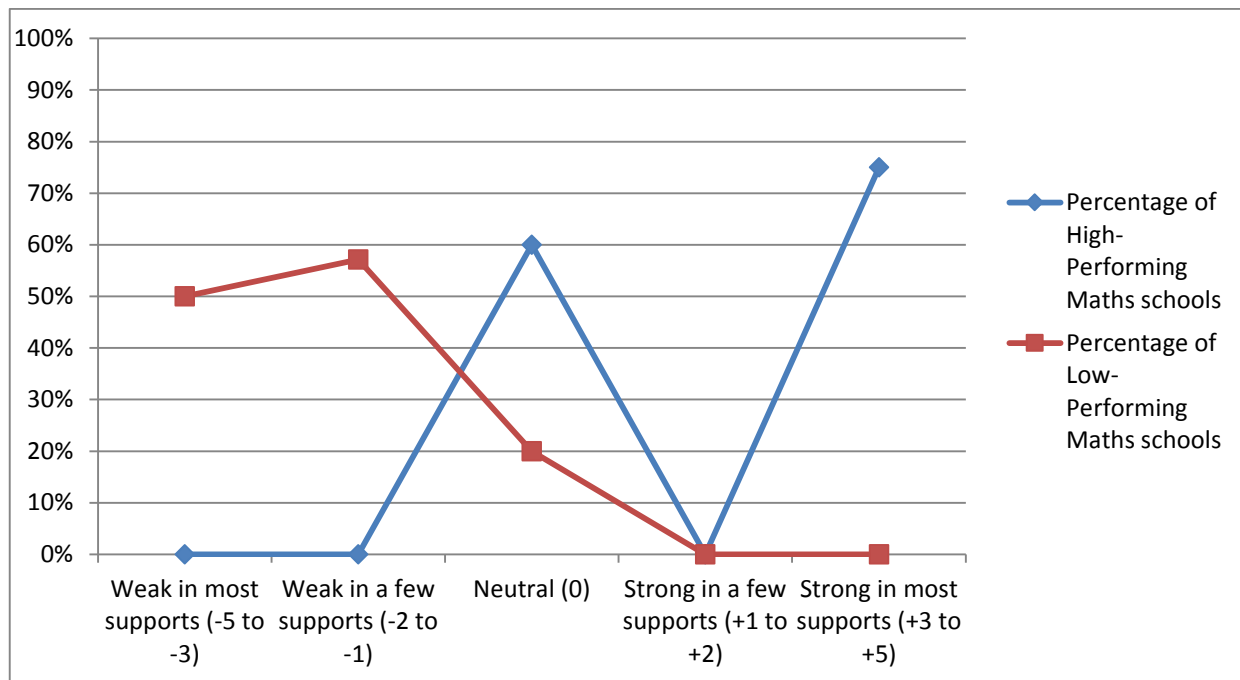
Figure 5.5: The percentage of schools in each category that are high- and low-performing in maths
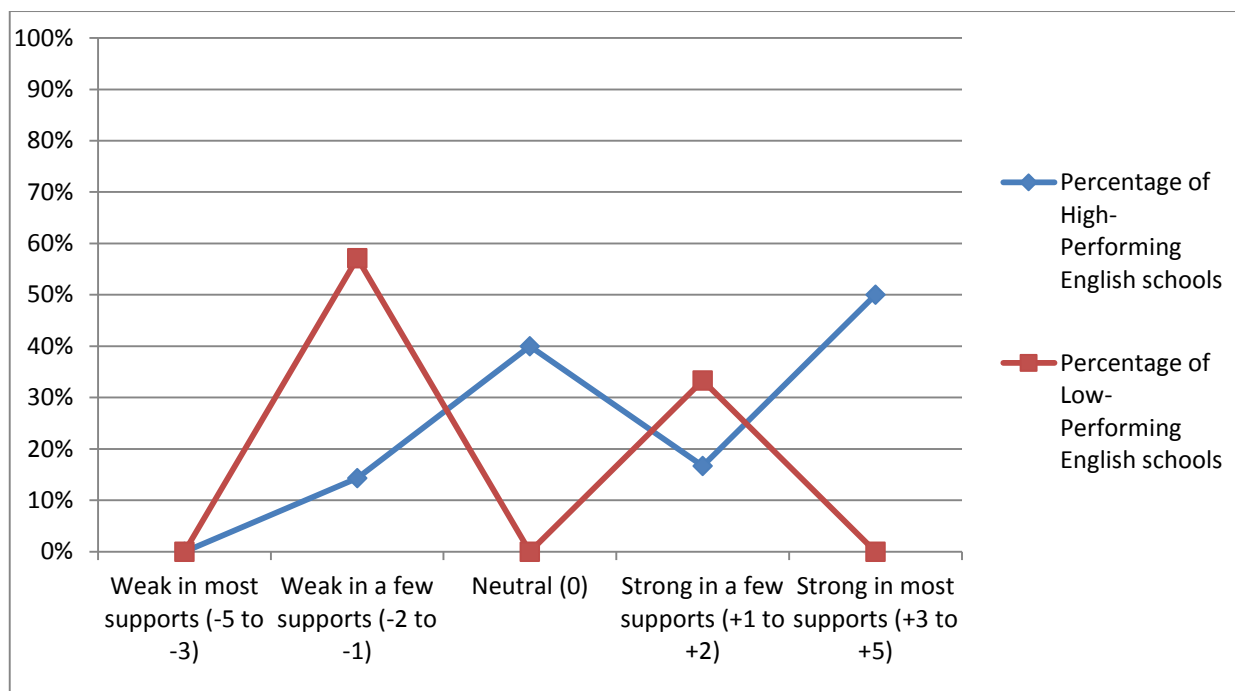
Figure 5.6: The percentage of schools in each category that are high- and low-performing in English

If the performance of schools were not linked to the strengths of the organisational supports, we would expect reasonably flat, horizontal lines across all categories. However, if indeed the supports act as a system, we'd expect none or very few high-performing schools to lie in the first (weak) categories and many to lie in the last two (strong) categories, creating a distinctive up-slope. Similarly, we'd expect there to be many low-performing schools in the first categories and few in the last two, creating a down-slope. Without producing the same very definitive up- and down-slopes for high-performing and low-performing schools respectively that Bryk and colleagues manage to produce (2010:92), the results here seem reasonably supportive of their claim. Certainly, if the low number of schools in my sample and some misclassification is accounted for, so that the numbers shift up or down one category, it is clear that weak schools (with scores between -1 and -5) contain the bulk of the low-performing schools, while strong schools (between +1 and +5) contain the bulk of the high-performing schools.

To conclude, it seems that my data provides some support for the claim that the essential supports function together as a system. In order for schools to improve, sustained attention needs to be paid to all five areas, rather than simply focusing on one or two of the organisational supports, as is often the case in many school improvement interventions in South Africa (e.g. leadership projects,

technology projects, teaching projects, etc.). These findings also highlight the substantial challenges facing the lowest performing schools, which typically have weakness across most of the supports and thus find themselves with little to draw on in the way of successful practices.

5.2.6 Broadening the analysis to include all sixteen indicators

Figures 5.1 to 5.4 presented fairly compelling evidence that the six indicators chosen to represent the Five Essential Supports connect to performance in maths and English. In order to further test this hypothesis, I now broaden the investigation to include all sixteen organisational measures generated for this study. A similar method is used to examine the evidence, making use of the quartile approach described in Bryk et al. (2010:98-101). Once again 25% represents the probability of a school improving or stagnating due to random chance. If my findings are to confirm those of Bryk and colleagues, in Figures 5.7 and 5.8 I would expect strong (blue) schools to fall predominantly to the right of the 25% line, and weak (red) schools to the left of the line. In Figures 5.9 and 5.10, I would expect the opposite.
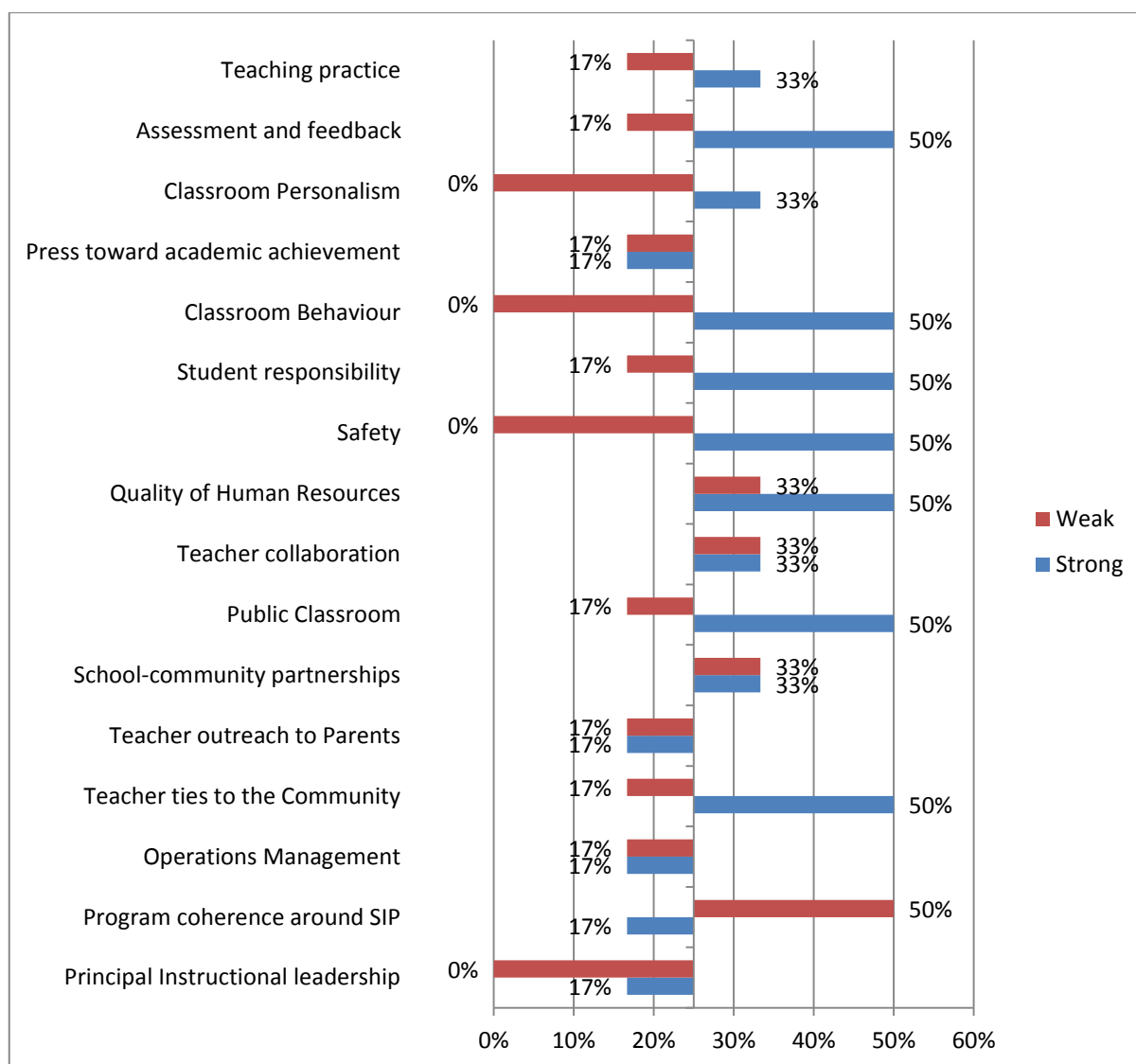
Figure 5.7: The percentage of strong and weak schools found in the top quartile for mathematics performance

While not consistent across all sixteen indicators, there seems to be enough evidence in Figures 5.7 and 5.8 to suggest that indeed, organisationally strong schools are more likely to be high-performing schools than weak schools. In particular, *Assessment and feedback, Classroom behaviour, Student responsibility, Safety, Public classroom* and *Teacher ties to the community* seem especially predictive of performance in both maths and English. Notably, *Program coherence around the School Improvement Plan, Teacher collaboration* and *School-community partnerships* do not appear to be linked to performance.
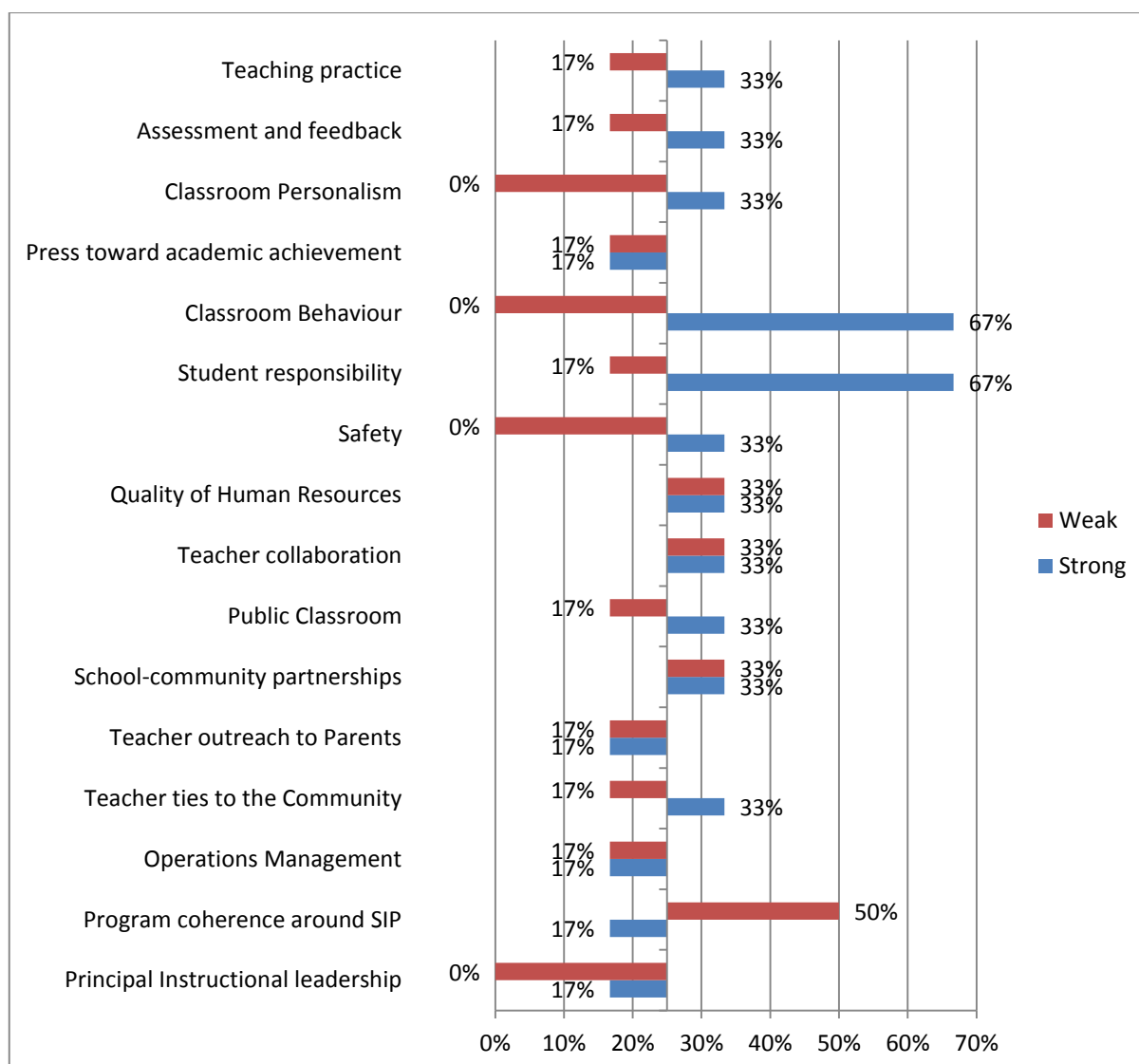
Figure 5.8: The percentage of strong and weak schools found in the top quartile for English performance

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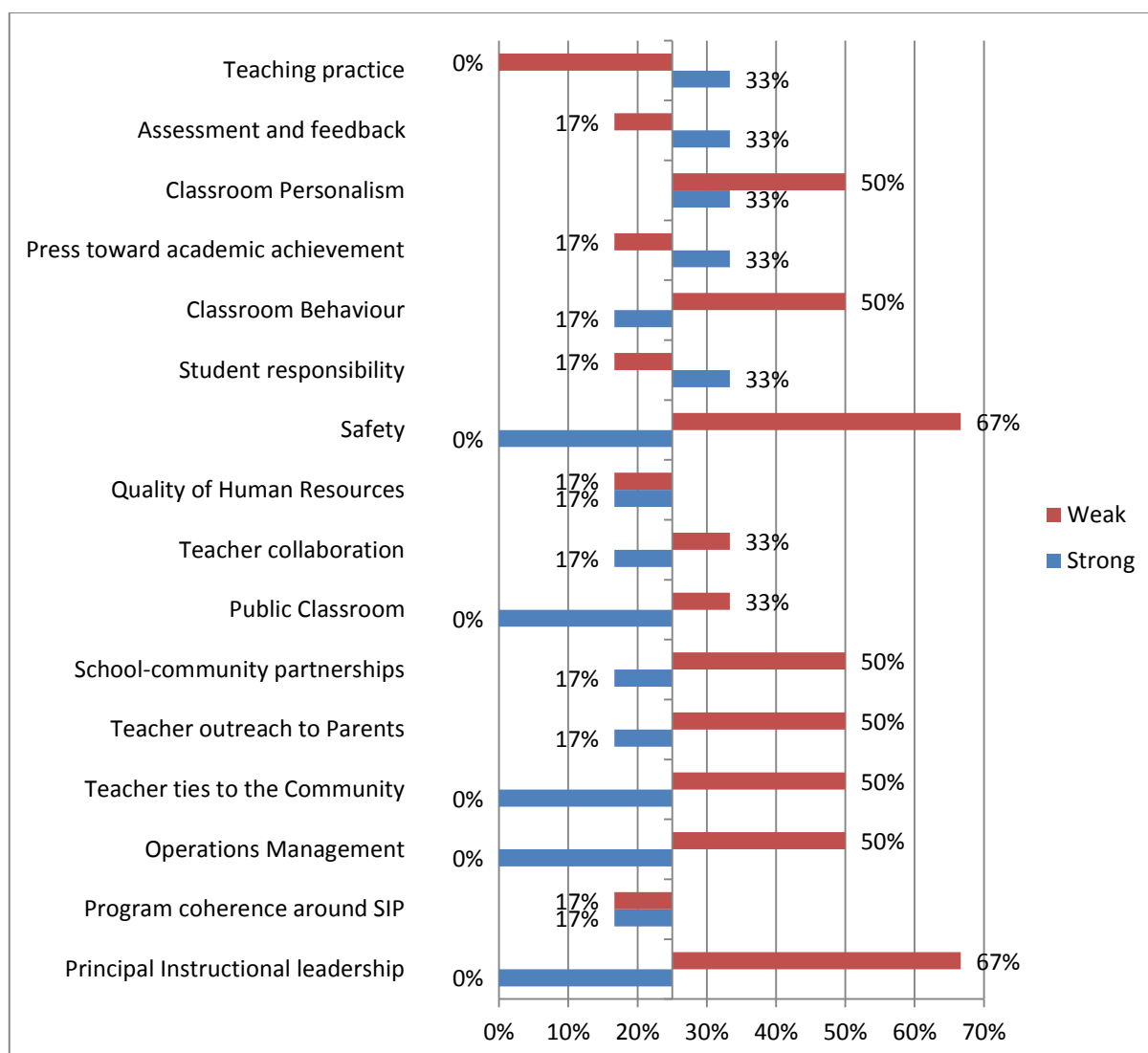
Figure 5.9: The percentage of strong and weak schools found in the bottom quartile for maths performance

Once again, the broad trend in Figures 5.9 and 5.10 appears to be in line with my predictions about stagnation, particularly so for maths performance in Figure 5.9. Organisationally weak schools overwhelmingly seem to lie in the bottom quartile of schools for performance in maths and English. In particular, *Principal instructional leadership, Safety, Operations management,* and *Classroom behaviour* seem to be particularly predictive of low performance. *Assessment and feedback, teaching practice* and *Press towards academic achievement* do not follow the same trend and may require further examination.
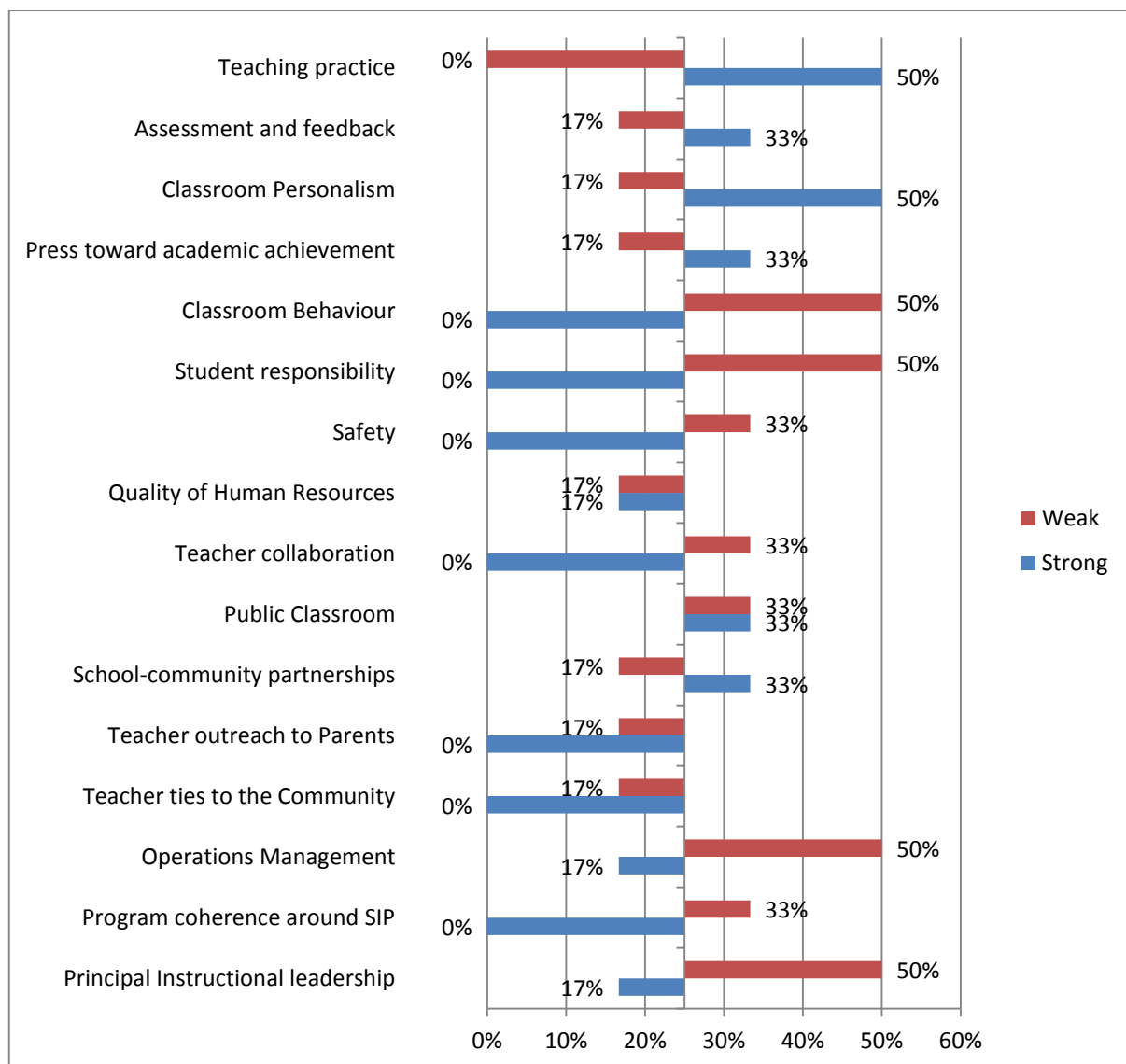
Figure 5.10: The percentage of strong and weak schools found in the bottom quartile for English performance

In summary, Figures 5.7 to 5.10 offer solid support for the premise developed by Bryk and colleagues in Chicago, and tested in a very different context here. Namely, schools strong in the Five Essential Supports are significantly more likely to perform well on external assessments than schools weak in the essential supports. Similarly, schools weak in the essential supports are far more likely to lie in the bottom quartile of schools on performance in maths and English, than strong schools.

5.2.7   Analysis of additional factors

5.2.7.1   Introduction

Several additional factors, specific to the rural South African context, were identified as part of my conceptual framework development, and the construction of the indicators for these factors was described in Table 3.1 of the Methodology chapter. The aim of this section is to explore the relationship between these indicators and the organisational and school performance measures developed elsewhere. Since most of these additional factors had poor reliability and only tentative connections between other variables, I have summarised the findings here and included the more detailed analyses (similar to that performed in Section 5.2.1) in Appendix AB.

5.2.7.2   Summary of additional factors

The following indicators seem worth exploring further, both in terms of their relationship to student performance, and more generally in terms of how qualitative analysis may shed more light on the causal linkages and drivers:

- *Home:* having electricity in the home is associated with students' perception and use of English.
- *TSPACE:* this measure of the distance from school to key facilities seems to have a number of correlations with other similar measures, which supports the validity of its construction.
- *Community consultation, School-community organisation partnerships, TTCA* and *Teacher-parent trust*: these measures of school outreach and community connections provide support for each other and warrant further investigation.
- *Class size:* the connection to maths performance is worth further exploration.
- *Language:* there seem to be important connections between teachers' language use, students' language preference and school organisation.
- *Facilities:* connections between the facilities at schools (particularly libraries), school organisation and community partnerships seem worth exploring.
- *Professional development:* the nature of professional development, and particularly how it connects to community partnerships, has emerged as significant.
- *Principal time away from school:* again, there seem to be important connections to school organisation and language.

5.2.7.3   Quartile analysis for the additional factors

The final step in the analysis of the additional factors is to perform a quartile grouping exercise for maths and English performance, using the additional factors selected for particular focus in the preceding section. The same method employed in sections three and six of this chapter will be used here. Once again, in Figures 5.11 and 5.12, if the additional factors are to be linked to strong school performance, I expect that the blue bars will lie predominantly to the right of the 25% (random probability) line and that the red bars will lie to the left. In Figures 5.13 and 5.14, I expect the opposite: red bars on the right and blue bars to the left.
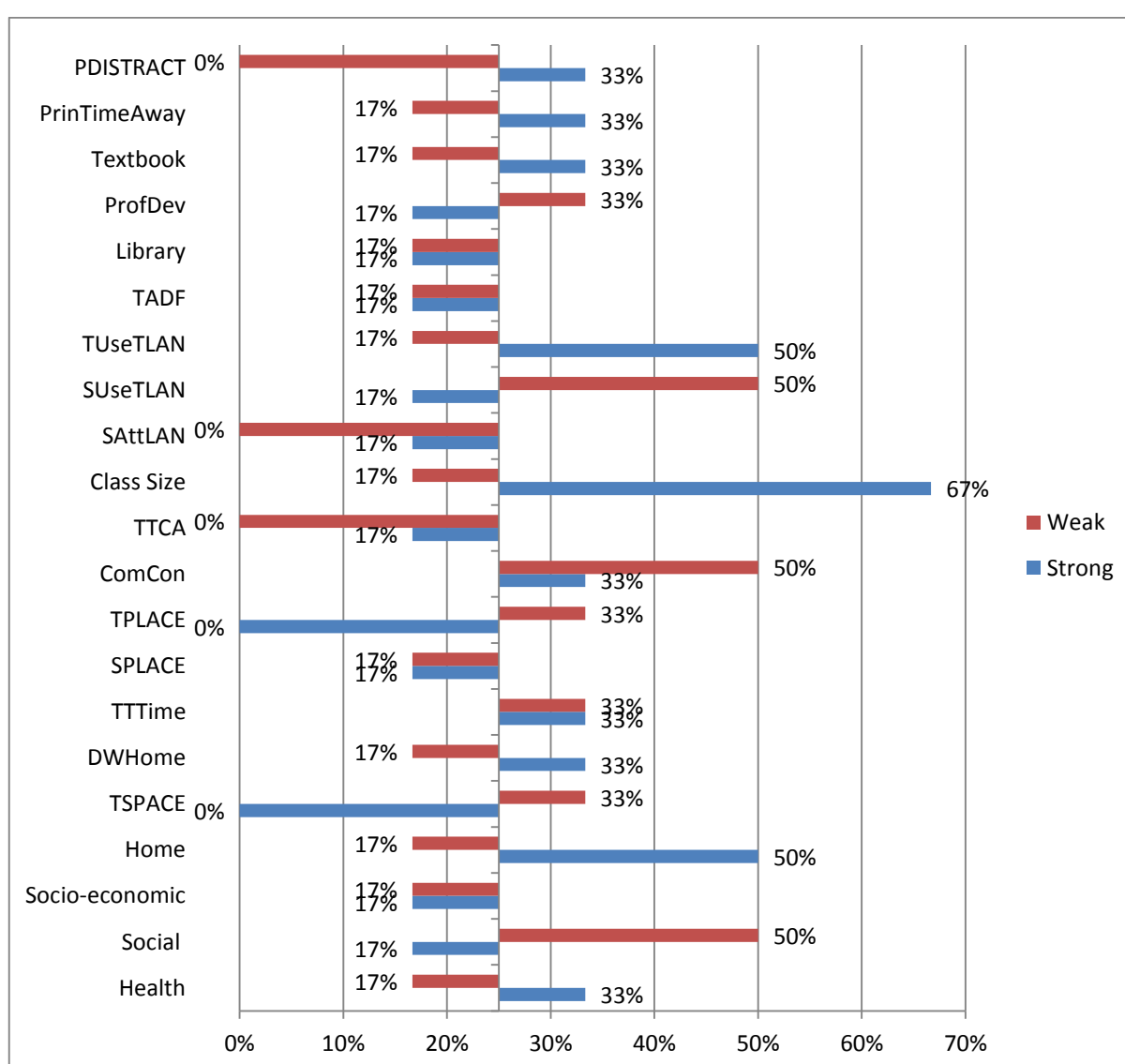
Figure 5.11: The percentage of strong and weak schools found in the top quartile for mathematics performance
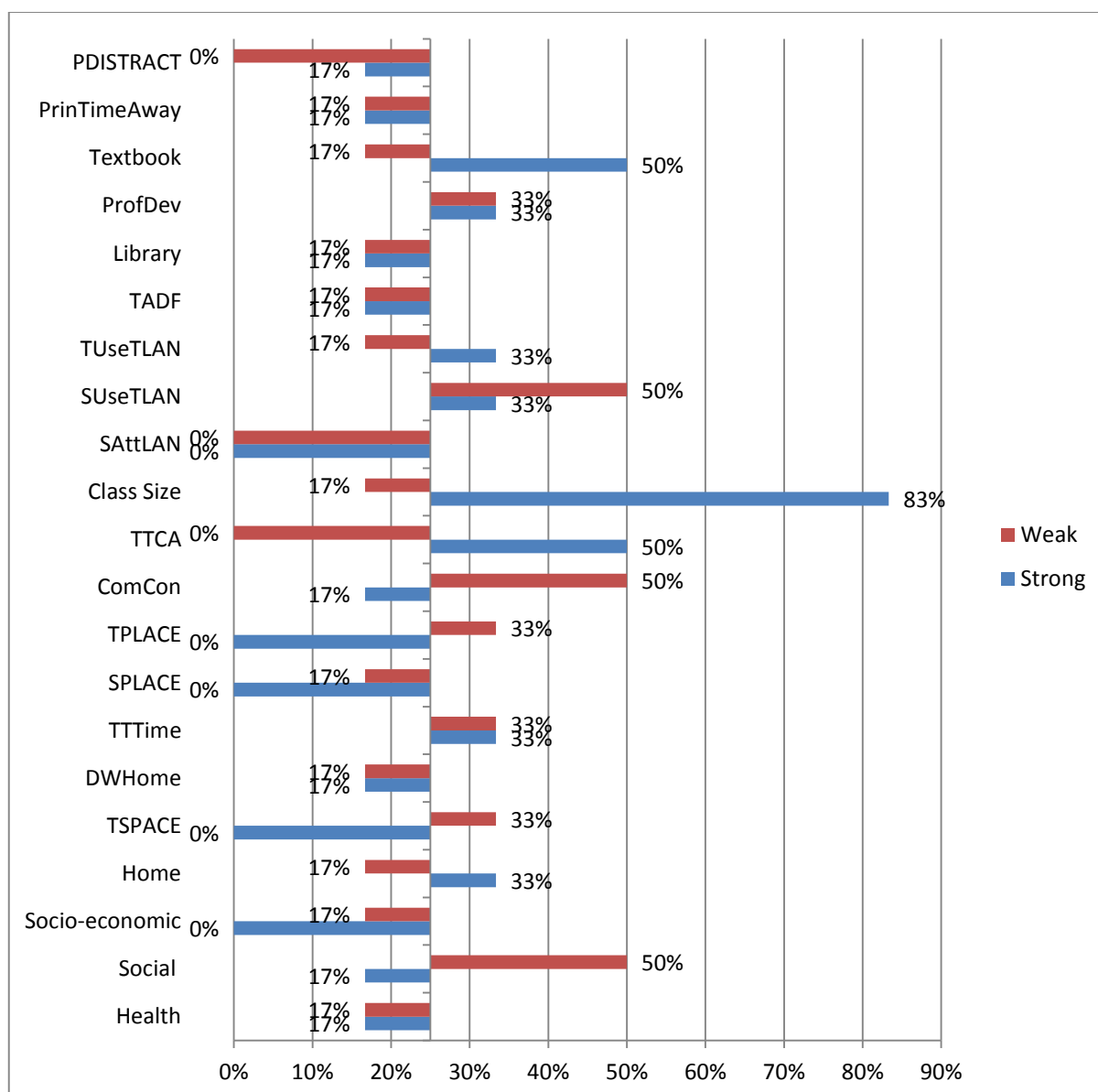
Figure 5.12: The percentage of strong and weak schools found in the top quartile for English performance

In both Figures 5.11 and 5.12 the evidence for the additional factors impacting student performance in maths and English is far less compelling than it was for the school organisation indicators explored in Section 5.2.6 of this chapter. Notable exceptions appear to be *Home (the presence of electricity in the home), Class size* and *TUseTLAN* (Teachers use of the language of instruction, as reported by teachers), which all seem to suggest that schools strong in these indicators are far more likely to lie in the top quartile for maths and English performance than in the bottom quartile. *TTCA* (a measurement of the degree to which schools make use of traditional/community authorities) may also be worth examining further.
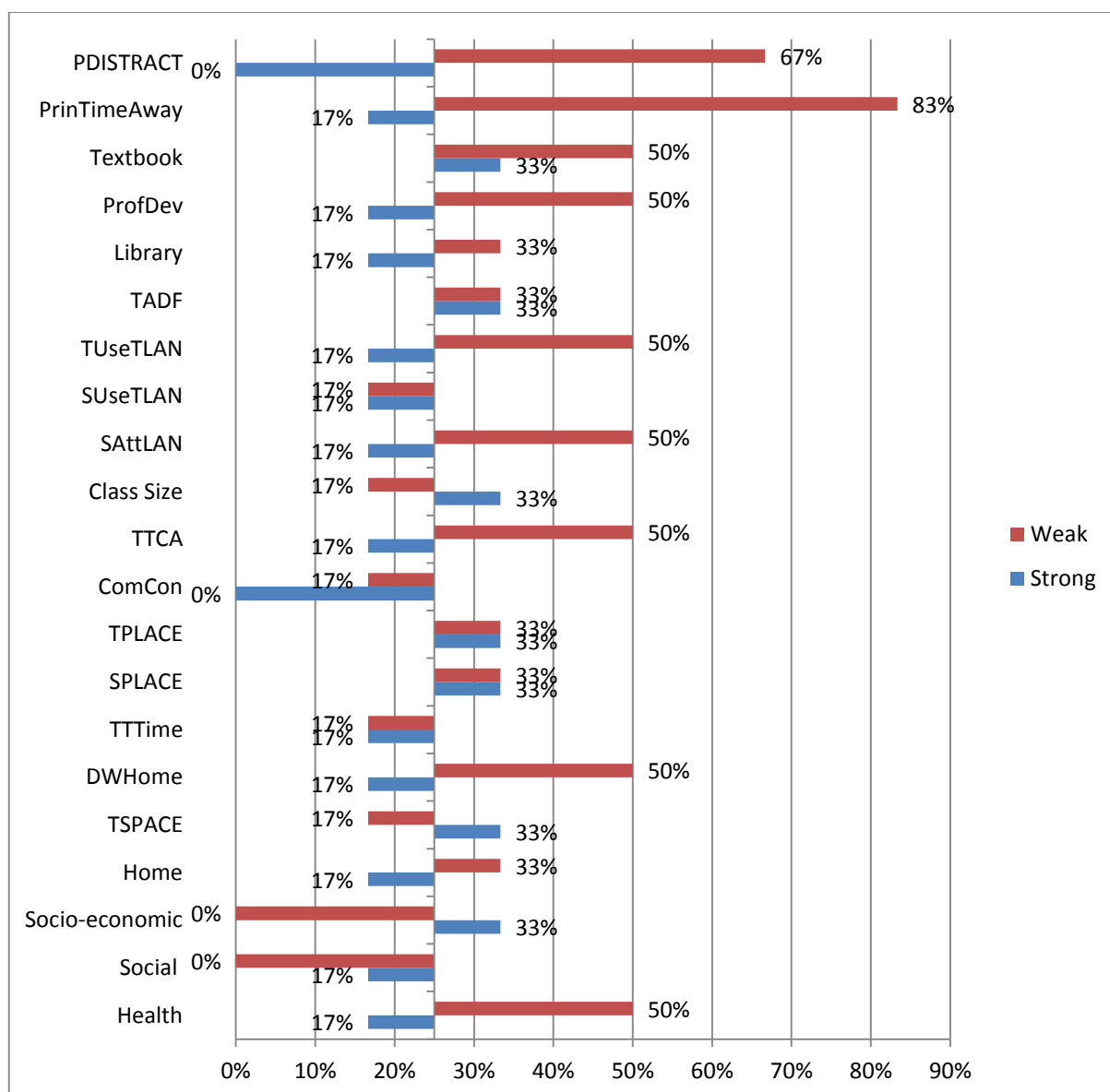
Figure 5.13: The percentage of strong and weak schools found in the bottom quartile for mathematics performance

Figures 5.13 and 5.14 present much more comprehensive evidence of the association of these additional factors with student performance. In general, schools that are weak in the additional factors seem to be much more likely to lie in the bottom quartile on maths and English performance than schools that are strong on these additional factors. This in itself is an interesting finding, since it suggests that while these factors may not impact on high performing schools (apart from the three factors highlighted above) they do play a significant role in the worst performing schools. It may be that when schools are particularly weak in these areas, their academic performance is essentially hamstrung.

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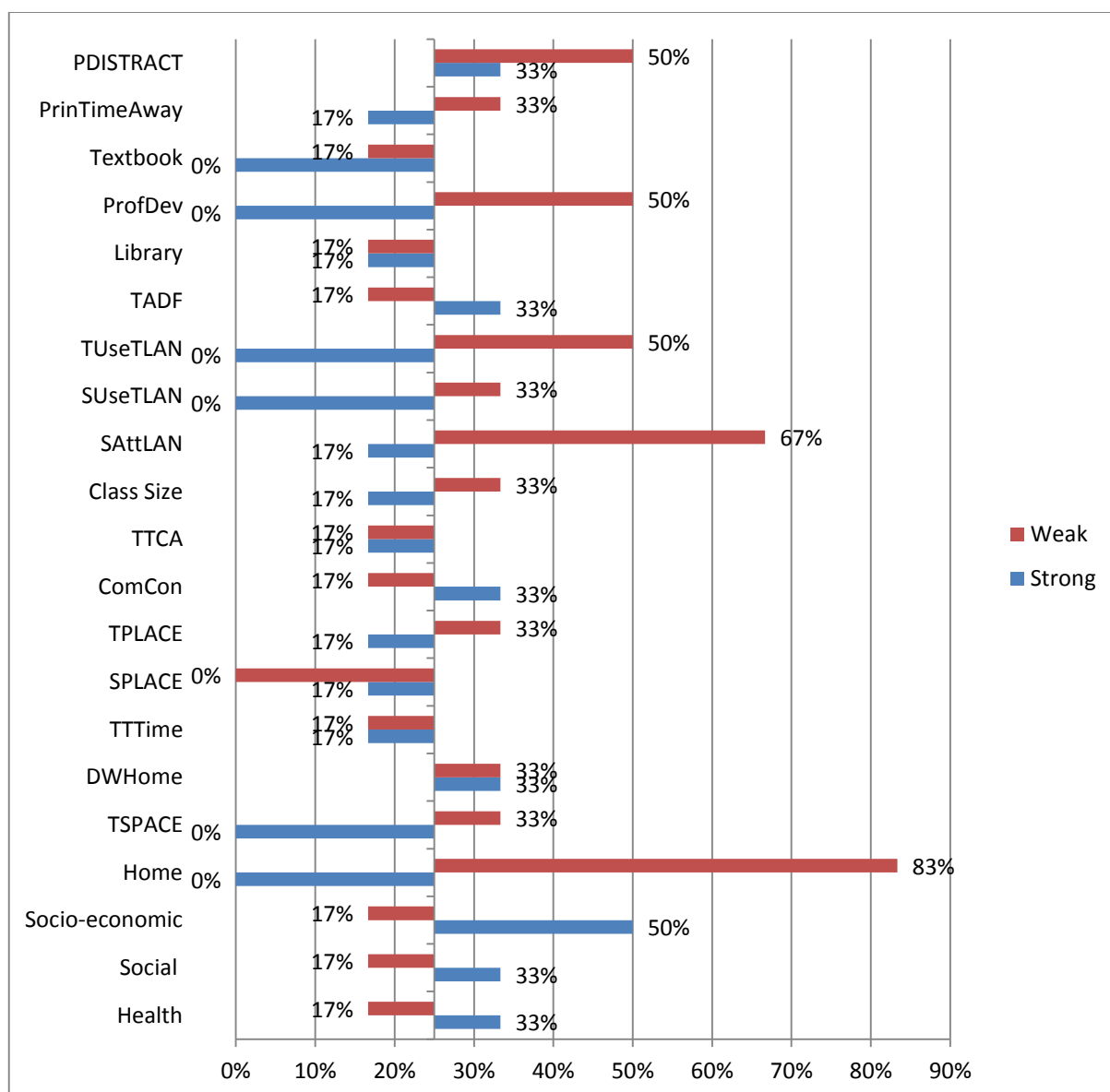
Figure 5.14: The percentage of strong and weak schools found in the bottom quartile for English performance

In particular, principal absence from school (*PDISTRACT, PrinTimeAway*) seems to be particularly important for low performing schools, as does the quality and effectiveness of the *Professional development* programme at the school. All three language measures also seem significant, with *TUseTLAN* in particular suggesting that schools where teachers teach predominantly in isiXhosa (rather than the language of instruction, English) are at least three times as likely to be in the bottom quartile on maths and English performance than those where teachers predominantly teach in English. It is also notable that Figures 5.13 and 5.14 provide some support for a deeper investigation of the three indicators identified earlier: *Home, Class size and TUseTLAN.*

5.2.8 Summary of quantitative findings

In the preceding sections I established a set of organisational measures based on the work of Bryk and colleagues (2010), and adapted for the context of school improvement in the rural Eastern Cape. I found a number of key connections between these measures. I also developed two indicators of school performance using National Senior Certificate and Annual National Assessment data. Using these school results I was able to confirm, in a very different context, a number of the findings of Bryk et al. Namely: that the organisational measures strongly connect to school performance; that there is some evidence that they are in fact 'essential' for improvement; and that they act as a system of supports so that it would be unlikely to find strength in only one of the five factors.

Several of the additional factors seemed worth exploring further based on the strong correlations with other measures and their connections to school results. Specifically, *Class size, Language* and *Adequate facilities* seemed particularly predictive of school performance. A number of other measures provided clues for further qualitative investigation in the second half of this chapter, particularly: the relationship between electricity in the home and language; professional development; community and local organisation partnerships; and language use of teachers.

5.3   Examining the suitability of the Five Essential Supports

5.3.1   The Five Essential Supports in rural South Africa

The previous section provided an overview, or mapping, of the Five Essential Supports using data generated in a very different context to that which the framework was originally developed for. It is now necessary to take a step away from the details of this analysis, in order to answer an important, more general question about the framework I have adapted in this thesis. The critique of much research that has originated in developed countries and then been transplanted to developing countries, is that the transfer process between the two is not simply a case of contextual adaption, but in fact that two different paradigms exist, requiring entirely different frames (Hargreaves, 2012; Gallie, 2014). Taking this point seriously, it is important to first examine

the warrant I have for using the Five Essential Supports in this new context, before I can return to my analysis of rural schools.

There is a significant body of evidence, collected over the past twenty years in Chicago and more recently elsewhere in the U.S. that validates the premises underlying the Five Essential Supports. Namely, that these five factors – leadership, school-community ties, professional capacity, learning climate, and instructional guidance - are strongly linked to school improvement (or stagnation). Among other findings, Bryk and colleagues have managed to convincingly demonstrate that the five supports: are linked to gains in student attendance and achievement; act as an interactive system of supports; and are catalysed by leadership. Given the robust evidence collected for all of this in the U.S., an interesting secondary objective of this study has been to establish whether these same findings could be replicated in a very different context.

The lack of a credible testing regime in the lower grades in South Africa, comparable to the Iowa Test of Basic Skills used in Chicago, has been one of the major complications of this contextual difference. As has been discussed at length, the ANAs in their current form simply do not (and are not at this stage intended to) provide a reliable assessment of student performance in the early grades of school. In the absence of a 'gold standard', I have been forced to make the best of what *is* available and use some discretion in doing so. On top of this, the relatively small number of schools in my sample and the low number of teacher responses from some schools has further reduced the kinds of claims that my data can support. I have also adapted some items and measures to better fit the context, to the extent that the surveys conducted and the analysis processes followed would not stand up to rigorous comparison with those used in Chicago.

Despite all of these cautionary notes, there is enough in my findings to suggest with a fair degree of confidence that the Five Essential Supports hold promise for application in the rural Eastern Cape. In support of this statement, I draw on five findings from the Rasch and statistical analyses presented earlier in this chapter:

1   The high degree of correlation between measures within factors (see Table 5.1) suggests that the factor constructs 'hold together' well. All of the factors had at least one (usually more) internal correlation between measures. For example, *Teacher ties to the community* correlated

with both *Teacher outreach to parents* and *School-community organisations partnerships*, suggesting that the **Parent-community ties** factor had significant validity.

2   Secondly, there were important correlations between factors. The **School leadership** factor had correlations with **Professional capacity, Parent-community ties** and the **Learning climate** measure of *Safety.* Similarly, there were connections between a number of measures of **School-community ties**, **Professional capacity** and **Learning climate**. These findings are very much in support of those demonstrated by Bryk et al. (2010:77).

3   When the six core organisational measures were compared with student results (Figures 5.1 to 5.4), there was good evidence to suggest that schools strong in the supports were more likely to be high-performing schools. Similarly, schools weak on a measure were more likely to be low-performing. The *Teaching practice* measure was the one exception to this trend. When these tests were extended to include all 16 organisational measures, a similar, but less conclusive pattern emerged.

4   There was also good warrant for the idea that the supports work together as a system, so that strength in any one support is likely to be accompanied by strength in others, as demonstrated in Figures 5.5 and 5.6. Conversely, it would be unlikely to find weakness in one support and not in others. This again supports the findings by Bryk et al. (2010:94).

5   An analysis of the errors associated with my data confirmed my concerns regarding reduced reliability. In general, once potential errors were accounted for, the strength of the relationships between student performance and the organisational measures was substantially diminished. Having said this, Sebring and Luppescu, two of the authors of the CCSR study, have suggested that the burden of proof for a small-scale study pilot such as mine is also much less (Personal correspondence, March 2014).

Together these five findings provide good backing for the applicability of the Five Essential Supports to school improvement in the rural Eastern Cape, with some consideration for the additional factors discussed in the next section. In Appendix AA, I have made further comments about specific organisational measures that seemed either to fit well, or require more work, which may be of interest to readers wanting to develop the framework further.

5.3.2 The additional factors

In addition to the core organisational measures based largely on constructs borrowed from the CCSR, I have argued for the inclusion of several additional factors that make allowance for the unique characteristics of education in rural South Africa. When these factors were measured, some significant correlations were established between these measures and other important variables, the details of which I have summarised below and in more detail in Appendix AB. In addition, when these measures were examined alongside school performance measures in Figures 5.11 – 5.14, there was considerable evidence for the effect of these additional factors on the English and maths scores of the lowest performing schools (but less convincing for the top quartile schools).

The results of these analyses suggested that in particular three of these measures were worth further investigation: *Home, Class size* and *Language use of teachers*. Indeed language more broadly (including student usage) was identified as a critical factor, and was one of only a few measures that were directly correlated with performance in English. The implications of these findings for schools are discussed in Section 5.5. Here I simply motivate for the inclusion of these three variables in any future Rasch-type models developed with rural, developing context applications in mind, and refer the interested reader to Appendix AB where I present the basis for this motivation.

The question then remains: what about the other additional factors? Is there no merit in their inclusion? A basic answer is that there simply isn't sufficient evidence available to make the kinds of strong recommendations that I have made for *Class size, Language* and *Home.* Instead, each measure requires some further interpretation or testing. For instance, the measures of **Deep disadvantage** (apart from *Home*) did not appear to form meaningful constructs, but, as I've pointed out, this may well be because the schools and communities I am looking at are reasonably homogenous and form a tiny fraction at the bottom end of the wealth spectrum in the country. It may be that in a wider survey of schools from different contexts, these factors become significant. I therefore suggest they be retained for examination in future studies and I have provided further comment in Appendix AB.

In summary, I would suggest that in most cases (apart from the three I have identified above) the additional factors *do* have a bearing on schools' organisation for improvement, but that the impact

is experienced through a novel dimension of existing measures of the Five Essential Supports. I have thus suggested that they be included in future iterations of these measures. In a handful of cases I have motivated for the inclusion of an entirely new measure, or for a measure's inclusion for further piloting with a wider variety of schools. In general, the Rasch measures for the additional factors had low reliability (PSI) and poor fit statistics, so I would recommend extensive field testing of any of these that are included in future applications. At the end of this chapter I pick up more detailed analyses of two of the additional factors that emerged as key themes from both the qualitative and statistical findings: *language* and *infrastructure*. *Interactions with the department* also came through strongly, and this is picked up in a variety of places in this chapter and the next.

5.3.3 The use of ANAs as a school performance measure

Thus far I have focussed on the implications of this study for the development of a model for rural school improvement, aligned to the Five Essential Supports. The findings in Chapter 5.2.2 also raised interesting questions about the use of the Annual National Assessments as a school performance measure. In order to use quantitative frameworks that employ test score data to measure student progress, such as the CCSR framework I have adapted here, a trustworthy, standardized testing regime is a necessity. According to the DBE's website (2015a), "The ANA will be used to measure learners' progress and to establish the level they are performing at." My findings call into question the reliability, and hence the usefulness, of these assessment tools in two ways.

Firstly, the 2012 and 2013 ANAs contained vast quantities of missing data for the schools in my sample. Some schools were missing entirely from the data set and some schools were missing results for particular assessments in particular grades. In addition, the numbers of students enrolled in the school did not always match with the numbers of students enrolled to write the ANAs. Further, the number of students who actually wrote the assessments tended to be substantially less than those enrolled to write: in 2012 about 85% and in 2013 only 38% of those enrolled actually wrote (of my sample). It is difficult to know whether the missing data is a fault at the school level, or in the collation of the data at district level, or in the actual data set supplied to me from the DBE. Regardless of where the porosity occurs, all of these missing data points diminish the reliability of the results.

Secondly, my analysis of the national, provincial, district and sample school means for the ANAs and NSC examinations, displayed in Tables 5.4 – 5.6, suggested sharp incongruence between results at Grade 9 and Grade 12 levels. I suggested a number of alternative hypotheses for why this might be, but was forced to conclude that some degree of inflation was occurring at the school level, whether intentional or through poor adherence to the marking memoranda. The situation of marking of the ANAs at the school level obviously opens up the possibility for this to occur. This is consistent with my observations of school mark manipulation in other situations[44]. Again, regardless of where, how or why these irregularities are occurring, they compromise the reliability and validity of the ANAs as a tool for measuring learning.

This is not to say that the assessments cannot fulfil some important functions at the school level. I found a degree of consistency in the ANA results across years, subjects and grades (see Appendix T), suggesting that if manipulation was happening, at least it might be happening consistently. If schools treat the assessments with integrity – at least internally – and with a desire to learn from them, there is much potential for student and teacher feedback and learning. The National Education Evaluation and Development Unit's report on the Foundation Phase (NEEDU, 2014) has suggested as much, and the feedback from teachers I interviewed was mostly positive, suggesting that they now "know where they stand". However, the DBE's claims of moderation at district or provincial level should be seen in the light of my findings, which clearly point out that moderation has *not* been effectively done across schools.

The purpose of these assessments is important, particularly in the light of my observations about doxa and the hierarchies of the department that follow in Chapter 6. There is an extensive set of evidence from the US and elsewhere that demonstrates that high-stakes testing encourages unwanted behaviour – from 'gaming' the system, to teaching to the test, to outright cheating (Jacob, 2005; Amrein-Beardsley, Berliner & Rideau, 2010). At the moment, the ANAs are explicitly not a tool for learner progression and promotion, nor is there any official indication of the results being used to punish poor performing schools (District officials are to use them to design school

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[44] End of term reports collected from schools on a routine basis by my organisation, often feature discrepancies between 'actual' results, and those submitted to the department. This is not to say that this constitutes 'cheating' per se, as schools are allowed some leeway in how they treat individual cases, particularly when it comes to the promotion of students from grade to grade.

improvement plans according to the DBE website). However, given the picture I will paint in later sections of the distrustful and at times antagonistic relationships between schools and the district office, it is not hard to understand how schools may want to alter the results to make their students look better. Anecdotal evidence from other provinces suggests that the ANAs may be beginning to be associated with department punishment for poor performance (Majake, 2013:55-62). While there is any doubt in teachers' minds about the purposes of these assessments and how they may be used by their superiors, the assessments are unlikely to have the desired impact on learning at the school.

The flip side of this is also important: that for government administrators, researchers and others interested in broad performance measures, the ANAs in their current form are simply not the tool to use. I have attempted to make the best of the data available to me, dealing with the porosity and questionable reliability of the ANA data, as well as creating a composite set of student performance measures to straddle the junior-senior divide. Not for one second, however, would I suggest that this is an ideal scenario. If further validation work is to be done on the Five Essential Supports in South Africa – or indeed any framework requiring this kind of rigorous, performance-based approach - a more robust set of national performance measures will need to be developed.

5.4 Adding texture to the Five Essential Supports using interview, observation and survey data

Up to this point the description of the findings from the survey data, Rasch analyses and statistical investigations has clung quite closely to the approach of Bryk and colleagues (2010), and as such has been far-removed from the context from where the data was sourced. The aim of this section, then, is to add texture and depth to this fairly stark mapping of rural schools' organisation. To do so I examine aspects of each of the Five Essential Supports as they emerged from the interview and observation data. While these different forms of data provide some triangulation and flesh to the 'barebones' of the Five Essential Supports examined in the previous section, another intention here is to generate a picture of rural teachers and schools that will be fruitful for the discussion of habitus and doxa that follows in the next chapter. What I hope will unfold in the sections below is an idea of what each of the Five Essential Supports looks like in this particular context.

5.4.1 Leadership

While lacking the longitudinal data necessary to validate Bryk and colleagues' (2010) claim – that leadership drives improvement in the other supports - in the first part of this chapter I established a similar set of connections between leadership and a number of key organisational measures. The next step is to probe the qualitative data for themes that might provide evidence of the mechanisms that drive these relationships. Emerging from my interviews were descriptions of leadership practices that differed markedly from school to school, with some practices clearly appearing more effective than others. In particular, school leaders[45] seemed to play a crucial role in: establishing learning climates of order and control; facilitating productive interactions with parents; attracting and recruiting high quality teachers; 'fighting' for teachers' well-being; improving school infrastructure; and maintaining a presence at the school despite numerous distractions. Each of these leadership practices will be examined in turn.

Order and control: creating the climate for learning to occur

We make sure that the main thing is that teaching is going on. – Lumka, HOD and Maths teacher
ECZ023

My visits to schools for survey administration and collection – around 100 visits to the 25 schools over the space of about five months – suggested to me that order and control of the basic functions varied tremendously from school to school. Students' being out of school or class during official teaching time was a pervasive phenomenon, observed at almost every school I visited. This ranged from a handful of students taking extra time out of sight by the bathrooms or behind school buildings, to full scale chaos throughout the school grounds. When the latter occurred I saw no evidence of teachers attempting to instil order or even simply monitoring the situation. This sense of 'discipline', as many teachers referred to it, was a topic that came up over and over again in the interviews, usually without any prompting from me.

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[45] In this thesis I make use of the term 'school leaders' to include those with formal leadership roles, either through their job title (principal, deputy principal, head of department) or their involvement in the school's senior management team (SMT). While it is true that all teachers are leaders to a certain degree, I have chosen to focus on this particular sub-set of leaders as the easiest to identify. Conversely, I sometimes refer to 'teachers' in a general sense, which may include all those at the school who are teachers (whether qualified or not), which would include the principal.

(In response to what he sees as his school's strengths) *Attendance. Discipline. Even if we are not here at school, the students know what to do…. My teachers they know what they are here to do. They must go to their classrooms. Learners must be in their books. Seriousness. The students know very well what they need to do. Students must take responsibility. Even when teachers are not there.* – Gcobani, Principal ECZ023

Since the sample of teachers I interviewed was skewed towards those in management roles, monitoring and control quickly emerged as possibly the biggest theme, and seemed a core issue. Most of these school leaders listed 'monitoring' as one of their most important functions. When I probed what this entailed, they generally suggested three levels of monitoring: making sure students and teachers were in class; making sure that teaching was actually happening in these classes; and thirdly, making sure that the teaching that happened did so in a way that ensured that the curriculum was covered. Many of these school leaders described a 'successful day' as simply one where these three things happened.

The way that many leaders described their monitoring role gave me the sense that they felt that they literally needed to be walking up and down outside classrooms a few times every morning in order for the school to function properly. Gcobani suggested that even this was not good enough: "Even when in class – I must monitor teachers so that they are not just sitting, but actually teaching." The principal of ECZ026 takes this one step further in describing a teacher, who they had found teaching outdated content: "These things happen when you are relaxed, not checking", she said. Lumka, an HOD at Gcobani's school, describes the environment as "quiet, serious", summarising management's role as:

The management is making sure that teachers are in class and the learners are learning in class. We as management, we tell the teachers that we are going to do this… (monitoring) Everyday they are aware. We (taper) off monitoring after a while, but step up again when we see things are starting to get slack. – Lumka, HOD and Maths teacher ECZ023

There is a real sense from all of this that these leaders believe - I assume based on experience - that if they do not perform their monitoring duties, the school will quickly slide into chaos.

If this monitoring role of school management is so crucial, what happens in schools where formal management roles are absent or thinly spread? It was noteworthy that Bandile of ECZ003, a huge junior secondary school with over 1300 students, when asked about the climate of his school said that they were lucky that they had a full management structure (because of their size) and thus were able to effectively monitor curriculum coverage, because everyone knew their specific roles. This implies that smaller schools with fewer management posts, or schools with unfilled posts (not uncommon) may encounter difficulties in this regard. The burden for monitoring then falls on fewer shoulders. When these key people are absent, there is a very real likelihood of things falling apart.

While the relationships presented in Figures 5.7 and 5.8 do not provide much support for the importance of leadership influence on learning in schools in the top quartile, there was, however, fairly dramatic support for its influence on the lowest performing schools (Figures 5.9 and 5.10). These findings support the international literature (Leithwood, 2008) that suggests leadership impacts learning indirectly through other mechanisms, particularly in this case *Classroom behaviour, Student responsibility, Assessment and feedback, Safety* and *Teacher ties to the community*, which were all strongly linked to student performance. All of these can conceivably be traced back to the role of instructional and transformational leadership at the school – in other words, both direct involvement in improving the instructional effectiveness of teachers, as well as creating the right institutional environment for quality teaching to occur.

In addition, these results suggest that while effective leadership may go almost 'unnoticed' in schools that are performing well, its absence has a damaging effect on student performance. If school leadership's core function is to maintain order in an entropic world that can quickly descend into chaos if left untended, then student learning must suffer severely at schools with weak leadership. There is support for this idea in the fact that three of the measures that were identified as strongly connected to student performance – *Classroom behaviour, Student responsibility* and *Safety* – are measures of the **Learning Climate**, and are essentially a good proxy for this idea of order and control that emerged so strongly from my discussions with teachers.

Several South African authors have noted the importance of the basic functioning and control of schools (Christie, P; Butler, D; and Potterton, M., 2007; Fleisch, 2008; Taylor & Prinsloo, 2005). Indeed, in *Schools as (dis)organisations* (1998), Christie's point is that in many South African schools

dysfunctionality and disorganisation are the defining features of school life. Jansen's (2002:54) analysis of accountability in the teaching profession paints the picture of schools as sites of protest and disruption under apartheid, with this legacy continuing in different shapes and forms into the new millennium. Finally, Heneveld and Craig (1996) include 'Order and Discipline' in their framework for developing country school improvement, and I would suggest that this is particularly important in South African rural schools. Against this background, my interviews were bursting with confirmations of the centrality of the role of leaders in establishing order and control, and the very basic processes of monitoring teacher and student absenteeism, presence in class, and curriculum coverage.

The final point on leadership's connections to order and control has to do with school safety. Box 5.1, in the next section, presents the disturbing statistic that 45 % of students surveyed said that they *never* had a place where they felt safe from violence and abuse. This is in line with a recent Child Gauge report estimating that over 50% of South African children suffered physical abuse from caregivers, parents or teachers (Jamieson, Lake and Smith, 2014). The clear statistical relationships I established between leadership measures and *Safety*, together with the legal mandate we know principals have to create a safe environment for learners (South African Schools Act, No. 84 of 1996, 1996:16A), place a significant burden on school leaders to do more for their students, both while at school and on their way to and from home.

Facilitating productive relationships with parents and community members

The second feature of leadership in this context relates to the tone that is set by the principal and others in leadership when it comes to community and parent interactions. I expand further on the spectrum of school-community relationships in Section 5.4.3, but here I suggest that effective school leaders promote: a welcoming atmosphere where parents feel valued at the school; an intentionality about educating parents in the ways in which they can support their childrens' learning; and, an openness for community members to become actively involved in the school. Cindy captures something of this patient, affirming approach that she and other leaders at ECZ003 seem to encourage:

You want the third leg (parents) so that we all push in the same direction. They cannot talk openly to their children. Sometimes it is not a case of talking about educational issues (with parents). You want the parent to be aware: "Are you aware that your child is not doing my work at school?" It's not that you want to talk about teaching, you want them to be aware of behaviour, to be engaged. Parents don't know their role, to say: "no, this is not allowed." … You must be very patient because the school belongs to the community. The teachers cannot work in isolation - the school belongs to the community - they must know (this). – Cindy, Deputy ECZ003

Caring and fighting for staff

Given the challenges faced by teachers in these schools, principals must use what means they can to create specific conditions at their school that might encourage good teachers to apply. …' Principals also play a critical role in the hiring of good teachers. Two examples will suffice to show this. Gcobani, principal of ECZ023, is the best example of creating this positive, attractive climate, viewing his most important job as "fighting" for and looking after his teachers:

I have to see that my teachers are comfortable…. They must be happy. If the teacher is unhappy, he must come and talk to me - whether (about) personal (matters) or in the (about?) classroom (matters). – Gcobani, Principal ECZ023

Elsewhere in his interview he describes having (provincial/national) award-winning teachers as part of the 'shining star' vision he has for his school - so clearly he sees part of his schools' success wrapped up in the success of his teachers. Gcobani sees his role as a continual fight with the department to give him the teachers he wants: "I always say to them: give me teachers and fight with me if I cannot give you 90% (pass rate)." Similarly, motivating teachers is important:

When I talk to them I always tell them that, whatever you do you're not doing it just to be here, you're preparing to get out there to show the world what you are capable of. Whatever you do you are preparing yourself for the better position. So get committed. Do whatever is in front of you. – Thandi, Principal ECZ026

According to Cindy, the principal of ECZ003 has made it clear to her SMT that: "I don't want just any teacher. You must recruit the teacher that will do the work perfectly." She has developed a reputation for researching potential candidates and recruiting them from the top private schools in Mthatha. Bandile, whom I interviewed, is an example of one of these recruits. It should be noted that these are the exceptions; the more general attitude towards recruitment seems to be one of fatalism – in most of my interviews the discussions on recruitment were dominated by the many reasons why teachers would not want to work at their schools, and the frustrations with the departmental post system.

Improving school infrastructure

The statistical association of leadership with the presence of a library at a school (a proxy for *'adequate facilities'*) suggests that one of the functions of effective leadership in these schools is the development of infrastructure. Exceptional leaders seemed to be able to secure some form of facilities upgrade, whether through 'fights' with the department, generating community support for their building plans, or shrewd use of the limited discretionary budget[46]. This point is supported by my interview with Gcobani - clearly the best example of these effective leaders - who was also one of the few principals who could articulate a plan for infrastructural development at his school. Evidence of this development drive were the plaques on the wall from former projects, as well as a new private sector-funded science lab under construction at the time of the interview. Since schools routinely seem to levy a 'building fund' from parents, the connections I established between leadership, infrastructure and ties to the community seem particularly pertinent here.

Maintaining a presence at the school

Schools with principals who were regularly away rated low on all three leadership measures. The principal's physical presence at school thus seems to be a key component of effective school leadership, and when s/he is away often, the entire school suffers. This is particularly the case in

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[46] Indeed, some schools in dire need of buildings have been known to take funds from their LTSM budgets to build much-needed facilities.

small schools where the management team consists only of the principal and full-time teaching staff.

The data from my original set of interviews did not reveal much detail about the nature of principals' and teachers' absence from school, and so I arranged a single interview with a teacher, Phumlani, from school ECZ024, which was one of schools that showed up as having high levels of principal absence in the statistical analysis. This school is also one of the furthest away from department offices in my sample. Phumlani estimated that he was absent from school on average once a month for departmental reasons (moderation, memorandum coverage, etc.), in addition to the odd errand that he ran for the school, since he was one of only two teachers who owned a car.

Phumlani had also been involved in assisting his principal with transport to and from Mthatha and so could speak with some authority regarding principal absence. He estimated that his principal was away from school about three days of every week. Phumlani did not seem to think that any of these trips were anything other than justifiable school business, usually involving meetings with the department, resolving school-related issues such as teacher posts, or hand-delivering or – collecting documents (especially exams) from the district office.

Given that ECZ024 is located a full 90 minute drive away from the district office in Mthatha, any meeting involves at least half a day away from school, and this may explain why the school rated so highly on the measure of principal *Distraction*. Phumlani described waking up at 5 am each morning to drive to Mthatha to collect exam papers and back in time for a 9h00 exam, and then repeating the 3 hour round trip with the scripts in the afternoon. This seems to occur for all Grade 11 and 12 exams, at considerable fuel cost to the school. When the kind of road conditions – pot holes, mist, animals, pedestrians – are taken into account, it is no wonder that many teachers describe this journey as stressful, and to be doing this road four times a day is demanding for those involved. Needless to say, such high frequency of principal absence, even if for valid reasons, has severe consequences for leadership and learning.

Having discussed leadership as the first of the Five Essential Supports, I now turn to the second, school-community ties.

5.4.2 School-community ties

This section contains considerable detail about the few schools that seemed to get relationships with the community 'right'. Witten (2010) argues that in contexts of deep disadvantage, schools need to view themselves as 'community schools', where their role is much broader than a simple focus on teaching and learning, and involves connecting to the broader community. Of the three schools that seemed to prioritise community relationships, all had some evidence of the impact these relationships had on the school. ECZ023 seemed to be able to harness parental support, particularly in Grade 12, in order to create a hard-working climate that placed high expectations on students to, amongst other things, attend after-hours classes. At ECZ026, parents and the community seemed to take responsibility for the care of grounds and buildings, as well as the motivation of students, and it certainly came across as the most orderly and cared for of the schools I visited. Both of these schools lie in the top quartile of the student performance measures. At the third school, ECZ003, however, the situation is more complex. Their reputation – a term I discuss at length in a later section – amongst parents is a good one, to the extent that they are by far the biggest school in the area with over 1300 students. Yet they are among the worst performing schools on all of the ANAs I examined. So the relationship between student performance and school-community ties is not a straightforward one to untangle.

In the statistical analysis in the first part of this chapter, schools' relationships with parents and the community emerged as a key differentiator between strong and weak schools. The next questions to probe are how do these relationships with the community play out at school level, and how they contribute to school improvement? Overall, what stands out are: lack of home support for most of the schools, the importance of value and support, and examples of proactive and educational interactions. Each of these will be considered in turn.

Lack of home support

Almost all teachers across the different schools in the study cited lack of support from the home as one of their primary obstacles. Box 5.1 gives some sense of these challenges from the home, as described by the student survey data.

BOX 5.1: Summary of survey data on students (N=604)

- When asked to think of only ONE parent/guardian, **12.3% of Grade 12 students and 22.3% of Grade 9 students stated that these people were working at the moment**.

- Less than 3% of Grade 12 students stated that **their parent/guardian had completed a Bachelor's degree or higher** (almost 50% did not know the educational level of their parent).

- 5% of Grade 9 students knew their parent/guardian had **completed a Bachelors' degree** or higher (again a high percentage, 30%+, did not know).

- Nearly 60 % of Grade 9 students **spend more than an hour travelling to and from school each day** (33% spend more than two hours). 40.5% of Grade 12 students spend more than one hour travelling to and from school each day.

- 67.5% of Grade 9 students and 83% of Grade 12 students **spend an hour or more on household chores** each day.

- 59% of students say they **NEVER had access to running water** from a tap at home (12% say they have running water 'almost always').

- 56 % of students **NEVER had electricity at home** (29% indicate they have electricity 'almost always').

- 25 % indicated that they **NEVER had access to sufficient space and light to work** at home.

- Only 8% and 13% indicated they **had access to a computer and the internet** (respectively) OFTEN or ALMOST ALWAYS.

- 45 % of students indicated that they NEVER had **access to a place where they felt safe** from violence and abuse.

From conversations with teachers, there seemed to be three broad categories of home support that seemed to be lacking. Firstly, home environments tended to lack the kinds of stimuli that might promote learning, like books, toys and games. Secondly, teachers spoke of a lack of educational values engendered at the home, so that school was often competing with household activities and chores for students' time, and little interest was shown in the students' school work. Noluvo suggested that many students leave their bags overnight at a home near the school and collect them again the next morning on their way to classes. Anele complained that students seem to 'throw away their books' when they reach home – they play games, fetch cattle and generally forget about all things school. Interestingly, some of the older teachers viewed the dearth of educational values in the community as a relatively new phenomenon – fifteen or twenty years ago they claim this was not the case. Thirdly, there seemed to be a lack of tangible support from the home in terms of responsiveness to requests for meetings, help in disciplining students and contributions (financial and other) to the improvement of the school. In Cindy's words, 'nobody pushes (at home); it is only the teachers that push.'

Feziwe and Cindy summarise some of the challenges of engaging parents:

> *Parents are illiterate, so (there is) no urge to push them (students). Children tend to lie to them (parents). When we call them (parents), they do not come. When they do come, they say they don't know what their children are doing - they do not like to push their children, (to) check on how they are studying, to work hard. – Feziwe, Principal ECZ018*

> *Most of the kids here stay with their grandmothers. The school tries to speak with biological mothers when they come from Marikana, Cape Town… It is not easy to communicate with parents. They are busy with their household things. – Cindy, Deputy ECZ003*

How then do teachers respond to these challenges? Most schools seemed to view parents as a problem. There were some exceptions, however, from which I draw out several attitudes and practices that seemed productive. Firstly, schools with relatively healthy relationships with parents and the community seem to see the building of these relationships as part of the core business of the school. They value and respect parents as equal 'co-owners' of the school. The principal of ECZ026, a good example of a school with strong school-community ties, explains this well:

We have good relations. You know I used to watch - when I am in class - and I am watching some teachers talking to visitors. Yes! At least they make everyone feel accepted and welcome - the community members.

CP: How?

Greeting the parent…. You know the people of this area; they have a way that they feel comfortable when you talk to them. Holding them with their hands. (Taking my hand as she speaks) You know when you shake hands with people they feel good, so nice. And they feel this person is so good, so nice. Even if you didn't do anything nice. "Unjani. Ndiyaphila." So other teachers say: "Wooooooo those hands - you're never washing those hands." It's an insult to them (the parents), because they were never educated about washing hands... But insulting a parent and saying "how can you bring that dirty hand to me" - that's what happens at other (schools). And the parents even told us - you guys are so sweet, so great. So, I think, those relations (are one of our strengths). – Thandi, Principal ECZ026

Gcobani echoes this sentiment:

When they (parents) are here at school I say to the other teachers, we must get them coffee… I cannot sit with them for more than three hours without offering them anything. We are looking after them. – Gcobani, Principal ECZ023

Another important part of creating this sense of respect and school ownership in the community seems to be the graduations, celebrations and prize-givings to which parents and the wider community are often invited. These are big affairs, with food, entertainment and tents laid on, and often cost in the region of R10-20 000 - a significant portion of a school's budget. There is also the cost of lost academic time in preparing for these events. Yet, the repeated reference to the importance of these types of events by teachers (and the vehemence of parents' reactions when it was decided to cancel one at a local pre-school), suggest that these form an important part of the school's outreach to parents.

Proactive and educational interactions

In addition, some schools seem to see part of their role as being intentional about educating parents. By this, I do not mean formal adult education programmes, but rather educating parents about the role that they should be playing in their children's education. Mhlobo, pointing out shortcomings in his school's relationships with parents, suggests the school should be more active in educating parents about how they can help their children. Cindy, in the earlier quote, is more specific, suggesting that conversations with parents need not focus on educational content, but should lead parents to take a more active stance towards checking on and encouraging their children's efforts at school.

Since many of the parents are uneducated themselves, often they are intimidated by the education of their children and feel unable to engage with this world. The principal of ECZ026, who referenced community relationships frequently in her interview, was able to quite clearly articulate their strategy for educating their parents:

> *Parents from this community (are) not learned, so (it) takes time to understand, (you) have to go (the) extra mile to explain each and every policy, make them understand where you need their support. They don't think by themselves, you need to assist them. Even taking care and helping the kids, you have to tell them: "when the child comes to school please check his or her books, are they marked? A cross means they didn't get the point. So look at it and assist the child. Give them time to study." We are telling (them) all these strategies (for) how to help the child. Otherwise they don't mind letting the kids spend their time collecting the cows.* – Thandi, Principal ECZ026

For schools that seem to be able to develop constructive relationships – in particular three of the schools I visited - the benefits are substantial. Gcobani states that parents help him with the discipline at school (one gets the sense that many schools try to outsource their use of corporal punishment to the home) and that parents phone him to tell him about students that are not at school. The attendance at his school's Grade 12 parent-teacher meeting is exceptional (over 90% according to Lumka, Gcobani's HOD) for this area and he seems to be able to leverage this to create a shared home-school-community focus on supporting their matrics as they prepare for their final

year examinations. Many teachers referred to the supportive role of the SGB, particularly in communicating messages to the wider community.

School ECZ026 provides an example of what is possible when these relationships are prioritized. The school lies nestled in a beautiful valley at the foot of a precipitous drop-off from the plateau above. The road to get to the school winds down this pass in hair-raising fashion and is impassable for vehicles in rainy weather. Teachers often must complete the journey on foot when it rains, and school closes when the rivers swell. Traditional rural life still holds sway, with students regularly missing school for agricultural reasons like sheep 'dipping'. So the school does not have much going for it in terms of ease of access for teachers, connection to the outside world, or 'professional' school rhythms and routines. Yet the principal had a revealing story about the school's interaction with the community. In 2012 the school's finances were under strain and they no longer had funds to pay for security personnel (most schools here have 24 hour security staff). So the principal approached the community, and in particular the young men who used the school's football field on an adjoining piece of land, to help them solve their problem. She pointed out to the community that in fact this was their school and that they were free to use the field and the school hall for community purposes, but could they take responsibility for looking after the property? The result has been a vibrant and successful (there have been no incidents since and the young men even effected some building repairs) partnership.

When I asked her about her school's relationships with parents and the community, she captured this spirit of cooperation eloquently:

> *The SGB members, they felt it necessary to come - I indicated, I put the idea in them, that we would love to hear from you. We'd love to see you. We'd love to hear your word. Even the kids would love to hear your words. We always talk to them (students), don't do this, this is not right for the school... but if one of the parents would come every week, Monday mornings and address them. It will be much better. And they do that. And they come and say "We are here to see that you are all OK, teachers. M'am is everything going well?" Yes, they talk to learners, and talk even to us. (CP: That's the SGB, what about parents?) Parents come to check the progress of the learners. And we say: "you are welcome to come." So they do come.* – Thandi, Principal ECZ026

5.4.3 Professional capacity

According to Bryk and colleagues (2010), the third of the Essential Supports, **Professional capacity** consists of four elements: the quality of human resources, the frequency and quality of professional development, professional dispositions, and professional community. Possibly the defining feature of the teachers I surveyed is the remarkable homogeneity of their backgrounds. Box 5.2 captures something of the similarity of experience of rural teachers in their schooling, further education and work.

Teacher background

BOX 5.2: Summary of select survey data on teachers (N=165)

- 80 % of teachers indicated that ***they matriculated from a rural school like the one they now teach at***;
- 85.7% of senior secondary teachers and 69.8% of junior secondary teachers ***agreed*** or ***strongly agreed*** that ***their background was similar to their students'*** background;
- 40 % of senior secondary teachers and 46 % of junior secondary teachers ***had only taught at the school they currently teach at***;
- 80 % of senior secondary and 96 % of junior secondary teachers ***had only taught in Eastern Cape schools*** – the remainder seemed to have gained their outside experience in other countries (rather than provinces);
- 69 % of senior secondary teachers and 76 % of junior secondary teachers had ***no work experience outside the field of education***;
- 50 % of teachers ***did not have a Bachelor's degree*** (62.5 % of JS teachers and 8.6 % of SS teachers);
- Of the 50 % of teachers with Bachelor's degrees, ***the vast majority (76%) attended Tier 3 universities*** (the lowest tier in my framework).

The following description by the deputy principal and maths teacher at one of the senior schools seems typical of the background of most teachers:

> *I'm from Tsolo, Qoqwana location, that is a rural area. I studied at Lower Koqwana JSS and from there to Cisa Senior Secondary School in Tsolo. Then from there to Transkei College of Education. I studied there CHED, that is College Higher Education Diploma. (From there to) Transkei College of Education in Mthatha now part of WSU. Then I started here in 1997.* – Daniel, Deputy ECZ018

The path is a familiar one: from a rural area to a rural school; from a rural school to a local college of education or university; and back again to a rural school.

According to the teachers interviewed their parents came from a variety of backgrounds - some educated, some not – but all seemed to value education and were influential in their children's decisions to study further. For example, one of the teachers mentioned that although his parents were not educated, they were "amakumsha" (associated with Christians or "educated ones" among the amaXhosa[47]). There was an almost physical sense of cultural capital transfer in the confidence and comfort of the interviewees. The few that came from uneducated families, where they were the only degree holders, were reticent and had difficulty expressing themselves. In comparison, those that came from second generation university families were far more comfortable – of course, this may have been more to do with their language abilities and confidence in English, but the issues are not unconnected.

It was common for siblings to also have an influence on teachers' choices about tertiary study. In some cases it was the older siblings that motivated the younger ones to study. In other families, where money was tight, strategic choices were made about who should study, sometimes at the expense of the education of others. The most striking example is of Gcobani, the fifth of eleven children of uneducated but influential trading store owners. He was the first to graduate from

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[47] Early missionaries from Europe brought formal education as well as Christianity to the area and many of the foremost schools in the Eastern Cape, such as Lovedale and Healdtown (where Nelson Mandela attended), were mission schools.

tertiary education, but pushed all his siblings to eventually graduate, including his youngest brother, now a neurosurgeon in Mthatha.

At the same time, all teachers spoke of the constrained environment of choice. Many shared Mhlobo's story: *"I won't lie, I never chose to be a teacher. Teaching found me."* In fact, only one of the fourteen teachers indicated that teaching was their first choice career. Those growing up under apartheid talked about the limited options for study, particularly for women, which were typically confined to nursing, police, social work and teaching. Even those growing up in the 1990s, or later, experienced a similar restriction of choice; no longer for political reasons, but because exposure to other careers was (and continues to be) so limited in the rural areas. Overwhelmingly, the reasons for choosing teaching were linked to financial necessity, with many interviewees mentioning bursaries that were available for study at colleges and universities.

Similarly, their reasons for choosing where to teach were often out of financial necessity. Bandile talked about how the state system, with its security of tenure and pension, lured him from a prestigious private school in Mthatha to the school he is now at, more than an hour and a half commute from his home. In general, teachers seemed to have had little choice about where they began their teaching career, taking any available job, regardless of the distance from home, or the quality of the school. Since a relatively high proportion (over 40%) of teachers surveyed were in the same school that they'd started at, this original choice of school seems unusually important.

Despite the fact that all but one teacher had not originally chosen teaching, most teachers indicated that they now enjoyed teaching and all alluded to at least some aspect of the job that they enjoyed – for example, "the kids" or "the staff". They admitted, however, that the elements of the job that were particular to rural schools – for instance, the long commute, poor infrastructure, or local living conditions – made the job very strenuous or stressful.

When asked why they stayed at the school if there were all of these challenges, some talked about the difficulty in moving schools, given the inflexible nature of the Eastern Cape's post provisioning. One particularly demotivated principal lamented:

There is nowhere else I can go. I just have to make it where I am. If I get a chance to get away, I can go tomorrow to where conditions are going to be better. – Odwa, Principal ECZ024

Interestingly, the few teachers that mentioned leaving the profession had all worked outside of the profession before. More positively, many of the teachers who had been at schools for significant periods of time and typically were now in management, spoke of the commitment they felt to their school and students:

I think I like this school because I started here when it was very very bad when we taught in the shacks and then the school developed. – Daniel, Deputy ECZ018

We have come a long way… you don't want to leave after 3 years… I want to see that what I am trying to plant, I see the produce. – Cindy, Deputy ECZ003

I know that I can make the difference to them. I am thinking of these learners. If all of us will go to Holy Cross (a good school in Mthatha)*, what will happen to these learners down there? I am thinking of the learners from this community here, where are they going to get these mathematics and physical sciences.* – Lumka, HOD ECZ023

Teaching is my job, I like it. I always believe challenges can be overcome. There was a time when I wanted to resign. When I told my parents (of the students at her school) *they were crying. I felt so bad for (the) learners.* – Thandi, Principal ECZ026

From these and other teachers there exudes a strong sense of pride for what they have accomplished, of how far the school has come, and of the genuine care and commitment for the school community. This is particularly the case for the number of teachers and principals who had been involved in the founding of schools. These schools had often been started in mud buildings or huts built by community members and have now grown into large institutions serving hundreds (and in one case thousands) of students. These teachers also display a sense of the importance of their work; they fully believe that they have positive influence and are improving the lives of their students. The fact that this is not necessarily evidenced in their schools' results is an interesting point linked to a range of issues, including teacher motivation.

Teacher motivation

Although I did not ask directly about teacher motivation, it was relatively easy to obtain a sense of this during an hour long interview, and it seemed a key component of the 'professional capacity' of teachers. Teachers often talked about their feelings of efficacy and success through the lens of student results – either matric pass rates, or in the case of junior secondary school, pass rates in particular subjects or learning areas. Since few schools in my sample could be considered 'high-performing', this relationship between school results and teacher motivation is noteworthy. Teachers' sense of not being supported by the district office often exacerbated their difficulties:

> *If we see a car or twin cab[48], you see everyone going to their files, because they harass us. They are not supporting. They are intimidating us. They are always pointing out what we do wrong… but not giving you any information about how to do it right.* – Mhlobo, Science Teacher ECZ003

Many teachers spoke of their frustrations with school and departmental promotion policies that merely transferred the problem of at-risk students from grade to grade. Senior secondary school teachers were particularly scathing of the level of students arriving in Grade 10, who had supposedly passed their Grade 9 year with decent results, but in reality were completely unprepared.

> *They are lacking the basics - the foundation is not conquered. When they come to grade 10 they can't even write their name. Especially if they are having those mini-alphabets… (they) can't even make a sentence in English.* – Onezwa, Science Teacher, ECZ024

The point here is that if teachers view their success as linked to student performance on exams, there are very few positive feedback mechanisms in place (in other words students do not perform well at school, do not achieve after school, and remain in their communities as a reminder to teachers of the futility of their work), and I will pick this up in the next chapter when I discuss habitus and doxa.

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[48] Most teachers take public transport, in the form of a minibus taxi, to and from school each day. Visitors arriving in private vehicle are thus usually identified as department officials.

Considering that 60 % of teachers surveyed reported that their home was more than 50 km from their place of work, teachers also tend to work relatively long days - if you include the one to one and a half hour commute at the beginning and end of each day. It is not uncommon for teachers to leave Mthatha at 6 am and return to their homes well after 5 pm. Those staying close to the school will often be charged with managing the afternoon 'study' period that is common for Grade 12s, and sometimes other grades as well. At least two of the schools spoke about night classes (sometimes student-led only), which also required managing. All the senior schools had some form of Saturday classes to support particularly the Grade 12s, but often as a routine form of 'catch-up' with other grades as well. So while it is true that during my observations schools would often start late and end very promptly at 14h30 or 15h00 (and on Friday this would often be more like 12h00) so that teachers could leave, teachers experience long days and weeks, particularly at senior secondary level.

The employment environment is also one of uncertainty and instability. Many school leaders referred to the difficulties in advertising and filling vacant posts. Temporary teachers have been employed and then redeployed numerous times over the past few years (Mannya, 2012; Makupula, 2013). Onezwa described the very poor pay she received as an SGB employed teacher at ECZ024, often the only route in to a job for new teachers. These employment conditions add to the sense of stress and frustration for teachers.

The final point on teacher motivation is that the physical environment plays an important – and often subliminal – role in how teachers feel about their work. My school visits took me to classrooms that would not be fit for animals to live in. The quotes from Onezwa, Feziwe and Odwa below, are revealing about the connections between environment, motivation and professionalism.

> *Now that we have a decent building, the job is really enjoyable. But when I think back to when we taught here and there was just a ground... (we) used to teach in an old stable with no door. Animals used to shelter there. Then (there came) temporary structures and shacks.*
> – Feziwe, Principal ECZ018

It's not a good thing to come to a school with broken windows, potholes inside classroom(s), no electricity. It even makes you relaxed in terms of attire - wearing less professional (clothes) *because it seems as if you are going to the field whereas you are going to the class. Because the environment is not a class environment.* – Onezwa, Science teacher ECZ024

Discouraging, not motivating (in response to a question about the environment)*. I have to try and get something somewhere else to motivate me. When you are going to a job you must be dying to be at work, but when we are going to work it is killing us.* – Odwa, Principal ECZ024

Clearly the physical environment impacts how teachers feel about their workplace, themselves and the work that they do. In overall terms, teachers in these schools experience a heavy commute, substandard living conditions for those that stay locally, job uncertainty, large classes, lack of student success and antagonism from the department. These living and working conditions provide the basis for a particular habitus and doxa, as will be analysed in the next chapter. Needless to say, teachers responded to these conditions in different ways, some seemingly accepting and others determined to bring change - and it is to these teachers and leaders that I move to next.

Exceptional teachers, exceptional early experiences

As I interviewed teachers and principals, it became clear that some individuals were outliers. Their attitudes and actions were in stark contrast to the apathy and fatalism that marked the majority of my encounters with teachers during interviews and observations at schools. There was often evidence of the effects of these remarkable people – in stand-out student performance in their subjects or overall at their schools; in the way that other people referred to them or their teaching or their school; or simply in the atmosphere and physical appearance of their classroom or school. In some interviews, it was a particular attitude or approach rather than the person as a whole that seemed exceptional, and so I've tried to pull out these common experiences, characteristics or traits, to try to paint a picture of what these people look like in this context. Generally these exceptional teachers collected in one or two schools, usually high-performing (or at least in the case of ECZ003, there were strong elements within the organisation of the school, even if its performance on the ANAs was low), and usually around a strong leader.

Many of these teachers had an experience of an exceptional 'other'. By this I mean that most of the exceptional people I interviewed had experienced – usually early on in their education or career – something out of the ordinary course of life in the Transkei. So while their background *in general* may have been remarkably homogeneous as described above, somewhere in their life journey they were exposed to a different kind of school, or university, or field of work. This seemed to have given them an entirely different set of expectations about what was possible for them and for their schools, and served as a reference point for the rest of their careers. The most common example of this was early work, or teaching practice experience at one of three top schools in Mthatha - but the list of these exceptional experiences included tertiary study at one of the out of the 'ordinary' higher tier institutions, or work in the private sector.

For instance, Gcobani had worked as an administrative clerk at Bandingville High School and later took up his first teaching post at St. John's College, Mthatha – two of the three schools mentioned frequently by interviewees as high-performing. He describes himself as "shivering" with fear when he heard of his appointment at such a demanding establishment, but later reconciled himself saying, "No, I can do this. I've never been a failure". This says much for his character, but just as revealing are the constant references to St. John's throughout his interview. When he founded ECZ023 in the early 1990s his thoughts were that he would "make ECZ023 to be the St. John's of Mqanduli." And indeed the school today is the envy of other rural schools in the area on any number of indicators. Having a powerful experience of high-performance early on in his career certainly seems to have played a pivotal role in shaping his expectations and vision.

These experiences of 'other' were not confined to education. Mhlobo, by reputation and by results the stand-out maths and science teacher in the region, does not have a teaching qualification. He finished his secondary education at an FET college and did various technical qualifications before deciding to return to school to complete matric. He then studied a diploma in metallurgy at the University of Johannesburg before taking up work in industry. Finding himself out of work, he began tutoring students privately in Mthatha, before being recruited to teach maths literacy at ECZ023. Within a year he had been entrusted with teaching Grade 12 maths and science, where he took the physical science pass rate from 14% to over 90% within the space of a few years. When his principal describes him he refers to Mhlobo's exceptional commitment to his students and his drive to see them succeed. Mhlobo himself expresses his disappointment that so few of his students go on to

study outside of the former Transkei and seem to have so little vision for themselves. It seems clear throughout his interview that he has an entirely different view of the world – possibly because of the variety of 'out of the ordinary' experiences he has had – and an entirely different set of expectations about what is possible for his students.

> *They do not know what the next step is. It is rare that you find a learner doing something different from his environment. From here… taxi rank, from here… shops - even with good results. They don't believe they can pass. I don't know about this thing of WSU* (Walter Sisulu University, the local university that is the default choice for most students) *- they always go to WSU. I always discourage them from going to WSU. If I can have one student who goes to Wits University and is doing well, then I know that my job is done.* – Mhlobo, Science teacher, ECZ023

Having said this, the story is more complex. Odwa, the principal of low performing ECZ024, comes from an educated family, with both parents having tertiary qualifications and involved at the higher levels of education. He attended Bandingville High School for his final three years of education and went on to study at Fort Hare University – possibly the premier tertiary institution open to black students at the time. He then took up a post at an elite science school near Alice and quickly rose through the ranks, eventually leaving the profession to take up opportunities elsewhere.

In my interactions with him, he came across as thoughtful and articulate and displayed all the hallmarks of his comparatively privileged education and upbringing. He currently finds himself, however, six months into the job as the principal of the worst-performing school in the district and readily admits he would transfer to another school (or preferably out of the profession entirely) at the drop of a hat if an opportunity arose[49]. His lack of motivation and distaste for the work is evident throughout. So despite plenty of exposure to 'other' worlds and possession of significant cultural resources, the impression is one of apathy and ineffectiveness, rather than the drive and determination of the previous two examples. Clearly, an exceptional early experience is not enough.

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[49] Since the time of the interview, now 18 months in to the job, he has effectively been dismissed from his post after student unrest around financial mismanagement.

Attracting and retaining quality teachers

We are always the last option to them (new teachers). – Thandi, Principal ECZ026

Sandi, deputy principal of ECZ026, relates a story highlighting the tough conditions of work that makes the attraction of new teachers difficult. A group of teachers from Port Elizabeth, who had been redeployed to teach at their school, arrived in the school's vicinity after a long journey down a very steep hill. They asked community members for directions to the school. When it was pointed out to them, the teachers took one look and returned to the city!

Retaining teachers is also difficult. Onezwa suggests that it is common for new teachers to 'grow up' in rural schools and then move to urban schools once they are 'fit'. Bandile – somewhat sheepishly - admits that he would move if he had a chance, but that moving is not that easy given the bureaucracy and politics around post provisioning in the province. The principal at ECZ024 openly says that he would move at the first opportunity.

Despite this overwhelming lack of appeal, a number of teachers describe their staff team as 'excellent', 'the best', 'dedicated', or 'would fit in anywhere'. Some of this, no doubt, can be attributed to the social dynamics of schools, where there is often a lack of discernment or distinction between social and professional regard. However, across the twenty-five schools I visited there were discernible differences in what Bryk and colleagues (2010) call 'professional capacity' – the ability of schools to attract high quality talent and then get the best out of the team they manage to assemble. Some schools seem to be able to influence these dynamics more than others and it is instructive to examine the differences.

School results (Grade 12) were used by teachers, both as one of the reasons pulling teachers to good schools and pushing teachers away from schools with poor results. Onezwa and Noluvo, both teaching at the worst performing of the schools in my sample, suggest that one of the reasons that teachers do not want to teach there is because of their disappointing results. They suggest that since teachers are judged by learner outcomes, being associated with a poor performing school damages teachers' reputations. Conversely, Gcobani cites his school's strong results as one of the reasons that teachers are attracted to the school: "…everyone wants to be associated with something that is good." Connected to school results is the complicated issue of reputation,

discussed at length in Section 5.4.5. Bandile uses the fact that they have "a good name around here" as one of his explanations for how the school manages to attract quality teachers.

A couple of teachers mention the rural allowance (talked about at national level for some time, but as yet only implemented locally on a trial basis) as a measure that would help them attract better teachers. In the absence of a meaningful financial incentive to attract and retain teachers, schools do what they can with the resources at their disposal. Teachers spoke about small 'inyama' (literally meat – possibly in the way of meals) incentives that teachers received for teaching after hours or on Saturdays. Many schools organise transport for their teachers from Mthatha, and in one case the principal actually owns his own fleet of taxis, which are used to run this route and thereby cut down some of the stress of travel for his teachers. Team building and professional development retreats were listed as some of the additional incentives used to motivate and retain teachers.

Possibly the primary non-financial resource that teachers mentioned, was the school climate or culture. Schools with a 'disciplined' or 'tight' environment seemed to be attractive, as were schools that managed to create an environment of supportive collegiality. Principals seem to be key in the establishment of such climates, and in the section on leadership I have mentioned some of the extraordinary lengths that stand-out principals seem to go to in order to attract great teachers to their schools.

The need for such extraordinary measures becomes apparent when the limitations of the post-provisioning system are examined further. Few schools can afford SGB posts, and where they exist, according to Onezwa, these posts pay unpredictably, and predictably low (she estimates around a quarter of the pay of state salaries). Vacant entry-level state posts are therefore an important attraction device that schools can use to attract good new teachers. Maternity cover is seldom a possibility, with devastating effects for students[50]. A number of (management-level) teachers spoke of the frustration around losing good teachers to senior posts elsewhere, and the fact that their school had a number of unfilled, unadvertised positions sitting vacant for years on end. Senior posts are therefore another key attraction tool. Sadly, these few critical mechanisms available to schools for attracting teachers effectively become nullified in the context of a province with continually

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[50] For instance, at three of the schools, students preparing for their final exams have lost the school's only maths or science teachers to maternity leave, with no cover available, meaning that students must fend for themselves.

changing policies and on-going uncertainty about posts. Low-performing as well as high-performing schools seemed to suffer equally from these structural issues.

Gcobani does a great job of summarising a number of the points made above:

> *(It is a) Big challenge to keep these teachers here - the schools in town want to grab them. I don't mind them going, but I always say to them: "If you are moving horizontally you should stay here." They always call me a Greek man[51], because I want them to go to class to do their job… when they run away to other schools, they say: "That man (Gcobani), he was a good man, he understands people. Our (new) principal he is a ghost." …I always fight for them (my teachers) so that they can be involved in the winter school and the marking (additional sources of income for them).* – Gcobani, Principal ECZ023

Interestingly, no teachers talked about firing or 'pushing out' underperforming teachers – certainly one of the key professional capacity levers discussed in the literature (Bryk & Schneider, 2002:53), and in my experience actively used at high-performing South African schools. When pushed to describe for me how underperforming teachers are dealt with, Cindy and Thandi both describe a remedial kind of approach that involves mentoring, 're-education' and monitoring. Whether the reluctance to take strong action is because of perceived bureaucratic barriers, socio-cultural taboos, the lack of better candidates, or some other reason is not clear. What does seem clear, however, is that firing teachers is not part of the culture of schools in this area.

Another issue, particularly it seems for junior secondary schools, is that of teachers teaching subjects that they are not comfortable with. Cindy claims: "If we could manage to let every teacher teach one of their majors (the school would be much stronger). (Many) teachers (are) teaching outside of (their) strengths." The deputy principal of ECZ026 includes in his five to ten year vision for the school, that they have qualified maths and English teachers in each of the phases. Later he uses an example of a Ghanaian[52] teacher who came and taught English and seemed to have made a big impression on him, so it seems that good teachers in these subjects are rare.

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[51] I think implying that he brings a different, foreign culture to his school, compared to other schools in the area.
[52] I came across a number of teachers from other African countries – particularly Ghana, Zimbabwe and Nigeria – who have relocated from their home countries seeking work.

5.4.4 Learning climate

Bryk and colleagues suggest that the *Learning climate* at a school consists of three elements: safety and order; teacher press and personalism (teachers that engage, stretch and support students); and, supportive peer norms (students have a positive approach to learning). In the schools I visited there was a definite continuum of school learning climates. On the one side were positioned schools such as ECZ024 and ECZ027, where the relaxed, social dimensions of school were striking. At the other end was the tight, focused environment of ECZ023, where time was clearly a precious commodity and Grade 12 results the yardstick. The differences in learning climate closely correlated with school performance. As I've mentioned, effective school leaders seemed to see the monitoring and control of this climate as one of their key duties.

At ECZ024, a small (and getting smaller) senior secondary school with a very poor student performance record, the three teachers interviewed admitted that discipline was an issue at their school. In fact, the principal was very articulate in describing both the lack of discipline at his school, and the importance of his role in maintaining this. He even contrasted his school with ECZ023, which he described as having 'discipline' and connected this to the principal, who he said was 'very strong'. Yet when it came to filling the gap between what was currently happening at his school and his own role, he suggested that he would like to be doing monitoring and be in class more, but that paperwork and department meetings took him away from the involved role that he would prefer. In the context of poor performance at his school it is difficult to know how to interpret this, but there is certainly a sense that he alone (there is no deputy and the HOD is a full-time teacher) at the school bears the full administration burden. He claims that he is away from school two to three times a week for department meetings and workshops, and his school does rank among the worst on the measures of principal 'distraction'. My observations at schools supported this theory. Many schools had a distinctly more ordered feel when the principal was there.

Absenteeism and late coming of teachers and students were common sources of frustration for school managers. Again, many teachers described a successful day simply as one where teachers and students arrived early to school and were in class promptly. Of course, the rural context makes this issue not as clear cut as might be the case elsewhere, as students and teachers travel long distances and weather plays a major role. The deputy of ECZ026 described his softening of heart

regarding the disciplining of latecomers, as he came to know his students better and the distant areas they travelled from.

Daniel (School ECZ018) indicated that dealing with latecomers was his most difficult job, and that the school didn't really know how to deal with or discipline late students. They use 'frog jumps' – students must jump across the quad like frogs (with the intention that this is humiliating or physically demanding?) – as punishment, but he said that students seemed to enjoy this! "You have to be consistent, be there every morning," he says. This lack of conviction around discipline policies was a common theme at other schools. Feziwe (also at ECZ018), when asked to describe an excellent school in the area and what they did differently, chose Gcobani's ECZ023 as her model school:

> They get good results, but have different policies. He uses the switch (stick for corporal punishment). The principal could be taken to jail for this. I don't want to be taken to jail – we resort to parents. But the learners don't respond to parents.

She was the most forthright in her analysis of the situation at Gcobani's school, but by no means the only teacher who insinuated that things were different there because of the use of corporal punishment. His school is not alone – I witnessed and have been told of numerous instances at a variety of schools, where corporal punishment is still alive and well. My sense is that schools struggle to find a credible alternative that works. And it is often the parents that drive this.

Despite the picture painted above, I saw enough to suggest that, in the absence of disruptions, school days could be reasonably 'normal'. Classes could run more or less according to the timetable; students and teachers could be in class most of the time; and I assume that at least some learning could be happening inside these classrooms. The problem, as I saw it, was not that normal schooling did not happen, but that it did not happen enough. Disruptions, instead of being exceptional, seemed to be part of 'the new normal'.

Over the roughly six month time span during which I was in and out of schools for data collection, the list of 'exceptional' disruptions to normal schooling is extensive: sports days, sports tours, literacy festivals, spelling competitions, preparation for exams, exams, marking of exams, report writing, ANAs, marking of ANAs, Mondays, Fridays, the start of long weekends, CAPS training, other

teacher training, preparation for moderation, moderation, IQMS, celebration days, prayer days, graduation days, students away for 'dipping' days (cattle/sheep dipping, involving most students in the school, reportedly happened every Wednesday at two of the schools I visited, although I was unable to verify this). And, of course, funerals. Given that all of the above typically involve multiple days, it is fair to conjecture that more days in a term are disrupted days than normal ones.

A classic example from one school (ECZ010) occurred when I was trying to arrange for a good day to visit the school to set up the surveys with students and teachers. The principal listed the events for the week ahead: Monday was, well, Monday and not a good idea; Tuesday the principal was away at a moderation meeting; Wednesday the whole school was attending a memorial service; Thursday was a sports day with another school; and Friday was, well, Friday. Of course, good schools in suburban areas also deal with sports days, moderation, exams etc. The difference seems to be that the capacity to make 'normal' schooling happen in the face of disruptions doesn't seem to be there. Often it is only the principal away, or a few teachers, or a few students in a sports team, or a few hours of the day, but the result is extremely disruptive with many students out of class and/or school during school hours. This is complicated by the travel time that can turn a one hour meeting in Mthatha into a whole day affair.

These observations were supported by teachers that were interviewed. Cindy indicated that her idea of a successful day was one with no interruptions - nobody selling life insurance, no outsiders, etc. She conceded that initiatives like LoveLife were important for the students, but nevertheless she was happy when there were no interruptions to her day. Similarly, Feziwe suggested that she could do without the disruptions that sport caused to the routine of the school. Spillane, Parise and Sherer (2011) discuss the importance of organisational routine in school change processes and suggest that some constancy is needed for change to take effect. It makes sense, then, that in this context of constant disruption, the capacity to effect change is severely undermined.

A recurring theme in my interviews was the contrast between 'serious' or 'disciplined' schools and the 'relaxed' atmosphere at 'those other' schools. In particular this comparison was made when discussing junior secondary schools. Gcobani gives an example of this relaxed behaviour when I ask him what he would like to spend less time on:

Sitting in the staffroom without anything to do. Some of the principals they go there (staff room), sit down and talk gossip with the teachers. I don't like that. I have to go there and motivate them and make sure they are doing their job.

He continues, describing other (different) schools:

They are not using my approach… their kids are relaxed. Whether the kids come to school or not come to school it is all the same. Even the parents they are relaxed. (The) Problem lies with the principal. I always say I see my school shining. (I have) Vision. – Gcobani, Principal ECZ023

Feziwe, as a former junior secondary school teacher, now the head of a senior secondary, is well-positioned to talk about the differences in levels:

If I was taken back to junior secondary level it would be difficult for me because I would be bringing the hard working (attitude/culture?) to them because they are not used to hard working. Even their learners when they get to Grade 10 are lost. They are used to the relaxed…. They come here with good reports, but when we take them they don't have good backgrounds. More teachers at junior secondary need to be finding out more about senior.

She blames this difference in approach between the levels of school on the department of education, claiming that they are not putting pressure on the junior secondary schools.

In a senior school situation - SASAMS (the data capturing system) is putting pressure, because (it is) recording tasks that students must do. – Feziwe, Principal ECZ018

Cindy, a former secondary school teacher, now the deputy of a junior secondary school has more sympathy. She relates that when she made the change of schools, she was very interested to understand why the junior secondary schools seemed to lack 'seriousness'. She says that it is because there is no final 'purpose' (exit exam) at junior secondary level, and that it is hard to be strict with the younger children.

Department support and accountability

The role of the department in shaping school learning climates is worth further exploration. Teachers' responses to questions about the department ranged from vociferous criticism to mild appreciation. The latter tended to come out from teachers lower down in the school hierarchy, and my sense was that they were saying what they felt they were 'supposed' to be saying. In contrast, most of the principals complained about what they perceived as a lack of awareness and effort from department officials:

> *This is a noble profession; our government is not appreciating what our teachers are doing. Teachers need more support. (We have) Not enough teachers, no support from the department. No books, no materials. You cannot produce results from nothing. –* Gcobani, Principal ECZ023

> *The department of education is very frustrating, especially in the Eastern Cape. There is nothing that encourages you to do your best here - because of all these problems that the department is having. I don't think the department takes teachers very seriously - the way we are treated. After studying, having degrees, etc., (the) remuneration is not commensurate. People with no degrees earn more. SA does not take education very seriously. This is contributing to the way teachers are working - they are not 100%. They are being forced to work - not working willingly… (talking about post provisioning and the temporary nature of the job) shouldn't be treating professionals like that. It shouldn't be like that. –* Odwa, Principal ECZ024

> *District officials aren't doing their job. If the manager of a school is relaxing and does not care then the whole staff will relax and not care - then district officials should be going down there, coming down here, not calling us to come to them. They haven't visited us in years, when they do come, they just sit here (in office) - ask to see teachers and files - anyone can make a file! Teachers are good at manipulating. I (if she were in the official's position) would be going to the classroom to see whether the file matches what goes on in the classroom. –* Thandi, Principal ECZ026

These sentiments were echoed by a number of teachers. Many seemed to resent what they considered unfair pressure being placed on them to produce results from nothing. In particular, they took exception to two, common (but unhelpful) practices: meetings in Mthatha called by the department, and school visits. The following quotes help to illustrate the attitude that many teachers have towards these practices:

> *Even if my subject does well but the school does badly we will still get in trouble - because you are the school manager…. Superiors will come and ask a lot of questions of us. (We) Feel very, very bad when they come. When the learner fails you are in trouble. You feel useless because they don't motivate us.* – Daniel, Deputy ECZ018

> *(Answering my question about what he would like to spend less time on) Meetings with the department. For me to attend these meetings with the department is killing me. Department meetings are frustrating us – (they) talk down, (and are) blaming (us).* – Gcobani, Principal ECZ023

> *(Answering my question about what he would like to spend less time on) Meetings - department meetings and workshops. These workshops to me make no difference – (they are a) waste of time. 2-3 times a week at these meetings. You hear today that tomorrow you need to be somewhere else. In the morning they will phone and say you must be here in the office now… (It is) Poor planning from those responsible. We complain about things, (and are) told about the hierarchy: your senior's programmes take priority over yours. If Bhisho wants the district directors, (they can) call them at any time. If the district directors want EDOs, (they can) call at any time. If the EDOs want principals… This is the system that is being used (hierarchy). But otherwise, just no proper planning. (CP: And if you refuse to go?) (They say) You have an attitude, eventually (resulting in) disciplinary (action).* – Odwa, Principal ECZ024

Of course, experiencing some external pressure to perform may be healthy, but in many instances it seems like the pressure is applied in an unnecessarily draconian and unhelpful way. Feziwe,

principal of ECZ018, talks about taking early retirement[53] because of the frustrations of working with students who do not want to work at school and then being held to account for their results. At the same time she spoke gratefully of the support received from the department, particularly in terms of LTSMs and the school nutrition programme. Other teachers indicated that when they had a problem, the department has been able to offer support – so it seems the criticism is not completely universal. However, there is still a sense of 'fight' - as Gcobani puts it. Although schools and the department are in theory on the same side, in practice there is a great deal of conflict over resources and results.

Teachers and the purpose of school

The differing definitions of school success discussed later in this chapter hinted at the often conflicting beliefs that teachers bring to school, that contribute to the shaping of a school's learning climate. My field notes after one of my visits captures a sense of my own grappling:

> *As I observe and talk with teachers it becomes apparent that for some teachers teaching and learning is not necessarily what brings them to school each day. There seems to be a real reluctance about being in class, and when in class, to be teaching. There seem to be many reasons not to teach, and the staff room tends to be a popular - and well-populated - place. As is the case in many of the schools I have worked in, mealtimes and food play a very central role in the life of the school.* – Field notes, November 1st, 2013

My enduring picture of staff rooms at the majority of schools I visited was of teachers sitting at desks piled high with books, eating meals and talking to each other. Occasionally teachers would leave to go to class, but they would often soon be back. Many schools have several more teachers than they have classrooms, due to large student numbers and limited infrastructure[54], so it is partly logistical that teachers find themselves in the staffroom more often than in the classroom.

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[53] I don't think it a coincidence that two other principals have taken early retirement, another two are on extended sick leave, and two have died in unexpected health-related circumstances in the last couple of years.

[54] The number of teachers that schools are allocated is based on the number of students at the school. So schools with large student numbers will have a high number of teachers, but the number of classrooms is often the constraining factor in terms of how effectively these teachers can be deployed.

However, I was left with a sense that the social dimensions of school – the food, the gossip, the people – were integral to what constituted 'school' for many teachers.

Place

> *Enough classrooms. A laboratory. Library. When not enough educators, hiring educators. Enough desks. Those are the basics of a school, if you have these things, then you can be expected to perform. – Odwa, Principal ECZ024*

An analysis of rural South African schools would not be complete without a discussion of school infrastructure – and in this particular case, how infrastructure impacts professional capacity and learning climate. This is as much because of the abundant media coverage and the physical evidence of dilapidation at any site visit, as it is because it was mentioned by every teacher I interviewed. In some cases, this took the form of a desperate plea for more classrooms to alleviate horrific overcrowding (in the case of ECZ003, over 130 students per classroom). In others, there were compelling arguments for science labs, accommodation for teachers, and school hostels. In all cases, there was a sharp awareness that infrastructure matters.

As mentioned in the discussion of teacher motivation in Section 5.4.3 of this chapter, part of this awareness is of the fact that the physical environment impinges on the professional and social dimensions of the school. As Mhlobo said, "When your school is beautiful on the outside of the school, as a student you are motivated - you don't want to let the school down!" The first item on almost every teacher's description of their vision for their school in five or ten years' time had to do with new buildings. There is almost a sense that many teachers think, "if only we had this, that and that, the rest of our issues would disappear." Bandile of ECZ003 certainly seemed to think this when he outlined his plan for three new classrooms, suggesting that their dismal ANA results would improve if the class sizes were reduced:

> *Start with Grade 1 and 2s and split - if we can give the right space for foundation phase, maybe it can make a change for the whole school…. Individual attention - face one teacher rather than three… Little ones need one teacher – to love them, teach them. Then basic things (like) reading, writing (can be) learnt quicker with younger kids. – Bandile, HOD ECZ003*

A few schools had additional teaching venues that were unused, despite large class sizes, and usually enough teachers to manage the extra class or two. It made me wonder how decisions about classrooms were made and what additional considerations, such as storage venues for textbooks or building materials, were at play for those that made these decisions. Many of the better performing schools seemed to have organised additional buildings, but these seldom kept pace with the increase in student numbers that required additional teaching venues.

On my site visits I encountered a number of mud structures, but by and large in this area of the Eastern Cape, progress has been made to eradicate these. Far more disturbing for me are the recently refurbished schools, now three, five, ten years old that are starting to fall apart. Buildings, no matter how well-built, require maintenance, but it is rare to find schools with new paint, new windows or polished floors. A far more common picture is of door handles missing, metal supports dangling from roofs where the bottoms of poles have rusted away, broken windows, roof sheets held down by cinder blocks, holes in ceilings … the list is depressingly long.

There are exceptions. I used the example earlier of ECZ026's partnership with young people in the community to provide maintenance and protection of the school in exchange for the use of the football field. At another school the teachers had formed a 'grounds committee', which involved both teachers and students. Unlike the vast majority of the committees I encountered, which seemed to remain immobile, pasted onto staffroom walls, this committee seemed to produce something tangible. It was clear that a great deal of care had been taken, not just in maintaining the grounds, but in creatively and colourfully decorating the school property: brightly coloured tyres marked walkways, trees had been planted, white-painted stones were laid in interesting patterns, and carefully laid pathways had been carved from the grass. What in any other context would have been considered garish or kitsch, at this school sang out loudly of care, pride and ownership.

Recurring throughout discussions about school infrastructure 'wish lists', were mentions of student hostels and staff cottages. Hostels seem to be seen as one way for schools to exercise more control over their students, effectively distancing the home environment that many teachers seem to see as such a distraction. Gcobani saw this as an absolutely critical part of his strategy: "If I could get a hostel, I would be the St. Johns, Holy Cross (two of the best schools in Mthatha) of this area… (we) could be one of the best schools in South Africa." Mhlobo suggested that hostels would enable the

school to monitor students' time better. For others, hostels were a solution to the problem of far flung students walking hours to school each day. In all of these discussions there was a sense that if schools could play more of a role in students' home life, things would go better at school.

Staff accommodation was also seen as a critical piece of many teachers' visions for their schools. This was both to save time and money commuting each day, as well as to enable teachers to play a more 'present' role outside of official school time, whether it be to facilitate marking outside of class time or extra-murals. Gcobani wanted this accommodation so that his teachers could take night classes. At ECZ024, where all but one of the teachers rent around the school in fairly basic local accommodation, Onezwa suggested that formalizing or upgrading staff accommodation would enable teachers to do their jobs better, since at the moment: "Sometimes you have to sleep even if you feel like doing more work, since the light is not enough."

For all of the discussion and lamentation about new infrastructure, very few schools – apart from Gcobani's ECZ023 - seemed to have a 'concrete' plan for funding new developments. In most cases schools were waiting for others to act. Daniel captures the prevailing attitude nicely when he says (in response to questions about new infrastructure and materials): "I need those things, but I don't have money and I don't want to think about that more and more because I won't get money."

5.4.5   Instructional guidance system

Bryk and colleagues (2010:50) consider the *Instructional guidance* system responsible for setting the degree of academic rigour, organising the way in which the curriculum is delivered, and providing coherence for a school's instructional (pedagogic) practices. In my own analysis there was very little connection between any of these *Instructional guidance* measures and academic outcomes. In fact, of the six core measures selected to represent the Five Essential Supports, *Teaching practice* was the only measure that failed to demonstrate any connection to maths and English performance.

Apart from these considerations, the complete absence of any reference to pedagogic or instructional practices in my qualitative data – in high- as well as low-performing - is revealing in itself. When asked explicitly about what their school did to 'stretch and support' their students, teachers generally referred to two things: the provision of extra (compulsory, after-hours) classes or

the planning and monitoring of lesson content. Neither of these practices reveals much beyond the basics of trying to cover curriculum in the allocated time. What did emerge strongly from the qualitative data, however, was the interesting interplay between student numbers, school reputation, results and different definitions of success. While these do not relate directly to instructional practices and curriculum organisation, I include these here since they have indirect impact on the instructional focus of the school.

School reputation and student mobility

Rural student populations in this area are surprisingly mobile, given the significant transport hurdles involved in moving school. The senior school enrolment data that I have (Appendix U), as well as evidence from my conversations with teachers, suggests that students will actively move to schools – even much further away ones – that have a better reputation. Reputation is, of course, a complicated thing to understand and measure, but it seems that, at least where senior schools are concerned, part of what makes up a school's reputation is the performance (pass rate) on the National Senior Certificate.

In many ways, this is a good thing. Many school reform efforts, such as voucher systems in the US, rely on parents 'voting with their feet' in order to hold schools accountable. The fact that this seems to happen here, in poor communities containing many illiterate parents (where the complaint from teachers is usually about the *lack* of understanding and appreciation for education amongst parents) is remarkable. The issue is whether the basis for the reputation is grounded in things that matter. For a start, as noted in the previous section where NSC results were discussed, pass rates can be quite easily manipulated by schools through various mechanisms such as shifting students from maths to maths literacy, or holding students back in Grade 11. There is a significant bulge in the numbers per grade in Grades 10 and 11 (compared to Grade 12) in Appendix U, suggesting that these well-documented practices occur in these particular schools (Spaull, 2013:31-32). My discussions with principals over a number of years regarding the maths vs. maths literacy debate, also suggest that considerable thought is given to steering students towards easier subject choice.

In the absence of external school performance indicators (the ANAs seem not to be used in this way - yet), as is the case at junior secondary schools, reputation seems to be built largely around the activity of the school and its extramural success. When I asked the deputy principal at one of the

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larger junior secondary schools why his school seemed to be so popular, he replied that people knew that 'things were happening at the school' and that they 'used their money effectively'. Some schools seem to have a reputation for utilising the funds available to them to organise more events and outings: sports days, festivals, tours, matric farewells, etc. Many teachers interviewed linked their idea of success to the school's performance at regional, provincial and national choir and athletic competitions. The trophy cabinet seems to hold even more value here than it does in elite schooling establishments.

The problem with this becomes apparent at a school like ECZ003, national choir champions in 2012 and serial high performers in most regional cultural and sporting competitions. To do so they use significant amounts of teaching time to train their choir. They also have a dynamic SMT, who seem to focus on community relations and go out of their way to make sure the school 'belongs to the community'. As one can imagine, their reputation is known far and wide – to the extent that their enrolment has soared from 400 to over 1300 in the space of the last ten years. Schools a kilometre down the road have less than thirty students in a classroom, while they have in excess of 130 students in some classrooms. And their performance on the ANAs? In the bottom four schools for EVERY 2012 and 2013 English and maths assessment.

A similar scenario plays out at senior secondary level. ECZ023 is known throughout the region as the best school in the area, with results rivalling the top schools in Mthatha. Another external indicator of success may be school infrastructure: five years ago ECZ018 had a brand new campus built, with smart blue roofing to match their uniform and a proud flag flying from its new flagpole. ECZ024 on the other hand has had a high turnover of principals; its decaying infrastructure is inviting to little more than sheep and goats wanting a shelter from the rain; and, its results have bottomed out at lower than a 20% pass rate for the last three years. The result has been a rapid migration from the last-mentioned school to the first two schools, such that these 'successful' schools battle to accommodate 60+ learners in a classroom, while ECZ024 has a grade 12 physical science class of fewer than 20 students.

While many might argue that this mobility is good for accountability, unfortunately there are implications for all schools concerned. Firstly, the schooling system, particularly in the Eastern Cape, is unable to respond with the same degree of swiftness and flexibility. This means popular schools

experience severe pressure on their physical infrastructure, often already in a considerable state of disrepair and overcrowding. There seems to be little ability to cap the numbers of students admitted each year. For schools that have worked hard to achieve comparatively good results, the additional burden of increased student numbers that is placed on teachers means that these achievements may well be forfeited if the school cannot think of creative ways to teach more productively.

Secondly, teacher post allocations are calculated using enrolment numbers. On the one hand, this means popular schools often sit with dozens of teachers spending the majority of their time in the staffroom, teaching one or two lessons a day, because the classroom shortages mean that they cannot be utilized effectively. Schools who have lost students suddenly find themselves losing teachers – sometimes mid-year – who have been reallocated according to a formula that doesn't seem to take into account the fact that they may be the only teacher at the school qualified to teach a critical subject like English.

Finally, these shifts in numbers produce an ever-accelerating downward spiral for struggling schools. They are hounded for more disciplinary meetings[55] with the department because they are low-performing. They often need to cover the same number of subjects and lessons with fewer teachers. The students that remain tend to be weaker or less wealthy and may well be disgruntled by the fact that they must stay while their friends have left. And, possibly most critically, when expectations based on past performance are so low, there is little to suggest to students that they can perform any differently. Odwa, the principal of ECZ024 captures this cycle of decline very well:

> *You see what is happening here - very interesting - the poorer gets poorer, richer gets richer. If you already have good numbers from past performance you are entitled to high numbers of educators. If you have less numbers, then less educators. With our numbers, we don't have enough educators. If school is performing badly, learners leave. (Our) Learner numbers (are) going down. The failed students usually leave. The students who would normally be feeding us are going somewhere else. Human resources (meaning more teachers), it makes things very easy. Those schools up there they have HR, they have numbers. Even now we are*

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[55] Department officials arrive at the school and ask the school to account for their poor performance the previous year, which teachers and principals relate as simply an exercise in being shouted at.

supposed to be redeploying two teachers. If those go, (there will be) four subjects without teachers. It makes the school to go down. Those other schools are waiting to receive teachers from us!

The role of extramurals at schools is controversial. On the one hand, school managers experience pressure from enthusiastic teachers and students, as well as their peers in the circuit, to ensure they participate fully in circuit and district events. Managers know, however, that the reality is that sports and cultural activities can become a massive distraction, and yet another disruption of teaching time. This places them in an awkward position, where the 'right' thing is often in conflict with what is popular.

(In response to a question about what she would like less time for)…*less time for sport. It is time-consuming… Sport, we have to give time for learners to practice and there is no time for that. Learners must be in class, taught. The contact teaching time is important, concerning teaching. Because the core business is teaching and learning… The department does want us to take part in sport. But sometimes the learners do put pressure, but we try to control it.* – Feziwe, Principal ECZ018

At the heart of this issue is the fact that school closes rigidly at 2:30 or 3:00 pm every day, with the swift exit of students and teachers alike. This means any extramural activities are conducted during the school day, not after hours as might be the case at more privileged institutions. So while sporting and cultural extramurals are usually advocated as an important component of a well-rounded education, in these schools they often come at the expense of academics, rather than as a complement.

At some schools, where the pressure of time is felt more keenly, the disruptions are typically limited to a day of 'training' the day before an event, and then the actual event itself, which usually involves extensive travel and expense to the school. This was typical of some of the higher-performing senior schools. In this way a rugby 'season' is distilled into two days, arguably losing all that is valuable about school sport anyway – the team work developed over time, the discipline of practice, the efficacy grown from honing a skill, etc. Even though this is the minimum most schools invest in extramurals, the costs are still significant, with on average one sporting and one cultural activity per term, this equates to sixteen lost days a year (just under 10% of the school year).

Mhlobo goes so far in his analysis of the climate of ECZ023 to say that he thinks the learning climate is good *because* there are not many days allocated for sport. His comment reveals his awareness of the situation at other schools and how devastating it can be for academic time.

At other schools, where extra-murals are taken more seriously – again mostly at junior level - the effects on academics can be even more pronounced. In choir 'season' at ECZ003 (*national* choir champions in 2012)[56], lessons are reduced by 15 minutes, to allow for an extra one to two hours of choir practice each day, involving only a small proportion of learners. Complicating the matter is that the vast majority of teachers live an hour and a half from the school and leave promptly at 2:30 or 3:00 pm each day in order to catch shared public transport. Students also face pressure to return home in the light and in time to do afternoon domestic chores. Since the choir only consists of about 5% of the school, this is an extraordinary burden for the rest of the school to bear. When the choir participates in regional, circuit, district, provincial or national level competitions, school is closed to allow supporters to attend. The conflicting feelings of their deputy principal, Cindy, are apparent as she grapples with the issues:

> *There are many programmes that we are faced with. We cannot teach our learners for the whole day. We must teach them and we must assess them. At some intervals they must sing, they have to do extramural activities…just to change their mindset. Sometimes not all of them will be professionals, not all of them will be policemen, not all of them will be doctors. Some of them will be like Zithulele Sisinqa, who was an athlete in South Africa, who earned his living through doing that. That is why we have to attend to this. Most of the people used to ask, 'why do you let them sing this much?' Because most of them are coming from different backgrounds, they have different talents. We have to allow that. Not all of them are intelligent. Some of them want to be athletes… But I like going to class, because it is the core business. That is why we are here.*
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> CP: *And what would you like less time for?*

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[56] This 'season' lasts for most of the first half of the year, extending from preparation for the Circuit level competition in March-April, to District, Regional, Provincial and National levels ending in July – for those schools that get this far.

Less time for these extramural activities. Sometimes I used to think even if I get home, "how can we do it?" Somebody told me that at Mkathazo, you know we used to chat as teachers… She told me that, most of us stay at Mkathazo, we don't stay in Mqanduli or Mthatha so that we don't interfere with the curriculum time. For curriculum they stick to quarter to eight to three o'clock. Then after that they do the extra-murals. Then sometimes we sit down and say, "how can we do this?" We have to do these extra-mural activities, but what mechanisms can we introduce so that we do not interfere with curriculum time? – Cindy, Deputy ECZ003*

How schools define success seems to be critical. At senior secondary school level, this has largely been externally defined by school exit examinations and is reinforced at every interaction with the department. At lower levels, however, the message is less clear. Much of the reputation and recognition of schools is based on a murky set of often conflicting feedback from the department and the school community. Schools want their students to experience success, in whichever sphere or activity that may come. The ANAs have introduced a new measurement tool – one which at this stage schools seem unsure how to interpret. Teachers provided tentative, uncertain responses to direct questions about the ANAs. Some seemed to think it good to have a 'yardstick', that they now knew where they stood. Others were mystified about their poor performance and how to improve.

It is possible that over time the ANAs will introduce an improved focus on academics at junior secondary schools. It may be, however, that schools continue to prioritise different avenues that allow their students to uniquely succeed. If academic success proves elusive, a focus on alternative opportunities may continue to be most 'rational'. The case for doing so is not a simple matter. Thandi and Cindy, quoted at length above, summarise these competing beliefs about success and the goals of schooling:

You know, when you watch children performing in front of the parents, in front of everyone. You reflect back. Wow, did I really do this? When they show what they have learnt in class, showing everyone. You become so proud. The parents become satisfied. Because they can see from them. And even with the results, especially when we get 100% (pass rate for a particular grade)...those things they make you proud. We are doing it! – Thandi, Principal ECZ026

When they present there (at national choir competition)*, you feel happy, but I feel differently. I become sick. I ask myself where are they coming from? You know their home circumstances… They don't have uniforms some of them. They are coming from poor families. Their mothers have not been to school. But look at them. They are going to a national level. They are able to say these words, to follow these dynamics… and doing it successfully. Where are they coming from? Who are they?* – Cindy, Deputy ECZ003

Results, promotion and performance

Connected to these ideas about school activity, productivity and differing definitions of success is schools' focus on results. Here the distinction between senior and junior secondary schools is profound. When asked to define a successful year, almost all senior school teachers made some mention of improved Grade 12 results, pass rates or individual subject goals. Some junior secondary teachers mentioned the ANAs, but it was always very vague and listed in addition to other indicators. For instance, at ECZ003 the disappointment in their performance on the ANAs comes across, but so too does a certain mysteriousness about why they've performed poorly and what they might do to remedy this.

Other junior secondary school teachers talk about success and results in terms of pass rates in a particular grade. The principal of ECZ026 talks glowingly about 2012, the year when they achieved a 100% pass rate in Grade 3, for which they received an award from the department. Without a set of external examinations, one would expect these pass rates to be susceptible to the subjective decision-making of teachers, or the logistical needs of administrators. This introduces the issue of promotion, which came up as a highly controversial topic a number of times in the interviews.

Many teachers, particularly at senior secondary level, were highly critical of the pass and promote system that, according to them, simply moves unprepared students from one grade to the next. The consequences of this practice are felt most keenly by the teachers who must face the wrath of the department when their matric results are not up to scratch. The point that these teachers make is that they receive students into Grade 10, who are poorly prepared for the demands of this

phase[57]. The science teacher at ECZ024 had this to say when I asked her why she thought many of the students from the area did not perform well in their final exams:

> *Maybe I'll be shooting the bullet in someone else's field! They are lacking the basics - the foundation is not conquered. When they come to grade 10 they can't even write their name, especially if they are having those mini-alphabets. (They) Can't even make a sentence in English.* – Onezwa, Science teacher ECZ024

These issues continue into the senior school, since the school is not permitted to fail students more than once per phase. Emily gives the example of a student achieving 15% for physical science and 12% for maths in Grade 10 or 11 being promoted to the next grade, where they are expected to somehow meet the new demands of tougher content without anything near the requisite prior knowledge and skills. If, in addition to these deficits, the student also lacks the motivation or work ethic – in itself often a trained skill developed at school and in the home - the pressure on matric teachers to produce miracles seems unfair. This practice seems too close to the definition of insanity[58] - 'doing the same thing over and over again and expecting a different result' - for it to be a sensible policy for schools to endorse. In fact, at the higher performing senior schools, there seemed to be intentionality about managing these at-risk students out of the system before matric.

Many teachers mentioned 'analysis of results' in conversations about improving performance. This seems to be standard practice, certainly at senior school level, but it is unclear what the outcomes of this process are, or whether there are meaningful changes made to organisational and teaching practice. My perception was that schools had been told by their superiors to analyse the results, may even have been told how to do this, but that realising the gains from this process had proved elusive.

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[57] South African schools are structured in four phases: Foundation phase (Grades R-3), Intermediate phase (Grades 4-6), Senior phase (Grades 7-9) and the Further Education and Training band (Grades 10-12).
[58] variously attributed to Benjamin Franklin or Albert Einstein

5.5 A closer look at two additional factors: Language and Infrastructure

In Section 5.3.2 I summarised the findings for the additional (contextual) factors that I included in this rural, developing country study. Here I focus on two that seemed to emerge most significantly from both the quantitative and qualitative data.

5.5.1 Language

Language appeared to be an important additional factor, as may have been expected from the literature (Fleisch, 2008; Howie, 2003). I've indicated elsewhere that my interest in language is not to do with the debate around mother tongue instruction in the early grades. Rather, I'm interested in the dynamics of language as they play out in later years: schools surrounded by isi-Xhosa speaking people are all English-medium; students must write their final exams in English; communities seem to overwhelmingly want their children to learn English; yet most teachers teach predominantly in isi-Xhosa. There were strong statistical connections between the various language measures and student performance measures.

Only a handful of the teachers I interviewed discussed language in any detail. Most reinforced the perception that students don't want to speak the language, don't understand the language when spoken to, and can't even write a sentence in English when they arrive at senior school in grade 10. In contrast, one of the characteristics of a teacher's description of a good urban school was that students all speak English at school. English teachers themselves seem to be rare, and one deputy principal referred in glowing terms to a Ghanaian teacher who had taught the subject at his school some years back.

The statistical findings yielded three further insights into how the language dynamics play out. Firstly, students' preference for English had a significant correlation (at the 0.05 level) with teachers' use of English. In other words, when teachers use English more frequently students are more likely to be comfortable with the language. This makes good intuitive sense, but runs counter to what many teachers seem to believe: that if they teach in English, students will not understand them.

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Secondly, communities with electricity in the home were more likely to produce students who were comfortable learning in English. Again, there is some good intuitive sense to this, since children with electricity at home are more likely to have radios and TVs that connect them to the outside English world, as well as more time to read after dark. However, this draws attention to the fact that there are important implications for education in government's plans to electrify rural areas. Interestingly, at ECZ026, a school ranking high on ANA performance in English and also one of few schools with an articulated language strategy, teachers talked about the importance of bringing TV to the community. In the developed world the problem tends to be too much TV; here there seems to be good evidence that *more* TV and other forms of connection to the English world will produce improvements in student learning.

Finally, language use by teachers was also linked to principal absenteeism and several key leadership measures. It is possible that one of leaderships' key monitoring roles at schools may involve ensuring that teachers teach in English. Given these connections to other measures and to student performance outcomes, I suggest there is strong motivation for *Language* to be included in a rural school improvement framework.

5.5.2 Infrastructure

Two important statistical findings emerged from the work on the additional factors that had a bearing on school infrastructure. The first was the strong connection between class size and student performance. The international and local literature on class size presents a mixed picture, with some studies showing at best a moderate effect on student outcomes (Hanushek, 2002; Krueger, 2003; Howie, 2003). I suggest that in the context of extreme numbers, such as is the case at some schools in my sample, class size starts to become significant. Note that much of the international literature on class size refers to pupil-teacher ratio, which is misleading in a context of high student numbers with a constraint of a limited number of classrooms.

The second statistical connection was between *Library* and two groups of measures: ***School-community ties***, and ***School leadership***. Both of these groups of variables had strong connections to learning outcomes, suggesting that the presence of a library was an important indicator of leadership and healthy community relationships - and their effect on student performance. I have discussed these connections at length in previous sections; here it suffices to state some

confirmation of Heneveld & Craig's (1996) finding that in developing contexts, adequate facilities become a significant factor affecting school improvement.

It is notable that most of the teachers I interviewed mentioned school infrastructure improvement as part of their five year vision for their schools. Clearly the physical dimension occupies a large part of what teachers consider wrong about their schools. It is also significant to examine what teachers refer to specifically: in some (mostly extreme) cases, teachers simply want enough classrooms to adequately house their learners; however, the majority are advocating for libraries, science labs, student hostels and teachers cottages – all facilities that they believe will take their schools to another level.

Earlier in this chapter, I have suggested that accommodation for teachers and for students seems to emerge as a critical consideration for improving the *Learning climate* of schools. Before rushing off to buy bricks, however, I do raise a cautionary point. Clearly the current maintenance system does not work and I would suggest that asking teachers and school communities to better 'own' their schools is only part of the solution. As with the Five Essential Supports more broadly, when thinking about infrastructure the most important consideration needs to be how to integrate new plans and buildings into what is already going on in the school, so that there is a sense of the system and some coherence.

5.6 A summary of key descriptive findings

At its start, I suggested that this chapter was the beginning of an attempt to formulate some ideas about the possibilities and constraints facing rural schools in the Eastern Cape. By design the data has been presented separately, in a way that makes it difficult to see clear lines between the questions posed early on in this thesis, and these answers that I have set out to find. Nevertheless, the story thus far has been a revealing one, with a number of noteworthy highlights, the implications of which will be considered later on in this thesis. In summary:

- There seems to be substantial backing for the adapted framework of the Five Essential Supports in a rural South African context. Three findings in particular seem pertinent: the *organisational measures strongly connect to school performance*; there is some

evidence that they are in fact '**essential' for improvement**; and that they act as **a system of supports** so that it would be unlikely to find strength in only one of the five factors.

- Secondly, several of the **additional contextual factors** seemed important; in particular, *Class size, Language* and *Adequate facilities*.

- The **Annual National Assessments do not currently provide a reliable enough testing regime** for performance-based, quantitative approaches like the framework developed by Bryk and colleagues (2010).

- **Effective leadership** in this context seems to consist of: establishing learning climates of order and control; facilitating productive interactions with parents; attracting and recruiting high quality teachers; improving school infrastructure; 'fighting' for teachers' well-being; and maintaining a physical presence at the school despite numerous distractions.

- Schools use a variety of strategies to engage with parents, but for many schools this remains a low priority and a source of frustration, rather than a central tenet of their improvement plans. Schools that managed to **engage effectively with the community and parents** seemed to: value and respect parents as co-owners of the school; actively involve community members in the activities of the school; and, proactively educate parents about the important role they can play in their children's learning.

- The statistical data about teachers suggested that the vast majority of rural teachers share a **common background** in terms of their upbringing, education and limited career choices. Those that had significantly **different educational or early career experiences** seemed to carry these experiences into their current roles and schools in a powerful way.

- **Teacher motivation** seemed to play a severe constraining role on professional capacity, especially considering the numerous factors that serve to drain teacher motivation in the rural context.

- A key differentiator between schools seems to be whether they are able to create a **'disciplined' school climate**, rather than the 'relaxed' environment that seemed more common. The principal's role as enforcer (often with a stick) seemed critical.

- There seemed to be **little data about effective Instructional guidance systems**, pedagogic practices or curriculum organisation.

- There was, however, substantial evidence that ***the purposes of schooling are anything but clear*** in this context. School performance on national examinations is only one of a host of competing indicators of school success that influence parent (and teacher) choice.

- ***Language*** emerged as an important predictor of student performance and was connected to teachers' attitudes to and use of English in the classroom, as well as the presence of electricity in the home.

- Finally, the ***location and physical environment of schools*** reinforce many of the messages of low worth that teachers receive from other sources. These messages are further compounded by ***interactions with the department that are seldom supportive***, and usually demand extensive travel from teachers and principals.

This brief tour of some of the key findings in this chapter offers a summary of how the Five Essential Supports play out in this context. It positions us well to begin to consider school improvement from an alternative – and hopefully complementary – perspective in the next chapter, using Bourdieu's notions of habitus and doxa. These findings will be revisited in Chapter 7, where they should provide at least part of the answer to some of the questions posed early on in this thesis about Bahle and the schools he represents.

Chapter 6: A Bourdieusian interpretation of rural schooling in the Eastern Cape

They always call me a Greek man, because I want them to go to class to do their job…
when they run away to other schools, they say: "That man (Gcobani), he was a good
man, he understands people. Our (new) principal he is a ghost."

– Gcobani, principal ECZ023

The habitus, a product of history, produces individual and collective practices - more
history - in accordance with the schemes generated by history. It ensures the active
presence of past experiences, which, deposited in each organism in the form of
schemes of perception, thought and action, tend to guarantee the 'correctness' of
practices and their constancy over time, more reliably than all formal rules and
explicit norms.

– Pierre Bourdieu, *The Logic of Practice,* (1990:54)

6.1 Introduction

In this thesis I have suggested that the geographical and historical complexities inherent in an analysis of schools in the rural Eastern Cape make the use of multiple analytical tools an imperative. To authentically and meaningfully answer a question about schools requires answers in multiple dimensions: about power and social reproduction; about schools and their organisation for improvement; and about education in the broader context of rural development. These three themes are addressed in the substance of this chapter, and I return more specifically to them in the conclusion in considering the possibilities and constraints facing rural schools, and some of the implications for rural school improvement more generally.

In Chapter 5 I presented descriptions produced from several data sets: extensive surveys of students, teachers and principals; Rasch measures developed from these surveys; observations from multiple visits to 25 schools; follow-up interviews with 15 teachers and school leaders from five of these schools; and health and socioeconomic data from the Zithulele Birth Follow-Up Study. Added to this, I have drawn on a body of diverse international and local research on school improvement, rurality and social change, so that I now have at my disposal a set of high-quality analytical tools to assist in my interpretation of these rich data sets. Over all of this I sit, as both additional tool (Maxwell, 2012:96) and as operator of these tools, bringing to bear my own beliefs, education, background and experiences working in these communities and schools – with all the advantages and disadvantages that these bring to the research.

The previous chapter gave support to the Bryk et al. framework and located it in the context of the particular schools in the sample. The task of this chapter is to bring the Bourdieusian toolbox to bear – particularly the concepts of field, capitals, habitus and doxa - to provide insight into the dynamics of social reproduction and power, school organisation for improvement, and rural development in this particular context. I am particularly interested in where doxa and habitus seem to be at odds with each other, suggesting some potential for shifts and change. I thus begin the chapter with an exploration of fields and capitals, relying primarily on the literature to create a sense of the ongoing struggles in the field. I then shift my focus to habitus and doxa in rural Eastern Cape schools, building on my accounts in the previous chapter, as well as on the theory of rurality I developed in Chapter 2.

6.2 Fields

Bourdieu uses the term 'fields' instead of the more general concepts of 'society' and 'social institutions'. He defines fields as follows:

> *A field is a structural social space, a field of forces, a force field. It contains people who dominate and people who are dominated. **Constant, permanent relationships of inequality** operate inside this space, which at the same time becomes a space in which the various **actors struggle** for the transformation or preservation of the field. **All the individuals in this universe bring to the competition all the (relative) power** at their disposal. It is that power that defines their position in the field and, as a result, their **strategies** (Bourdieu, 1998a, p. 40-41; emphasis added).*

Particularly important for the analysis provided in this chapter are the points Bourdieu raises here about the structured, 'constant, permanent relationships of inequality' as they pertain to the schools in this study, located as they are in a rural and poor part of the country. Also important are the power struggles between different actors or agents in this part of the field, the different capitals at stake (which, as I shall show, extend beyond academic capital), and the strategies for playing the game in this part of the field. The influence of the structures of the field on the habitus of people will emerge as a key explanation for many of the practices outlined in the second half of chapter 5.

Bourdieu suggests three steps in the analysis of a field (Wacquant, 1989:40). Firstly, the field should be related to the field of power. Secondly, one must map the field by examining the relations between players, capitals and positions taken up. Finally, one must undertake an analysis of the habitus of the players in the field. Using these guidelines to structure what follows, fields and capitals are foregrounded first, since they provide the backdrop to a more detailed discussion of habitus and doxai that will emerge in subsequent sections.

The position of rural schools in the field of South African education

Bourdieu contends that 'social space translates into physical space' (1999:124), and the social terrain provides a useful means of illustrating the relationships of power that play over the section of the field in which the schools in this study are located. In socioeconomic terms, this part of the field is one of the poorest rural areas of the country, and also one where formal political power is exercised in complex and often dysfunctional ways (Ngoma, 2007; Hendricks, 2012). Schools in this part of the world operate in environments of 'deep disadvantage' – a term Bryk and colleagues (2010) use for schools where socioeconomic and social factors make improvement an almost impossible task.

In Chapter 2, I provided an analysis of rurality, suggesting that there are distinctive structural conditions and relationships that need to be taken into account in understanding the dynamics of schools and their possibilities for change. In particular, I suggested the need for acknowledgement of: the location of **rural schools on the margins of the field of play** with **limited support, choice and voice**; the very different **set of resources** available to rural school communities; the constraints that **space, place and time** impose on agents in this field; and the **interplay between these agents and the forces** exerted by the environment they find themselves in (see Section 2.3.1). Bourdieu's connection between social and physical space, together with my description of rurality as 'life on the periphery', suggests that the distance that separates the schools in my sample from Pretoria, Bhisho and Mthatha has as much import in the physical world as it does in the social.

Bourdieu (1999:125) plays on the word 'capital' to suggest that capital cities, and cities more generally, tend to be the site of capital. In Bourdieu's France, the opposite of capital is 'provincial', denoting with the same air of condescension the disadvantage, backwardness and absence of capital that many English speakers associate with 'rural'. Thus in the field of South African education, rural education is positioned far from the source of economic, social, cultural and symbolic capital. Similarly, people with valuable knowledge and skills are unlikely to be found far from the cities. Thus it should be no surprise in the previous chapter to hear teachers speak of the stratified pecking order of schools, with those furthest from cities having little or no say over the quality of teachers they are able to attract.

The education system in South Africa should be seen in the context of a post-apartheid society still dominated by issues of race, inequality and poverty. The seat of political power lies with the African National Congress and its allies (including, significantly, the largest teacher union, SADTU). On the other hand, economic capital still resides largely with white business, apart from a handful of prominent black entrepreneurs and enterprises that have made good on the social and symbolic capital gained through their association with the ANC. The majority of the population still live in poverty, receive inferior social services, and struggle to achieve economic capital. These structures, largely vestiges of apartheid, have been hard to dismantle and thus continue to shape the opportunities of people today (McKinley, 2001; Seekings and Nattrass, 2002; Taylor, 2011:4-7). The fact that government salaries are an important source of economic capital for many previously disadvantaged families is an added complication, which is particularly evident in poor areas such as the Eastern Cape (Aliber, 2003:482-485).

Education in South Africa is structured so that different levels of government are responsible for different functions: the national department sets policy, norms and standards; provincial government is responsible for delivery of services and manages the vast majority of the budget for schooling; local or district offices work closest with schools and are responsible for support and accountability functions. A number of assumptions underlie this structure. In particular: that provincial governments are capable – which my summary in Chapter 1 and the numerous interventions from national government suggest may not be the case in the Eastern Cape; and, that district offices are homogenous entities and hence should be funded as such, despite the markedly different requirements for supporting schools in rural areas, not least in terms of the distances covered.

My brief analysis of the history of the Eastern Cape early on in this thesis suggested that the incorporation of large swathes of rural land, in the shape of the former homelands of the Transkei and Ciskei, presented tremendous political and logistical challenges for the new provincial administration (Wright, 2012b:1; Hendricks, 2012:20; and Lemon, 2004:269). The requirements – technical, sociocultural, political – of education leadership in the province have been exceptionally complex; requirements that the provincial government have often failed to meet, as evidenced by national government's interventions in the province in 2011 (Wright, 2012b:8).
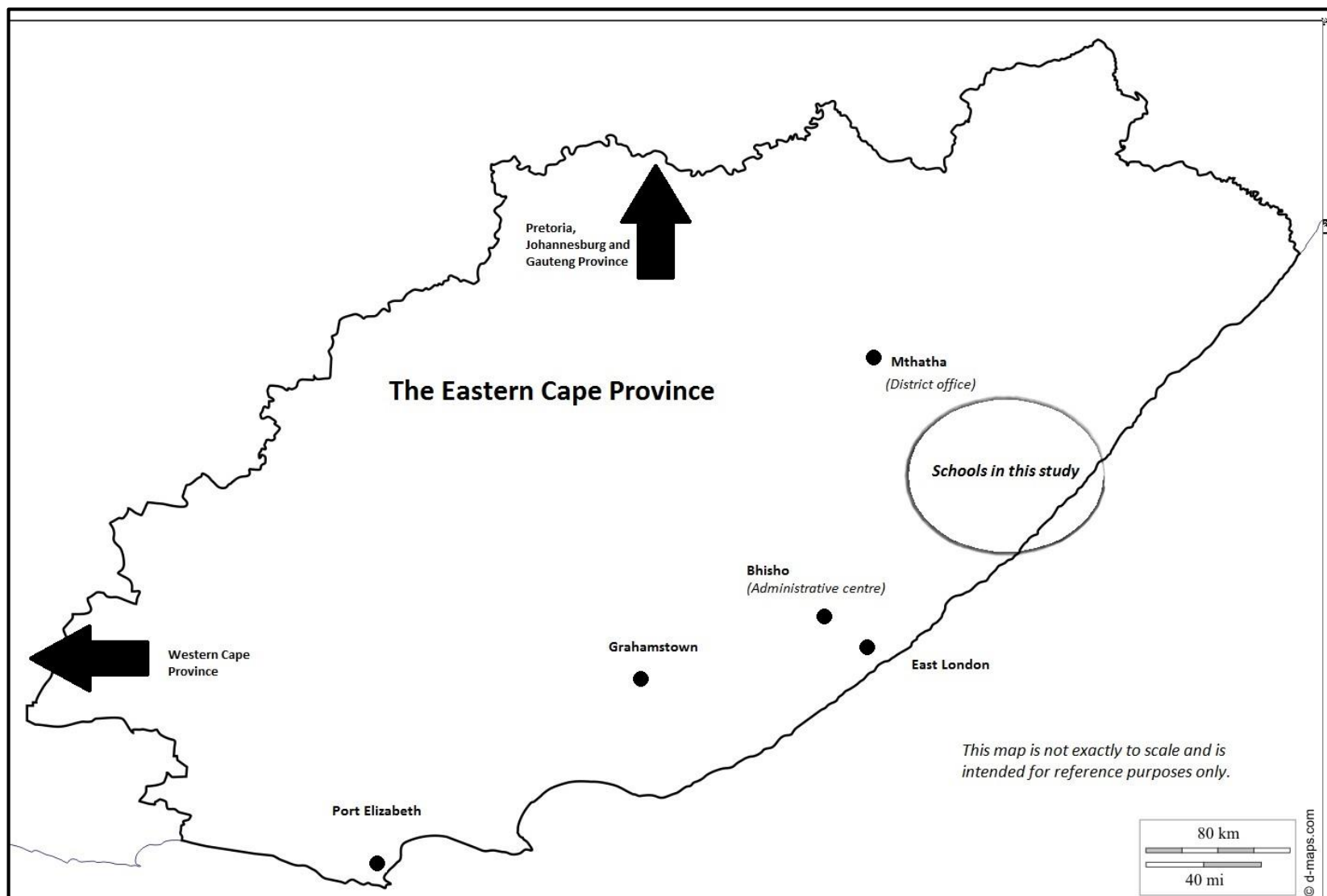
Figure 6.1: The Eastern Cape Province with (some) major centres

The most rural and remote districts, such as the schools in my sample, become marginalised and capital-poor. It is here that there are mud schools, pot-holed roads and no science and maths teachers. By contrast Bhisho, the administrative centre of the province, acts like a magnet, pulling Education Development Officers (EDOs), principals, teachers and, latterly, lawyers involved in court action against the department, towards it. Educators I interviewed were very clear that if they wanted anything to happen – a salary to be paid, a building to be built, or a position to be advertised – it was to Bhisho they must go, some four hours' drive away. Here again the physical distance is mirrored by the social space.

During my visits to schools it became evident that organisational hierarchies are taken exceptionally seriously. There is a great deal of protocol (greetings, prayers, agendas, etc.) that accompanies any meeting with department officials, and large amounts of deference are shown to senior officials from those in schools. These protocols give symbolic form to hierarchical relations of power.

Contestants in the field

The particular set of schools in my sample is found about one to one and a half hour's drive from the district office. Various actors struggle for power in this part of the field, and different forms of capital are contested here: the economic and symbolic capital that is very closely aligned with district and union hierarchies; the social and cultural capital generated from a rich and interwoven familial history of clans and chiefdoms of the amaXhosa spread throughout the area (some sense of this is given by Peires, 1994). There is little economic capital available outside of direct and indirect government employment. While the social and cultural capital is spread between traditional homesteads of headmen, chiefs and 'great places', the economic and symbolic capital for schools is almost exclusively centred at the district office.

Within this corner of the field the forces are dominated by districts and the provincial administration, although occasionally a school (usually with a vigorous enough principal) may appear on the contours of the social map. Unions play an active role in this field, although their influence seems to wane the further away the school is from their reach. Unions share the struggle for economic capital in terms of their role in pushing for better conditions of employment for their members, but their links to political capital through their alliance with the ANC government mean that they also take part in the struggle for symbolic capital. My own experiences working in the

Eastern Cape suggest that the other player that surfaces in this part of the field is the NGO or non-profit organisation. These tend to have sufficient value in the field by virtue of their social or cultural capital that their actions, in certain circumstances, can influence the dynamics of the field. In particular, I'm referring to the advocacy and legal action of organisations that have brought issues such as government's provision of school infrastructure before the courts and into the public eye (Sephton, 2014). It is interesting to note again that their physical location too tends to be in a city - Johannesburg, Cape Town, perhaps Grahamstown if they are 'on the ground' - but almost always these organisations that may represent the rural and marginalised, are found near capitals. Smaller NGOs (including my own) are also active at some schools in this area, although teachers were mostly silent when asked about their influence.

These patterns of power are reflected in the patterns of movement, employment and organisation within the district. According to teachers, meetings between the district and teachers more often than not happen at the district office. Principals are called to meetings in Mthatha, not the other way around. This is despite the fact that the actual site of the work for which both district and schools are responsible is the school. It is true that my interviews revealed that schools *are* occasionally visited by district officials, and that there is a certain amount of logistical sense in meeting centrally; however, my account of the departmental interactions in Chapter 5 suggested that the power dynamics are very clear in terms of who calls the meetings, who sets the agenda, and who does the blaming. Again, there are echoes here of Bourdieu's assertion of how the structures of physical space are mirrored by those of social space, with the most remote schools wielding the least influence, and garnering the least support. As I've pointed out, there are major implications of this both for principals' time away from school (especially for small schools) and for the expenses involved in travel.

My interview data suggested that entry-level teachers start their work at the most remote schools and work their way closer to the city. New principals take up positions in rural schools, often with a view to district level appointments later on in their careers. The best students from rural junior schools, if the financial viability exists, tend to migrate to schools closer to the city to complete their schooling. The sense of marginalisation, seen initially at the national level, filters through the provincial and district levels to those schools furthest from the centres of power. As one teacher

remarked to me, "we (her school) are too far from both the unions and the district for either of them to care too much about us."[59]

In addition to district and provincial authorities, unions and NGOs, schools are also positioned differently in the field, particularly those whose reputation with parents (symbolic power) has pulled large student numbers. The principal of ECZ001 complained to me that neighbouring school ECZ003, with huge student numbers, had "stolen" all of her students. Other organisations and bodies also hold sway. I've mentioned how traditional authorities such as chiefs and headmen can influence the field, making use of their extensive social capital to support or undermine school-based initiatives. At ECZ026, the principal had to persuade her local headman not to remove all the children under his authority from her school in order to send them to his[60] (much worse performing) school. Police, clinics, hospitals and other social services are also present, although teachers were mostly mute or neutral when asked to describe their school's relationships with these bodies.

As I've indicated in Chapter 5, schools' relationships with the department are fraught with complexity and struggle. On the one hand some of the teachers I interviewed expressed appreciation for some of the (new) services they were receiving from the department: most now have textbooks, 'scholar transportation' and school feeding schemes. On the other hand, there was widespread dissatisfaction with the way in which schools were berated for their performance each year (p. 164). Added to this was a feeling of unfairness that feeder schools are not held accountable for their performance to the degree that senior schools are – and that the effects of this are absorbed by the senior schools in the inferior intake of Grade 10 students that they must deal with (p. 177).

This notion of accountability can be viewed in the light of the struggles for power in the field. Firstly, it is clear that accountability makes a difference. Pressure from the department has had some healthy outcomes in that senior schools have clearly been forced to become more organised, focused, time- and task-oriented – my observation data presented this plainly, and my discussion of

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[59] Private correspondence, Ms X. ECZ024
[60] I'm unsure what she meant when she referred to "his" school – it may be that it fell within the boundaries of his ward or tribal area.

"relaxed vs. disciplined" schools in Chapter 5.4.4 reinforced this. However, in my interviews the manner in which this pressure is brought to bear on schools came across as unhelpful. Here again is a hint of the reproductive nature of the field. The strong sense of hierarchy means that checklists and compliance are the way the game is played. Dominant power relations are respected and, as Odwa pointed out, 'your senior's programmes take priority over yours' - to the extent that the hierarchical chain is in a constant game of 'chase your senior'.

6.3 Capitals

> *Capital, which, in its objectified or embodied forms, takes time to accumulate and which, as a potential capacity to produce profits and to reproduce itself in identical or expanded form, contains a tendency to persist in its being, is a force inscribed in the objectivity of things so that everything is not equally possible or impossible. And the structure of the distribution of the different types and subtypes of capital at a given moment in time represents the immanent structure of the social world, i.e., the set of constraints, inscribed in the very reality of that world, which govern its functioning in a durable way, determining the chances of success for practices.* (Bourdieu, 1986:241)

Within the schools in my sample, struggles are held over the forms of capital most valued in this particular corner of the field. Who decides what is valuable is important. To a certain extent, this part of the field takes its cue from the broader field of education in the country. So the Department of Basic Education, responsible for setting new curricula, policies, pass rate objectives and timelines, dictates some of what takes place at schools. To put this in Bourdieu's terms, it builds a representation of formal academic capital, to which – in an ideal world - all schools should aspire. Similarly, the district office holds schools accountable for performance on Grade 12 exams (and possibly on the ANAs in the future too), and organises cultural, academic and sporting competitions. Schools may position themselves in the field according to any one of these valued measures, becoming a 'choir school', or a 'rugby school'. Thus distinction among schools is sometimes achieved for performance in one or more of these official spheres. In Chapter Five I suggested that schools seemed to have very different definitions of success.

In the context of performance on the Grade 12 National Senior Certificate, I demonstrated in section 5.2.2 that schools in this area, including even the best school ECZ023, performed well below national averages for maths and English FAL. The picture was more complicated for junior secondaries' performance on the Annual National Assessments, but in general the picture was one of low performance. Thus academic success does not necessarily have the same symbolic capital – and hence 'pulling power' – as it does in schools where achievement is the norm. For these schools, academic failure is often (or at least seems to be) seen as a matter of course. As Bourdieu (1973:495) suggests, *"… a resigned attitude to failure and exclusion – must be understood as an anticipation, based upon the unconscious estimation of the objective probabilities of success…."* In this case, where academic success seems unlikely to teachers, other forms of success that have higher "objective probabilities" are likely to come to the fore.

As my discussion of reputation and success of schools has illustrated, academic performance is not the only means of enhancing a school's symbolic capital. Also at play are the social and economic capitals that high student numbers bring to schools. Schools, being largely the domain of qualified professionals, place high value on academic capital. Uneducated and illiterate parents are thus marginalised, and their physical location, often a considerable distance from the school, reduces their influence still further. Parents do possess social capital, although this is often not well utilised. For instance, school reputation is spread by word of mouth through the social connections between families and villages. Parents can choose to send students to different schools and this has implications for the economic capital of schools (in the form of higher principal's salary as well as provision of additional posts for those schools with higher numbers). The success of the schools in academic and other endeavours often hinges on the good-will and support of parents, so again social capital becomes increasingly important to schools.

The struggle over these various forms of capital reveals itself in some of the apparently contradictory behaviour of schools. Spending large amounts of money on Grade R graduations and matric farewells may seem misplaced if academic distinction were the only capital at stake. However, these seem to play a vital role in growing a school's social capital among staff and parents. As the deputy principal at ECZ015 remarked, parents liked his school because they were seen to do many things, to be active, and these activities form a kind of symbolic capital that has value to parents in this part of the field. Similarly, removing fifteen minutes academic time from

each period of the day so that the choir can have more time to practice, runs contrary to building academic capital, but the distinction of the choir boosts cultural, social and symbolic capital in this particular field. A community-run vegetable garden may produce more capital than just food for a school.

Principals and teachers as actors in the field

The schools in my sample that won distinction in this field often have distinctive principals with unique personal qualities, backgrounds and social connections, who have a 'feel for the game' and its strategies – such as Gcobani at ECZ023, Thandi at ECZ026 (both high performing schools academically) and Anele at ECZ003 (at this school, I'm suggesting that distinction takes the form of social rather than academic capital). Since principals represent the school legally and figuratively, they hold symbolic capital (Hayes et al., 2011:86). The value of this symbolic capital beyond the confines of the school depends to a large degree on the social and cultural capital of the school itself. If a principal has been seen to 'get things done' (for example: teachers are paid, school discipline is maintained, good results are produced), his or her symbolic capital grows alongside that of the school's. In order to get these things done, the principal has had to make use of multiple forms of capital, but particularly social capital, where his or her internal and external social ties become extremely important.

The capital a school has acquired influences the position a school takes up in the field. Gcobani's (principal of ECZ023) comment is apt in this regard: "I always say to them, 'Give me teachers and fight with me if I cannot give you 90%.'" His school seems to have earned a certain amount of capital through its superior academic performance over a number of years, so that he feels he can "fight" with the department. The tone I picked up from most other principals was far more timid and acquiescent when it came to their approach to the department. When this is viewed in the context of a set of field hierarchies that positions rural schools at the extremities of educational power, the need for a certain amount of "fight" is apparent if the principal is to achieve any of his/her objectives for the school. If principals are to get anything done, they may need to come into conflict with district and provincial hierarchies, demanding the resources they need. For this to have any effect, they must have sufficient capital to make someone willing to listen.

The role of the principal, significant at inter-school level, is magnified still further within the school itself. S/he sits atop a steep hierarchy that positions leadership at one end and the youngest students at the other (Hayes et al., 2011:86). In the school itself, social and symbolic capital determine the influence of players in the game, but cultural capital also holds dominion – the knowledge of how, when and what things should be done. Knowing the rules of the game is important. As has been mentioned, when uneducated parents and young children enter this field, they cannot help but feel at sea and value-less. The capital that they possess has no meaning here.

Outside actors do impinge on the dynamics of the school, but these are often mediated through the principal and others in leadership. For instance, demands for IQMS[61] documents or mark schedules from the district office come via the principal, who must eventually account for these things to the department. The principal has an opportunity here to buffer the school from unimportant or distracting information and tasks, and the degree to which this opportunity is taken up may enhance her social capital within the school. Similarly, this leadership layer serves as the membrane through which NGOs, social workers, police and other potential partners have access to the core functioning of the school, and thus have a direct influence on their success or failure in supporting the school towards improvement.

Teachers are also significant actors in the field, and their approaches to its capitals have important effects. Emerging quite clearly from my interviews were portraits of some successful teachers, who managed to achieve good results in spite of the many challenges that other teachers offered as excuses. Teachers such as Mhlobo, physical science and maths teacher at ECZ023, seemed to have high expectations both in terms of the rigorous demands they placed on students, as well as of students' abilities to meet these demands. They also seemed to be conscious of a different set of 'objective probabilities' for their students – in other words, when Mhlobo says he wants to change students' expectations from attending the local university (WSU) to accessing a premier university like Wits, the message he is sending is: "Yes, this is possible for *these* students!"

It would be remiss of me not to mention here the 'lowly admin clerk', who, in fact, in many schools possesses capital far beyond his/her hierarchical position, given his/her proximity to two important

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[61] Integrated Quality Management System – a monitoring and evaluation tool undertaken annually by all public schools in the country.

centres of power, the principal and the district office, via the SA-SAMS laptop, where all mark schedules and registers must be recorded. The very specific knowledge required to operate this system endows the clerk with a particular kind of cultural capital that s/he may trade for social and other capitals. The 'keeper of marks' brings to mind one of Reay's (1995) four points about habitus: that it is a complex interplay between past and present. It is these very marks that hold the key to students' and schools' place in the field. Teachers' own limited performance at school and university brought them back to teach at the same schools, where they now bestow on the students in front of them a similarly constrained set of learning opportunities.

The structures of the field, together with the capitals at stake, shape the habitus of people in schools and their prevailing doxa. It is these structures that compel actors in the field to play the game in the ways that they do – almost as if they have no choice. In the sections ahead I aim to show how these forces serve as an explanation for the practices seen in the rural schools in my sample.

6.4 Habitus

The structures constitutive of a particular type of environment (e.g. the material conditions of existence characteristic of a class condition) produce habitus, systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures… (Bourdieu, 1977:72)

Having foregrounded field and capital, I now turn my attention to habitus. In this section I develop a picture of habitus of teachers in the Eastern Cape, drawing largely on the interview and observation data used in the second half of Chapter 5. I must emphasise that I am not suggesting that teachers possess a single shared habitus, or that they have identical habitus, or a 'super habitus' (Atkinson, 2012:183). Clearly, every person has a unique set of formational experiences in the home, at school and elsewhere that shapes the development of their habitus. However, as I've argued, in the Eastern Cape many teachers share a background that enables common characteristics of their habitus to be drawn out. The fact that some teachers (many of the ones I interviewed) and some schools stand out because they are quite different in their attitude and actions is simply evidence of

the contrast to the norm. It is these shared characteristics of 'the norm' that I discuss here by examining their background, dispositions and expectations.

Effects of space, distance and isolation

The statistics from the survey data in Box 5.2 capture something of the similarity of experience of rural teachers in their schooling, further education and work. In brief, teachers overwhelmingly: come from rural areas themselves; attended schools similar to the ones they now teach in; relate strongly to the background of the students they now teach; attended local colleges of education or a local university; and, have had little exposure in their working life to schools outside the Eastern Cape or to other occupations. This sense of isolation and insulation reflects a number of the points raised earlier about rural schools' position in the field: the lack of choice and voice, the spatial dimensions, and the on-going marginalisation.

Further information was revealed in the interviews: many teachers grew up under apartheid, or, in the case of younger teachers, at least experienced the very real and on-going effects thereof in terms of widespread poverty, oppression by a dominant and un-accountable hierarchy, lack of access to educational opportunities and limited career choice. Most did not choose teaching and were compelled by necessity both to enter the profession and to take up their current position in a remote school. Their parents may or may not have been educated, but in general their home life contained horizons constrained by necessity.

These early home and educational experiences were reinforced by their on-going experiences as professionals in schools, where they seldom experienced success in terms of high student performance; were harassed rather than supported by the department; and in their experiences of professional development seldom experienced anything outside of the realm of rural Eastern Cape experience (in other words workshops, modules and courses run by department officials who had come through the same 'world' as they had[62]).

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[62] My follow-up interview with one teacher that probed professional development (P.D.) practices suggested that not all of these P.D. experiences were bad or necessarily low-quality, depending very much on the subject advisor.

In other words, teachers have been insulated in a world of constrained choice, low expectations and mediocre experiences. This world reinforces on a daily basis their own inadequacy and, by virtue of their 'sameness', the lack of potential in their students. Their physical environment, both at work and at home, sends a similar message about their lack of value and esteem. Thus in multiple ways, the marginalised position of rural schools in the *field* acts as a powerful reproductive force, creating a set of conditions that make it difficult for rural teachers to be able to break out of this cycle.

In this context, teachers are inclined to repeat the practices of their own experience. While my study explicitly did *not* include any classroom observation, my own experiences working with teachers, the anecdotal evidence gathered while I was observing at schools, and the body of research around teacher pedagogy (Nykiel-Herbert, 2004:251; Pendlebury, 1998) suggests that many rural teachers teach in the 'chalk-and-talk', rote-learning, mechanistic style in which they themselves were taught. This extends beyond the classroom to issues such as discipline and corporal punishment, which my observations and interviews suggest is still widespread in schools, despite it being made illegal two decades ago. At this juncture the distinction between individual *habitus* and shared *doxa*, which I discuss further on, becomes blurred, but the substantial interplay between these two notions should be apparent. My point is that the insulation of experience and limited exposure of teachers confines their *practice* to what they know.

This background is absorbed and translated into a set of dispositions – states of being, inclinations or tendencies. Growing up under the influence of the apartheid system is sometimes given as the reason why teachers have such an unhelpful relationship with the department (Jansen, 2004). On the one hand there is ample evidence of the fear of the hierarchy that seizes schools when it comes to submitting mark schedules, IQMS forms or other forms of bureaucratic compliance. Teaching ceases and teachers are occupied in the staff room until the deadline has been met. Teachers that I interviewed complained of the backlash from the department when their results were not good enough, and it was plain that for many of them department approval was closely linked to their own idea of success. My earlier discussion of the different forms of capital at schools suggested that this is one of many directions in which teachers are pulled by these competing forces in the field.

I saw plenty to suggest that there were very warm relationships between staff members and between teachers and the students in their class. Often, however, this care did not seem to translate into professional actions that result in better outcomes for their students, as might be the case at schools where a high premium is placed on academic capital. For example: making sure they are on time to teach their class; organising extra classes; taking marking home so that teaching time is not compromised; guarding their teaching time zealously; arranging work and cover when they are not there; etc. In schools that were structured for higher performance, many of these practices were in place. However, in lower performing schools the evidence suggested that teachers seem to know, at least subconsciously, that the field of schooling had placed them so far on the margins, and that the 'objective probabilities' were so structured against them, that striving after academic capital was not worth the effort.

I was also intrigued by the ways in which schools were structured around pay day. Many schools I visited closed entirely for the day, while others structured half-days so that teachers could leave early. In my interviews many teachers referred to financial pressures and the need to find permanent work, or the best promotion post available, even if it meant considerable sacrifice in terms of the length of the commute. Teachers referred often to the constrained choice in entering the teaching profession, and when I asked why they stayed teaching at the school they were at (usually after they had listed numerous challenges facing the school), many indicated that they would move if they had a choice, but were compelled to stay for financial reasons. Of course, knowing the absolute poverty in which many students live makes one think about where teachers come from and how many people their salaries are supporting. I am not suggesting that these rural teachers themselves are 'poor' in the true socio-economic sense, but they are immersed in a context of overwhelming poverty. Thus, even if this generation of teachers has in theory escaped from poverty, they are supporting generations still mired in it. From these pieces of data, I suggest that economic survival may be an equally valid explanation for some of the practices seen in schools - connecting this discussion to the fields I described earlier, where economic capital is a key part of the struggle for dominance. Teaching and learning (central to building academic capital) become periphery when other forms of capital are symbolic in the field.

These thoughts on the contexts teachers come from also provide some food for thought on teacher capacity. The structures of the field make it very difficult for teachers, particularly with a family, to live near school. It is difficult to acquire land from tribal authorities on which to live, and opportunities for spouses to work, and for their children to attend better schools, are all centred in the city. Thus there is little alternative to the long commute each day, which teachers I interviewed constantly referred to as 'stressful'. There are clear lines connecting this 'stress' in spending three hours sitting in public transport each day to their capacity to teach, to care, to summon 'extra effort' while in class. Data from my surveys revealed that very few teachers have access to computers or the internet – key resources for any teacher these days, both for preparing lessons as well as to grow and improve their practice. The *conditions* of the work - the structures of the field so to speak – thus affect the *capacity* of the people doing the work, so much so that they define who they are in the classroom.

In the city it may be the odd teacher who has a tough commute, or is dealing with a difficult family life. Here the challenging conditions of service and tough home backgrounds – the structures of life as a rural teacher in the Eastern Cape - are so pervasive, and play such a constraining role on what teachers are able to bring with them to the classroom, that I would argue that they play an equally important role in shaping teacher habitus. Teachers demonstrating high professional capacity in this context seem to have had experiences outside of the 'normal' course of rural life, as I discussed in section 5.4.3; but equally teacher capacity seems to be affected by the structures of this corner of the field. The way teachers play the game can thus also be seen as a reflection of the on-going battle for survival against powerful forces in this field.

Expectations

The expectations of the teachers I interviewed – for their lives, their work, their schools, their students – are shaped by their background and by their dispositions. Overwhelmingly, teachers expect things to be the same; again, echoes of the structures of the field that marginalise and perpetuate this marginalisation appear here. The teachers I interviewed had a fairly limited view of what was possible for them, usually confined to working their way up the institutional hierarchy. For many it was a case of earning a salary to afford housing, a car and schooling for their children. It is true that in my highly biased sample of teachers (many held leadership positions or were viewed

as exemplary teachers by their colleagues), a few expressed a desire to influence the educational system by lobbying government, or becoming an EDO so that they could improve the teaching environment. However, these tended to be fairly vague statements that I understood to be more an expression of their dissatisfaction with the status quo in schools, rather than a particularly 'shining' vision of what they thought was possible for them as individuals.

Most teachers' descriptions of a successful day were again fairly unambitious: going to class on time; their colleagues doing the same; delivering content; their students listening and understanding - in other words, a routine, uneventful day. Similarly, their descriptions of a successful year were generally about achieving results that would allow a little breathing space from the department. They had very limited expectations of support from the department or of any interventions that would radically improve their teaching practice and environment. In general, the feeling was that if we all worked extremely hard and things went very well, there may be a slight improvement in a few indicators of our school's performance – if we were lucky.

Most teachers' expectations for their students were similarly flat. There may be one or two students who might pass if they were lucky, but to expect *these* children to succeed at school was simply too unreasonable. As Mhlobo put it when responding to a question about the challenges he faced when teaching:

> *I think it is the environment. Being in a rural area where the learners are not motivated… they do not know the next step.* – Mhlobo, Science teacher ECZ023

Perhaps the fortunate few may be able to pass matric and attend a local college or university, as they had done themselves, but to study engineering or business, at UCT or Wits – no this was dreaming. After all, look at their parents. Look at where they lived. Look at how many students were in their classroom.

Emerging here is a picture of how many teachers' own backgrounds, with their low horizons and constrained choice, together with their dispositions – to comply rather than to fight, to accept rather than expect, to survive rather than thrive – shape their expectations. The rules of the game deftly work together to minimise the opportunities for positive change, and to create an environment totally insulated from high expectations.

6.5 Doxa

I have always been astonished by what might be called the paradox of doxa – the fact that the order of the world as we find it, with its one-way streets and its no-entry signs, whether literal or figurative, its obligations and its penalties, is broadly respected; that there are not more transgressions and subversions, contraventions and 'follies'...; or, still more surprisingly, that the established order, with its relations of domination, its rights and prerogatives, privileges and injustices, ultimately perpetuates itself so easily... (Bourdieu, 2001:1)

The descriptions of habitus in the previous section provide a foothold for scaling the heights of doxa. Where the habitus of multiple teachers reinforce each other, the doxa of an institution or a community begins to take shape. I've indicated that in many ways this can be thought of as the organisational climate or culture (Schein, 1992) – the shared, underlying assumptions about how the organisation operates within the field. Emerging here, then, are a set of taken-for-granted beliefs and understandings about the world of rural Eastern Cape teachers and how it works. Just as the field has shaped the habitus of teachers in the field, so organisational doxai are shaped by schools' (marginal) position in the field and their collective experiences of struggle and success.

Below I have summarised in bullet form some of these underlying assumptions that appeared to bubble up from my observation and interview data. Not for one second am I suggesting that every rural teacher and school shares all of these beliefs or assumptions, but I suggest there is merit in drawing out common threads in order to gain a sense of how the game is played in these schools:

- the educational hierarchy is extremely important and compliance with requests from superiors are the highest priority;
- at the same time, dealing with the department is generally associated with conflict - since the school and the department's goals are often not aligned - and should be avoided where possible;
- a core component of teachers' jobs involves bureaucratic compliance, which is often in conflict with academic goals, such as being in class and teaching;

- resources are limited and need to be fought for – thus there is little point in asking for anything or expecting requests to be followed through;

- staff meetings are for discussion and decision making by consensus (rather than reporting on decisions made elsewhere) and seem to take a long time - these meetings are often scheduled at short notice or in response to a crisis and tend to take place during school hours;

- there is a sense that things are unlikely to change or improve, that decline is inevitable and there is little personal responsibility for maintaining the school's buildings;

- effective discipline involves corporal punishment;

- school hours are limited and adhered to strictly;

- there is a general acceptance that absence from school is tolerated and not punished, and there is little personal responsibility for other teachers' classes should they be absent;

- teachers occupy a very narrow role at the school and cannot be expected to step outside of this; meals, meetings and social events are an important part of what keeps teachers connected to people.

- students' background and their parents' background prevent them from doing well, so it is unrealistic to expect more than one or two exceptional students to succeed at whatever subject is being taught;

- students won't understand if they are taught in English, so it's best to teach in isiXhosa;

- whether a teacher's class learns or not each day is not that important – it won't ultimately influence their performance regardless of the amount of effort teachers put in;

- teachers may care for (love/want the best for) students, but this is not necessarily connected to extra effort or improving their efficacy as a teacher.

While many articulated that they would like their schools to be like urban or former Model C schools, none of the teachers I interviewed could articulate very clearly what it was that made these schools different, or – importantly – what it would take to move their own school in that direction. They seemed to lack conviction that what they saw elsewhere could happen here. Of course, there were exceptions, Gcobani being the obvious example, but these rather served to prove the rule. I did not get the feeling that schools were 'on the move somewhere', pursuing a sparkling vision of the future with sound plans and concrete action.

At play here again are the competing forces in this field, the different forms of valued capital, and the strategies teachers use to navigate the rules of this game. To a degree, the components of doxa I have listed above are direct, logical responses to the structures of the field described earlier. They are an encoding of the ways of playing the game that make the most sense in pursuit of the valued forms of capital in this marginalised corner of the field.

My earlier descriptions of teachers spending large amounts of time in the staff room can be thought of as the game of school being played so as to maximise social and economic capital – in the absence of feasible means of achieving academic capital. Thus meals and time in the staff room are opportunities to enhance social capital. Arriving at work is one way to ensure economic security, but there are other opportunities for enhancing this by selling clothing, sweets and other products to students and colleagues during the school day – activities I saw repeatedly during my observations. Where these activities are common practice, these arrangements become encoded in the school's doxa - so much so that teaching at times seems a subsidiary, rather than primary, goal of the school.

Change agents on the other hand, in the shape of new, young teaching staff like Mhlobo, or well-intentioned 'leaders with a plan' like Gcobani or Feziwe, must face up to the realities of the power relations of the field. The forms of capital they bring to the game are an important predictor of their success, as is the *doxa* of the school. If it is change that they want to bring, inevitably this means that their own *habitus* is in conflict with the school's doxa and a struggle involving accommodation and compromise must ensue. More often than not the capital is stacked against these change agents and so it is the school's doxa that prevails and the habitus of agents is moulded by the experience. In Gcobani's case, he was the founding principal of ECZ023 more than fifteen years ago, and so the doxa of the school has been firmly moulded by his own exceptional experiences and outlook. On the other hand, at ECZ024, the doxa of apathy has survived a number of new principals over the last few years, so that Odwa's best efforts seem unlikely to shift things, and this comes across in the disillusionment in his interview. For Mhlobo, a protégé of Gcobani's at ECZ023, his recruitment and subsequent success at the school are no coincidence – his habitus is a clear match for the doxa of the school, and this has enabled him to excel. The fit between habitus and the doxa of the field is a key determinant of influence and of the possibilities for change.

To close this section, a point on infrastructure. The dangers of the reification of habitus have been pointed out, and I have purposely steered away from the term institutional habitus up to now. Allow for a minute, however, Bourdieu's notion that habitus is embodied to take hold at the institutional level and there are some interesting parallels of how the physical manifestation of internal qualities plays out. The contrast between schools with 'care', where grounds and buildings are well kept, and schools where neglect is rampant are simply too evident in the physical dimension for there not to be some connection to habitus (or doxa). This is no reflection on whether buildings are new or not. I saw old buildings with grounds where it was abundantly obvious that someone had taken care over the physical environment. This 'embodiment' of care spoke volumes to me about the doxa of care that prevailed at the school, and by extension the agency of its people that had been enabled to act.

6.6 Habitus and doxic shattering

Bourdieu's is a theory of social reproduction, which has not gone uncriticised for its deterministic outlook (Jenkins, 2002:80-84). If it is to prove useful in this particular context, it should provide theoretical tools to help explain the persistent stagnation of schools in this area, and why students emerging from these schools remain stuck in a cycle of poverty. This thesis, however, has had more ambitious goals than simply providing an account of how and why things stay the same. It seeks also to uncover, even if only to hint at, the mechanisms that produce school and societal change. To begin this journey I draw on a sentence in Atkinson's explanation of the concept of doxa, which I suggest may provide a clue as to where to begin:

> *…doxic experience is only given by the synchronisation of objective relational structures and the subjective perceptions of the habitus – any mismatch or sudden rupture and doxic experience can be disturbed or even shattered, even if the habitus itself remains stable. (2011:340)*

My descriptions of doxa and habitus make for depressing reading. While they may provide adequate possible explanations for the perpetuation of school stagnation in the rural Eastern Cape, they present a bleak view of a predetermined future – one which I am not comfortable endorsing. Indeed, Bourdieu himself vigorously defended his theories from accusations of determinism

(Bourdieu, 1990:116-118), and I have seen too much in the exceptional schools I visited and teachers I interviewed to suggest that the status quo need remain in place. Bourdieu claimed that despite the durability of dispositions, habitus could be changed in three instances: firstly, in a new field, the habitus operates differently; secondly, if circumstances change, the habitus too could be transformed; and finally, the habitus could be influenced by an awakening of social consciousness (Jenkins, 2002:82). The above quote on doxic shattering from Atkinson, together with Bourdieu's hints about habitus transformation, provide clues about where to look for a more hopeful version of the future.

In the first place, my discussion of some of the extraordinary teachers that I interviewed suggested that an experience of an exceptional 'other' early on in their education or careers had a profound effect on what teachers considered possible. Here their habitus has encountered and been shaped by a different doxa. Secondly, Gcobani quotes teachers who have moved on from his school as retrospectively describing him and his methods as 'Greek', indicating the foreign or very different *doxa* (or culture) he has created at his school. It thus seems possible for individual habitus, given sufficient symbolic capital, to shape the doxa of a particular institution (or field) with a very different set of beliefs and values to the prevailing doxa of the field. In a sense what has happened here is the doxic shattering that comes about when habitus comes into contact with doxa with which there is a 'mismatch' – as Atkinson puts it.

Finally, if circumstances or the dynamics of the field change, the habitus of teachers could operate differently. For instance, if instead of persistent failure, teachers began to experience success, the dynamics of the field could change. My interviews with teachers at the most academically successful school, ECZ023, suggest that their school's enhanced academic capital could be translated into social capital in their interactions with parents and the department. If instead of constraints and excuses, teachers experienced efficacy in applying for and receiving vital resources for their schools, their habitus might change. Similarly, if instead of cold, harsh authority, teachers experienced support, value and appreciation – 'ongoing regard' to use Kegan and Lahey's term (2001:94) – from their superiors and the department, a subtle shift in the field could begin to produce changes in habitus and growth in agency (Langhan, 2012). The surprise and gratitude experienced by outside teachers who encountered Thandi's empathetic style for the first time suggests that this is rare, but possible.

If instead of living in rudimentary conditions and commuting long hours every day, teachers were housed in comfortable accommodation located close to the school, a new sense of time and energy may produce deep changes. Onezwa's comments about her desire to work after hours, and to establish a 'professional' environment at her school seemed to suggest as much. If instead of arriving to broken windows and overcrowded classrooms, teachers arrived to their own classroom, made rich with care, they may begin to respond differently. I saw this in the handful of 'oasis' classrooms at ECZ008, where a few Foundation phase teachers seemed to have carved out their own magic world for their children, despite the broader disorganisation at other levels of the school. If instead of 'one-off' workshops with low-quality input, teachers experienced on-going, practical and high-quality professional development, their sense of what is possible may begin to shift. My own experiences of taking teachers away for team building sessions at venues where they are treated as valued professionals, suggests that this may indeed be transformational.

6.7 Conclusion

At the beginning of this chapter I suggested that understanding the constraints and possibilities faced by rural schools, as this thesis has tried to do, requires an analysis across multiple dimensions: of power and social reproduction; of schools and their organisation for improvement; and of rural development more generally. This chapter has shown that these dimensions combine and intertwine in complex ways that are not easy to pull apart.

In particular, I've shown how the location of rural schools on the periphery of the field of South African education - together with the constraints of space, place and time, the limited choice and voice of agents in the field, and the interplay of forces and agents – creates conditions that serve to undermine the possibility of quality schooling in a variety of ways. The fact that the sites of capital lie far from rural schools affects the patterns of employment, movement and organisation, to the extent that these schools are effectively hamstrung, playing with great difficulty the game of schooling in the same way that high performing schools in the city might play. In the absence of a feasible route to academic distinction, the rules of the game are rewritten so that other forms of capital may be pursued more successfully. In particular, social and economic capital begin to take precedence.

The habitus of teachers in rural schools has been shaped by the limited choices and lack of academic distinction available in this corner of the field. Prevailing in the majority of rural schools - and experienced by even exceptional schools as a suffocating blanket of inertia requiring constant struggle - is a doxa that promotes low expectations, apathy and demotivation. It has been created by a set of shared, and severely limiting, experiences by rural teachers. This doxa is continually reinforced by the physical environment, the arduous daily journey to and from work, the lack of positive feedback, and a host of other factors, which combine to send on-going messages to teachers about their lack of value and the intransigence of the situations they find themselves in. Under this climate, it is no surprise that most teachers' habitus remain largely immune to change. It is a handful of exceptions who manage to shape their environments to match their distinctively different habitus – often generated from exceptional experiences in education or early employment. Given sufficient capital, these individuals are able to shape the doxa of the schools they work in so that the agency of teachers around them is enabled, and possibilities for improvement emerge.

One of the central arguments of this thesis – that multiple analytical tools are needed to understand improvement in rural schools – has hopefully gained significant traction over the course of this chapter. The fairly neat and orderly picture of the Five Essential Supports that was painted in Chapter Five has been embedded in a landscape that prompts considered reflection around the mechanisms that reproduce the very conditions in schools that make it unlikely for strength to be developed in any of the Five Essential Supports. Making sense of how these two frameworks interact and can complement each other is the task awaiting us in the final chapter.

Chapter 7: Constraints and possibilities for rural school improvement

Hence a reform conundrum emerges. The schools that must develop strong essential supports will also often lack social capital in their school communities and may also confront an extraordinary density of student needs. These latter conditions make the development and maintenance of these essential supports quite difficult to attain in most cases.

- Bryk et al., *Organising schools for improvement,* 2010:194

…doxic experience is only given by the synchronisation of objective relational structures and the subjective perceptions of the habitus – any mismatch or sudden rupture and doxic experience can be disturbed or even shattered, even if the habitus itself remains stable.

- Will Atkinson*, From sociological fictions to social fictions: some Bourdieusian reflections on the concepts of 'institutional habitus' and 'family habitus',* 2011:340

7.1 Introduction

The aim of this thesis has been to understand the possibilities and constraints for school improvement in rural South African schools. In the opening paragraphs of the introductory chapter I puzzled about Bahle, a real-life character who seemed to have achieved in spite of unlikely odds, and the rural schools that he attended. I wondered whether there were school factors that contributed to his success. I also wondered about the mass of rural students that seemed destined for far dimmer horizons than Bahle, and about the structures that seemed to perpetuate the low performance of their schools. In Chapters 5 and 6, some clues to these puzzles began to emerge, and it is the work of this chapter to bring these ideas coherently together.

First, however, it will be worthwhile to reflect on the journey thus far. In Chapter 1 I outlined some of the motivations for this research, including my personal connection to its outcomes through my involvement with school improvement work in the area. I also provided a brief history of education in the Eastern Cape, with a particular focus on the former homelands, where this study is located. Out of an understanding of this context arose the conviction that multiple theoretical lenses were needed in order to authentically and meaningfully answer questions about school improvement. I posed two research questions, around which this thesis has been structured:

- **What are the possibilities and constraints for improvement facing the particular schools examined in this study?**
- **What are the implications for rural school improvement in South Africa more broadly?**

Chapter 2 provided the conceptual framework with which to go about seeking answers to these questions. I brought together three traditionally separate strands of research – school effectiveness and school improvement; rural development; and Bourdieusian sociology – in order to deal in a meaningful and authentic way with the complexity of school improvement in this context. Specifically, my conceptual framework drew on Bryk and colleagues (2010) comprehensive analysis of Chicago schools in *Organising schools for improvement,* and Bourdieu's sociological tools of habitus and doxa. These provided alternative lenses for examining the possibilities and constraints for improvement in rural schools.

In Chapters 3 and 4 I then outlined the research design, methodology, data collection and analysis strategies I have employed. Drawing on surveys of teachers and students at 25 schools, observation data, and interviews with fifteen teachers, I made use of a combination of quantitative and qualitative approaches to create a picture of rural schools in this area. In Chapter 5 this picture took the form of an analysis of the Five Essential Supports, as they play out in this context. In Chapter 6 a Bourdieusian interpretation was offered by examining the field, capitals, habitus and doxa that shape rural schooling in the Eastern Cape.

To summarise the findings presented in these final two chapters I have chosen to paint an 'ideal type' picture of two schools at either end of the spectrum of schools in the field. In this way I hope to indicate some of the possibilities and constraints for school improvement in this context, as well as making clear the inseparable connection these schools have to the broader field of education – and the consequences thereof. From these descriptions a number of implications naturally emerge, which I summarise, before reflecting on some recommendations and an agenda for further research.

7.2   The spectrum of schools in the field

Possibly the most significant finding to emerge from this research was the applicability of the Five Essential Supports to a rural South African context. In other words, that the Five Supports – leadership, school-community ties, professional capacity, learning climate, and the instructional guidance system – are tied to student performance on external assessments. To my knowledge this is the first time that this framework has been tested outside the United States, and the fact that there were very clear similarities between my findings in a remote, developing country context and the findings of Bryk and colleagues (2010) in Chicago, is remarkable in itself. I will pick up on some of the implications of this later, but of interest here is how the Essential Supports play out in relation to the field of education in South Africa.

The literature, together with substantial supporting evidence from my own observations and conversations with teachers, locates rural schools on the margins of this field. These schools are peripheral both in terms of their geographic location as well as their position on the social landscape. This affects the time-space-place dimensions of schooling, together with the patterns of

employment, movement and organisation. Actors have limited choice and voice, while often facing overwhelming forces, which affect the agency they are able to bring to bear. Together these structures of the field shape what is possible in terms of school improvement in this context.

Within this field there exists considerable variation, even in the comparatively small number of rural schools I examined in my study. This in itself is an important point – as Maxwell (2012:50) suggests, in social science it is seldom the mean or median that is of interest, but the diversity of experience. To demonstrate this variation, and in so doing to summarise my findings, I describe two 'ideal type' schools located at either end of the spectrum of schools in the field. I use the word *ideal* here to indicate that these schools do not actually exist – they are patterns or types in an ideal research world – but the characteristics of the schools and the people I describe are all taken from empirical data, so that the picture I create should be viewed as realistic, rather than wishful. I look at each of the Five Essential Supports (my additional factors of infrastructure, language and class size are integrated) in turn at both schools and then comment on how these interact with the field.

7.2.1   Carved out of constraints: Akunathemba Junior Secondary

At one end of the spectrum lies Akunathemba Junior Secondary School[63]. It is located alongside a major road about an hour and a half drive from the nearest town. The principal of the school grew up in the area, attended a local university, and began his teaching career at the school some fifteen years ago. All of his teaching staff went to rural schools similar to the one they now teach in, and qualified from local teaching colleges or universities of technology, with about half having bachelor's degrees. Most staff are in their first few years of teaching, apart from one or two who have been at the school since it was started 30 years ago and are now approaching retirement. None of the new teachers chose the school, but were forced to take a post in order to gain entry into the system, and plan to leave as soon as a post becomes available nearer town. All staff live in the nearest town, as there is no accommodation on the school property, and the surrounding villages do not have running water or electricity.

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[63] As with all names of schools and people in this thesis, this name is purely fictional.

Leadership at the school is embodied in the principal. Since the school has very low student numbers, there is only a post allocation for one Head of Department (no deputy positions), but this has not been advertised yet by the department, despite several attempts by the principal to press the matter with officials in Bhisho when the post became vacant two years ago. A Senior Management Team exists, but meetings are infrequent and usually involve a great deal of discussion and few decisions. Co-opted teachers on the SMT do not feel they have the authority or experience to contribute to these forums, and are not paid for the added responsibilities, and thus generally defer to the principal. The school does not have additional funds available to pay an admin clerk and one has not been allocated to them by the department. The outcome of this is that the principal carries all responsibility for school management and administration.

The principal thus feels under constant pressure to respond to departmental demands for paperwork and improvements in the school's performance on the ANAs and internal assessments. He passes this pressure on to his teachers in the form of harsh demands for better results, but seldom has the time to follow this up with meaningful visits to classrooms to mentor his mostly young staff. At the same time, he is conscious of the need to maintain good social standing at the school and thus spends significant amounts of time in the staff room, talking and gossiping with teachers. He is the only educator who owns a car and so is often (2-3 days each week) away from school providing transport for his teachers to departmental meetings, attending meetings himself, collecting school-related documents or purchasing supplies for the school.

The school has minimal contact with *parents and the community*. There is a School Governing Body, but like the SMT, this is largely for compliance purposes and meetings seldom result in meaningful outcomes. When the school calls parent-teacher meetings, only a handful of parents arrive. In general, teachers view parents as uneducated and unable to contribute to their work – a burden rather than an asset. Their view of the children they teach is similarly unpromising, expecting very few to succeed given the educational limitations and many distractions of their home life. When parents do visit the school to discuss issues, teachers are reluctant to leave the staff room, and shake hands with evident distaste. Local youth have been banned from using the area's only football field located on the school's premises, because vandalism has resulted when the school grounds are not locked after closing.

The *professional capacity* of teaching staff is undermined in several ways. Teachers arrive at school tired after an early start and a long, dangerous and uncomfortable journey on crowded public transport. They have little access to learning materials other than prescribed textbooks. The school's sole photocopier is regularly broken. Their experiences of teaching have been limited to similar schools and tertiary institutions, so it is unlikely that different approaches to teaching are explored. Other teachers never visit their classes. The high turnover of teachers as they seek posts closer to town undermines any sense of community, and there are few opportunities for teachers to meet together to plan or collaborate. The school has used its maintenance budget to build a staffroom, and so no maintenance of classrooms has been done in years. This leaves teachers feeling uncomfortable at school, and undervalued. They do not feel like professionals. With all of these negative surroundings, lunch is a highlight each day – a welcome break to eat a meal and talk with friends. School finishes promptly at 14h30 and teachers must rush home, via the hour and a half commute, to collect their own children from school and do chores before dark. There is no time, space, energy or light for lesson preparation or marking at home.

The *learning climate* of the school is largely set by the principal. The emphasis is thus on compliance with departmental mandates. He is aware that students and teachers should be in class, but seldom has the time or energy to monitor this closely or to follow through with threats. His social presence in the staffroom gives tacit permission to teachers to do the same. Other teachers do not view monitoring and control as their job and thus largely ignore students who are not under their direct supervision. The result is that students and teachers attend classes at their convenience. The timetable is often a flexible guide, which is dictated to by the readiness of the midday meal, or the demands of the extramural programme, which is usually accommodated within school hours. When the principal is away, the flexible nature of the school day increases still further, often resulting in early closure. When deadlines for marks or paperwork such as IQMS approach, the focus of the school shifts in order to make sure these are met, meaning that classes are often cancelled so that teachers can mark. In general, there is little expectation of change, of excellence, or of possibility.

Little can be seen of the *instructional guidance system* at the school. For most teachers, the level of disruption at the school generally prevents them from thinking about pedagogical issues – simply having students in class regularly is challenge enough. Students are all well behind where the highly

prescriptive curriculum says they should be, but in order to comply with the requirements from their principal, teachers stick closely to the CAPS documents. This results in lessons taught almost exclusively to the one or two students that are at grade level. Since students are exposed to so little English at home and are generally far behind grade level anyway, teachers teach in isi-Xhosa even though it is an English medium school from Grade 4 upwards. Assessments are undertaken haphazardly, often only in response to external demands for marks. It is only these handful of students that manage to pass each year, but the vast majority of students are allowed through to the next grade anyway, because of logistical as well as legal requirements. This leaves teachers feeling ambivalent about the purposes of school. One or two teachers are passionate about extra murals and use their skills in these to build very competitive programmes, which often take precedence over academics during these extra mural 'seasons'.

7.2.2 Powered by possibilities: Zamakulungisa Senior School

Zamakulungisa Senior School is also situated an hour and a half from the nearest town, but lies at the foot of a steep valley, which makes it inaccessible during heavy rains. The principal and founder of the school also grew up and studied locally, but took her first post at a high performing school in Mthatha. The teaching staff at the school come from a variety of backgrounds and not all have teaching qualifications. Some staff are from other African countries. Most staff are in their first five to ten years of teaching, but there are a cohort of senior staff who express commitment to the school and community and have been there significantly longer. Despite the fact that there are no facilities in the community, a handful of staff stay with local families so that they can run after-hours classes and extra-mural programmes. The rest commute from the nearest town.

Leadership at the school is undoubtedly driven by the principal, but she has been proactive in growing a team of capable senior leaders around her. Her mission is to create a 'shining star' rural school, comparable to the high performing school she taught at early on in her career. She is deeply committed to the school, sets tough standards for students and staff, but is approachable and encouraging. Her staff know she will fight for them. Under her leadership the school has created an excellent reputation in the community, partly based on the fact that they consistently produce the best grade 12 results of schools in the area. The consequence of this is that student numbers have swelled with students from far and wide, so that class sizes are often in excess of 70 students per

class, despite a never-ending set of building projects funded from a combination of private sector donations and parent levies. The high student numbers mean that the school has five additional senior posts – two deputy principals and three HODs – although one of the deputy posts has not yet been advertised by the department so is vacant. In addition, there are two admin clerks, one provided by the department and one funded by the SGB. The SMT meets every fortnight and maintains an active presence in the school. The leadership, administration and management burden is thus spread across a number of people, with clear roles defined by a combination of national policy and internal strategy.

One of these critical roles, undertaken on a rotational basis, involves monitoring student and teacher presence in class, which happens a few times each day. The management team also has grade and subject responsibilities, which involve ensuring that the correct content is being covered and assessments are completed at the appropriate time. The principal does her best to buffer the staff from departmental paperwork requirements, but there are still times when the entire staff is swamped by deadlines. The principal dislikes leaving the school for meetings elsewhere and avoids this wherever possible. Her track record and no-nonsense character mean that she receives unusual deference from district officials, allowing her to miss meetings or to send deputies. When she is away there is a clear line of command, and her absence is hardly felt in the functioning of the school.

The principal prioritizes relationships with ***parents and the community***, and this attitude has been inculcated in her teaching staff. Members of the SGB are seen on campus most days of the week, and meet regularly with the principal. Parent-teacher meetings are generally reasonably well-attended, with attendance at Grade 12 meetings approaching 90%. This overwhelming support from parents enables the principal to make exceptional demands of her Grade 12 class: they are housed with families close to the school throughout their grade 12 year so that they can attend night classes. The principal often has a queue of parents outside her office and she spends considerable amounts of time with them, dealing with their issues as well as discussing how parents can support their children's learning. Her teachers greet parents and shake hands warmly. After recent security issues at the school, the principal met with community members and they have established a security and maintenance team that looks after the school after hours in exchange for the use of the school's football field by a local community club.

The **_professional capacity_** of teachers is supported by several unique features of the school. The principal owns two taxis which transport teachers to and from school each day, which ensures that all teachers arrive timeously for school and are spared the stop-start nature of public transport. Most teachers make use of two or three textbooks or study guides to prepare lessons. The school's three computers, together with a number of photocopiers, are sometimes used to prepare learning materials, although there is no internet access. The higher student and staff numbers mean that there are usually two or more teachers per subject so that some collaborative planning and assistance is available, and the science department has recently been experimenting with fortnightly meetings. The principal has been proactive about recruiting the best available teachers, luring some away from private schools in the town with the promise of a permanent state post, and using her senior posts strategically to keep her most important teachers at the school. New teachers are drawn to the school by its reputation. The buildings and grounds, while old and cramped, are well cared for. This environment, together with several small incentives such as a morning meal, the provision of transport, and annual team-building days, give staff a sense of value, care and community.

An air of seriousness and order pervades the **_learning climate_** of the school. Teachers and students know what they are there for and move quickly between classes. Students are smartly dressed and greet visitors politely. They regularly organise after-hours study groups and attend night classes even when teachers are not present. The staffroom is a busy place and teachers seem to be purposeful about how they use their time. The timetable is adhered to strictly. There is generally a degree of planning around departmental deadlines, but the high student numbers often mean that marking deadlines are missed. Teachers tend to be frustrated by the level that students enter the school at in Grade 10, but many teachers still expect their students to achieve high results by the end of Grade 12. There is also a high level of awareness of the connections to tertiary study, with the principal sometimes paying out of her own pocket for students to apply, or making phone calls to contacts at universities in order to find bursaries. Many teachers express a desire for accommodation for students and staff on site in order to increase contact time.

The **_instructional guidance system_** at the school takes its cue from the learning climate. The emphasis is on ensuring that teaching happens and that students are working hard, rather than around different pedagogical approaches. Most classes are taught in English, particularly by the

contingent of foreign teachers. Assessments tend to be only those mandated by the CAPS documents, and practical investigations in subjects like physical science are usually restricted to the prescribed minimum. There is a big focus on academic success and the school has a strong track record; however, the increased student numbers in recent years has meant that the school struggles to maintain the high levels achieved previously. In particular, weaker students who fail in Grade 10 are legally required to be promoted through the grades, creating challenges when they reach Grade 12. The principal minimises this by actively discouraging these students from entering Grade 12, refusing to allow Grade 12s to repeat the year if they have failed, and by encouraging easier subject choice. A local teacher passionate about soccer runs high-quality training sessions after school, so that the school regularly wins trophies.

7.2.3   Possibilities and constraints in the field

The pictures above of the Five Essential Supports at play in two contrasting 'ideal' schools provide some sense of the constraints and possibilities for school improvement in this context. It is important to note that both schools occupy the same marginal place in the field, and as a result constraints are still evident throughout my description of the much stronger Zamakulungisa. For instance, both schools are equally affected by the long commute of teachers, the lack of accommodation, the limits to teachers pedagogical experiences, the effects of students' home life, the lack of support from the department – to name a few features of this corner of the field – and this affects the degree to which strength can be developed in many of the supports. In particular, my description of the instructional guidance system at Zamakulungisa is still incredibly restricted. Thus a key point that emerges here is that strength in the Five Essential Supports is limited by the field.

As I've thought back over hundreds of school visits in order to craft these narratives, only a handful of schools informed the picture of Zamakulungisa, while the vast majority of schools lay close to the Akunathemba side of the spectrum. In other words the possibilities present at Zamakulungisa are really an exception; far more dominant is the constraining influence of the field that makes it exceptionally difficult for schools to develop strength in any of the Five Supports. At this position in the field, the forces are aligned against rural schools in powerful ways.

These two points – that in most schools the field prevents strength from being developed in the Five Essential Supports, and in the rare cases where it is developed, it is limited - suggest an important starting place for rural school improvement: a shift in the structures of the field is required. Atkinson's (2011:340) notion of doxic shattering and Bourdieu's (1990:116-118) contention that habitus can be transformed in a new field or when circumstances in that field change, discussed towards the end of Chapter 6, provide support for this. The research from this thesis suggests that without fundamental changes to the field of education in South Africa, it is unrealistic to expect significant strength in the Five Essential Supports to develop in rural schools, at least at any meaningful scale. The majority of my recommendations later in this chapter are thus targeted at reshaping the field.

7.3 Implications

7.3.1 Generalizability and value of the study

This study makes limited claims about generalizability. On the one hand, there is fairly compelling evidence in this study that the Five Essential Supports apply in rural South Africa. Naturally, I have looked at only a small and specific sample of 25 schools and there have been considerable limitations to the data I have employed (particularly the lack of a credible testing regime through the different levels of the school), so further research in different South African contexts is required – a point I pick up in more detail later. However, the extensive and robust nature of the research in *Organising schools for improvement* (Bryk et al, 2010) provides a sound backing for the validity of their findings here. In summary, the rural school improvement framework I have advanced here holds promise for application in other areas of South Africa and beyond.

On the other hand, the particular nuances of each of the Five Essential Supports, as I have described in my discussion of Zamakulungisa and Akunathemba schools in the previous section, are specific to the schools in my study, at the time of my visits. This is how, for example, leadership played out in this particular corner of the field, and there is little to suggest that in another part of the field the same practices will be considered effective. As Maxwell (2005:115) suggests, external generalizability is not usually of foremost concern in qualitative studies of this nature, but the value that this portion of the study brings is in its contribution to an under-researched sphere of

education, namely rural schooling in South Africa. The case studies I have examined can be placed alongside other qualitative studies of rural schooling, so that a more comprehensive picture can be developed that will guide policy and practice. I would suggest that my choice of schools in what might be considered an extreme corner of the field (lowest performing district, in a former homeland, in the lowest performing province) provides additional illumination (Maxwell, 2012:142), in that they offer an example of what is possible even in extreme settings.

There is further value generated from this study in its connections to the sociological theories of Pierre Bourdieu. In particular, I have demonstrated the profound influence that South African rural schools' marginal position in the field has on their possibilities for improvement. This position shapes and reinforces the habitus of teachers and the doxa of the schools themselves, so that low expectations and apathy become entrenched. As the likelihood of achieving academic capital diminishes, taking up opportunities to play the game for other valued forms of capital becomes the most rational decision for many teachers. Viewed through this lens, the 'problem' of school improvement takes on much broader dimensions, so that it is necessary to think about shifting the structures of the field. It provides a sobering realisation that traditional school improvement frameworks, such as the Five Essential Supports, when aimed at rural schools may have limited impact while the field is configured as it currently is.

7.3.2 An interconnected system

Placing the Five Essential Supports as the centrepiece of a model for rural school improvement in South Africa has some interesting implications for how policymakers and practitioners approach improvement efforts. The *essentiality* of the supports (that *all* are vital for improvement to occur) and their *systemic* nature (that strength in one is likely to be accompanied by strength in the others) have been established both here (in part) and in the U.S. (much more extensively). The statistical connections presented in Chapter 5, together with these points about the essentiality and systemic nature of the supports, make a key statement about the interconnectedness of school improvement in this context.

Where Bryk and colleagues found that the Five Essential Supports acted as a system within Chicago schools, I would suggest that in a rural South African context this interconnectedness operates on a larger scale to include elements such as infrastructure provision at schools, support and

accountability from the district office, and electricity provision to rural homes, amongst others. Efforts that focus on one aspect - for example, improving classroom teaching - may fall flat if other supports such as leadership and learning climate are not in place. This may help to explain the lack of traction gained in some previous local improvement efforts (indeed Taylor and Prinsloo, 2005:7, suggest as much) and should help to inform future large-scale improvement programs. These links between the essential supports and several external factors effectively serve as connecting wires that tie their fates together.

In summary, I would extend Bryk and colleagues' argument to say that in order to improve rural schools there needs to be sustained, simultaneous focus on *all* of the key elements highlighted in this study. In support of this argument I found Moss Kanter's (2006) research on turnarounds of sports teams and large corporations to be helpful. She suggests that to create a 'Cycle of Success' (the antithesis of Odwa's description of the downward spiral at his school, p. 172) requires not only investments in people and systems, but also in the physical environment, salaries and status that will enable these people to view themselves as (successful) professionals. As improvements in each of these elements combine to produce confident people and teams, improved results follow, which contribute further to this sense of confidence and efficacy so that the upward cycle is sustained.

I have painted a similar picture of an interconnected system in the rural Eastern Cape that at the moment, however, is geared to reproduce habitus and doxa that make improvement difficult. Schools that were able to buck this trend appeared to have strengths across all of the Five Essential Supports, as well as a focus on the additional factors, such as language, adequate facilities and class size. In so doing they were able to create a different institutional doxa that allowed the habitus of people to function quite differently. To place more schools on this upward trajectory will require similarly sustained, simultaneous investments in improving *all* of these key elements.

7.3.3   Reflections on methodological possibilities and constraints

I have suggested that the findings in this thesis represent an important bridge for the Five Essential
Supports, from a well-established developed country framework to a set of tools that may be
similarly helpful in developing country contexts. The use of interview and observation data
alongside the survey data provided an understanding of context that enabled both greater clarity
and an important grounding of the quantitative framework in a different setting. Understanding
how teachers and school leaders make sense of a foreign framework like the Five Essentials is
critical if it is to be taken up in a different context – a point I pick up under recommendations for
further research.

A key caveat is that the sophisticated testing regimes that the framework makes use of are often
not present to the same degree in less resourced countries. In the particular case of South Africa,
while there are widely-accepted (although not entirely controversy free) exit measures at the end
of Grade 12, assessments in the earlier grades, such as the ANAs, are currently ill-suited for this
type of work, and this caused complications for the reliability of my findings.

To be specific, I found the ANAs problematic in two ways. Firstly, the data received from the
National Department of Basic Education was incomplete. Some schools were missing entirely, some
schools were missing data for specific students, and there was a significant gap between the
number of students enrolled in the school and the number enrolled to write the assessments. All of
these issues create opportunities for sample bias and compromise the reliability of the results.
Secondly, my analysis of the national, provincial, district and sample school means for the ANAs and
NSC examinations suggested sharp incongruence between results at Grade 9 and Grade 12 levels. I
was forced to conclude that some degree of inflation was occurring at the school level, whether
intentional or through poor adherence to the marking memoranda. The situation of marking of the
ANAs at the school level obviously opens up the possibility for this to occur. Again, regardless of
where, how or why these irregularities are occurring, they compromise the reliability and validity of
the ANAs as a tool for measuring learning.

My point is not so much about the ANAs themselves – there are many ways in which they can be
useful for other purposes in their current form. However, if quantitative, performance-based
frameworks, such as the Five Essential Supports, are to be used in countries like South Africa,

considerable work needs to be done to strengthen the testing regimes in the earlier grades. This represents a major constraint for taking the findings of this study forward in a more extensive pilot of schools across a wider spectrum of geographical and socioeconomic locales.

7.4 Recommendations

Thus far I have highlighted some of the major findings that arise from this study in terms of: the applicability of the Five Essential Supports; the particular form these supports take in this corner of the field; the constraining influence of the *field* on rural schools; the interconnected system; and, the constraints that the ANAs represent for future research. Out of these more general points arise several specific recommendations for concrete action that can be taken by those concerned with improving rural schools. These recommendations can be broadly collected into two groups, based on my earlier comments regarding the need to strengthen the Essential Supports at the same time as reshaping the field.

Where possible I have tried to be explicit about the *who,* as well as the *what* and *how,* in order to make these as relevant and actionable as possible. Some of the groups of people that may be able to take up these issues might be: principals and other change agents in schools; policymakers in academia and national government - in education and in rural development; national and provincial budget-makers and private sector funders; district offices, non-profit organisations and other educational support services working to improve schools from the outside; lobby and advocacy groups concerned with quality education for all South Africans.

7.4.1 Strengthening the supports

Recommendation #1: Start working with the Essential Supports now

If the Five Essential Supports do have traction in South Africa, then the most obvious recommendation is to begin to work with these as soon as possible. Clearly before they begin to shape policy and are turned into yet another national turnaround strategy, further research is required in more schools in more diverse settings. However, I would suggest that in the meantime, there is value in beginning to work the supports into the language and practice of schools – often

the acid test of improvement strategies is not whether they look good on paper, but whether they are taken up by schools as something valuable (Elmore, 1979).

A good place to start would be with the schools that were involved in this study. An interesting by-product of the survey process was the number of requests I received from school leaders for copies of the survey. It seemed to me that they were looking for a model of 'good practice' and that the survey provided examples of this. When I mentioned this to the folk at the CCSR and talked with school leaders in Chicago, they confirmed that a large part of the changes they see in schools between annual surveys, is in the language that the surveys provide teachers with that enables them to talk about their practice in a coherent way across the school (Personal communication, March 4, 2014). There thus seems to be good potential for conversations around the Five Essential Supports with the SMTs of schools in this area to have productive results.

Recommendation #2: Consider the entire system of factors when planning and implementing improvement initiatives

This recommendation has broad application to all those concerned with rural school improvement. For those responsible for policy and budgets, there needs to be a sense of the whole picture when planning individual improvements. My fear with regards the anticipated roll out of the Accelerated Schools Infrastructure Delivery Initiative (ASIDI), for instance, is that these new buildings are being planted in environments where other factors, such as the professional capacity to maintain these buildings, have not been adequately considered.

For those concerned directly with implementing new school-level initiatives, from inside or outside the school, there needs to be consideration of, and connection to, all five of the supports. For example, professional development initiatives led by the district office or non-profit organisations must consider (amongst other things): the level of 'distraction' these initiatives may bring to the sense of order at the school; the learning climates at schools and whether pedagogical improvements will be able to gain traction in such climates; the material resources currently available to teachers in terms of classroom space, labs, libraries and technology.

7.4.2 Reshaping the field

***Recommendation #3**: Rural schools require a different framework and different set of resources*

The review of the literature on rurality and rural education suggested that rural schools in South Africa are positioned very much on the periphery. The system they operate in has traditionally placed them on the margins of thought and hence a low priority item on national budgets and agendas. Indeed, as Westaway (2012:122) points out, despite being a stated 'Top 5' priority item for the government in 2009, rural development received only R252 million (or 0.03% of the total budget). A recurring theme throughout this thesis has been that the rural system is quite different to urban schooling: students, teachers and schools face different challenges. It is no good applying the same rules, frameworks and formulae across all schools in South Africa – a nuanced, contextual approach is required, and this is particularly the case for rural schools.

Part of this different approach concerns funding formulae and resource allocation, so this recommendation applies to private sector funders and government treasury departments, as well as policymakers. This thesis has illustrated the immensely complex task facing rural teachers and schools. If equality in schooling is the goal, then I suggest that equal funding allocations for rural and urban schools will never achieve this. Immediate issues that come to mind are: a rural allowance for teachers that will enable rural schools to compete on an even playing field with urban schools in terms of attraction and retention of staff; infrastructure at schools that will enable schools to accommodate (some) staff and students; and transport for (some) teachers and students. Of course, these suggestions need to be thoughtfully applied with careful criteria for what constitutes a 'rural' school, something that the rural health sector[64] has not managed to do (Eagar, personal correspondence, September 26, 2014).

Those that hold the budgets may argue that there simply isn't money for these additional 'luxuries'. My point is not to figure out how this can be done, but simply to state that if equal, quality education is the goal for all students, then more money must be spent on rural schools than on

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[64] Thinking through how to hold teachers on such an allowance accountable would probably require some thought, as well as some clearly defined criteria for what constitutes rural. For instance, the Department of Health's rural allowance has been largely used as a political tool, rather than as a clearly articulated and fairly allocated incentive to place professionals in the places that need them most (Eagar, 2014).

their urban counterparts. In terms of staff and student accommodation, I suggest that a possible place to start might be with those schools that show signs of having the Five Essential Supports in place so that the likelihood of schools making effective use of these additional resources is higher. This could then serve as incentive for other schools, who see that there are real rewards for organisation. I further suggest that these additional investments in rural schools, rather than being purely a net cash drain, would actually result in a reduction in the need for new infrastructure (schools and other) in urban areas as schooling migration lessens, admittedly probably only in the medium-term.

Recommendation #4: Investments in people and systems need to be accompanied by investments in the physical environment of schools

I've suggested that teachers in schools find it hard to think of themselves as valued professionals partly because of the physical environment that reminds them on a daily basis of their inferior status. Thus a focus on creating classrooms, staff rooms and additional school infrastructure that demonstrate to teachers their value and worth is key. In a sense ASIDI will begin to address this, but developing practical, functional maintenance plans for schools needs to accompany this, so that the deterioration is not a matter of course.

Recommendation #5: Living conditions of teachers and students need to be addressed as part of these investments

Similarly, I've suggested that teachers' and students' home environments (including the long journey to school each day) present a major impediment to teaching and learning. A rural allowance for teachers may help to relieve some of the discontent felt by many teachers at their long commute, but it will not replace the energy and time spent on these journeys. Having at least some staff accommodation on site at every rural school should thus be a priority and there are many additional reasons – such as increased ownership, reduced vandalism, longer school days, extra-murals – that make this compelling. Facilitating state- or private-sector run transport services for teachers and students at rural schools, although expensive, will also reduce the stress involved in transport and the late-coming issues. Finally, some form of hostel accommodation, particularly for senior school students, would assist schools in building the serious, academic learning climate

that is often compromised by the home environment. At homes, the accelerated provision of electricity to more rural areas has clear educational support from the findings in this thesis.

Recommendation #6: ***An orientation that serves students first is required from all levels of the system, and this should structure the organisation of work***

The phrase 'students first' has become value-laden rhetoric in education circles that is often misleading in its simplicity. Without wanting to undermine the complexities involved, my sense of the system at all levels was that it had been designed around the complex logistics of rural schools, rather than around what was best for the students in schools. An orientation that puts 'students first' should shape and structure how the work is done. Disruptions to teaching and 'normal', orderly school days should be minimized.

There are a few points that emerge from this. Firstly, the current centralised system does not work in the best interests of schools, particularly those smaller schools with few management posts where the loss of a principal is felt most keenly. While there are, no doubt, good logistical reasons for holding meetings in Mthatha, more effort from EDOs and circuit managers to come to regional meetings would not only ease the burden on principals, but would convey a message of value and support – creating a *doxa* of care - that seems remarkably absent from these interactions. Secondly, a better plan for the collection and return of exams and scripts, as well as submission of documents, needs to be created. While clearly the security and integrity of many of these processes is vital, there seem to be better solutions that would ease the burden of cost (in many senses) off schools. In the age of email and scanners, it seems that technology should have much to offer in the way of secure solutions. Schools – again, particularly small schools - need to have very clear and effective policies for handling principal absence. Regional events such as sports days, festivals and choral competitions have become the enemy of normalcy in schools and more attention needs to be given to how these are planned and prepared for, and in particular on what day of the week these are scheduled.

Recommendation #7: Work with teachers requires an attitude of strong support, value and respect, rather than harsh accountability

I've suggested that teachers battle to view themselves as professionals partly because of the physical environment, but also because they tend to be treated with little respect by their superiors and district officials. To counter the doxa of fear and harsh accountability requires school leaders that emphasise professional regard, value and respect. At the same time, these leaders do need to take a strong stand on issues that undermine professionalism, such as 'sick' leave, late-coming and staff room 'gravity'.

For district officials and others involved in supporting schools, accountability needs to be fair and progressive. In other words, it must apply at all school levels, not just at matric; and it should be focused on moving schools forward, rather than simply blaming schools for their lack of progress without providing the support to achieve their goals. In their comprehensive report, *Schools that work* (2007), Christie, Butler and Potterton make a similar point about accountability and refer to Elmore's notion of 'reciprocal responsibility' (2004:93), which suggests a two-way give and take of support and accountability. In this way, pressure to perform, as well as the support needed to get there, should be experienced all the way up the education hierarchy.

Recommendation #8: Attitudes and dispositions may be as important as content in professional development work with teachers

I've pointed out the important connections between professional development and a number of other factors that appear linked to student performance. I've also pointed out that I am not sure what this effective professional development actually looks like at schools, so I state this recommendation tentatively. From my findings it seemed that teachers' attitudes to things like collaboration, public classrooms and community-mindedness were good predictors of student performance. From this I suggest that at least part of the professional development work of outside organisations, as well as school leadership, needs to be to educate teachers, principals and district leaders about what constitutes 'healthy' school attitudes and practices. As evidence of this, during my study a number of teachers asked me for copies of the survey as a resource for themselves, indicating to me that there is generally a lack of knowledge about what good practice is.

Recommendation #9: Structure high quality formative experiences for teachers in their training and early years of their careers

This lack of knowledge about what is possible and what good practice looks like can be addressed early in teachers' careers too. There seems to be a great deal of potential in structuring more high quality learning opportunities for young and aspiring teachers. Offering teachers *different* experiences early on in their careers seems crucial. Ideally teachers should receive some of their teacher training or tertiary study at a college or university outside of the former Transkei. This would not guarantee quality (clearly an answer to national questions about teacher quality lies in addressing the dearth of quality teacher preparation programmes across the country), but at least would expose teachers to a different way of doing things.

Possibly even more powerful would be to create teaching practice 'hubs' at high quality schools. These schools should receive extra funding in exchange for a broader mandate that includes exposing a high number of teachers to good practice – in the classroom, as well as in the systems, attitudes and climate that produce professional practice. It is important that these schools be relevant to the context that teachers will find themselves in – to my mind former Model-C schools may not be good candidates, since teachers will battle to relate the plush surroundings to the schools they have grown up in and may return to teach in. Creating the systems and structures at these 'teaching' schools that might enable them to effectively transfer culture, without compromising on their teaching responsibilities, could become an interesting and important action research project.

Recommendation #10: Address the systemic issues in the Eastern Cape

Although there may be little point in stating what is well-known, but nevertheless stubbornly intractable, it would be remiss of me not to point out that the systemic issues in the Eastern Cape play a major constraining role on schools in the province. In particular, the post-provisioning system continues to have severe implications for rural schools. The unhealthy interconnections between government and unions need to be urgently addressed if sustainable progress is to be made at the school level.

7.5 Further research

There are also a few recommendations for further research that have materialised as this thesis has unfolded. Firstly, while the adapted model of the Five Essential Supports was largely supported by the evidence produced in Chapter 5, I have acknowledged the shortcomings in the size and homogeneity of my sample. So my first recommendation is to pilot the model more widely across South Africa, with a greater diversity of schools, particularly socioeconomically and geographically.

Connected to this, several of the measure constructs required additional refining if they are to be used in future applications. In particular, *Quality of human resources* and *Program coherence around the School Improvement Plan* require substantial further work. Most of the additional contextual measures developed in this thesis also require considerable field testing in a wider variety of schools, so that aspects such as *Deep disadvantage* and *Space, place and time* can be measured in settings with less homogeneity. It may be that further aspects of rurality will emerge as significant when schools are compared across the urban-rural divide.

Secondly, important relationships emerged between *Professional development* and a number of measures of school-community and outside partnerships. As I've mentioned, my data did not reveal anything substantial about the nature of these relationships or indeed what school-based professional development looked like in this context. My own experiences working with schools were similarly unhelpful, since I have not encountered any forms of professional development other than the limited work our organisation does with science and maths teachers. I therefore propose that further research be done to understand what teachers consider to be helpful (particularly school-based) professional development, and how this connects to school partnerships with the community and other outside entities.

Similarly, measures of *Public classroom* and *Collaboration* seemed to make important connections to **School-community ties.** I've suggested that there may be something about developing strong, open, *internal* ties between staff that promotes similarly open, collaborative *external* relations. Again, my experiences in rural schools suggests that classrooms are overwhelmingly un-public and that teachers tend to operate in subject silos – so the exact nature of how these measures play out in rural schools requires further investigation. So for my third research recommendation, I propose

research that examines how teachers work together and share classroom practices, and how these practices contribute to promoting strong community ties.

Finally, a key message from this thesis - that rural schools lack voice – is reflected in the dominant education research agendas at universities and elsewhere. Part of reshaping the field needs to be an increase in the investment and interest in rural schools research, ideally based at rural centres, so that a deep sense of context is maintained. This thesis should form one of many such research projects, so that a more comprehensive picture of rural schooling can be developed that will accurately guide, and advocate with more authority for, effective policies and practices.

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APPENDICES

Appendix A: Permission letters from the District Directors

PROVINCE OF THE EASTERN CAPE

ISEBE LEZEMFUNDO

DEPARTMENT VAN ONDERWYS

P/BAG X 5003 MTHATHA, 5099. SOUTH AFRICA

FAX NO: 047-5313535/7/

12 September 2012

Craig Paxton

Zithulele Village

Mqanduli

Eastern Cape

Dear Mr Paxton
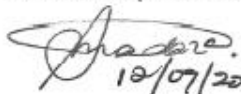
PERMISSION TO UNDERTAKE A PhD THESIS: UNDERSTANDING IMPROVEMENT IN SOUTH AFRICAN RURAL SCHOOLS

1. Thank you for your application to conduct research.
2. Permission to conduct the above mentioned research in Zithulele Area in Mqanduli under the jurisdiction of King Sabata Dalindyebo District in the Eastern Cape province is hereby granted on condition that:
   a. There will be no financial implications for the department;
   b. Institutions and respondents must not be identifiable in any way from the results of the investigation;
   c. The copy of your letter granting you the permission to conduct a research in Zithulele area must be presented to the principal of each school;
   d. The research may not be conducted during official contact time;
   e. You are requested to present the Department with a copy of your final paper/ report/thesis in hard copy and electronically and your findings;
   f. You comply with your ethical undertaking.
3. The Department wishes you well in your undertaking.
   Yours in service
   Madaza S.S (Circuit Manager)

18/07/2012

PROVINCE OF THE EASTERN CAPE

OFFICE OF THE DISTRICT DIRECTOR -
CURRICULUM SUB-DIRECTORATE
ISEBE LEZEMFUNDO
DUTYWA EDUCATION DISTRICT
PRIVATE BAG X1203, DUTYWA, 5000

REFERENCE: TELEPHONE: 047-577 0029   Cell: 082 066 6863 FAX: 047-489 1028

ENQUIRIES: A.M. MHAMBI   DATE: 30/05/2013   "STRIVING TO TURN THE SITUATION AROUND"

Dear Sir/Madam

PERMISION TO UNDERTAKE A PHD THESIS; UNDERSTANDING IMPROVERMENT IN RURAL SCHOOLS

This serves to acknowledge your letter dated 06 June 2013 and to grant permission on the above mentioned request.

This agreement must take into consideration the following conditions:

1. There will be no financial implications for the department.
2. Institutions and respondents must not be identifiable in any way from the results of the investigation.
3. The copy of this letter must be presented to the school principals as proof of permission granted.
4. Research process not to interfere with tuition time.
5. You are earnestly requested to provide the department with the copy of your research findings.
6. Please ensure compliance with research ethics.

Hopping that, this will serve the intended purpose.

Yours faithfully

.----------

A.M. Mhambi (Circuit manager)

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Appendix B: Examples of information and consent forms

Request for Consent to Participate in Research

Project Title: Understanding improvement in rural South African schools.

Researcher: Mr. Craig Paxton

Department: School of Education
                     Graduate Humanities Building
                     Upper Campus
                     University of Cape Town
                     Private Bag X5
                     Rondebosch 7700

Phone: +27 (0) 82 459 9877

Email: craig@axiumeducation.org   OR   pxtcra001@uct.ac.za

Dear Sir/Madam,

RE: Information and consent request for PhD study

I am writing to inform you of a study I am conducting in schools in the area surrounding ▮▮▮▮▮▮▮▮ ▮▮▮▮▮▮▮▮ District of the Eastern Cape.

What is the study about?

My research examines the challenges that rural schools face, as well as the "ingredients" necessary for improvement in these schools to happen. As such I think the research will be useful to the schools involved as well as other rural schools in the country. I am not interested in judging whether schools are 'good' or 'bad', but I am interested in understanding how different schools deal with the particular challenges that rural schools are confronted with.

What will I need you to do?

At all schools I will be asking teachers, principals and students to complete a survey that attempts to measure different aspects of school improvement. The survey will be completed on a small computer and you will be given assistance in doing so. It is quite a long questionnaire and I expect it to take somewhere between 45 and 75 minutes. Additionally, at some schools I will be interviewing some staff members and members of the SGB, again in order to understand how improvement happens. These interviews will be audio recorded.

If you are happy to participate in this study, please complete this form and return it to me. **You are free, at any time, to withdraw your consent** should you feel you no longer wish to participate in the study, and any information about yourself will **not** be used in the research if you do so. It should also be noted that

there are no costs involved in this study for your part. I do not believe there are any risks to your person of any nature (including to your job security), and hope that your school will find the results of the study interesting and useful. **Your name will not be attached to your answers to the survey and thus your identity will be entirely confidential throughout**.

Please tick all the following and then sign at the bottom of this letter.

	Please tick
I agree to participate in this research project.	
I have read this consent form and the information it contains and I have had the opportunity to ask any questions about the study.	
I agree to my responses being used for education and research on condition my privacy is respected.	
Should I be interviewed, I agree to the audio of the interview being recorded.	
I understand that I am under no obligation to take part in this study.	
I understand that I have the right to withdraw from this study at any stage.	

Name of Participant: _____

Signature of Participant: _____   Date: _____

Name of Researcher: Craig Paxton

Signature of Researcher: _____   Date: _____

Request for Consent to Participate in Research

Project Title: Understanding improvement in rural South African schools.

Researcher: Mr. Craig Paxton

Department: School of Education
                       Graduate Humanities Building
                       Upper Campus
                       University of Cape Town
                       Private Bag X5
                       Rondebosch 7700

Phone: +27 (0) 82 459 9877

Email: craig@axiumeducation.org   OR   pxtcra001@uct.ac.za

Dear Student,

RE: Information and consent request for PhD study

I am writing to inform you of a study I am conducting in schools in the area surrounding ▉▉▉▉▉▉▉ ▉▉▉▉▉▉▉ District of the Eastern Cape.

What is the study about?

My research examines the challenges that rural schools face, as well as the "ingredients" necessary for improvement in these schools to happen. As such I think the research will be useful to the schools involved as well as other rural schools in the country. I am not interested in judging whether schools are 'good' or 'bad', but I am interested in understanding how different schools deal with the particular challenges that rural schools are confronted with.

What will I need you to do?

At all schools I will be asking teachers, principals and students to complete a survey that attempts to measure different aspects of school improvement. The survey will be completed on a small computer and you will be given assistance in doing so. It is quite a long questionnaire and I expect it to take somewhere between 45 and 75 minutes. Additionally, at some schools I will be interviewing some staff members and members of the SGB, again in order to understand how improvement happens.

If you are happy to participate in this study, please complete this form and return it to me. **You are free, at any time, to withdraw your consent** should you feel you no longer wish to participate in the study, and any information about yourself will **not** be used in the research if you do so. It should also be noted that

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there are no costs involved in this study for your part. I do not believe there are any risks to your person of any nature (including to your school marks), and hope that your school will find the results of the study interesting and useful. **Your name will not be attached to your answers and thus your answers will be entirely confidential**.

Please tick all the following and then sign at the bottom of this letter.

	Please tick
I agree to participate in this research project.	
I have read this consent form and the information it contains and I have had the opportunity to ask any questions about the study.	
I agree to my responses being used for education and research on condition my privacy is respected.	
I understand that I am under no obligation to take part in this study.	
I understand that I have the right to withdraw from this study at any stage.	

Name of Participant: _____

Signature of Participant: _____   Date: _____

Name of Researcher: Craig Paxton

Signature of Researcher: _____   Date: _____

Isicelo sokuthabatha inxaxheba kuphando

Umba: Ukuqonda ongeziphumo kwizikolo zasemaphandleni eMzantsi Afrika.

Umphandi: Mr. Craig Paxton

Isebe: School of Education
Graduate Humanities Building
Upper Campus
University of Cape Town
Private Bag X5
Rondebosch 7700

Phone: +27 (0) 82 459 9877

Email: craig@axiumeducation.org   OR   pxtcra001@uct.ac.za

Mfundi obekekileyo,

<u>**RE: Isikelo mvume senkcu kacha kunye nemvumelwano yophando lwesifundo iPhD**</u>

Ndibhala ndikwazisa ngophando endilenzayo ezikolweni ezingqonge ███████████████ eMpumakoloni.

Simalunga nantoni esisifundo?

Uphando lwam luxilonga iingxaki zezikolo zasezilalini ezithi zijongane nazo, kunye nezinango ekufuneka zenziweukuziphucula. Oluphando luzokuba luncedo kwizikolo eziyinxalenye yalo kunye nezinye ezisezilalini kwilizwe lonke. Andinamnqweno wokuphononga ukuba izikolo zenza kakuhle okanye kakubi, kodwa kukufumana ulwazi nengxaki ezijongene nazo.

Ndifuna nenze ntoni nina?

Kuzo zonke izikolo ndizokubuza ootitshala, Inqununu kunye nabafundi bagcwalise iziphakamiso ezizakubonakala ezahlukileyo 20kuphucula umgangatho wesikolo. Uphando luza kugcwaliswa yiComputer umntwana uzakuncediswa ukwenza oko. Imibuzo mide noko isenokuthatha pakathi kwemizuzu eyi 45-75. Ukongezelela, kwezinye izikolo ndizokubuza abasebenzi kunye nabameli bezikolo SGB kwakona ndizame ukuqonda ukuba inkqubela yenzeka njani?

Ukuba unomdla umntwana athathe inkxa xheba kwesisifundo zalisa ifomu leyo uyibuyisele kum. **Awubopheelekanga nangawuphi umzuzu ukuba ungarhoxa xa uziva ungenamdla wokuqhubeka ubeyinxalenye yalo**. Inkcukacha ngomntwana azinakusetyenziswa xa wenze njalo. Enye into emawuyazi akukho zindleko zibandanye kayo kwindawo yako. Ndiyakholwa ukuba akukho luchaphazeleko

lwabungozi naluphina uhlobo, ndithemba ukuba isikolo sako siyakufumana iziphumo ezinomdla nezinokusebenzi seka.

Nceda uchonge (√) kwezizinto zilandelayo wandule ngokutyikitya kumazantsi encwadi.

	Chonga (√)
Ndiyavuma ukuthabatha inxaxheba koluphando.	
Ndiyifundile leform kwanenkcukacha eziqulathileyo kwaye ndilifumene ithuba lokubuza nowuphi na umbuzo malunga nezizifundo.	
Ndiyavuma ukuba impendulo zam ekufundeni yaye uphando ngokwe mfihlo luhloniphekile.	
Ndiyaqonda ukuba andinyanzelekanga nanini na.	
Ndiyaqonda ukuba ndinalo ilungelo lokuyeka kwezizifundo nanini na.	

Igama loparticipant: _____

Intsayimo loparticipant: _____   Umhla: _____

Igama umphandi: Craig Paxton

Intsayimo umphana: _____   Umhla: _____

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Request for Consent to Participate in Research

Project Title: Understanding improvement in rural South African schools.

Researcher: Mr. Craig Paxton

Department: School of Education
                   Graduate Humanities Building
                   Upper Campus
                   University of Cape Town
                   Private Bag X5
                   Rondebosch 7700

Phone: +27 (0) 82 459 9877

Email: craig@axiumeducation.org   OR   pxtcra001@uct.ac.za

Dear Parent,

<u>RE: Information and consent request for PhD study</u>

I am writing to inform you of a study I am conducting in schools in the area surrounding ████████
████████ District of the Eastern Cape.

What is the study about?

My research examines the challenges that rural schools face, as well as the "ingredients" necessary for improvement in these schools to happen. As such I think the research will be useful to the schools involved as well as other rural schools in the country. I am not interested in judging whether schools are 'good' or 'bad', but I am interested in understanding how different schools deal with the particular challenges that rural schools are confronted with.

What will I need you to do?

At all schools I will be asking teachers, principals and students to complete a survey that attempts to measure different aspects of school improvement. The survey will be completed on a small computer and your child will be given assistance in doing so. It is quite a long questionnaire and I expect it to take somewhere between 45 and 75 minutes. Additionally, at some schools I will be interviewing some staff members and members of the SGB, again in order to understand how improvement happens.

If you are happy for your child to participate in this study, please complete this form and return it to me. **You are free, at any time, to withdraw your consent** should you feel you no longer wish for your child to participate in the study, and any information about your child will **not** be used in the research if you do so. It should also be noted that **there are no costs involved in this study for your part**. I do not believe there are any risks to your child of any nature, and hope that your school will find the results of the study interesting and useful.

Please tick all the following and then sign at the bottom of this letter.

	Please tick
I agree to the participation of my child in this research project.	
I have read this consent form and the information it contains and I have had the opportunity to ask any questions about the study.	
I agree to my child's responses being used for education and research on condition his/her privacy is respected.	
I understand that my child is under no obligation to take part in this study.	
I understand that I have the right to withdraw my child from this study at any stage.	

Name of Child: _____

Name of Parent: _____

Signature of Parent: _____   Date: _____

Name of Researcher: Craig Paxton

Signature of Researcher: _____   Date: _____

Isicelo sokuthabatha inxaxheba kuphando

Umba: Ukuqonda ngeziphumo kwizikolo zasemaphandleni eMzantsi Afrika.

Umphandi: Mr. Craig Paxton

Isebe: School of Education
                       Graduate Humanities Building
                       Upper Campus
                       University of Cape Town
                       Private Bag X5
                       Rondebosch 7700

Phone: +27 (0) 82 459 9877

Email: craig@axiumeducation.org   OR   pxtcra001@uct.ac.za

Mzali obekekileyo,

RE: Isikelo mvume senkcu kacha kunye nemvumelwano yophando lwesifundo iPhD

Ndibhala ndikwazisa ngophando endilenzayo ezikolweni ezingqonge iZithulele kwisithili sase Mqanduli eMpumakoloni.

Simalunga nantoni esisifundo?

Uphando lwam luxilonga iingxaki zezikolo zasezilalini ezithi zijongane nazo, kunye nezinango ekufuneka zenziweukuziphucula. Oluphando luzokuba luncedo kwizikolo eziyinxalenye yalo kunye nezinye ezisezilalini kwilizwe lonke. Andinamnqweno wokuphononongo ukuba izikolo zenza kakuhle okanye kakubi, kodwa kukufumana ulwazi nengxaki ezijongene nazo.

Ndifuna nenze ntoni nina?

Kuzo zonke izikolo ndizokubuza ootitshala, Inqun+unu kunye nabafundi bagcwalise iziphakamiso ezizakubonakala ezahlukileyo 20kuphucula umgangatho wesikolo. Uphando luza kugcwaliswa yiComputer umntwana wako uzakuncediswa ukwenza oko. Imibuzo mide noko isenokuthatha pakathi kwemizuzu eyi 45-75. Ukongezelela, kwezinye izikolo ndizokubuza abasebenzi kunye nabameli bezikolo SGB kwakona ndizame ukuqonda ukuba inkqubela yenzeka njani?

Ukuba unomdla umntwana wako athathe inkxa xheba kwesisifundo zalisa ifomu leyo uyibuyisele kum. **Awubopheelekanga nangawuphi umzuzu ukuba ungarhoxa xa uziva ungenamdla wokuqhubeka**

ubeyinxalenye yalo. Inkcukacha ngomntwana wakho azinakusetyenziswa xa wenze njalo. Enye into emawuyazi akukho zindleko zibandanye kayo kwindawo yako. Ndiyakholwa ukuba akukho luchaphazeleko lwabungozi naluphina uhlobo, ndithemba ukuba isikolo sako siyakufumana iziphumo ezinomdla nezinokusebenzi seka.

Nceda uchonge (√) kwezizinto zilandelayo wandule ngokutyikitya kumazantsi encwadi.

	Chonga (√)
Ndiyavuma ukuthabatha umntwana wam inxaxheba koluphando.	
Ndiyifundile leform kwanenkcukacha eziqulathileyo kwaye ndilifumene ithuba lokubuza nowuphi na umbuzo malunga nezizifundo.	
Ndiyavuma ukuba umntwana wam impendulo zam ekufundeni yaye uphando ngokwe mfihlo luhloniphekile.	
Ndiyaqonda ukuba umntwana wam akanyanzelekanga nanini na.	
Ndiyaqonda ukuba ndinalo ilungelo umntwana wam lokyeka kwezizifundo nanini na.	

Igama lomntwana: _____

Igama lomzali: _____

Intsayimo yomzali: _____   Umhla: _____

Igama umphandi: Craig Paxton

Intsayimo umphana: _____   Umhla: _____

Appendix C: Senior school teacher survey instrument

Only the senior school teacher survey is included here. Copies of the Grade 12 student survey, Grade 9 student survey, senior school principal survey, junior secondary teacher survey and junior secondary principal survey are available upon request.

Senior School Teacher I 2013

Introduction to the 'Improving rural schools' survey

Molweni! Enkosi kakhulu ngexesha lakho!

This survey is part of a PhD study that I am undertaking entitled 'Understanding improvement in rural South African schools'. As you may know I am very interested in and concerned about the challenges facing rural schools like the one you are teaching in. It is my hope that the results of this survey will be useful both to your school and to hundreds of other rural schools across the country.

Thank you for being willing to take this survey. It should take you approximately 45 minutes. If you have any concerns or questions, please ask Craig or an assistant to help.
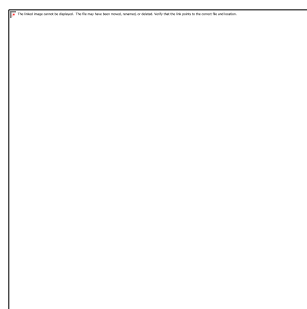
Craig Paxton

PhD Student

University of Cape Town

Background Questions

1) Please input the CODE allocated to your school for the purposes of this survey. If you do not know what this is, ask one of the assistants. The SCHOOL CODE should start with EC...*

_____

2) Which levels of students do you teach?*

( ) 1 - Primary school students (Grade R - 6)

( ) 2 – Junior secondary school students (Grade R - 9)

( ) 3 - Senior school students (Grade 10 - 12)

3) Did you matriculate from a rural school similar to the one you now teach in?*

( ) Yes

( ) No

4) Do you currently serve on the school's Senior Management Team (SMT)?*

( ) Yes

( ) No

5) How many years have you been a teacher? (Select one option)*

( ) Less than 1 year

( ) 1 to 3 yrs

( ) 4 to 5 yrs

( ) 6 to 10 yrs

( ) 11 to 15 yrs

( ) More than 15 yrs

6) What is your teaching experience? (Select an option for each line) How many years have you...*

	None	Less than 1 yr	1 to 3 years	4 to 5 years	6 to 10 yrs	11 to 15 yrs	More than 15 yrs
1 - Taught at this school?	( )	( )	( )	( )	( )	( )	( )
2 - Taught in a different school in the Eastern Cape?	( )	( )	( )	( )	( )	( )	( )
3 - Taught in a different province?	( )	( )	( )	( )	( )	( )	( )

4 – Taught in a different country?	( )	( )	( )	( )	( )	( )	( )
5 - Worked full-time in a job other than teaching?	( )	( )	( )	( )	( )	( )	( )

7) What is the highest level of formal education you have completed? (Tick one box)*

( ) 1 Matric

( ) 2 Diploma/ Certificate

( ) 3 Bachelors degree

( ) 4 Honours degree

( ) 5 Masters degree

( ) 6 Doctorate

8) From which college or university did you obtain your bachelors degree? [If more than one, list all. If from outside South Africa, indicate the country in brackets after the university.]*

_____

9) Which subjects/ learning areas… (Tick all relevant boxes)*

	English FAL	Isi-Xhosa Home Language	Mathematics	Natural science	Physical science	Other
1. …do you teach?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
2. …are you qualified to teach?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Questions about School Leadership

10) How does the Senior Management Team (SMT) function at your school?

To what extent do you agree with the following statements? (Tick one box for each statement.)*

	Strongly disagree	Disagree	Agree	Strongly agree
1 Communicates a clear vision for the school.	( )	( )	( )	( )
2 Encourages teachers to plan and prepare lessons of a high standard.	( )	( )	( )	( )
3 Follows up on teachers by requesting to see work schedules, lesson plans and visit classrooms.	( )	( )	( )	( )

4 Usually work longer hours than other staff.	( )	( )	( )	( )
5 A conscious effort is made to welcome new teachers.	( )	( )	( )	( )

11) How much do teachers influence school decisions on each of the following issues?*

	None	Some	A lot
1 Hiring new school staff.	( )	( )	( )
2 Planning how school funds should be used.	( )	( )	( )
3 Choosing textbooks and other teaching materials used in classrooms.	( )	( )	( )
4 Generating strategies for improving the school.	( )	( )	( )
5 Choosing the content of in-service professional development programs (e.g. choosing to spend time working with other teachers in your subject area on improving your teaching).	( )	( )	( )
6 Setting standards for student behaviour.	( )	( )	( )

12) How well does your School Governing Body (SGB) function?*

	Strongly disagree	Disagree	Agree	Strongly agree
1 Regularly visits the school.	( )	( )	( )	( )
2 Supports our efforts as teachers.	( )	( )	( )	( )
3 Is actively involved in improving the school.	( )	( )	( )	( )
4 Helps in communicating with parents and the local community.	( )	( )	( )	( )

13) Please comment on the principal's involvement at your school. Our principal…*

	Strongly disagree	Disagree	Agree	Strongly agree
1 Communicates a clear vision for our school.	( )	( )	( )	( )
2 Understands how children learn.	( )	( )	( )	( )
3 Sets low standards for student learning.	( )	( )	( )	( )
4 Encourages teachers to implement what they have learned in professional development.	( )	( )	( )	( )
5 Knows what's going on in my classroom.	( )	( )	( )	( )

14) How often is the principal away from school (e.g. for department meetings, school supplies, personal reasons, etc.) for more than half a day? (Tick one box)*

( ) Never

( ) A few times a year

( ) Every 3 to 4 weeks

( ) Every 1 to 2 weeks

( ) Weekly

( ) More than once a week on average

15) Do you feel respected by your principal?*

( ) Not at all

( ) A little

( ) Mostly

( ) Very much

16) To what extent is there trust between teachers and principal?*

	Strongly disagree	Disagree	Agree	Strongly agree
1 The principal has confidence in the competence of teachers.	( )	( )	( )	( )
2 I do not trust the principal at his or her word.	( )	( )	( )	( )
3 The principal takes a personal interest in the professional development of teachers.	( )	( )	( )	( )
4 The principal is an effective manager who makes the school run smoothly.	( )	( )	( )	( )

17) To what extent is there trust between teachers and teachers?*

	Strongly disagree	Disagree	Agree	Strongly agree
1 Teachers in this school trust each other.	( )	( )	( )	( )
2 Teachers respect other teachers who take the lead in school improvement efforts.	( )	( )	( )	( )
3 Teachers at this school respect those colleagues who are experts at teaching their subject/learning area.	( )	( )	( )	( )

Questions about the school's systems

18) Please indicate your opinion of the school's management systems:*

	Strongly disagree	Disagree	Agree	Strongly agree

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1 The teacher evaluation process at this school encourages my professional growth.	( )	( )	( )	( )
2 I have professional conversations with my principal that are focused on teaching and learning.	( )	( )	( )	( )
3 The school's homework policy is ineffective.	( )	( )	( )	( )
4 Discipline at this school is well-controlled.	( )	( )	( )	( )

19) If you want to improve your teaching, what would be most useful?*

	Strongly disagree	Disagree	Agree	Strongly agree
1 Enrolment in a university course.	( )	( )	( )	( )
2 Regular meetings with a network of teachers in your learning area.	( )	( )	( )	( )
3 Coaching by an expert teacher.	( )	( )	( )	( )

20) How frequently do you analyse student data? (Examples: absentees, common tasks and assessments, standardized tests and exams, annual national assessments, matric exams etc.)?*

	Never	A few times a year	Every 6 to 8 weeks	Every 3 to 4 weeks	Weekly
1. By myself	( )	( )	( )	( )	( )
2. With teachers in my grade level	( )	( )	( )	( )	( )
3. With teachers in my subject area at this school	( )	( )	( )	( )	( )
4. With my principal	( )	( )	( )	( )	( )
5. With subject teachers from other schools	( )	( )	( )	( )	( )

21) This is what I think about the school's routines:*

	Strongly disagree	Disagree	Agree	Strongly agree
1 Our school has a timetable that works well for both students and teaching staff.	( )	( )	( )	( )
2 We have regular (daily or weekly) staff meetings to discuss school issues and strategies for improvement.	( )	( )	( )	( )
3 At the end of each year, the staff are involved in planning the following year and allocating duties and roles.	( )	( )	( )	( )

22) My views on the way systems and routines are implemented:*

	Strongly disagree	Disagree	Agree	Strongly agree
1 In this school, lessons always start and end on time.	( )	( )	( )	( )
2 Most of our school staff meetings are a waste of time. Nothing changes.	( )	( )	( )	( )
3 Meetings that discuss exam results help me to improve the way I teach.	( )	( )	( )	( )

23) To what extent are you confident about your school's improvement strategy/program?*

	Strongly disagree	Disagree	Agree	Strongly agree
1 Once we start a new improvement strategy, we follow up to make sure that it's working.	( )	( )	( )	( )
2 Everyone at this school has a clear idea of the school's goals, and works towards achieving them.	( )	( )	( )	( )
3 The school has a language policy that is regularly used by all students and teaching staff.	( )	( )	( )	( )
4 The school has managed the change to CAPS very successfully.	( )	( )	( )	( )

24) What do you think about the school's improvement plan? (Tick one box for each statement.)*

	Strongly disagree	Disagree	Agree	Strongly agree
1 Our school improvement plan is available for all to see.	( )	( )	( )	( )
2 The whole staff regularly reviews the school improvement plan. We change it so that it tackles the challenges our school faces.	( )	( )	( )	( )
3 The school improvement plan influences the way our school functions. It is a useful tool for improving the school.	( )	( )	( )	( )

Questions about student culture and community

25) Comments on subject matter:*

	Never	Sometimes	Always	Not applicable
1 If you teach English or isiXhosa: I select poems, books and short stories that are culturally relevant to my students.	( )	( )	( )	( )
2 If you teach Maths or Science: I include examples that are culturally relevant to my students.	( )	( )	( )	( )

26) Comment on language usage in your school:*

	Strongly disagree	Disagree	Agree	Strongly agree
1 I am comfortable teaching in the language of instruction of our school.	( )	( )	( )	( )
2 My students would do better if all their subjects were taught in their home language.	( )	( )	( )	( )
3 Many teachers do not use the language of instruction in their classrooms.	( )	( )	( )	( )

27) Familiarity with students' home situations:*

	Strongly disagree	Disagree	Agree	Strongly agree
1 I often visit the homes of students at my school.	( )	( )	( )	( )
2 I understand the challenges that my students face.	( )	( )	( )	( )
3 My background is similar to my students' background	( )	( )	( )	( )

28) Links with the community:*

	Strongly disagree	Disagree	Agree	Strongly agree
1 Our school has a good relationship with the local community.	( )	( )	( )	( )
2 Most of our teaching staff live near the school.	( )	( )	( )	( )

	Strongly disagree	Disagree	Agree	Strongly agree
3 Members of the local community often do work around the school (cooking, cleaning, maintenance, etc.).	( )	( )	( )	( )
4 Our school regularly meets with local community/tribal authorities (chiefs, wardens, etc.) about school issues.	( )	( )	( )	( )

Questions about parent involvement in school

29) Teacher outreach to parents*

	Strongly disagree	Disagree	Agree	Strongly agree
1 The principal organises regular communication between parents and teachers.	( )	( )	( )	( )
2 We encourage feedback from parents and the community.	( )	( )	( )	( )
3 Teachers are sympathetic when parents tell them about home problems and concerns.	( )	( )	( )	( )
4 Parents are greeted warmly when they call or visit the school.	( )	( )	( )	( )
5 Parents are encouraged to help improve the school buildings and facilities.	( )	( )	( )	( )
6 The school regularly tells parents how they can help their children to learn.	( )	( )	( )	( )

30) Amount of parent involvement in the school*

	None	Some	Most	All
1 How many parents attend parent-teacher meetings?	( )	( )	( )	( )
2 How many parents volunteer to help around the school?	( )	( )	( )	( )
3 How many parents fetched their child's last report card?	( )	( )	( )	( )

31) How many teachers feel good about parents' support for their work?*

( ) None

( ) Some

( ) Most

( ) Nearly all

32) How many parents help their children to learn?*

( ) None

( ) Some

( ) Most

( ) Nearly all

33) Do you feel respected by the parents of your students?*

( ) Not at all

( ) A little

( ) Some

( ) To a great extent

34) Is there trust between parents and teachers?*

( ) Not at all

( ) A little

( ) Some

( ) To a great extent

35) Parents and teachers think of each other as partners in children's education:*

( ) Strongly disagree

( ) Disagree

( ) Agree

( ) Strongly agree

Questions about school-community partnerships

36) Relationships with tribal/community authority. How often do the following take place?*

	Never	Once or twice a year	Once or twice a month	Almost every week
1 Community meetings led by local leaders (headmen, chiefs, wardens etc.).	( )	( )	( )	( )
2 Someone from your school has consulted with local leaders about a problem your school is facing.	( )	( )	( )	( )
3 Someone from your household has consulted with local leaders about a personal problem they are facing.	( )	( )	( )	( )

37) Which community organisations does your school work with to support your students better?*

	Never	Occasionally	Often	At least weekly
1 Local NGOs and non-profit organisations.	( )	( )	( )	( )
2 Local hospitals and clinics.	( )	( )	( )	( )
3 Local law enforcement and police.	( )	( )	( )	( )
4 Universities.	( )	( )	( )	( )
5 Provincial and district education people.	( )	( )	( )	( )
6 Other government programmes and departments.	( )	( )	( )	( )

Questions about professional development of teachers

38) How frequently does your school or district have professional development sessions (sessions aimed at improving your knowledge, confidence and skills in teaching)?*

( ) Never

( ) A few times a year

( ) Every 6 to 8 weeks

( ) Every 3 to 4 weeks

( ) Weekly

39) My experience of school and district professional development activities:*

	Strongly disagree	Disagree	Agree	Strongly agree
1 I have been able to think carefully about, and evaluate new ideas.	( )	( )	( )	( )
2 The activities have been closely connected to my school's improvement plan.	( )	( )	( )	( )
3 There have been very few opportunities to work with colleagues.	( )	( )	( )	( )
4 I am a better teacher because of professional development activities.	( )	( )	( )	( )

40) Teacher development at your school – Describe the activities:*

	Does not happen	Happens, but not helpful	Happens, only a little helpful	Happens, very helpful
1 We have regular meetings with other teachers in my subject area or grade level.	( )	( )	( )	( )
2 We participate in a network of teachers, sometimes from other schools nearby.	( )	( )	( )	( )
3 We have time off to observe other teachers teaching.	( )	( )	( )	( )
4 Other teachers observe my teaching, and then give me feedback.	( )	( )	( )	( )
5 When we work in groups, I get suggestions and advice from other teachers in my school.	( )	( )	( )	( )
6 Teachers talk about teaching and learning in the staff room, staff meetings, etc.	( )	( )	( )	( )
7 Teachers in this school share and discuss student work with other teachers.	( )	( )	( )	( )
8 We work with other teachers to develop materials or activities for particular classes.	( )	( )	( )	( )
9 We work on teaching strategies with other teachers.	( )	( )	( )	( )
10 We plan work schedules and lesson plans with other teachers.	( )	( )	( )	( )

41) How do teachers at your school respond to teacher development?*

	Strongly disagree	Disagree	Agree	Strongly agree
1 Most of the teachers are not really trying to improve their teaching.	( )	( )	( )	( )
2 In this school, teachers are continually learning and seeking new ideas.	( )	( )	( )	( )
3 All teachers are encouraged to "stretch" and "grow".	( )	( )	( )	( )
4 Most of the teachers welcome any help they can get.	( )	( )	( )	( )

42) How often have each of the following people sat in on classes to observe your teaching?*

	Never	1 or 2 times a year	3 or 4 times a year	4 or 5 times a year	More often
1. Principal	( )	( )	( )	( )	( )
2. Deputy Principal	( )	( )	( )	( )	( )
3. Head of Department	( )	( )	( )	( )	( )
4. An "expert" from outside the school	( )	( )	( )	( )	( )
5. Subject advisor	( )	( )	( )	( )	( )
6. Someone else	( )	( )	( )	( )	( )

43) How helpful is it when someone observes and comments on your lesson?*

	No one visits my class	Strongly disagree	Disagree	Agree	Strongly agree
1 The observer has good judgment of how well I teach.	( )	( )	( )	( )	( )
2 This person gives me helpful feedback on my teaching.	( )	( )	( )	( )	( )
3 The observer concentrates on negative aspects of my teaching, e.g. students being bored.	( )	( )	( )	( )	( )

Questions about broader issues

44) How great is your commitment to the teaching profession and the school?*

	Strongly disagree	Disagree	Agree	Strongly agree
1 I usually look forward to each working day at this school.	( )	( )	( )	( )
2 I would prefer to work in another school.	( )	( )	( )	( )
3 I would recommend this school to parents seeking a place for their child.	( )	( )	( )	( )
4 I would NOT send my own children to this school.	( )	( )	( )	( )
5 I would prefer to work in another profession/job.	( )	( )	( )	( )

45) Is there collective responsibility in the school?*

	Strongly disagree	Disagree	Agree	Strongly agree

	Strongly disagree	Disagree	Agree	Strongly agree
1 Very few teachers help to maintain discipline in the whole school – not just their own classroom.	( )	( )	( )	( )
2 All teachers share responsibility for improving the school.	( )	( )	( )	( )
3 All teachers feel responsible when students fail or repeat grades.	( )	( )	( )	( )

46) Students and tertiary study:*

	Strongly disagree	Disagree	Agree	Strongly agree
1 Teachers expect most students in this school to go on to tertiary study.	( )	( )	( )	( )
2 Teachers at this school help students plan for tertiary study outside of class time.	( )	( )	( )	( )
3 At this school, the curriculum is focused on helping students get ready for tertiary study.	( )	( )	( )	( )
4 In this school, very few of the students are planning to go on to tertiary study.	( )	( )	( )	( )

Questions about student behaviour and co-operation

47) Which safety problems have occurred in your school?*

	Not at all	Some	To a great extent
1 Physical conflicts among students.	( )	( )	( )
2 Stealing.	( )	( )	( )
3 Gang activity.	( )	( )	( )
4 Student disrespect of teachers.	( )	( )	( )
5 Threats of violence toward teachers.	( )	( )	( )

48) Which forms of bad behaviour are there in your school?*

	Never	Occasionally	Often	Almost always
1 Students get in to fights.	( )	( )	( )	( )
2 Students bully other students.	( )	( )	( )	( )
3 Students swear and use disrespectful language or gestures.	( )	( )	( )	( )

49) How often are your scheduled lessons disrupted by…*

	Never	Once a week	Once a day	Most lessons
1 Visitors to your class?	( )	( )	( )	( )

	Never	Occasionally	Often	Most lessons
2 Students arriving late (or leaving early)?	( )	( )	( )	( )
3 Other teachers coming to talk?	( )	( )	( )	( )
4 Sports or cultural activities that mean lessons are lost or shortened?	( )	( )	( )	( )
5 Timetable clashes or late bell ringing?	( )	( )	( )	( )

50) How often do students misbehave in your class? Students…*

	Never	Occasionally	Often	Most lessons
1 Refuse to respond when you speak to them.	( )	( )	( )	( )
2 Act disrespectfully toward you.	( )	( )	( )	( )
3 Do off-task things (e.g., draw pictures, play games, text or talk on cell phone) during teaching time.	( )	( )	( )	( )
4 Create serious behaviour problems in your class.	( )	( )	( )	( )

51) Comment on students' academic abilities. Students in my classes…*

	None	Some	About half	Most	Nearly all
1 Lack knowledge and skills to learn what you are trying to teach.	( )	( )	( )	( )	( )
2 Have serious reading difficulties.	( )	( )	( )	( )	( )
3 Work cooperatively with other students.	( )	( )	( )	( )	( )
4 Remain on-task most of the time; they don't get distracted.	( )	( )	( )	( )	( )

52) How many hours do you expect an average GRADE 12 student to spend on homework and studying each week?*

( ) None

( ) 1 to 2 hours

( ) 3 to 5 hours

( ) 6 to 9 hours

( ) 10 to 14 hours

( ) 15 or more hours

53) Students' attendance and co-operation in class. Students at my school…*

	None	Some	About half	Most	Nearly all
1 Come to class on time.	( )	( )	( )	( )	( )
2 Attend class regularly.	( )	( )	( )	( )	( )
3 Come to class bringing the appropriate supplies and books.	( )	( )	( )	( )	( )

	Strongly disagree	Disagree	Agree	Strongly agree
4 Regularly pay attention in class.	( )	( )	( )	( )	( )
5 Always hand in their homework.	( )	( )	( )	( )	( )

54) Is there trust between students and teachers?*

( ) Not at all

( ) A little

( ) Some

( ) To a great extent

Questions about curriculum and pedagogy

55) Comments on my academic pacing and timing:*

	Strongly disagree	Disagree	Agree	Strongly agree
1 I stick strictly to the pacing outlined in pacesetters/work schedules/CAPS documents issued by the Education Department.	( )	( )	( )	( )
2 I use my experience to decide how much time I should spend on each section of work in terms of what I feel is important for my students to learn.	( )	( )	( )	( )
3 I work with other teachers to plan the pacing of my work at the beginning of the term or year.	( )	( )	( )	( )

56) Comments on my knowledge, confidence, and skills:*

	Strongly disagree	Disagree	Agree	Strongly agree
1 In my learning areas/subjects, I know what needs to be taught and when to teach it.	( )	( )	( )	( )
2 In my learning areas/subjects there are sections of work that I find difficult to understand.	( )	( )	( )	( )
3 In my learning areas/subjects there are sections of work that I find difficult to teach.	( )	( )	( )	( )

57) Comments on my own pedagogy:*

	Strongly disagree	Disagree	Agree	Strongly agree
1 I think carefully about how I am going to teach each section of work, not just what I am going to teach.	( )	( )	( )	( )

2 Students in my class spend most of their time listening to me teach or writing notes from the board.	( )	( )	( )	( )
3 I do not use informal assessments (e.g. homework, short tests, writing assignments etc.) to help me find out what my students know and understand.	( )	( )	( )	( )
4 Standardized tests and exams are an important source of information about how well my teaching is going.	( )	( )	( )	( )
5 I think carefully about how to challenge students of different abilities in my class (e.g. strong students vs weak students).	( )	( )	( )	( )
6 What I do in my class today has very little impact on my students' futures.	( )	( )	( )	( )

Questions about space, place, and time

58) How far are the following places from school?*

	Walking distance	1 – 10 kms	11 – 50 kms	More than 50 kms
1 Your home.	( )	( )	( )	( )
2 The place where you stay during the school week.	( )	( )	( )	( )
3 Nearest large shop (e.g. Spar/Shoprite/large trading store).	( )	( )	( )	( )
4 The nearest post office.	( )	( )	( )	( )
5 The nearest clinic or hospital.	( )	( )	( )	( )
6 The nearest police station.	( )	( )	( )	( )

59) How much time on each activity do you spend on an average school day?*

	Less than half an hour	30 – 60 min	1 – 2 hours	More than 2 hours
1 Travelling to and from school.	( )	( )	( )	( )
2 Household chores (cooking, cleaning, collecting water etc.).	( )	( )	( )	( )
3 Preparing lessons (outside of school time).	( )	( )	( )	( )
4 Additional school activities like sports, extra murals or extra lessons (outside of the school day).	( )	( )	( )	( )

60) In the place where you stay during the school week, do you have these?*

	Never	Occasionally	Often	Almost always
1 Running water from a tap.	( )	( )	( )	( )
2 Electricity.	( )	( )	( )	( )
3 Sufficient space and light for you to work at night.	( )	( )	( )	( )
4 Television.	( )	( )	( )	( )
5 Telephone (a cell phone must have reliable reception).	( )	( )	( )	( )
6 Computer.	( )	( )	( )	( )
7 Internet.	( )	( )	( )	( )

Questions about the school facilities

61) On average, how many students in each of your classes?*

( ) Less than 35 students

( ) 35 to 49 students

( ) 50 to 69 students

( ) 70 to 89 students

( ) 90 or more students

62) On average, how many lessons do you teach each day?*

( ) One

( ) Two

( ) Three

( ) Four

( ) Five

( ) Six or more

63) Classroom facilities at the school?*

	Strongly disagree	Disagree	Agree	Strongly agree
1 There is not enough classroom furniture (desks, chairs etc.).	( )	( )	( )	( )
2 Our school plans the timetable and classroom usage carefully so that classes are as small as possible. (e.g. the school extends the school day so that we can work 'shift classes')	( )	( )	( )	( )

	Strongly disagree	Disagree	Agree	Strongly agree
3 We have a reliable supply of electricity available in classrooms.	( )	( )	( )	( )

64) Other facilities and resources at your school?*

	Strongly disagree	Disagree	Agree	Strongly agree
1 Our school has a well-equipped library.	( )	( )	( )	( )
2 Our school has a well-equipped computer lab.	( )	( )	( )	( )
3 Our school has well-equipped science labs.	( )	( )	( )	( )
4 Our staff room has enough space for all staff.	( )	( )	( )	( )
5 Our school has a reliable internet connection.	( )	( )	( )	( )
6 Our school has enough equipment (e.g. computers, printers and photocopy machines) to enable all staff to use them when they need to.	( )	( )	( )	( )
7 Our school provides (or helps to organise) accommodation close to the school for teachers.	( )	( )	( )	( )

65) Resources at your school?*

	Strongly disagree	Disagree	Agree	Strongly agree
1 There are enough textbooks for all students in my class to take one home.	( )	( )	( )	( )
2 Textbooks are delivered to our school well before the start of the school year.	( )	( )	( )	( )
3 There are enough additional teaching resources (maps, lab equipment, projectors, visual aids, etc.) to make my teaching interesting and effective.	( )	( )	( )	( )

66) Choices about improvement: which of the following changes would do the most to improve the learning of students at your school? [Rank from 1 – 10, with 10 being your highest priority, 1 your lowest priority]*

_____1. Reducing the class size to 25 – 35 students per class.

_____2. Sufficient textbooks and other learning materials for each student.

_____3. High-quality professional development focused on helping you improve your teaching.

_____4. Good quality accommodation for teachers on the school premises.

_____5. Additional learning facilities like libraries, computer labs and science labs.

_____6. Additional teaching materials like maps, posters, projectors or lab equipment.

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_____7. Accommodation for students near/on the school premises.

_____8. Additional administrative personnel at the school to assist with the administration that teachers currently do.

_____9. Additional teaching staff at the school.

_____10. Substantially increased support (e.g. well-organised professional development, classroom and school visits, assistance with management issues, etc.) from the District Office.

67) What other changes would make a positive impact on your school?*

Thank You!

Thank you for taking this survey. Your response will be very helpful to my research on understanding improvement in rural South African schools. Your school will also receive some specific feedback on the outcomes of this survey for your school's improvement. Ndiyabulela!

Appendix D: Mapping the survey items onto factors and measures

Factor	School Leadership									Parent-Community Ties					
Element	Inclusive, Facilitative Leadership			Instructional Leadership			Operations Management			Teachers learn about student culture, local community			Staff engages parents in strengthening student learning		School-community partnerships
Measure	Inclusive Principal Leadership	Teacher influence	SGB Participation	Principal Instructional Leadership	Program Coherence	SIP Implementation	Systems	Routines	Implementation	Knowledge of student culture	Ties to the community	Use of community resources	Teacher outreach to parents	Parent involvement in the school	Involvement with outside organisations
Teacher Code	TIPL	TTIN	TSGB	TPIL	TPGM	TSIP	TSYS	TROU	TIMP	TKSC	TTIC	TUCR	TOPA	TPIS	TSCP
Principal Code			PSGB	PPIL	PPGM	PSIP	PSYS	PROU	PIMP	PKSC	PTIC	PUCR		PPIS	PSCP
Student Code													SPSS?	SPIS	
Bryk Code (P,T,S)		INFL		INST /PTNV	PGMC		DATA/PD TA						OUTR	PRS2/PART/PIE S	TRAP/ARFD/ ACLR/AINV/
Items - Teacher	6	6	4	6	4	3	8	3	3	3	2	2	6	3	6
Items - Student														8	
Items- Principal			4	13	4	3	6	3	3	2	2	2		7	20
Items- TOTAL	6	6	8	19	8	6	14	6	6	5	4	4	6	18	26
Who?	Teachers	Teachers	TP	TP	TP	TP	TP	TP	TP	TP	TP	TP	Teachers	TPS	

Factor	Professional Capacity													Student-centered learning climate						
Element	Quality of Human Resources			Quality of Professional Development		Professional dispositions		Professional community						Safety and order		Teachers academic press and personalism		Supportive peer norms		
Measure	Cosmopolitan experience	Quality of undergraduate institution	Change in HR	Frequency of PD	Quality of PD	Innovation	School commitment	Public classroom	Reflective dialogue	Peer collaboration	Focus on student	Teacher socialization	Collective responsibility	Safety	Classroom disruptions	Press toward academic achievement	Classroom personalism	Classroom behaviour	Academic norms	Peer support for academic work
Teacher Code	TCOS	TQUI	TDHR	TFPD	TQPD	TINN	TSCT	TPUB	TRFD	TPCO	TFOS	TSOC	TCLR	TSAF	TCLD	TPRS	TCLP	TCLB	TACN	TPSA (TSRE STUDENT RESPONSIBILI
Principal Code	PCOS	PQUI	PDHR	PFPD	PQPD	PINN	PSCT			PPCO			PCLR	PSAF		PPRS				
Student Code								SPUB						SSAF	SCLD	SPRS	SCLP	SCLB	SACN	SPER
Bryk Code (P,T,S)				QPD2/QPPD		INNV/PINV	SCMT/PCMT		REFD	COLB		SOCZ	COLR/PCLR	VICT/SCHSAFE/S		SLAP/FUTR/UEXP	RIGR/PERC		ACNO/STDY	PSSM/AVOR/PEER/EMHL/
Items - Teacher	6	Score		1	8	4	4	5	5	6		2	5	8	8	4		5	5	
Items - Student								2			6			7	7	14	13	3	13	14
Items- Principal	10	Score	8	1	7	4	4			3			4	5		4				
Items- TOTAL	16	0	8	2	15	8	8	7	5	9	6	2	9	20	15	22	13	8	13	14
Who?	TP	TP	Principal	TP	TP	TP	TP	ers and stu	Teachers	TP	Students	Teachers	TP	TPS	TS	TPS	Students	TS	Students	Students

Factor	Instructional guidance					Relational trust				Local Community Context										Structural Factors		System Factors			
Element	Curriculum organisation	Intellectual emphasis and pedagogical methods				Teacher-parent trust	Teacher-principal trust	Teacher-student trust	Teacher-teacher trust	Deep disadvantage				Constraints of space, time, place			Rural resources			Class size	Language	Material support			Distraction
Measure	Critical engagement and planning	Teaching content knowledge, confidence, basic classroom and time mgmt skills		Higher order skills: Learning from assessments		Teacher-parent trust	Teacher-principal trust		Teacher-teacher trust	Health	Social	Socio-economic	Home	Space	Time	Place	Collective efficacy	Religious participation	Tribal/community authority	Building & HR use	Attitude to and use of language	Adequate facilities	Professional development	Textbooks and other materials	Time away from school
Teacher Code	TCEP	TCCS		TPDA		TTPA	TTPR	TTST	TTTE	Not included in survey. ZiBFUS data was used to generate measures of Deep Disadvantage.				TSPA	TTIM	TPLA	Not measured		TTCA	TBHU	TLAN	TADF	TPDO	TTOM	TDIS
Principal Code	PCEP	PCCS				PTPA	PTPR							PSPA	PTIM	PPLA			PTCA	PBHU	PLAN	PADF		PTOM	PDIS
Student Code		SCCS	SCTM	SPDA				STST							STIM						SLAN			STOM	
Bryk Code (P,T,S)		ENGL/MATH/ENGG		CLAR/SDIS		TRPA/PRPA	TRPR/PRPT	TRTS	TRTE	Similarly, Bryk et al used other data sources to measure.															AINS
Items - Teacher	3	3		5		5	5		4					6	4	4			3	5	3	5	4	5	
Items - Student				14										6	4	4				4	3			4	
Items- Principal	3	3				1	4							6	4	4			3	5	3	5	4	5	15
Items- TOTAL	6	6	0	19	0	6	9		4	0	0	0	0	18	12	12	0	0	6	14	9	10	8	14	15
Who?	TP	TP		Teachers & Students		TP	Teachers & principals	Students	Teachers	From other sources				TPS	TPS	TPS			TP	TPS	TPS	TP	TP	TPS	Principal

Appendix E: Background to Rasch Analysis

This thesis makes extensive use of Rasch Analysis in order to create rating scales. The following extract, taken directly from the CCSR's website, provides some helpful background to the method used by the CCSR, and by extension, also used throughout this thesis:

A Primer on Rasch Analysis

The Rasch model is a member of the family of item-response latent-trait models. Using a set of carefully selected survey items (questions), it produces an interval scale that determines item difficulties and person measures. The items are arranged on the scale according to how likely they are to be endorsed (item difficulty). The scale is then used to show person measure, a quantitative measure of a person's attitude on a unidimensional scale. In other words, the items are used to define the measure's scale, and people are then placed on this scale based on their responses to the items in the measure. The scale units are logits (log odds units), which are linear and therefore suitable for use in simple statistical procedures.

Measures contain several related items (usually between four and eight). To create these item clusters, CCSR analysts select items that belong together according to education theory. Determinations as to which items to keep in the final measure are based on conceptual coherence as well as the statistical fit of the group of items. Unless there are strong conceptual reasons, CCSR analysts eliminate items with high misfit statistics. Each person and item is assigned a measure score that represents where they fall on the scale. In addition, each person and item has a true standard error (the precision of the measure) and a fit statistic (the statistical coherence of the measure). The fit statistics are calculated by taking the mean squared deviations of the difference between the expected values and the observed values. The fit statistics have an expected value of 1.0; items with fit statistics substantially greater than 1.0 may belong to a construct different from the one underlying other items in the cluster and may not belong in the cluster.

Appendix F: ZiBFUS mapping exercise

The Zithulele Birth Follow-Up Study (ZiBFUS) data used in this thesis to obtain measures of deep disadvantage was sourced directly from the ZiBFUS research team in the second half of 2014. The data was grouped according to each clinic served by the local hospital. In order to translate this information about clinic populations to school populations, I needed to perform various calculations and make a number of assumptions about how the populations were grouped, as outlined below:

1. 2013 Clinic population estimates for KSD Municipality were obtained from the hospital. Unfortunately these did not include three of the clinics in the ZiBFUS data, so these figures were used only as a comparison to ensure that the ZiBFUS data was representative, given that the study is relatively small (less than 500 births in total, and less than 20 births at one clinic). The ZiBFUS proportions of births per clinic compared very closely with the KSD clinic data, and so I used the births per clinic to estimate individual clinic populations.

2. To do this I took the births at each clinic as a percentage of the total births in order to calculate an estimate of the size of the 'service area' (or clinic catchment) of each clinic. In other words, if a clinic had a higher percentage of the total births, the clinic was allocated a larger service area.

3. I then plotted these service areas on a map of the area. The average distance between clinics was 8 km. The average percentage of births was 8 %. Using these percentages, a factor was calculated by which the service area was multiplied. For example, for a clinic that had 5 % (less than the average) of the total births, a factor smaller than 1 was multiplied by the average distance of 8 km, to calculate the radius of the clinic service area. For a clinic with 15 % of the total births, a factor larger than 1 was used to create a much bigger service area. These service areas were plotted on the map as circles with the clinics at the centre.

4. Of course, this is not actually how clinic catchments work: people go further to get better services or for more complex ailments; populations tend to be clustered, rather than laid out evenly across the map; they also will travel further if located on a road; natural boundaries like rivers influence decisions too; and there are possibly several other factors

here outside of my limited knowledge of public health. The assumptions made here simplify matters greatly and allow for some allocation of clinic populations to schools.

5. Schools that fell within a clinic catchment were then assumed to share the characteristics of the ZiBFUS data for that clinic. Where a school lay between two or three clinics, average values of the ZiBFUS data were calculated across these two or three clinics. If the clinic and the school lay on the same road, a slightly larger allotment was allowed for. River boundaries were also taken into consideration.

Appendix G: Observation framework

Date: _____ Start Time: _____ End Time: _____ School: _____ Other information: _____

School Observation Framework: *Understanding improvement in rural SA schools*

Factor	Measure	Evidence	Comment
Leadership	What evidence is there of distributed, inclusive leadership in organograms, job descriptions, etc?		
	Is there evidence of any structures, such as committees, and processes, such as meetings? What are these?		
	Is there evidence of year planning, goals, or themes and how these relate to the School Improvement Plan? How is the SIP taken up in school activities?		
	Is there a timetable visible? How is the change of lessons signalled? How rigorously is the timetable adhered to? (How many (%) students/teachers are out of class 5 minutes after the end of break bell?)		

Date: _____ Start Time: _____ End Time: _____ School: _____ Other information: _____

Factor	Measure	Evidence	Comment
Parent & Community Ties	Are there parents or community members on the school property?		
	What are they doing?		
	Is there a schedule of parent-teacher meetings visible? What other evidence is there of parent/community interaction?		
	Is there evidence of other outside organisations/role players in the staff room or on the school property?		
Professional Capacity	Is there a schedule of PD sessions for the year available?		
	Is there a Saturday/holiday teaching programme evident?		
	Is this well-attended and supported by staff?		
	Are classroom visits scheduled into the school timetable?		

Date: _____ Start Time: _____ End Time: _____ School: _____ Other information: _____

Factor	Measure	Evidence	Comment
	Is there any other evidence of regular, planned classroom visits?		
	Are subject or grade level meetings scheduled into the timetable?		
	Is there any other evidence of peer-peer collaboration/meetings?		
	Is there evidence of distribution of jobs, roles and duties throughout the staff?		
Learning climate	Student behaviour between lessons/at break times:	☐ Polite, respectful, ordered ☐ Some running around, but controlled ☐ Out of control, wild behaviour ☐ Threats to student/personal safety	
	Describe the atmosphere around the school… during lessons? …during break or before/after school?		
Instructional Guidance	Is there a meeting schedule for inter-school subject planning?		
	What other evidence is there of cluster/collaborative planning and distribution of tasks?		

Date: _____ Start Time: _____ End Time: _____ School: _____ Other information: _____

Factor	Measure	Evidence	Comment
Relational Trust	What evidence is there of warm, collegial, professional conversations between teachers?		
	What evidence is there of warm, collegial, professional conversations between teachers and the principal?		
	What do teachers talk about, to each other and the principal, at break, or in the staff room? What is the tone of the discussion?		
Community Context	Is there a school feeding scheme?		
	What time do teachers arrive and leave school? Is the recording of this valid?		
	Is there late coming from students? Teachers? How late?		
	Is there evidence of care of the school grounds and buildings?		
	Who is responsible for this?		

Date: _____ Start Time: _____ End Time: _____ School: _____ Other information: _____

Factor	Measure	Evidence	Comment
	Is there a Christian Union/church/religious group? What percentage of students attend, and how often do they meet?		
	What other student-led activities are available? How regularly do these meet?		
Structural Factors	What is the average class size today?		
	What are the official student numbers and number of classrooms, as posted in the staffroom or principal's office?		
	Are all classes roughly the same size? At capacity?		
	Is there evidence of creativity in planning classroom usage for key subjects and grades to minimize student numbers? What factors influence the distribution of student numbers?		
	What language is used between teachers in the staff room?		

Date: _____ Start Time: _____ End Time: _____ School: _____ Other information: _____

Factor	Measure	Evidence	Comment
	What language is used by teachers when engaging with students?		
	What language is used by students when engaging with students?		
	What language is used in most classrooms?		
	Does the school have a science lab?		
	If so describe the facility and its use.		
	Does the school have a library?		
	If so describe the facility and its use.		
	Does the school have sports facilities?		
	If so describe the facility and its use.		
	Does the school have a computer lab?		
	If so describe the facility and its use.		

Date: _____ Start Time: _____ End Time: _____ School: _____   Other information: _____

Factor	Measure	Evidence	Comment
	Does the school have any other specialized, dedicated spaces? Describe these spaces and the way they are used.		
	How many computers does the school have? How are these used? By whom?		
	What evidence is there of department-led cluster meetings?		
	How do these feature on the accountability-support continuum?		
	Is there any evidence of the existence and use of textbooks? Where are they, and how are they accessed and used?		
	How many staff members are away today? (%)		
	Is the principal away today?		

Appendix H: Interview Guide

1.   Questions about you

1.1 Tell me about your background. Where did you grow up, go to school, etc?

_____ ☐

1.2 Tell me about your parents. Where were they born, educated? What do they do now?

_____ ☐

1.3 Tell me about your choice to become a teacher – why did you choose teaching?

_____ ☐

1.4 Tell me about your early career – how did you end up teaching here?

_____ ☐

1.5 [What was your attitude to teaching like when you started teaching? What is it like now?]

_____ ☐

1.6 (In your dreams…) If everything went really well for you, where could you see yourself in 5-10 years?

_____ ☐

1.7 [What have you done/are you doing to move yourself towards this goal? {further study, new job, new profession, etc}]

_____ ☐

2.   Questions about your day at school

2.1 How many lessons a day do you teach? What takes up the rest of your time?

_____ ☐

2.2 Do you enjoy school? How often? What do you enjoy?

_____ ☐

2.3 What is the part of your day that requires the most effort? What is difficult?

_____ ☐

2.4 [Rank your most important activities during the school day {list of cut-out options}]

- Attending subject or grade team meetings

- Preparing and eating the midday meal

- Organising choir, sporting or other student activities

- Attending union meetings

- Preparing lesson plans

- Attending school meetings

- Teaching classes in your subject

- Doing administration related to your classes

- Marking homework or assessments

- Doing administration related to other school responsibilities you might have

- Reading about your teaching subjects in books or textbooks or on the internet

- Attending departmental/district meetings

- Meeting with parents

- Doing administration demanded of you by the Department

- Other (name)

_____ ☐

2.5 If you could choose how to spend your day at school, what would you allow more time for? Less time for?

_____ ☐

2.6 [How much control do you have over how you use your time during the day? Who does control this?]

_____ ☐

2.7 Can you describe for me what would be a successful day for you at school?

_____ ☐

2.8 Can you describe for me what would be a successful year for you at school?

_____ ☐

2.9 What do you think is the most important job/role you perform at school?

☐

_____

3.   Questions about your school

3.1 [How does your school environment/conditions make you feel about your work?]

☐

_____

3.2 You've spoken to me about some of the challenges you face at school. If there are so many challenges, why do you stay teaching here?

☐

_____

3.3 [Which of these challenges would be the most important to change?]

☐

_____

3.4 What do you think are the three main factors that keep your students from high achievement {list of options}?

☐

_____

3.5 [Why do you think these things have not been changed?]

☐

_____

3.6 When students leave your school, what do they do? How well do you think your school prepares them for this? Explain.

☐

_____

3.7 What are some of this school's strengths?

☐

_____

3.8 What would make it stronger?

☐

_____

3.9 If everything went really well for your school, can you describe what it might look like in 5-10 years? In terms of what students might be achieving; what the school might physically look like… etc

☐

_____

3.10   Our school is a …………………. {Cut out sentence, choose from: partner; competitor; leader; follower; servant; neutral/no relationship} to …..

- Parents   District office
- Local police   Universities
- Community elders/authorities (Chiefs, headmen, etc)
- Other neighbouring schools   Unions
- Local business (between here and Mthatha)   NGOs

☐
_____

3.11   Is your school able to: (why/why not?)

3.11.1.1   Attract the best teachers here?

☐
_____

3.11.1.2   Get the best out of teachers working here?

☐
_____

3.11.1.3   Use parents and the community to support/strengthen the school?

☐
_____

3.11.1.4   Create a culture of teaching and learning?

☐
_____

3.11.1.5   Plan teaching so that students are stretched and supported?

☐
_____

3.11.1.6   Put systems in place so that the school runs smoothly and teaching is not disrupted.

☐
_____

3.12   What do you think you and other leaders in this school do to strengthen the above factors?

☐
_____

4. Questions about other schools

4.1 Is there a difference in your school's approach to the above factors, compared with other schools in the area?

☐

_____

4.2 Do you know a teacher in this school or somewhere else that you think is 'excellent'? What makes them excellent?

☐

_____

4.3 In your opinion, what is the best school in this area? What makes it the best? What do you think they do there that makes it successful?

☐

_____

4.4 What else would make a difference to teachers and schools in this area? [Accommodation?]

☐

_____

Appendix I: Follow-up Interview Guide - Professional Development and Absence from school

1. Distractions

    a. On average how many times a week/month are you away from school?

    b. What takes you away (most)?

    c. What happens to your (and other teachers') classes when you are not there?

    d. How do you feel about these absences?

    e. Any suggestions to improve the situation? (If you were sitting in the DO, what would you do differently?)

    f. How often is your principal away?

    g. What takes him away (most)?

    h. What is the school like when he is not there?

    i. How do you feel about these absences?

    j. Any suggestions to improve the situation?

2. Professional development and team building

    a. What have been your experiences of PD?

    b. Who has organised these experiences (school, district, other)?

    c. If more than one supplier, describe the differences.

    d. What PD is most needed at your school?

e. What considerations (logistical, contextual) should be taken into account when planning?

Appendix J: School permission letter

Zithulele Village
Mqanduli
Eastern Cape

The Principal
Gqubeni Junior Secondary School
Eastern Cape Department of Education

July 23rd, 2013

Dear Principal,

RE: Request to conduct research in your school

I am a PhD student at the University of Cape Town. The (working) title of my research project is "Understanding improvement in South African rural schools", with the particular focus of the study being schools in the area surrounding Zithulele Village in the Eastern Cape. I would like to be able to conduct surveys, interviews and observations with students and educators at your school. I realise that this may be of some inconvenience to those involved, but will endeavour to be as unobtrusive as possible in the way that I conduct this research.

My research examines the challenges that rural schools face, as well as the "ingredients" necessary for improvement in these schools to happen. As such I think the research will be useful to the schools involved as well as other rural schools in the country. Participation is voluntary (and there will be no compensation), although I would appreciate all help in making a success of this project.

The surveys will take place in roughly two batches, from April - August 2013, and April – August 2014, at 30 schools. A list of these schools is available on Page 2 of this letter. Interviews and observations will follow the survey phase, at three senior secondary schools (Upper Mpako SS, Sea View SS and Dudumayo SS), which will involve 1-2 days at each school in the second halves of the 2013 and 2014 school years. The audio of interviews will be recorded. Observations will be focused on evidence of how schools organise themselves for improvement and will be gathered using a structured rubric. No audio- or video-recording of school observations will take place. It should be noted that all data collected will remain confidential and anonymous, using a coding system that keeps participants' identities private. Names of schools and people involved in the study will not be used in any publications resulting from this research. As stated, participation in the study is voluntary, and schools - and the individuals within schools - may withdraw at any time without consequences.

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It should be noted that in no way is my involvement with Axium Education related to this research project, and I will be endeavouring to separate my two roles as much as possible. Participation in this research should not be seen as advantaging or disadvantaging your school with regard to any on-going support from Axium Education.The University of Cape Town, in line with good research practice, requires that I obtain consent from all participants in my research and so I will be doing this, as and when participants are selected.

Yours sincerely,

PhD Student, University of Cape Town

082 459 9877

_____

By signing in the space provided, I acknowledge that I am aware of the contents of this letter and hereby grant permission to Craig Paxton to conduct research in my school.

_____

Signature   Date

_____

Print name   Stamp

_____

Agreed DATE of school visit: _____   TIME: _____

NOTE: PLEASE WARN STAFF THAT ON THE ABOVE DATE THEY SHOULD EXPECT TO BE BUSY

Appendix K: Fit statistics for all measures

Factor	Leadership				School-community ties					Professional capacity			
Measure	TIPL*	TPIL	TPGMSIP	TOPS	TTIES	TOPA	TPIS*	SPSS*	TSCP	TINNCT*	TPUB	TCOLAB	QHR**
Analysis	TIPL1	TPIL3LHLHT	TPGMSIPLHT	TOPS2	TTIES1	TOPALHT	TPIS	SPSS2	TSCP	TINNCT2	TPUB6	TCOLAB5	SCALE
PSI	0.67	0.75	0.81	0.78	0.66	0.76	0.61	0.53	0.69	0.64114	0.84771	**0.703**	
C Alpha	-	-	-	-	-	-	-	0.6	-				
Chi Sq	0.000044	0.00073	0.83	0	0.55	0.001117	0.69	0.39	0.25	0.357867	0.058232	0.000058	
T-Test 5%	3.45	2.1	7.19	12.42	10.43	6.08	1.88	16.49	3.85	4.91	9.55	5.52	

Factor	Learning Climate						Instructional Guidance			Trust		
Measure	TSAF	TSRE	TCLB	SPRS	SCLP	SACN*	TPRAC*	SPDA	SCCS	TTPRST*	TTPA	TTTE
Analysis	TSAF	TSRE2LHT	TCLB10	SPRS2	SCLP7	SACN1	TPRAC3	SPDA6	SCCS1	TTPRST2	TTPA1	TTTE
PSI	0.81	0.82	0.72	0.7	0.72	0.65	0.59	0.62	0.8	0.5	0.73	0.68
C Alpha	-	-	-	0.72	0.78	0.76	-	0.67	0.84	-	0.75	0.87
Chi Sq	0.91	0.43	0.02	0.000336	0	0.004931	0.11	0	0	0.27	0.06	0.0078
T-Test 5%	6.52	4.64	9.84	6.69	5.82	4.48	3.85	6.95	7.86	6.45	4.94	2.21

*Not included in final 18 measures

**QHR was not a Rasch measure, hence no fit statistics.

Note: Cronbach's Alpha (C Alpha) is only available if there is no missing data. ALL of my teacher data contained missing data, hence there are no values for this statistic for all the teacher measures generated above.

Appendix L: Summary statistics

Teacher Analyses

Analysis	Item Fit Residual		Person Fit Residual		Chi Square Interaction			PSI	Cronb Alpha	Unidimensionality T-Tests (CI)	
Name	Mean	SD	Mean	SD	Total ChiSq	df	Prob	PSI	Alpha	PerC <5%	PerC <1%
Guideline							>0.05	>0.7	>0.7	If <5% OK	
Teach 2	0.3543	1.0383	-0.2562	2.9425	2083.7125	450		0.92752	-		
Teach301	0.3815	1.177	-0.2554	3.2079	1919.5964	400		0.93716	-		
Lead	0.3493	2.3145	-0.2723	2.4898	479.1407	108		0.93639	-	34.55	23.64
TPIL	-0.0007	4.8589	-0.5084	1.3913	91.4928	12		0.67432	-		
TPIL	-0.1331	3.7	-0.3946	1.3645	109.3099	12		0.65381	-		
TPIL2	-0.896	1.3001	-0.6177	1.1474	25.9478	10		0.77127	-		
TPIL3	-0.9709	1.3484	-0.6201	1.1475	25.8907	10		0.7664	-	2.1	0
TPIL3LHLHT*	-1.0772	1.4115	-0.6228	1.1419	30.4223	10	0.00073	0.74847	-	2.1	0
Full Set	0.381	1.0643	-0.2151	3.0046	2090.7147	450		0.93183	-		
FULLDELNR	0.3838	1.1774	-0.2537	3.2082	1877.5497	400		0.93726	-	46.06	36.97
TIPL	0.2043	1.442	-0.6383	1.4567	43.7644	12		0.72334	-		
TIPL1*	-1.1755	1.1772	-0.6223	1.1708	37.6042	10	0.000044	0.66784	-	3.45	1.38
TOPERATION	0.0951	1.829	-0.3103	0.9836	91.7594	28		0.82822	-	21.6	9.88
TOPS1	0.0707	1.8122	-0.3504	1.3096	67.6152	20		0.7892	-	13.04	2.48
TOPS2*	-0.1514	1.9253	-0.4093	1.3279	75.0479	20	0	0.7823	-	12.42	3.73
TPGMSIP	-1.1682	0.9298	-0.8565	1.496	15.4624	14		0.81333	-	5.88	3.27
TPGMSIPLHT*	-1.4967	1.4998	-0.9278	1.5856	9.0411	14	0.828409	0.80861	-	7.19	3.92
TOPA	-1.6958	0.7213	-0.9176	1.2739	27.4026	12	0.006759	0.77152	-	12.84	2.03
TOPALHT*	-1.7541	1.0085	-0.9632	1.3574	32.5999	12	0.001117	0.76436	-	6.08	2.03
TTRUST	0.0861	1.8656	-0.3875	1.4931	91.51	28	0	0.78293	-	14.55	4.85

Analysis Name	Item Fit Residual Mean	SD	Person Fit Residual Mean	SD	Chi Square Interaction Total ChiSq	df	Prob	PSI	Cronb Alpha	Unidimensionality T-Tests (CI) PerC <5%	PerC <1%
TRUSTRES	0.0167	1.9321	-0.3987	1.5228	96.5719	28	0	0.78574	-	13.94	4.24

Analysis	Item Fit Residual		Person Fit Residual		Chi Square Interaction			PSI	Cronb Alpha	Unidimensionality T-Tests (CI)	
Name	Mean	SD	Mean	SD	Total ChiSq	df	Prob			PerC <5%	PerC <1%
Guideline							>0.05	>0.7	>0.7	If <5% OK	
TTRUST1	-0.1446	1.3691	-0.4592	1.4536	43.627	26	0.016573	0.80549		13.33	7.27
TTRUST2*	-0.242	0.9782	-0.4555	1.3381	20.3948	24	0.674119	0.81385	-	14.63	8.54
TPIS*	-0.1831	0.6894	-0.3363	0.6582	3.8775	6	0.693255	0.60849	-	1.88	0
TTIES	-0.4318	1.2756	-0.6477	1.3421	14.8989	14	0.385099	0.67173	-	11.04	2.45
TTIES1*	-0.3886	1.0743	-0.6567	1.3908	12.6624	14	0.553264	0.66369	-	10.43	2.45
TINNCT	-0.1265	1.8992	-0.6223	1.6139	44.6318	18	0.000468	0.66656	-	16.56	7.36
TINNCT1	-0.3913	1.4236	-0.7054	1.6903	23.2501	18	0.181163	0.6806	-	14.72	1.84
TINNCT2*	-0.2869	1.1345	-0.6677	1.6132	17.4372	16	0.357867	0.64114	-	4.91	0.61
TQFPD	-0.8031	1.7215	-0.9525	1.4621	22.0444	10	0.014882	0.44197	-	7.36	2.45
TQFPD1*	-0.8892	1.6875	-0.9768	1.5248	14.961	10	0.13349	0.43973	-	9.2	1.84
TPUB	-0.4103	2.976	-0.4685	1.1582	145.3144	18	0	0.77184	-	7.36	1.23
TPUB3	0.2265	3.1198	-0.3499	1.3838	185.6691	18	0	0.71536	-	9.82	5.52
TPUB6*	0.1818	0.5187	-0.329	1.138	25.7111	16	0.058232	0.84771	-	9.55	3.18
TCOLAB	-0.2806	1.8117	-0.4326	0.9814	98.3802	26	0	0.73212	-	6.21	1.86
TCOLAB2	-0.4491	1.9292	-0.4569	1.0282	119.5425	26	0	0.74496	-	8.07	1.86
TCOLAB5*	-0.4902	1.0663	-0.4681	1.0213	57.1848	22	0.000058	0.703	-	5.52	0
TSAF*	-0.6068	0.9452	-0.5977	1.2664	8.9875	16	0.913926	0.81492	-	6.58	1.32
TPRS2	-0.3922	1.9869	-0.9937	1.6806	70.6736	8	0	0.48142	-	8.55	0.66
TSRE	-0.8542	1.1042	-0.7217	1.352	8.8397	10	0.547386	0.84155		6.13	1.84
TSRE2	-1.4715	1.1541	-1.1226	1.6368	3.7844	10	0.956549	0.81843	-	4.64	1.99
TSRE2LHT*	-1.7188	0.7635	-1.2863	1.8335	10.1514	10	0.427314	0.81754	-	4.64	1.99
TCLB4	-0.0917	1.7886	-0.472	1.1589	56.3404	16	0.000002	0.64676		8.07	4.97
TCLB10*	-0.5082	1.1407	-0.4306	1.0028	23.6533	12	0.022666	0.72435	-	9.74	3.25
TCCS3	0.0473	1.9075	-0.6569	1.1181	36.1258	6	0.000003	0.47501			

Name	Item Fit Residual		Person Fit Residual		Chi Square Interaction			PSI	Cronb Alpha	Unidimensionality T-Tests (CI)	
TPRAC3*	-0.2873	2.126	1.0288	1.2604	18.0635	12	0.113778	0.58827	-	3.85	1.92
Analysis	Item Fit Residual		Person Fit Residual		Chi Square Interaction			PSI	Cronb Alpha	Unidimensionality T-Tests (CI)	
Name	Mean	SD	Mean	SD	Total ChiSq	df	Prob			PerC <5%	PerC <1%
Guideline							>0.05	>0.7	>0.7	If <5% OK	
TBHU1	0.753	0.5617	-0.3287	1.2342	14.248	8	0.075527	-0.13911	-		
TADF3*	0.1847	1.8438	-0.2458	1.2164	68.2702	16	0	0.56757	-	2	0
TTOM*	0.1819	1.8669	-0.4803	1.0297	16.8116	6	0.010002	0.54833	-	0.61	0
TTPRST2*	0.1362	1.267	-0.4173	1.1527	12.1883	10	0.272654	0.50269	-	6.45	0
TTPA1*	-0.2696	1.0485	-0.4525	0.9939	17.6479	10	0.061203	0.73464	0.74605	4.94	1.23
TTTE*	-1.8879	0.8541	-0.745	0.8491	17.4379	6	0.007803	0.67646	0.86594	2.21	2.21
TPLACE1*	-0.3634	1.972	-0.3069	0.9248	45.3889	14	0.000035	0.77499	-	3.07	1.23
TSPACE1*	0.059	1.3629	-0.4232	1.2479	26.6392	12	0.008706	0.56917	-	3.75	0
TTCA*	0.3649	1.0502	-0.523	1.1847	6.9428	6	0.32617	0.50208	-	3.55	0
TSCP*	0.0525	0.7	-0.4757	1.2348	14.8567	12	0.249369	0.6934	-	3.85	1.28

*These analyses were selected as the best available for the particular measure being generated. This did not imply that they were of sufficient quality to be included in the final factor-measure selection.

Student Analyses

Analysis	Item Fit Residual		Person Fit Residual		Chi Square Interaction			PSI	Cronb Alpha	Unidimensionality T-Tests (CI)	
Name	Mean	SD	Mean	SD	Total ChiSq	df	Prob			PerC <5%	PerC <1%
Guideline							>0.05	>0.7	>0.7	If <5% OK	
STRUST	-0.6169	0.7587	-0.352	0.7242	46.346	15	0.000047	0.40656		0	0
STRUSTLHT	-0.5619	1.07	-0.3474	0.7181	45.2623	15	0.00007	0.40232		0	0
SSAFE	0.6257	1.8656	-0.2353	1.0437	174.9571	72	0	0.47219			
SSAFE1	0.5253	1.7401	-0.2379	0.9876	104.6694	63	0.000765	0.50396	0.52647	6.21	0
SSAFE2	0.3458	1.0165	-0.2731	1.0044	84.509	54	0.004993	0.50004	0.55036	3.55	0
SSAFE1RES6*	0.3741	2.4022	-0.1758	0.9087	120.2683	49	0	0.43555	0.4677	3.8	0
SCLD2	0.0607	0.9931	-0.152	0.7467	77.982	20	0	0.15531	0.38477	0.17	0
SPRS2*	0.2457	1.2899	-0.2895	1.2161	142.8667	90	0.000336	0.70163	0.71747	6.69	0.7
SCLP7*	-0.4638	2.2323	-0.648	1.5001	185.96	99	0	0.72354	0.77712	5.82	2.06
SLAN1	1.3647	1.701	-0.2359	1.1218	55.0407	24	0	0.0101	0.16974	2.13	0
SACN1*	-0.1931	1.9335	-1.0101	1.8991	51.0469	28	0.004931	0.65381	0.76384	4.48	0.35
SPER1*	0.647	0.8728	-0.3054	1.2008	51.2635	36	0.047497	0.4503	0.50378	4.08	0
SPDA6*	0.3553	1.5169	-0.2273	1.0793	136.8383	49	0	0.62264	0.6729	6.95	0.89
SCCS1*	-0.0841	2.761	-0.4773	1.7252	220.0868	88	0	0.80499	0.83894	7.86	1.61
SPIS2	-0.2511	1.1545	-0.332	0.7002	42.3241	12	0.000029	0.39427	0.55107		
SPSS2*	0.2231	2.8747	-0.1927	0.8227	119.0438	48	0	0.53423	0.60282	1.43	0
SSLA1*	0.0617	0.9775	-0.1142	0.9493	111.3535	108	0.393112	0.68224	0.76635	16.49	4.12
SPLACE4*	-0.2939	1.9204	-0.2392	0.7281	152.0372	49	0	0.50615	0.61104	0.78	0

*These analyses were selected as the best available for the particular measure being generated. This did not imply that they were of sufficient quality to be included in the final factor-measure selection.

Appendix M: Composite Factors

Leadership

SCHOOL	TIPL	TPIL	TPGMSIP	TOPS	LEADERSHIP	Std Error
Analysis	TIPL1	TPIL3LHLHT	TPGMSIPLHT	TOPS2		
PSI	0.67	0.75	0.81	0.78		
Chi Sq	0.000044	0.00073	0.83	0		
T-Test 5%	3.45	2.1	7.19	12.42		
1	6.725408	6.465457	3.735584	6.323221	5.812417	0.697267
2	7.872082	8.294136	5.348487	7.127217	7.160481	0.650383
3	7.014391	6.300354	5.348487	5.995973	6.164801	0.345814
4	8.452488	7.959982	8.642821	6.546289	7.900395	0.47374
5	7.163194	8.224944	6.742437	6.760287	7.222716	0.347912
6	7.151979	7.376494	4.071536	6.391197	6.247801	0.755435
7	6.552765	6.980383	4.071536	5.53671	5.785349	0.64653
8	7.425954	7.405364	6.042119	6.432623	6.826515	0.349383
9	7.936544	7.982524	6.042119	6.936109	7.224324	0.462133
11	8.009785	7.925195	6.042119	6.892169	7.217317	0.466896
12	6.472835	6.470134	6.742437	5.845617	6.382756	0.190096
13	8.402665	8.512204	5.348487	7.633178	7.474134	0.735041
14	7.275683	7.536519	6.742437	6.981044	7.133921	0.172919
15	7.694011	7.75074	6.042119	6.635895	7.030691	0.417493
16	6.937633	7.475422	4.840381	6.478455	6.432973	0.568609
17	7.004454	7.143868	8.1648	6.597057	7.227545	0.333258
18	7.905492	8.976215	7.272271	7.084646	7.809656	0.42666
20	8.546073	9.036716	7.272271	7.864436	8.179874	0.386385
21	8.316488	8.657132	6.042119	7.709268	7.681252	0.580474
23	7.846751	8.149358	8.642821	6.86555	7.87612	0.374678
24	6.87503	6.540484	6.042119	6.168839	6.406618	0.188575
25	6.368441	5.414622	6.042119	6.091461	5.979161	0.201415
26	6.728912	6.329431	5.348487	6.368277	6.193777	0.295767
27	7.13718	8.066842	4.840381	6.427191	6.617898	0.680994

	TIPL	TPIL	TPGMSIP	TOPS	LEADERSHIP
Range	2.177632	3.622094	4.907237	2.327726	**2.394525**
Stdev	0.667018	0.934476	1.325691	0.57254	**0.705929**
Max	8.546073	9.036716	8.642821	7.864436	**8.179874**
Min	6.368441	5.414622	3.735584	5.53671	**5.785349**
Mean	7.40901	7.540605	6.061271	6.653863	**6.916187**

Community

SCHOOL	TTIES	TOPA	TPIS	SPSS	TSCP	COMMUNITY	Std Error
Analysis	TTIES1	TOPALHT	TPIS	SPSS2	TSCP		
PSI	0.66	0.76	0.61	0.53	0.69		
C Alpha	-	-	-	0.6	-		
Chi Sq	0.55	0.001117	0.69	0.39	0.25		
T-Test 5%	10.43	6.08	1.88	16.49	3.85		
1	4.431173	5.269679	4.549179	6.280043	4.246115	4.955238	0.373923
2	5.173666	6.306108	3.705508	5.989997	5.231205	5.281297	0.449983
3	4.938204	5.507841	3.553094	6.257594	4.83747	5.01884	0.445053
4	5.177486	6.139765	3.155113	6.531327	4.317114	5.064161	0.613388
5	5.315244	6.622719	3.95767	5.660938	4.577187	5.226751	0.457033
6	5.457402	6.130676	3.932054	6.302968	4.575159	5.279652	0.453616
7	3.987061	5.267752	3.449997	6.365346	3.764659	4.566963	0.545567
8	4.833418	5.155094	5.128519	6.03235	4.313839	5.092644	0.279461
9	5.85219	6.931307	3.769369	5.978472	4.68848	5.443963	0.549525
11	5.06252	6.442285	2.587779	6.153069	3.876726	4.824476	0.719033
12	4.882776	4.571726	1.930311	6.220381	4.486951	4.418429	0.695758
13	5.729139	7.876941	4.269282	5.714665	4.491452	5.616296	0.640806
14	4.95418	7.195114	3.673704	6.183255	5.111124	5.423475	0.595629
15	4.884933	5.92226	4.248219	5.492357	5.040428	5.117639	0.283181
16	4.417856	6.763037	3.367304	5.840207	5.595059	5.196693	0.590741
17	3.698705	7.137211	1.909021	6.10861	4.174616	4.605632	0.920539
18	5.59695	7.7857	3.312011	6.450065	5.363664	5.701678	0.732767
20	6.945088	7.959019	4.616323	6.285803	5.810493	6.323345	0.558585
21	6.224096	7.609658	5.199381	5.416728	5.370135	5.964	0.447921
23	5.106658	6.404559	3.270566	5.972102	5.268938	5.204565	0.537735
24	5.585321	6.357908	4.317972	6.366384	5.242949	5.574107	0.382734
25	4.717249	4.263643	3.000162	6.253069	5.218844	4.690594	0.5367
26	4.736461	5.03975	3.910136	6.267052	4.365948	4.863869	0.398348
27	5.719375	6.190621	4.426628	5.993183	4.295922	5.325146	0.401084

Range	3.246383	3.695376	3.29036	1.114599	2.045834	**1.904916**	
Stdev	0.699197	1.030126	0.845417	0.291866	0.552981	**0.445128**	
Max	6.945088	7.959019	5.199381	6.531327	5.810493	**6.323345**	
Min	3.698705	4.263643	1.909021	5.416728	3.764659	**4.418429**	
Mean	5.142798	6.285432	3.718304	6.088165	4.76102	**5.199144**	

Learning Climate

SCHOOL	TSAF	TSRE	TCLB	SPRS	SCLP	SACN	SSAF	SPER	Learning Climate	Std Error
Analysis	TSAF	TSRE2LHT	TCLB10	SPRS2	SCLP7	SACN1	SSAFE1RES6	SPER1		
PSI	0.81	0.82	0.72	0.7	0.72	0.65	0.44	0.45		
C Alpha	-	-	-	0.72	0.78	0.76	0.47	0.5		
Chi Sq	0.91	0.43	0.02	0.000336	0	0.004931	0	0.047		
T-Test 5%	6.52	4.64	9.84	6.69	5.82	4.48	3.8	4.08		
1	3.95	6.44	6.33	5.91	5.98	6.10	5.56	6.20	5.79	0.38
2	5.57	5.93	6.47	5.87	5.88	6.78	5.39	5.62	6.08	0.18
3	5.24	5.31	5.89	6.52	7.04	6.80	6.11	6.08	6.13	0.31
4	4.87	5.82	6.38	6.33	6.26	6.42	5.69	5.57	6.01	0.25
5	7.07	6.09	6.35	5.49	5.98	6.78	5.90	5.46	6.29	0.23
6	6.37	6.63	6.63	6.04	6.90	6.91	5.84	5.82	6.58	0.14
7	6.61	4.93	6.62	6.07	6.34	6.67	5.91	6.29	6.21	0.27
8	6.28	6.28	6.69	5.89	6.68	6.40	5.86	6.39	6.37	0.12
9	6.64	7.03	7.27	5.86	6.45	5.87	5.39	5.94	6.52	0.24
11	6.30	6.71	6.54	6.12	6.92	6.39	5.81	6.31	6.50	0.12
12	6.43	5.70	6.64	5.57	6.13	5.99	5.61	5.60	6.08	0.17
13	6.02	5.48	6.43	5.35	6.04	5.91	4.90	5.47	5.87	0.16
14	6.45	6.97	7.62	6.00	5.90	6.64	5.55	5.99	6.60	0.26
15	6.37	7.17	7.02	6.16	6.80	7.43	6.35	6.63	6.83	0.20
16	6.07	4.59	5.95	5.78	6.21	6.79	6.24	5.81	5.90	0.30
17	4.70	7.07	6.53	5.68	5.43	7.25	6.52	6.36	6.11	0.41
18	6.01	6.60	6.30	6.47	6.09	7.16	5.98	5.71	6.44	0.17
20	6.48	6.46	6.89	5.52	6.48	7.04	5.72	5.85	6.48	0.22
21	6.80	7.75	7.21	5.51	5.98	6.87	6.04	5.99	6.69	0.33
23	5.81	7.59	6.36	6.93	6.93	7.70	6.41	6.62	6.88	0.29
24	4.99	6.31	5.98	6.45	6.86	6.46	6.12	5.88	6.18	0.26
25	4.96	5.58	5.84	6.26	5.57	7.36	6.19	6.09	5.93	0.33
26	6.43	7.68	7.55	4.93	5.85	6.48	5.95	5.99	6.49	0.42
27	6.27	6.62	7.30	6.11	6.47	6.44	5.52	5.80	6.53	0.17

	TSAF	TSRE	TCLB	SPRS	SCLP	SACN	SSAF	SPER	Learning Climate	
Range	3.12	3.16	1.78	2.00	1.61	1.83	1.62	1.18	1.10	
Stdev	0.78	0.84	0.50	0.44	0.45	0.48	0.37	0.34	0.31	
Max	7.07	7.75	7.62	6.93	7.04	7.70	6.52	6.63	6.88	
Min	3.95	4.59	5.84	4.93	5.43	5.87	4.90	5.46	5.79	
Mean	5.94	6.36	6.62	5.95	6.30	6.69	5.86	5.98	6.31	

Professional Capacity

SCHOOL	TINNCT	TPUB	TCOLAB	QHR	PROFESSIONAL CAPACITY	Std Error
Analysis	TINNCT2	TPUB6	TCOLAB5	SCALE		
PSI	0.64114	0.84771	**0.703**			
Chi Sq	0.357867	0.058232	0.000058			
T-Test 5%	4.91	9.55	5.52			
1	4.87737	3.619021	5.109578	5.24589	4.712965	0.333172
2	5.913555	5.853016	6.869463	5.569705	6.051435	0.252931
3	5.011626	4.606597	5.126621	5.723778	5.117155	0.206541
4	6.492603	4.936656	6.219889	7.376801	6.256487	0.451232
5	5.904374	5.54332	5.793763	4.33712	5.394644	0.322447
6	5.733045	4.549814	5.676484	7.448021	5.851841	0.534661
7	5.573253	5.072405	5.240551	5.277227	5.290859	0.093161
8	5.257641	5.815043	6.884327	5.535757	5.873192	0.318176
9	6.56377	6.259132	6.98505	6.381854	6.547452	0.141965
11	5.721835	5.895661	7.043903	5.402575	6.015994	0.31978
12	5.5183	3.987144	5.402598	4.619152	4.881799	0.321015
13	6.784596	5.610484	7.108834	5.512254	6.254042	0.363004
14	5.934947	4.997394	7.476528	5.684607	6.023369	0.468108
15	6.11166	5.135715	5.718349	5.803688	5.692353	0.182343
16	5.41485	5.273812	6.023178	5.527923	5.559941	0.145725
17	6.260939	5.355862	7.525997	5.747281	6.22252	0.422491
18	6.22836	5.250156	6.509935	6.234428	6.05572	0.24725
20	6.983967	6.862626	7.181488	4.243109	6.317797	0.621338
21	6.185375	6.416315	6.838556	7.28279	6.680759	0.216437
23	6.159625	5.368378	7.18776	7.321962	6.509431	0.411882
24	5.147581	5.638424	6.065642	6.750063	5.900427	0.30382
25	5.894205	4.993818	5.943204	7.119838	5.987766	0.389894
26	5.157587	5.231229	6.265813	6.566518	5.805287	0.32048
27	6.831835	6.577781	8.243173	4.938788	6.647894	0.605789

Range	2.106597	3.243605	3.133594	3.243605	3.133594	**1.967795**
Stdev	0.588402	0.761233	0.845422	0.761233	0.845422	**0.528732**
Max	6.983967	6.862626	8.243173	6.862626	8.243173	**6.680759**
Min	4.87737	3.619021	5.109578	3.619021	5.109578	**4.712965**
Mean	5.902621	5.368742	6.435028	5.368742	6.435028	**5.90213**

Instructional Guidance

SCHOOL	TPRAC	SPDA	SCCS	INSTRUCTIONAL GUIDANCE	Std Error
Analysis	TPRAC3	SPDA6	SCCS1		
PSI	0.59	0.62	0.8		
C Alpha	-	0.67	0.84		
Chi Sq	0.11	0	0		
T-Test 5%	3.85	6.95	7.86		
1	6.241547	6.372635	5.647406	6.087196	0.223127
2	6.427139	6.295426	5.677418	6.133327	0.231104
3	5.600445	7.036971	6.418745	6.352054	0.416028
4	6.251471	6.303325	5.864794	6.139863	0.138347
5	6.419584	6.053063	5.496364	5.98967	0.268389
6	6.603746	6.551649	6.183947	6.446447	0.132109
7	5.798617	6.83865	5.515955	6.051074	0.402153
8	5.530512	6.781051	5.726196	6.012586	0.388363
9	6.785701	6.522563	5.865815	6.39136	0.273531
11	6.022253	7.033564	6.352139	6.469319	0.297762
12	6.134502	6.442746	5.541878	6.039709	0.264342
13	6.591293	6.452765	5.408626	6.150894	0.373283
14	6.545344	6.075126	5.415832	6.012101	0.327581
15	5.933427	6.376212	6.093432	6.134357	0.129449
16	5.218306	6.060329	5.656177	5.644937	0.243136
17	8.24471	6.075632	5.629476	6.649939	0.80772
18	7.029708	5.741361	5.634551	6.135207	0.448312
20	6.91307	6.249607	5.458308	6.206995	0.420494
21	6.634164	5.964285	5.227822	5.94209	0.406127
23	7.043068	6.703075	6.067889	6.604677	0.285777
24	6.339551	6.527882	6.152471	6.339968	0.108372
25	7.011403	6.395261	5.4222	6.276288	0.462604
26	6.461919	5.92654	5.56446	5.984306	0.260679
27	6.205177	6.294236	6.107117	6.202177	0.054037

Range	3.026404	1.295611	1.190922	**1.005002**
Stdev	0.619419	0.338398	0.32809	**0.227776**
Max	8.24471	7.036971	6.418745	**6.649939**
Min	5.218306	5.741361	5.227822	**5.644937**
Mean	6.416111	6.378081	5.755376	**6.183189**

Appendix N: University tier ranking system

The university ranking system I devised was based on two internationally published ranking systems - the Times Higher Education Ranking (http://www.timeshighereducation.co.uk/world-university-rankings/2013-14/world-ranking/region/africa) and the QS World University Ranking System (http://www.topuniversities.com/university-rankings/) – as well as a 2010 study on South African Higher Education by the Centre for Higher Education Transformation (McGregor, Karen (23 May 2010). "SOUTH AFRICA: New university clusters emerge". University World News. Retrieved 11 June 2010), which ranked universities into three separate clusters according to function. Any ranking system is deficient, but my attempt to synthesize these different rankings provides a rough estimate of the 'elite-ness' of South African universities for the purpose of measuring the lack of access that rural teachers have had to top tier tertiary institutions.

Table: Summary of university rankings

Tier	Institutions	Rank score for Rasch
1	UCT, Wits, Stellenbosch, Pretoria, UKZN, Rhodes	4
2	UFS, UJ, NW, Fort Hare, Limpopo, UWC, NMMU, Zululand, other African universities	3
3	Vaal, Central UT, Durban UT, Mangosuthu UT, Tshwane UT, Venda, WSU, CPUT, UNISA	2
4	Colleges	1
5	Certificates/None	0

Note:

1. I include UNISA in the third tier because the distance-learning model means that teachers studying through UNISA would not have been exposed to a 'different' learning environment – a core premise of Bryk and colleague's (2010) work and this thesis.

2. When teachers responded to the survey questions about their undergraduate degree with the name of an old institution (e.g. University of Port Elizabeth), the ranking was assumed to be the same as the new institution (e.g. Nelson Mandela Metropolitan University), *unless* the old institution was a technikon (e.g. Port Elizabeth Technikon) or college, in which case the tier was dropped one level.

Appendix O: Devising a score for the Quality of Human Resources measure

Bryk et al. (2010) generated a measure for the Quality of Human Resources at a school by taking into account two considerations: the cosmopolitan experience of teachers (particularly whether they had experience teaching outside of the Chicago Public Schools system) and the quality of the undergraduate institution attended. I modelled my own QHR measure on similar criteria:

- *Cosmopolitan experience:* this score was generated using a weighted composite of three items on the teacher survey.
    - Whether teachers had attended a rural school themselves.
    - Whether teachers had worked outside the teaching profession or outside the Eastern Cape.
    - Whether teachers had studied outside of the former Transkei.
- *Education:* this score was generated by combining two scores.
    - The level of education – from 0 (matric) to 5 (PhD).
    - The quality of the university attended, as outlined by the ranking system explained in Appendix N.

These two measures were then combined with equal weighting into a combined measure of the Quality of Human Resources. Given the measure's unhelpful performance during analysis, there remains considerable work to be done to refine this scoring process into a meaningful measure.

Appendix P: Department of Basic Education permission to use ANA data

1) Screenshot of email that I assumed implied permission had been granted and requesting EMIS numbers for the schools I am interested, dated 1-16-2014.

(no subject)   PhD x

Tshikororo.J <Tshikororo.J@dbe.gov.za>   1/16/14
to pxtcra001, me

Jerry
From dbe can you send me list of the school with EMIS NUMBERS PLS.

JERRY TSHIKORORO

_____
This outbound email has been scanned by the IS Mail Control service.
For more information please visit http://www.is.co.za
_____

Craig Paxton <paxcraig@gmail.com>   1/16/14
to Tshikororo.J

Hi Jerry,

Many thanks for following up on my request.

I've attached the list (see page 2), but I'm afraid I don't know their EMIS numbers. If you let me know where I can find the EMIS numbers, I'd be happy to plug the numbers in and resend it to you.

Many thanks

. . .

W   Request for acce…

2) Screenshot of email acknowledging receipt of my request, dated 12-04-2013.

REQUEST FOR ANNUAL NATIONAL ASSESSMENT RESULTS FOR PHD STUDY

Inbox x   PhD x

Ndlovu, Mbali <Ndlovu.M@dbe.gov.za>   12/4/13
to me, Danielle, Dyer.C

Dear Sir

Your correspondence received on 21 November 2013 , regarding the above is acknowledged.

Kindly note that it has been refered to our Planning, Information and Assessments Branch.

You may expect further correspondence from them in this regard.

(Your reference no: 2311/13)

Contact Person: Karina De Bruin
Tel: 012 357 4309
e-mail: debruin.k@dbe.gov.za

Kind regards
Mbali Ndlovu
Office of Director-General
222 Struben Street
Pretoria
Tel: 012 357 4010
fax: 012 323 3233
e-mail:ndlovu.m@dbe.gov.za

basic education
Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

3) On the next page, a copy of my letter requesting the ANA data sent to the DBE on 21-11-2013.

Request to access Annual National Assessment data

Project Title:	Understanding improvement in rural schools in the Eastern Cape
Researcher:	Mr. Craig Paxton
Department:	School of Education
	Graduate Humanities Building, Upper Campus
	University of Cape Town
	Private Bag X5
	Rondebosch 7700
Phone:	+27 (0) 82 459 9877
Email:	paxcraig@gmail.com OR pxtcra001@uct.ac.za
To:	The Director-General
	Department of Basic Education
	Private Bag X895
	Pretoria
	0001

November 6th, 2013

Dear Sir,

RE: Request for Annual National Assessment results for PhD study

I am writing to inform you of a PhD study I am conducting in schools in the area surrounding ▮▮▮▮▮ ▮▮▮▮, in the Mqanduli District of the Eastern Cape. Annual National Assessment results form an integral part of this research and I am seeking permission to access this data for the 35 schools in the study for the 2012, 2013 and 2014 school years (as this data becomes available).

My research examines the challenges that rural schools face, as well as the "ingredients" necessary for improvement in these schools to happen. As such I think the research will be useful to the schools involved as well as other rural schools in the country. To be specific, I hope to use National Senior Certificate and Annual National Assessment (Grade 9) results to ascertain whether schools in my study are 'improving' or 'stagnating' over time. In parallel to this analysis I am conducting surveys, interviews and observations at these schools, with the aim of learning more about the factors that influence rural school improvement.

I have obtained permission from the District offices involved, as well as from the individual schools participating in the project (copies of these letters are available upon request). In obtaining ethical clearance, I have guaranteed anonymity for the schools as well as of the individual survey respondents, and the same will apply for the use of the ANA and NSC data. A list of these schools can be found on the second page of this letter.

Thank you for considering my request.

Kind regards

Craig Paxton
PhD Student

Appendix Q: Spearman's Rank and Pearson Correlations for 16 organisational measures, including validation exercise

1. Pearson Correlations: output from SPSS

Correlations

		TPIL	TPGM SIP	TOPS	TTIES	TOPA	TSCP	TPUB	TCOL AB	QHR	TSAF	TSRE	TCLB
TPIL	Pearson Correlation	1	.317	.809**	.619**	.820**	.273	.624**	.548**	-.141	.451*	.254	.275
	Sig. (2-tailed)		.132	.000	.001	.000	.196	.001	.006	.510	.027	.231	.193
	N	24	24	24	24	24	24	24	24	24	24	24	24
TPGM SIP	Pearson Correlation	.317	1	.316	.140	.312	.239	.192	.379	.168	-.055	.318	-.020
	Sig. (2-tailed)	.132		.132	.514	.138	.260	.370	.068	.433	.799	.130	.924
	N	24	24	24	24	24	24	24	24	24	24	24	24
TOPS	Pearson Correlation	.809**	.316	1	.686**	.829**	.462*	.615**	.599**	-.022	.271	.400	.297
	Sig. (2-tailed)	.000	.132		.000	.000	.023	.001	.002	.920	.201	.053	.159
	N	24	24	24	24	24	24	24	24	24	24	24	24
TTIES	Pearson Correlation	.619**	.140	.686**	1	.546**	.484*	.612**	.351	.018	.381	.263	.247
	Sig. (2-tailed)	.001	.514	.000		.006	.017	.001	.093	.933	.066	.214	.245
	N	24	24	24	24	24	24	24	24	24	24	24	24
TOPA	Pearson Correlation	.820**	.312	.829**	.546**	1	.394	.558**	.561**	-.054	.242	.245	.183
	Sig. (2-tailed)	.000	.138	.000	.006		.056	.005	.004	.803	.254	.248	.392
	N	24	24	24	24	24	24	24	24	24	24	24	24
TSCP	Pearson Correlation	.273	.239	.462*	.484*	.394	1	.266	.104	.166	.059	.063	-.135
	Sig. (2-tailed)	.196	.260	.023	.017	.056		.208	.630	.439	.784	.770	.528
	N	24	24	24	24	24	24	24	24	24	24	24	24
TPUB	Pearson Correlation	.624**	.192	.615**	.612**	.558**	.266	1	.724**	-.096	.449*	.275	.341
	Sig. (2-tailed)	.001	.370	.001	.001	.005	.208		.000	.656	.028	.194	.103
	N	24	24	24	24	24	24	24	24	24	24	24	24

TCOLAB	Pearson Correlation	.548**	.379	.599**	.351	.561**	.104	.724**	1	-.024	.192	.448*	.462*
	Sig. (2-tailed)	.006	.068	.002	.093	.004	.630	.000		.911	.368	.028	.023
	N	24	24	24	24	24	24	24	24	24	24	24	24
QHR	Pearson Correlation	-.141	.168	-.022	.018	-.054	.166	-.096	-.024	1	-.238	.334	-.075
	Sig. (2-tailed)	.510	.433	.920	.933	.803	.439	.656	.911		.263	.111	.729
	N	24	24	24	24	24	24	24	24	24	24	24	24
TSAF	Pearson Correlation	.451*	-.055	.271	.381	.242	.059	.449*	.192	-.238	1	.170	.554**
	Sig. (2-tailed)	.027	.799	.201	.066	.254	.784	.028	.368	.263		.427	.005
	N	24	24	24	24	24	24	24	24	24	24	24	24
TSRE	Pearson Correlation	.254	.318	.400	.263	.245	.063	.275	.448*	.334	.170	1	.632**
	Sig. (2-tailed)	.231	.130	.053	.214	.248	.770	.194	.028	.111	.427		.001
	N	24	24	24	24	24	24	24	24	24	24	24	24
TCLB	Pearson Correlation	.275	-.020	.297	.247	.183	-.135	.341	.462*	-.075	.554**	.632**	1
	Sig. (2-tailed)	.193	.924	.159	.245	.392	.528	.103	.023	.729	.005	.001	
	N	24	24	24	24	24	24	24	24	24	24	24	24
SPRS	Pearson Correlation	-.062	.223	-.270	-.083	-.109	.152	-.163	-.075	.378	-.362	-.069	-.446*
	Sig. (2-tailed)	.775	.294	.201	.701	.613	.479	.445	.727	.069	.082	.750	.029
	N	24	24	24	24	24	24	24	24	24	24	24	24
SCLP	Pearson Correlation	.102	-.095	-.125	.266	-.045	.000	.093	-.123	.094	.172	.025	-.107
	Sig. (2-tailed)	.636	.660	.561	.209	.834	.998	.665	.567	.664	.420	.908	.617
	N	24	24	24	24	24	24	24	24	24	24	24	24
SCCS	Pearson Correlation	-.116	-.071	-.309	-.027	-.173	-.185	-.062	-.074	.175	-.176	.056	-.214
	Sig. (2-tailed)	.589	.741	.142	.900	.420	.386	.773	.731	.413	.411	.795	.316
	N	24	24	24	24	24	24	24	24	24	24	24	24
SPDA	Pearson Correlation	-.283	-.215	-.379	-.143	-.396	-.394	-.112	-.216	-.023	-.091	-.272	-.286
	Sig. (2-tailed)	.180	.313	.068	.505	.056	.057	.603	.310	.914	.673	.199	.175
	N	24	24	24	24	24	24	24	24	24	24	24	24
TTPA	Pearson Correlation	.512*	-.054	.485*	.902**	.395	.449*	.449*	.224	.036	.444*	.169	.310
	Sig. (2-tailed)	.011	.801	.016	.000	.056	.028	.028	.293	.867	.030	.430	.140
	N	24	24	24	24	24	24	24	24	24	24	24	24

TTTE	Pearson Correlation	-.116	-.071	-.309	-.027	-.173	-.185	-.062	-.074	.175	-.176	.056	-.214
	Sig. (2-tailed)	.589	.741	.142	.900	.420	.386	.773	.731	.413	.411	.795	.316
	N	24	24	24	24	24	24	24	24	24	24	24	24

Correlations

		SPRS	SCLP	SCCS	SPDA	TTPA	TTTE
TPIL	Pearson Correlation	-.062	.102	-.116	-.283	.512*	-.116
	Sig. (2-tailed)	.775	.636	.589	.180	.011	.589
	N	24	24	24	24	24	24
TPGMSIP	Pearson Correlation	.223	-.095	-.071	-.215	-.054	-.071
	Sig. (2-tailed)	.294	.660	.741	.313	.801	.741
	N	24	24	24	24	24	24
TOPS	Pearson Correlation	-.270	-.125	-.309	-.379	.485*	-.309
	Sig. (2-tailed)	.201	.561	.142	.068	.016	.142
	N	24	24	24	24	24	24
TTIES	Pearson Correlation	-.083	.266	-.027	-.143	.902**	-.027
	Sig. (2-tailed)	.701	.209	.900	.505	.000	.900
	N	24	24	24	24	24	24
TOPA	Pearson Correlation	-.109	-.045	-.173	-.396	.395	-.173
	Sig. (2-tailed)	.613	.834	.420	.056	.056	.420
	N	24	24	24	24	24	24
TSCP	Pearson Correlation	.152	.000	-.185	-.394	.449*	-.185
	Sig. (2-tailed)	.479	.998	.386	.057	.028	.386
	N	24	24	24	24	24	24
TPUB	Pearson Correlation	-.163	.093	-.062	-.112	.449*	-.062
	Sig. (2-tailed)	.445	.665	.773	.603	.028	.773
	N	24	24	24	24	24	24
TCOLAB	Pearson Correlation	-.075	-.123	-.074	-.216	.224	-.074
	Sig. (2-tailed)	.727	.567	.731	.310	.293	.731
	N	24	24	24	24	24	24
QHR	Pearson Correlation	.378	.094	.175	-.023	.036	.175
	Sig. (2-tailed)	.069	.664	.413	.914	.867	.413
	N	24	24	24	24	24	24
TSAF	Pearson Correlation	-.362	.172	-.176	-.091	.444*	-.176
	Sig. (2-tailed)	.082	.420	.411	.673	.030	.411
	N	24	24	24	24	24	24
TSRE	Pearson Correlation	-.069	.025	.056	-.272	.169	.056
	Sig. (2-tailed)	.750	.908	.795	.199	.430	.795
	N	24	24	24	24	24	24

TCLB	Pearson Correlation	-.446*	-.107	-.214	-.286	.310	-.214
	Sig. (2-tailed)	.029	.617	.316	.175	.140	.316
	N	24	24	24	24	24	24
SPRS	Pearson Correlation	1	.524**	.604**	.427*	.022	.604**
	Sig. (2-tailed)		.009	.002	.037	.917	.002
	N	24	24	24	24	24	24
SCLP	Pearson Correlation	.524**	1	.804**	.683**	.311	.804**
	Sig. (2-tailed)	.009		.000	.000	.139	.000
	N	24	24	24	24	24	24
SCCS	Pearson Correlation	.604**	.804**	1	.610**	.025	1.000**
	Sig. (2-tailed)	.002	.000		.002	.906	.000
	N	24	24	24	24	24	24
SPDA	Pearson Correlation	.427*	.683**	.610**	1	-.111	.610**
	Sig. (2-tailed)	.037	.000	.002		.606	.002
	N	24	24	24	24	24	24
TTPA	Pearson Correlation	.022	.311	.025	-.111	1	.025
	Sig. (2-tailed)	.917	.139	.906	.606		.906
	N	24	24	24	24	24	24
TTTE	Pearson Correlation	.604**	.804**	1.000**	.610**	.025	1
	Sig. (2-tailed)	.002	.000	.000	.002	.906	
	N	24	24	24	24	24	24

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

			TPIL	TPGM SIP	TOPS	TTIES	TOPA	TSCP	TPUB	TCOL AB	QHR	TSAF
Spearman's rho	TPIL	Correlation Coefficient	1.000	.348	.883**	.737**	.768**	.392	.659**	.545**	-.117	.318
		Sig. (2-tailed)	.	.095	.000	.000	.000	.058	.000	.006	.588	.130
		N	24	24	24	24	24	24	24	24	24	24
	TPGM SIP	Correlation Coefficient	.348	1.000	.392	.201	.357	.262	.137	.411*	.177	.000
		Sig. (2-tailed)	.095	.	.058	.347	.087	.217	.525	.046	.407	.998
		N	24	24	24	24	24	24	24	24	24	24
	TOPS	Correlation Coefficient	.883**	.392	1.000	.617**	.837**	.439*	.617**	.639**	-.003	.257
		Sig. (2-tailed)	.000	.058	.	.001	.000	.032	.001	.001	.987	.226
		N	24	24	24	24	24	24	24	24	24	24
	TTIES	Correlation Coefficient	.737**	.201	.617**	1.000	.593**	.415*	.572**	.370	.092	.312
		Sig. (2-tailed)	.000	.347	.001	.	.002	.044	.003	.076	.668	.138
		N	24	24	24	24	24	24	24	24	24	24
	TOPA	Correlation Coefficient	.768**	.357	.837**	.593**	1.000	.436*	.557**	.597**	-.069	.190
		Sig. (2-tailed)	.000	.087	.000	.002	.	.033	.005	.002	.750	.375
		N	24	24	24	24	24	24	24	24	24	24
	TSCP	Correlation Coefficient	.392	.262	.439*	.415*	.436*	1.000	.226	.079	.261	.096
		Sig. (2-tailed)	.058	.217	.032	.044	.033	.	.288	.713	.218	.657
		N	24	24	24	24	24	24	24	24	24	24
	TPUB	Correlation Coefficient	.659**	.137	.617**	.572**	.557**	.226	1.000	.687**	-.186	.309
		Sig. (2-tailed)	.000	.525	.001	.003	.005	.288	.	.000	.384	.142
		N	24	24	24	24	24	24	24	24	24	24
	TCOLA B	Correlation Coefficient	.545**	.411*	.639**	.370	.597**	.079	.687**	1.000	-.006	.037
		Sig. (2-tailed)	.006	.046	.001	.076	.002	.713	.000	.	.977	.862
		N	24	24	24	24	24	24	24	24	24	24
	QHR	Correlation Coefficient	-.117	.177	-.003	.092	-.069	.261	-.186	-.006	1.000	-.264

	Sig. (2-tailed)	.588	.407	.987	.668	.750	.218	.384	.977	.	.212
	N	24	24	24	24	24	24	24	24	24	24
TSAF	Correlation Coefficient	.318	.000	.257	.312	.190	.096	.309	.037	-.264	1.000
	Sig. (2-tailed)	.130	.998	.226	.138	.375	.657	.142	.862	.212	.
	N	24	24	24	24	24	24	24	24	24	24
TSRE	Correlation Coefficient	.232	.286	.394	.240	.250	.058	.292	.452*	.376	.242
	Sig. (2-tailed)	.275	.175	.057	.259	.240	.787	.166	.027	.070	.255
	N	24	24	24	24	24	24	24	24	24	24
TCLB	Correlation Coefficient	.209	.002	.265	.222	.079	-.201	.312	.415*	-.089	.641**
	Sig. (2-tailed)	.328	.993	.210	.298	.713	.347	.138	.044	.680	.001
	N	24	24	24	24	24	24	24	24	24	24
SPRS	Correlation Coefficient	-.177	.121	-.282	-.061	-.227	.069	-.263	-.137	.394	-.484*
	Sig. (2-tailed)	.407	.573	.182	.778	.286	.750	.214	.522	.057	.016
	N	24	24	24	24	24	24	24	24	24	24
SCLP	Correlation Coefficient	.058	-.038	-.115	.270	-.049	.047	.128	-.076	.076	.075
	Sig. (2-tailed)	.787	.860	.593	.201	.821	.828	.552	.725	.725	.728
	N	24	24	24	24	24	24	24	24	24	24
SCCS	Correlation Coefficient	-.196	-.174	-.286	.009	-.259	-.172	-.022	-.110	.229	-.320
	Sig. (2-tailed)	.360	.417	.175	.968	.221	.421	.920	.610	.282	.127
	N	24	24	24	24	24	24	24	24	24	24
SPDA	Correlation Coefficient	-.347	-.220	-.397	-.123	-.391	-.343	-.128	-.212	.039	-.150
	Sig. (2-tailed)	.097	.302	.054	.565	.059	.100	.552	.320	.856	.485
	N	24	24	24	24	24	24	24	24	24	24
TTPA	Correlation Coefficient	.590**	.164	.475*	.897**	.549**	.500*	.349	.290	.099	.338
	Sig. (2-tailed)	.002	.445	.019	.000	.005	.013	.095	.170	.645	.106
	N	24	24	24	24	24	24	24	24	24	24
TTTE	Correlation Coefficient	-.196	-.174	-.286	.009	-.259	-.172	-.022	-.110	.229	-.320
	Sig. (2-tailed)	.360	.417	.175	.968	.221	.421	.920	.610	.282	.127
	N	24	24	24	24	24	24	24	24	24	24

Correlations

			TSRE	TCLB	SPRS	SCLP	SCCS	SPDA	TTPA	TTTE
Spearman's rho	TPIL	Correlation Coefficient	.232	.209	-.177	.058	-.196	-.347	.590**	-.196
		Sig. (2-tailed)	.275	.328	.407	.787	.360	.097	.002	.360
		N	24	24	24	24	24	24	24	24
	TPGMSIP	Correlation Coefficient	.286	.002	.121	-.038	-.174	-.220	.164	-.174
		Sig. (2-tailed)	.175	.993	.573	.860	.417	.302	.445	.417
		N	24	24	24	24	24	24	24	24
	TOPS	Correlation Coefficient	.394	.265	-.282	-.115	-.286	-.397	.475*	-.286
		Sig. (2-tailed)	.057	.210	.182	.593	.175	.054	.019	.175
		N	24	24	24	24	24	24	24	24
	TTIES	Correlation Coefficient	.240	.222	-.061	.270	.009	-.123	.897**	.009
		Sig. (2-tailed)	.259	.298	.778	.201	.968	.565	.000	.968
		N	24	24	24	24	24	24	24	24
	TOPA	Correlation Coefficient	.250	.079	-.227	-.049	-.259	-.391	.549**	-.259
		Sig. (2-tailed)	.240	.713	.286	.821	.221	.059	.005	.221
		N	24	24	24	24	24	24	24	24
	TSCP	Correlation Coefficient	.058	-.201	.069	.047	-.172	-.343	.500*	-.172
		Sig. (2-tailed)	.787	.347	.750	.828	.421	.100	.013	.421
		N	24	24	24	24	24	24	24	24
	TPUB	Correlation Coefficient	.292	.312	-.263	.128	-.022	-.128	.349	-.022
		Sig. (2-tailed)	.166	.138	.214	.552	.920	.552	.095	.920
		N	24	24	24	24	24	24	24	24
	TCOLAB	Correlation Coefficient	.452*	.415*	-.137	-.076	-.110	-.212	.290	-.110
		Sig. (2-tailed)	.027	.044	.522	.725	.610	.320	.170	.610
		N	24	24	24	24	24	24	24	24
	QHR	Correlation Coefficient	.376	-.089	.394	.076	.229	.039	.099	.229
		Sig. (2-tailed)	.070	.680	.057	.725	.282	.856	.645	.282
		N	24	24	24	24	24	24	24	24

TSAF	Correlation Coefficient	.242	.641**	-.484*	.075	-.320	-.150	.338	-.320
	Sig. (2-tailed)	.255	.001	.016	.728	.127	.485	.106	.127
	N	24	24	24	24	24	24	24	24
TSRE	Correlation Coefficient	1.000	.590**	-.066	.003	.081	-.270	.237	.081
	Sig. (2-tailed)	.	.002	.759	.987	.707	.203	.266	.707
	N	24	24	24	24	24	24	24	24
TCLB	Correlation Coefficient	.590**	1.000	-.414*	-.035	-.145	-.172	.260	-.145
	Sig. (2-tailed)	.002	.	.044	.872	.498	.421	.220	.498
	N	24	24	24	24	24	24	24	24
SPRS	Correlation Coefficient	-.066	-.414*	1.000	.527**	.610**	.449*	.021	.610**
	Sig. (2-tailed)	.759	.044	.	.008	.002	.028	.923	.002
	N	24	24	24	24	24	24	24	24
SCLP	Correlation Coefficient	.003	-.035	.527**	1.000	.726**	.675**	.303	.726**
	Sig. (2-tailed)	.987	.872	.008	.	.000	.000	.149	.000
	N	24	24	24	24	24	24	24	24
SCCS	Correlation Coefficient	.081	-.145	.610**	.726**	1.000	.533**	-.012	1.000**
	Sig. (2-tailed)	.707	.498	.002	.000	.	.007	.955	.
	N	24	24	24	24	24	24	24	24
SPDA	Correlation Coefficient	-.270	-.172	.449*	.675**	.533**	1.000	-.133	.533**
	Sig. (2-tailed)	.203	.421	.028	.000	.007	.	.535	.007
	N	24	24	24	24	24	24	24	24
TTPA	Correlation Coefficient	.237	.260	.021	.303	-.012	-.133	1.000	-.012
	Sig. (2-tailed)	.266	.220	.923	.149	.955	.535	.	.955
	N	24	24	24	24	24	24	24	24
TTTE	Correlation Coefficient	.081	-.145	.610**	.726**	1.000**	.533**	-.012	1.000
	Sig. (2-tailed)	.707	.498	.002	.000	.	.007	.955	.
	N	24	24	24	24	24	24	24	24

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

3. *Example of verification exercise for TPIL-TOPS*

3.1 Continuous, linear and outliers?
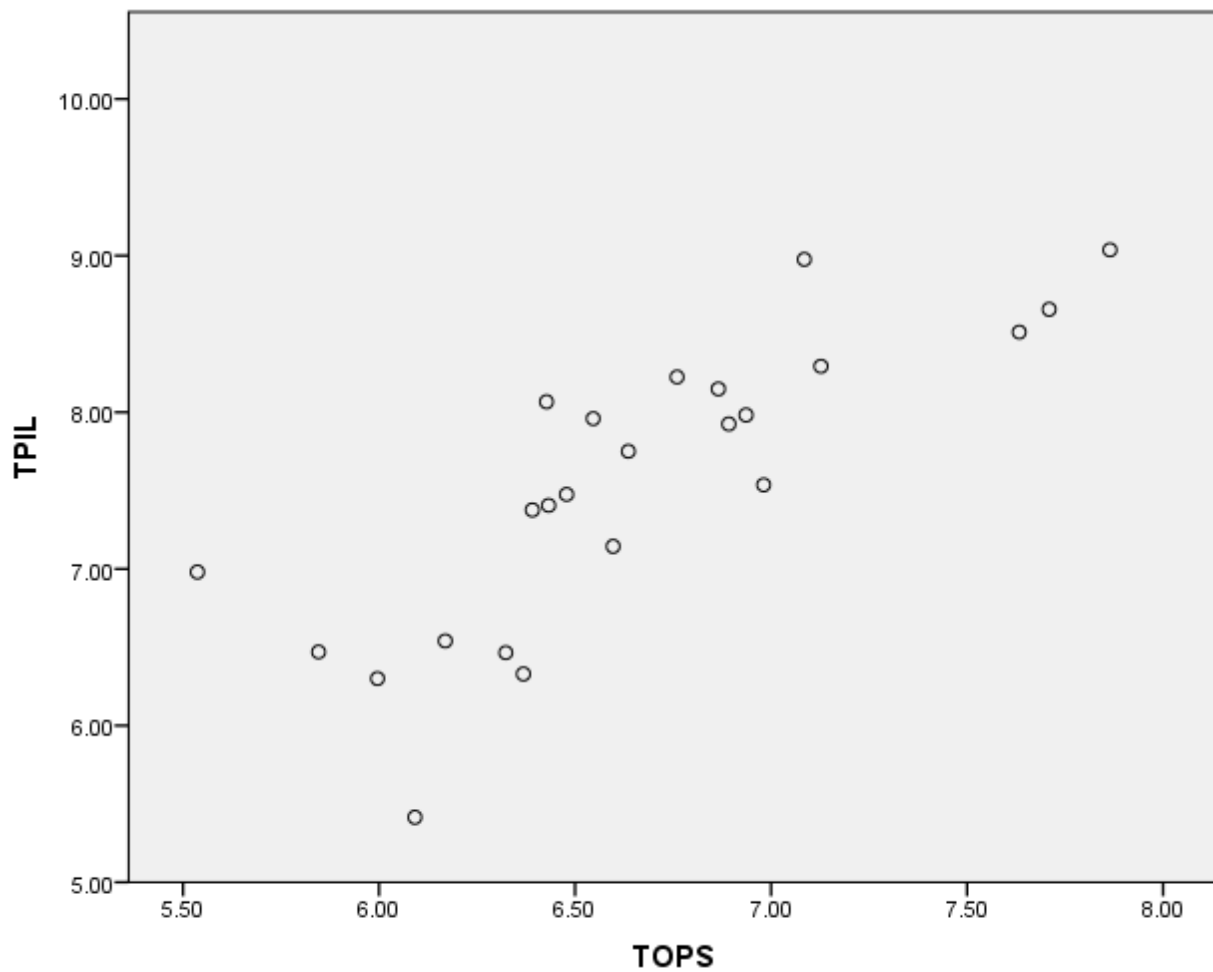
3.2 Normal distribution?

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
TPIL	.118	24	.200[*]	.966	24	.575
TOPS	.096	24	.200[*]	.972	24	.710

[*]. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

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Descriptives

			Statistic	Std. Error
TPIL	Mean		7.5406	.19075
	95% Confidence Interval for Mean	Lower Bound	7.1460	
		Upper Bound	7.9352	
	5% Trimmed Mean		7.5680	
	Median		7.6436	
	Variance		.873	
	Std. Deviation		.93448	
	Minimum		5.41	
	Maximum		9.04	
	Range		3.62	
	Interquartile Range		1.56	
	Skewness		-.410	.472
	Kurtosis		-.379	.918
TOPS	Mean		6.6539	.11687
	95% Confidence Interval for Mean	Lower Bound	6.4121	
		Upper Bound	6.8956	
	5% Trimmed Mean		6.6472	
	Median		6.5717	
	Variance		.328	
	Std. Deviation		.57254	
	Minimum		5.54	
	Maximum		7.86	
	Range		2.33	
	Interquartile Range		.64	
	Skewness		.392	.472
	Kurtosis		.124	.918

Normal Q-Q Plot of TPIL

Normal Q-Q Plot of TOPS
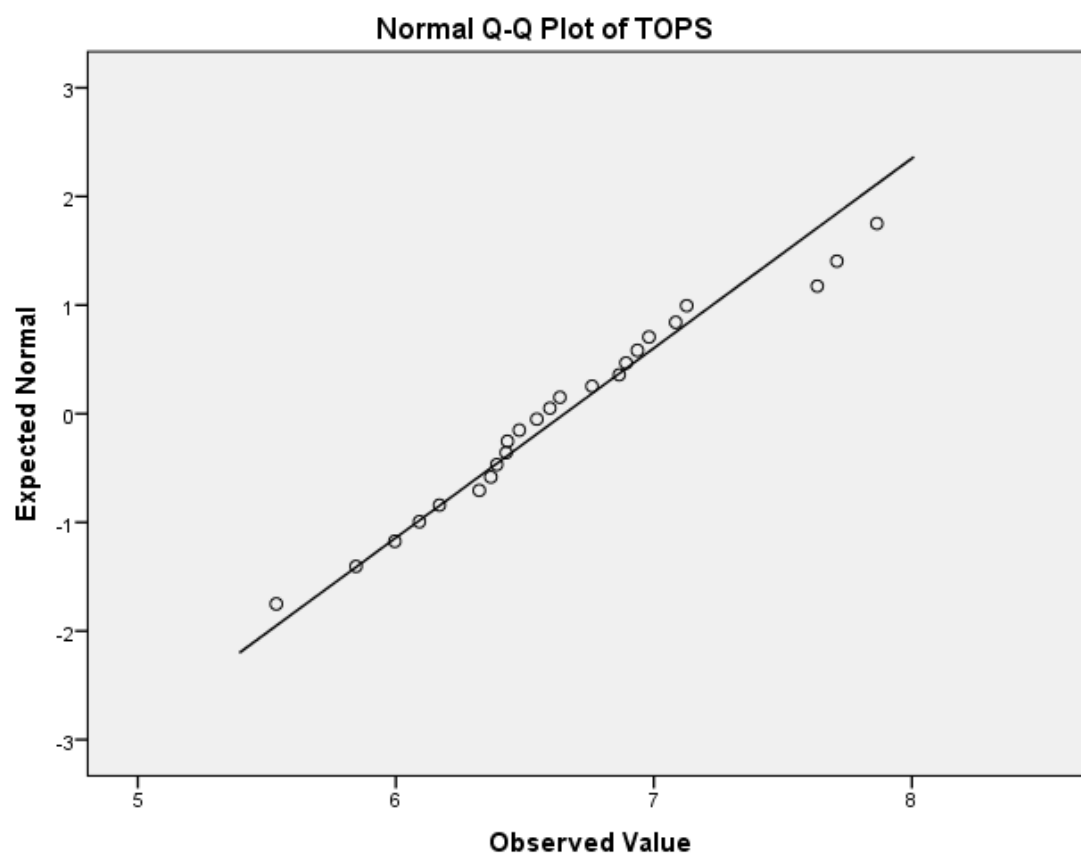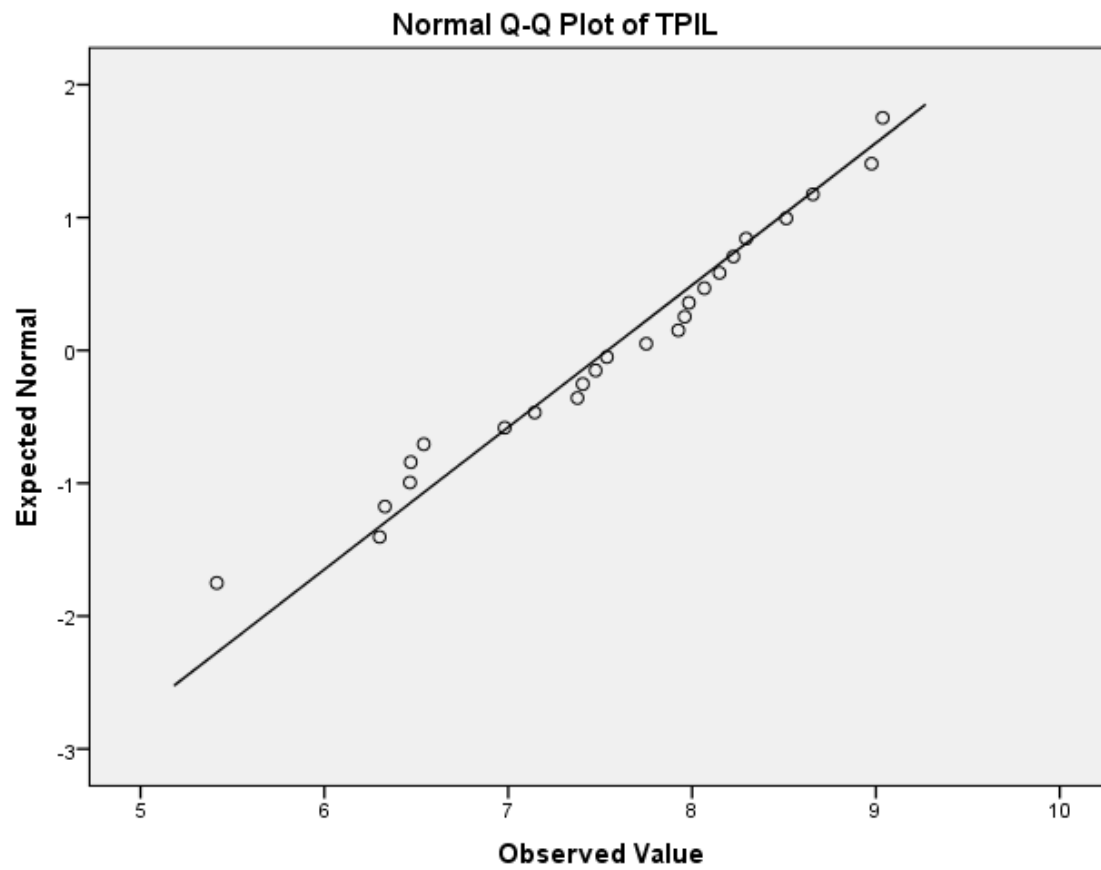
Appendix R: Survey response data

School	Teachers					Students					Principal responses
	Total at school	Surveys collected	Surveys uploaded	Final survey numbers	Response rate	Total in grade	Surveys collected	Surveys uploaded	Final survey numbers	Response rate	
1	11	6	6	6	55%	43	17	27	17	63%	1
2	16	9	9	9	56%	57	13	13	11	23%	1
3	26	8	8	8	31%	99	27	27	27	27%	1
4	20	6	6	6	30%	147	28	28	28	19%	1
5	11	3	3	3	27%	49	33	33	33	67%	1
6	20	11	11	11	55%	56	29	25	26	45%	1
7	11	9	9	9	82%	18	13	13	13	72%	1
8	15	8	8	8	53%	35	16	16	16	46%	1
9	19	8	8	8	42%	71	16	16	24	23%	1
10	16	2	0	0	0%	27	24	21	21	78%	0
11	17	12	12	12	71%	39	23	22	22	56%	1
12	21	4	4	4	19%	53	39	34	34	64%	1
13	23	4	4	4	17%	51	25	25	25	49%	1
14	12	6	6	6	50%	55	38	35	35	64%	1
15	20	6	5	5	25%	47	19	15	15	32%	1
16	18	6	6	6	33%	71	22	22	22	31%	1
17	16	2	2	2	13%	36	34	33	33	92%	1
18	21	11	11	11	52%	187	11	11	11	6%	1
20	14	4	4	4	29%	46	35	34	34	74%	1
21	19	12	12	12	63%	65	38	37	37	57%	1
23	31	8	8	8	26%	164	39	33	33	20%	1

School	Teachers					Students					Principal responses
	Total at school	Surveys collected	Surveys uploaded	Final survey numbers	Response rate	Total in grade	Surveys collected	Surveys uploaded	Final survey numbers	Response rate	
24	14	6	6	6	43%	55	13	12	12	22%	1
25	15	5	5	5	33%	93	22	23	22	25%	1
26	16	7	7	7	44%	29	22	20	20	69%	1
27	12	5	5	5	42%	29	21	18	18	62%	1
TOTAL	434	168	165	165	38%	1622	617	593	589	37%	24
AVERAGE	17.36	6.72	6.6	6.6		64.88	24.68	23.72	23.56		0.96

*Surveys uploaded, after duplication removal process

Appendix S: Example of outlier analysis for suspect Pearson correlations

SPSS Output for correlation between TCLB and SPRS before outlier removal:

Correlations

			TCLB	SPRS
Spearman's rho	TCLB	Correlation Coefficient	1.000	-.414[*]
		Sig. (2-tailed)	.	.044
		N	24	24
	SPRS	Correlation Coefficient	-.414[*]	1.000
		Sig. (2-tailed)	.044	.
		N	24	24

*. Correlation is significant at the 0.05 level (2-tailed).
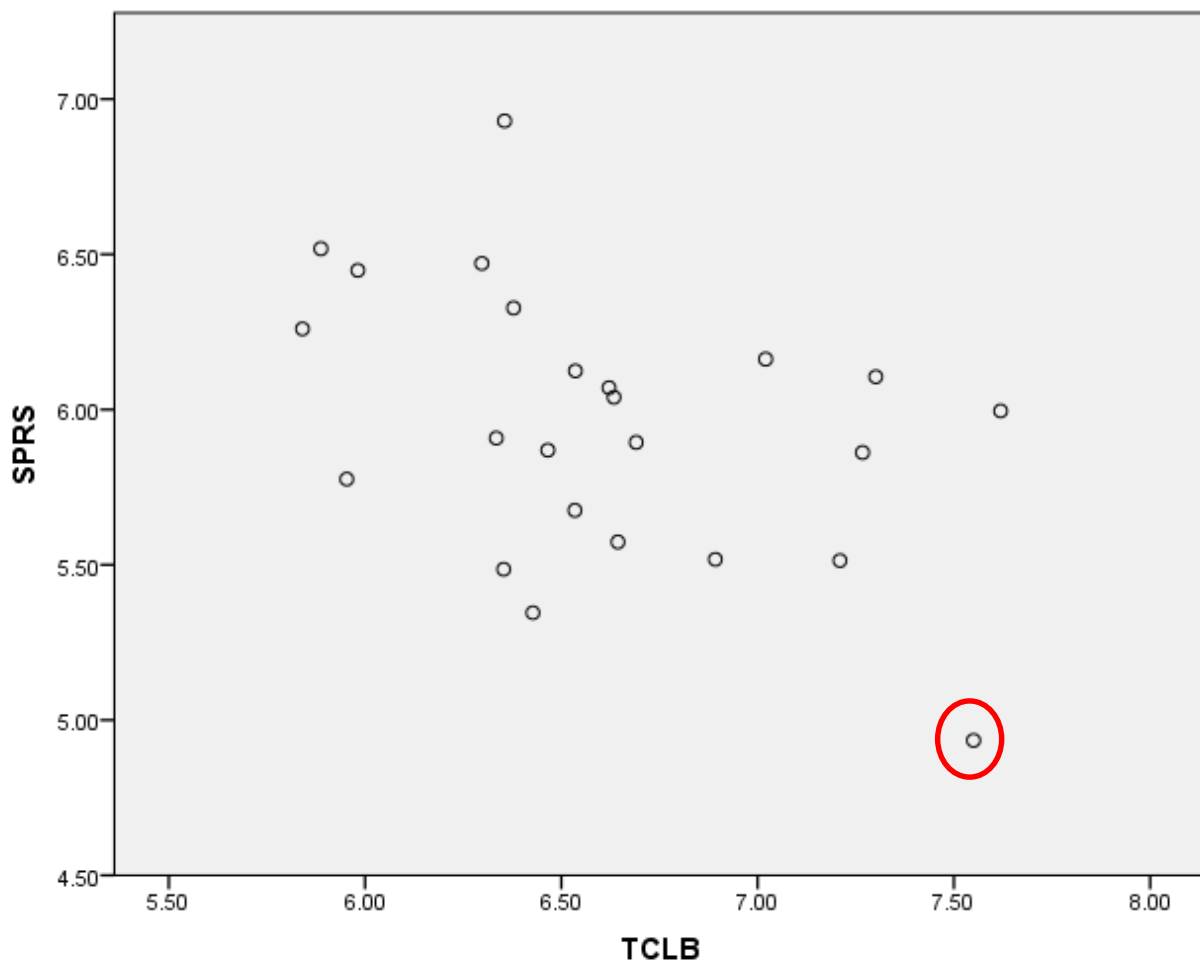
School ECZ026 appears to be an outlier. An analysis of the constituent data suggests that it has been reliably constructed using 7 teacher responses (for TCLB) and 22 student responses (for SPRS). Thus there seems to be little reason to be suspicious of the data; however, to check its influence the correlation is checked with ECZ026 removed.

SPSS Output for correlation between TCLB and SPRS after outlier removal:

Correlations

			TCLB	SPRS
Spearman's rho	TCLB	Correlation Coefficient	1.000	-.346
		Sig. (2-tailed)	.	.106
		N	23	23
	SPRS	Correlation Coefficient	-.346	1.000
		Sig. (2-tailed)	.106	.
		N	23	23

Note: correlation is no longer significant.

Recommendation: treat this relationship with some tentativeness.

Appendix T: Pearson correlations for ANA results

Correlations

		Gr6Maths2012	Gr6Maths2013	Gr9Maths2012	Gr6FAL2012	Gr6FAL2013	Gr9FAL2012
Gr6Maths2012	Pearson Correlation	1	.668**	.322	.743**	.468	.522**
	Sig. (2-tailed)		.003	.101	.000	.146	.009
	N	30	17	27	24	11	24
Gr6Maths2013	Pearson Correlation	.668**	1	.214	.718**	.403	.602*
	Sig. (2-tailed)	.003		.443	.003	.220	.029
	N	17	17	15	15	11	13
Gr9Maths2012	Pearson Correlation	.322	.214	1	.271	.330	.448*
	Sig. (2-tailed)	.101	.443		.222	.385	.028
	N	27	15	27	22	9	24
Gr6FAL2012	Pearson Correlation	.743**	.718**	.271	1	.396	.411
	Sig. (2-tailed)	.000	.003	.222		.228	.058
	N	24	15	22	24	11	22
Gr6FAL2013	Pearson Correlation	.468	.403	.330	.396	1	.152
	Sig. (2-tailed)	.146	.220	.385	.228		.695
	N	11	11	9	11	11	9
Gr9FAL2012	Pearson Correlation	.522**	.602*	.448*	.411	.152	1
	Sig. (2-tailed)	.009	.029	.028	.058	.695	
	N	24	13	24	22	9	24

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix U: Students, teachers and classrooms at survey schools

School	Students	Teachers	Classrooms	Largest grade size	Grades	Student:Teacher Ratio	Student:Class room ratio	Teacher:Class room ratio	Classrooms: Grade ratio	Largest Class*
1	414	11	10	56	10	37.6	41.4	1.1	1.0	56.0
2	487	16	11	61	10	30.4	44.3	1.5	1.1	55.5
3	1179	26	10	177	10	45.3	117.9	2.6	1.0	177.0
4	743	20	11	392	3	37.2	67.5	1.8	3.7	105.9
5	273	11	7	49	10	24.8	39.0	1.6	0.7	70.0
6	657	20	16	102	10	32.9	41.1	1.3	1.6	63.8
7	208	11	9	30	10	18.9	23.1	1.2	0.9	33.3
8	383	15	10	35	10	25.5	38.3	1.5	1.0	35.0
9	625	19	10	75	10	32.9	62.5	1.9	1.0	75.0
11	370	17	10	58	10	21.8	37.0	1.7	1.0	58.0
12	558	21	11	72	11	26.6	50.7	1.9	1.0	72.0
13	647	23	13	82	10	28.1	49.8	1.8	1.3	63.1
14	381	12	10	55	10	31.8	38.1	1.2	1.0	55.0
15	670	20	13	118	10	33.5	51.5	1.5	1.3	90.8
16	638	18	10	78	10	35.4	63.8	1.8	1.0	78.0
17	465	16	11	98	10	29.1	42.3	1.5	1.1	89.1
18	869	21	14	366	3	41.4	62.1	1.5	4.7	77.9
20	512	14	10	46	10	36.6	51.2	1.4	1.0	46.0
21	647	19	15	47	10	34.1	43.1	1.3	1.5	31.3
23	965	31	15	424	3	31.1	64.3	2.1	5.0	84.8
24	278	14	9	148	3	19.9	30.9	1.6	3.0	49.3
25	519	15	9	247	3	34.6	57.7	1.7	3.0	82.3
26	633	16	16	62	10	39.6	39.6	1.0	1.6	38.8

School	Students	Teachers	Classrooms	Largest grade size	Grades	Student:Teacher Ratio	Student:Class room ratio	Teacher:Class room ratio	Classrooms: Grade ratio	Largest Class*
27	388	12	16	58	10	32.3	24.3	0.8	1.6	36.3
TOTAL	13509	418	276	2936	206					
AVERAGE	562.88	17.42	11.50	122.33	8.58	31.72	49.23	1.54	1.71	67.67

*Largest class is an estimate based on the assumption that the largest grade will be divided by the maximum possible class:grade ratio (rounded up from the numbers given here)

Appendix V: Abnormality test for ANA results

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Maths	.259	22	.000	.770	22	.000

a. Lilliefors Significance Correction
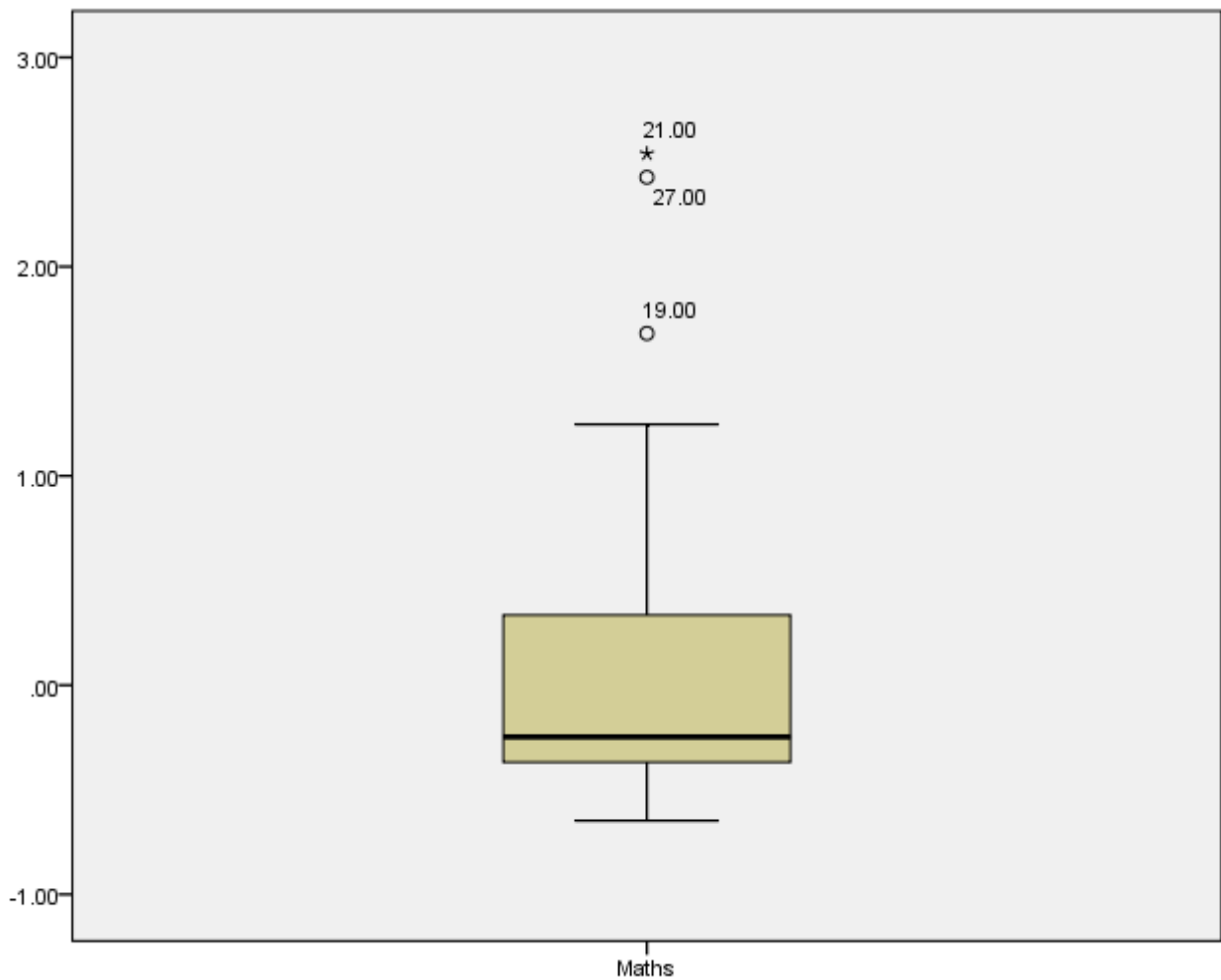
Appendix W: Sensitivity analysis of combined results using InterQuartileRange

School ranking using raw score blending:

Top Quartile: "High Performing" Maths Schools	Top Quartile: "High Performing" English Schools	Bottom Quartile: "Low Performing" Maths Schools	Bottom Quartile: "Low Performing" English Schools
23	23	24	24
6	26	26	11
9	15	3	3
7	7	1	16
27	27	17	12
21	21	8	2

School ranking using the Inter-Quartile Range Method* for blending ANA and NSC results:

Top Quartile: "High Performing" Maths Schools	Top Quartile: "High Performing" English Schools	Bottom Quartile: "Low Performing" Maths Schools	Bottom Quartile: "Low Performing" English Schools
21	21	26	24
27	27	3	11
7	23	1	3
23	15	24	16
4	7	17	25
9	4	8	2

Note there is little difference between these two tables, with only one school difference in each of 'High Performing Maths Schools' and 'Low Performing English Schools'.

New Score = Desired mean + ((old score - old mean)/(old inter quartile range))(new interquartile range)

Appendix X: Linear regression for TPIL and Socioeconomic

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.417[a]	.174	.091	.88405	.174	2.099	2	20	.149

a. Predictors: (Constant), Socioeconomic, TPIL

b. Dependent Variable: MathsScore

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.992	4.287		.231	.819	-7.950	9.934
	TPIL	.349	.212	.338	1.649	.115	-.093	.791
	Socioeconomic	-.011	.011	-.201	-.978	.340	-.034	.012

Appendix Y: Full table of Pearson correlations for the additional factors

		Health	Social	Socioeconomic	Home	TSPACE	Distanceto WHome	TeacherTravelTime	SPLACE	TPLACE	ConsultCommunity	TTCA	ClassSize
TPIL	Pearson Correlation	-,136	,008	-,224	,054	-,069	-,051	-,101	-,164	-,088	,104	,195	,042
	Sig. (2-tailed)	,528	,970	,293	,801	,748	,812	,640	,443	,682	,630	,362	,846
	N	24	24	24	24	24	24	24	24	24	24	24	24
TPGMSIP	Pearson Correlation	,062	-,216	,074	-,062	-,001	,321	,201	-,170	.471*	-,284	-,354	-,252
	Sig. (2-tailed)	,773	,311	,730	,774	,996	,126	,345	,427	,020	,178	,089	,235
	N	24	24	24	24	24	24	24	24	24	24	24	24
TOPS	Pearson Correlation	-,073	-,256	-.408*	-,228	-,154	,042	,081	-.432*	-,046	,035	,176	-,177
	Sig. (2-tailed)	,736	,227	,048	,284	,471	,847	,708	,035	,831	,871	,412	,408
	N	24	24	24	24	24	24	24	24	24	24	24	24
TTIES	Pearson Correlation	-,089	-,065	-,210	-,118	-,317	-,238	-,006	-,166	-,276	,401	.527**	-,121
	Sig. (2-tailed)	,681	,762	,325	,583	,131	,263	,979	,438	,191	,052	,008	,575
	N	24	24	24	24	24	24	24	24	24	24	24	24
TOPA	Pearson Correlation	-,083	-,104	-,329	-,135	-,042	-,069	,033	-.457*	-,028	-,104	-,034	-,059
	Sig. (2-tailed)	,699	,629	,116	,531	,845	,748	,878	,025	,895	,628	,876	,783
	N	24	24	24	24	24	24	24	24	24	24	24	24
TSCP	Pearson Correlation	,303	-,271	-,167	-,326	-,256	,108	,362	-.419*	,061	,391	.412*	-,365
	Sig. (2-tailed)	,151	,200	,435	,120	,227	,616	,082	,042	,775	,059	,045	,080
	N	24	24	24	24	24	24	24	24	24	24	24	24

	StudentAttitudeLAN	SLANTeacherUse	TLANTeacherUse	TADF	Library	ProfessionalDevelopment	Textbook	PrincipalTimeAway	PDISTRACT	MathsScore	EngScore
TPIL	,070	,128	-.643**	,297	.510*	,245	-,077	-.409*	,312	,366	,250
	,744	,550	,001	,159	,011	,248	,720	,047	,157	,086	,261
	24	24	24	24	24	24	24	24	22	23	22
TPGMSIP	-,190	-,313	-,222	,211	,203	-,006	-,393	-.484*	,194	-,288	-,293
	,374	,136	,298	,322	,342	,979	,057	,017	,388	,183	,185
	24	24	24	24	24	24	24	24	22	23	22
TOPS	,108	,058	-.630**	,209	.500*	.443*	,171	-.427*	,280	,172	,136
	,615	,789	,001	,328	,013	,030	,425	,038	,206	,434	,547
	24	24	24	24	24	24	24	24	22	23	22
TTIES	,027	,168	-,344	,377	.517**	.555**	,244	-,228	,195	,349	,081
	,901	,433	,100	,069	,010	,005	,251	,283	,385	,103	,719
	24	24	24	24	24	24	24	24	22	23	22
TOPA	,023	-,112	-.627**	,210	.495*	,110	-,041	-.446*	,379	,195	,110
	,914	,601	,001	,324	,014	,610	,849	,029	,082	,373	,625
	24	24	24	24	24	24	24	24	22	23	22
TSCP	,107	,003	-,016	.452*	.575**	,381	,147	-,294	,288	-,114	-,229
	,620	,989	,939	,027	,003	,066	,493	,163	,194	,604	,306
	24	24	24	24	24	24	24	24	22	23	22

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		Health	Social	Socioeconomic	Home	TSPACE	Distanceto WHome	TeacherTr avelTime	SPLACE	TPLACE	ConsultCo mmunity	TTCA	ClassSize
TPUB	Pearson Correlation	-,204	-,106	-,249	-,212	-.476[*]	-,071	,090	-,302	-,225	,016	,279	,241
	Sig. (2-tailed)	,339	,622	,241	,321	,019	,742	,676	,151	,290	,942	,187	,257
	N	24	24	24	24	24	24	24	24	24	24	24	24
TCOLAB	Pearson Correlation	-,028	-,364	-,194	-,351	-,201	,009	,163	-,325	-,040	-,103	,030	,277
	Sig. (2-tailed)	,898	,081	,365	,093	,347	,967	,448	,121	,853	,633	,888	,190
	N	24	24	24	24	24	24	24	24	24	24	24	24
QHR	Pearson Correlation	,067	,201	-,075	,081	,157	,044	,122	-,108	,019	-,156	,005	-,065
	Sig. (2-tailed)	,757	,347	,726	,707	,464	,839	,571	,615	,929	,466	,980	,762
	N	24	24	24	24	24	24	24	24	24	24	24	24
TSAF	Pearson Correlation	-,116	,036	-,054	,188	-,038	-,015	-,140	,066	-,223	,164	,377	,149
	Sig. (2-tailed)	,589	,869	,803	,380	,861	,943	,515	,759	,294	,444	,070	,486
	N	24	24	24	24	24	24	24	24	24	24	24	24
TSRE	Pearson Correlation	,048	-,272	-,216	-,222	,047	,165	,113	-,183	-,120	-,329	-,015	,181
	Sig. (2-tailed)	,824	,198	,312	,297	,826	,440	,601	,392	,575	,117	,944	,398
	N	24	24	24	24	24	24	24	24	24	24	24	24
TCLB	Pearson Correlation	,103	-,154	-,133	-,043	-,003	,032	-,008	-,086	-,222	-,018	,215	,313
	Sig. (2-tailed)	,631	,472	,536	,841	,990	,882	,970	,691	,297	,935	,313	,137
	N	24	24	24	24	24	24	24	24	24	24	24	24

	StudentAttitudeLAN	SLANTeacherUse	TLANTeacherUse	TADF	Library	ProfessionalDevelopment	Textbook	PrincipalTimeAway	PDISTRACT	MathsScore	EngScore
TPUB	,263	,126	-.702**	,218	.440*	,306	,042	-,106	,146	.498*	,223
	,214	,559	,000	,307	,031	,146	,844	,621	,517	,016	,319
	24	24	24	24	24	24	24	24	22	23	22
TCOLAB	,082	-,068	-.737**	,219	,284	,238	,090	-,228	,141	,300	,145
	,702	,752	,000	,303	,179	,264	,675	,284	,530	,165	,521
	24	24	24	24	24	24	24	24	22	23	22
QHR	-,107	-,085	,164	,274	-,107	-,004	,185	-,138	,111	-,063	-,194
	,618	,692	,445	,195	,618	,984	,388	,519	,624	,775	,387
	24	24	24	24	24	24	24	24	22	23	22
TSAF	-,212	-,041	-,381	,290	,228	,191	,037	-,145	,074	.479*	.465*
	,321	,850	,066	,169	,284	,372	,863	,500	,742	,021	,029
	24	24	24	24	24	24	24	24	22	23	22
TSRE	-,008	-,161	-,337	,066	-,021	,086	,347	,017	,012	,183	,330
	,972	,451	,107	,761	,924	,689	,097	,938	,958	,403	,134
	24	24	24	24	24	24	24	24	22	23	22
TCLB	-,220	-,069	-.535**	,060	,118	,137	,212	,040	-,007	.493*	.669**
	,302	,748	,007	,782	,583	,523	,320	,854	,974	,017	,001
	24	24	24	24	24	24	24	24	22	23	22

		Health	Social	Socioeconomic	Home	TSPACE	Distanceto WHome	TeacherTr avelTime	SPLACE	TPLACE	ConsultCo mmunity	TTCA	ClassSize
SPRS	Pearson Correlation	-,164	,111	,024	-,062	,070	-,033	,087	,082	,087	,034	-,009	-,038
	Sig. (2-tailed)	,445	,607	,910	,773	,745	,878	,687	,703	,685	,876	,966	,861
	N	24	24	24	24	24	24	24	24	24	24	24	24
SCLP	Pearson Correlation	-.432*	,146	-,036	-,003	-,122	-,155	-,086	,301	-,262	,269	,302	-,055
	Sig. (2-tailed)	,035	,496	,866	,991	,571	,471	,689	,154	,217	,203	,151	,799
	N	24	24	24	24	24	24	24	24	24	24	24	24
SCCS	Pearson Correlation	-.481*	,111	-,002	-,168	-,076	-,132	-,047	,189	-,174	,019	-,014	-,066
	Sig. (2-tailed)	,017	,607	,992	,431	,725	,538	,829	,375	,415	,930	,949	,761
	N	24	24	24	24	24	24	24	24	24	24	24	24
SPDA	Pearson Correlation	-.499*	,151	,082	-,016	-,112	-,074	-,094	,367	-,051	-,006	-,020	-,027
	Sig. (2-tailed)	,013	,481	,702	,941	,602	,731	,663	,077	,813	,977	,925	,902
	N	24	24	24	24	24	24	24	24	24	24	24	24
TTPA	Pearson Correlation	-,028	-,006	-,244	-,050	-,271	-,241	,043	-,086	-,368	.561**	.652**	-,060
	Sig. (2-tailed)	,898	,977	,251	,815	,200	,257	,843	,689	,077	,004	,001	,782
	N	24	24	24	24	24	24	24	24	24	24	24	24
TTTE	Pearson Correlation	-.481*	,111	-,002	-,168	-,076	-,132	-,047	,189	-,174	,019	-,014	-,066
	Sig. (2-tailed)	,017	,607	,992	,431	,725	,538	,829	,375	,415	,930	,949	,761
	N	24	24	24	24	24	24	24	24	24	24	24	24

	StudentAttitudeLAN	SLANTeacherUse	TLANTeacherUse	TADF	Library	ProfessionalDevelopment	Textbook	PrincipalTimeAway	PDISTRACT	MathsScore	EngScore
SPRS	,220	-,107	,297	,242	-,009	-,092	-,049	-,028	,146	-,156	-,412
	,301	,618	,158	,255	,965	,668	,821	,897	,516	,476	,057
	24	24	24	24	24	24	24	24	22	23	22
SCLP	,118	-,124	,232	.406[*]	,194	-,128	-,041	,224	-,059	,038	-,110
	,583	,565	,276	,049	,362	,552	,849	,292	,793	,864	,627
	24	24	24	24	24	24	24	24	22	23	22
SCCS	,270	-,025	,223	,259	-,160	-,288	,054	,325	,043	-,126	-,261
	,202	,906	,295	,222	,455	,172	,802	,121	,848	,566	,240
	24	24	24	24	24	24	24	24	22	23	22
SPDA	,133	-,054	,321	,013	-,213	-,205	-,102	,142	-,188	-,065	-,236
	,536	,802	,126	,953	,317	,336	,634	,507	,401	,768	,289
	24	24	24	24	24	24	24	24	22	23	22
TTPA	-,037	,249	-,237	,356	.409[*]	.524[**]	,350	-,148	,309	.524[*]	,251
	,862	,240	,264	,088	,047	,009	,093	,491	,162	,010	,260
	24	24	24	24	24	24	24	24	22	23	22
TTTE	,270	-,025	,223	,259	-,160	-,288	,054	,325	,043	-,126	-,261
	,202	,906	,295	,222	,455	,172	,802	,121	,848	,566	,240
	24	24	24	24	24	24	24	24	22	23	22

		Health	Social	Socioeconomic	Home	TSPACE	Distanceto WHome	TeacherTr avelTime	SPLACE	TPLACE	ConsultCo mmunity	TTCA	ClassSize
Health	Pearson Correlation	1	-,220	.457*	-,040	,251	-,017	-,005	-,058	,125	,143	,029	-,034
	Sig. (2-tailed)		,302	,025	,853	,237	,939	,980	,789	,562	,505	,893	,874
	N	24	24	24	24	24	24	24	24	24	24	24	24
Social	Pearson Correlation	-,220	1	,133	.772**	,283	-,399	-.477*	.511*	,116	-,146	-,167	,258
	Sig. (2-tailed)	,302		,535	,000	,180	,053	,018	,011	,589	,497	,437	,224
	N	24	24	24	24	24	24	24	24	24	24	24	24
Socioeconomic	Pearson Correlation	.457*	,133	1	,050	,365	-,230	-,286	,403	,066	-,078	-,190	,024
	Sig. (2-tailed)	,025	,535		,817	,079	,280	,176	,051	,759	,718	,374	,913
	N	24	24	24	24	24	24	24	24	24	24	24	24
Home	Pearson Correlation	-,040	.772**	,050	1	,230	-,091	-,372	.647**	,342	-,052	-,152	,222
	Sig. (2-tailed)	,853	,000	,817		,280	,672	,073	,001	,102	,808	,480	,297
	N	24	24	24	24	24	24	24	24	24	24	24	24
TSPACE	Pearson Correlation	,251	,283	,365	,230	1	-.429*	-.604**	,202	-,057	-,338	-,375	,070
	Sig. (2-tailed)	,237	,180	,079	,280		,036	,002	,343	,790	,106	,071	,747
	N	24	24	24	24	24	24	24	24	24	24	24	24
Distanceto WHome	Pearson Correlation	-,017	-,399	-,230	-,091	-.429*	1	.792**	-,154	.443*	-,078	-,086	-,391
	Sig. (2-tailed)	,939	,053	,280	,672	,036		,000	,472	,030	,717	,690	,059
	N	24	24	24	24	24	24	24	24	24	24	24	24

	StudentAttitudeLAN	SLANTeacherUse	TLANTeacherUse	TADF	Library	ProfessionalDevelopment	Textbook	PrincipalTimeAway	PDISTRACT	MathsScore	EngScore
Health	-,259	-,026	,025	,166	,031	-,035	-,065	-,072	-,303	,052	,265
	,221	,903	,907	,438	,885	,870	,762	,738	,171	,812	,234
	24	24	24	24	24	24	24	24	22	23	22
Social	-,189	,191	,113	-,120	-,154	-,300	-,266	,030	-,085	,062	,040
	,376	,370	,600	,578	,471	,154	,209	,891	,708	,777	,860
	24	24	24	24	24	24	24	24	22	23	22
Socioeconomic	-,090	,220	,161	,186	-,233	-.432*	-.478*	-,036	-.479*	-,247	-,268
	,677	,302	,453	,385	,274	,035	,018	,866	,024	,255	,228
	24	24	24	24	24	24	24	24	22	23	22
Home	-.537**	-,093	,071	-,051	-,008	-,152	-,328	-,080	-,221	,188	,290
	,007	,666	,742	,813	,970	,478	,118	,709	,322	,390	,190
	24	24	24	24	24	24	24	24	22	23	22
TSPACE	-,034	-,069	,110	-,097	-,395	-,355	-,153	,105	-,327	-,368	-,029
	,876	,748	,608	,650	,056	,089	,476	,626	,137	,084	,900
	24	24	24	24	24	24	24	24	22	23	22
DistancetoWHome	-,219	-,159	-,034	-,010	,175	-,022	-,143	-,208	,256	-,045	,004
	,304	,458	,873	,963	,412	,919	,504	,329	,250	,838	,987
	24	24	24	24	24	24	24	24	22	23	22

		Health	Social	Socioeconomic	Home	TSPACE	Distanceto WHome	TeacherTr avelTime	SPLACE	TPLACE	ConsultCo mmunity	TTCA	ClassSize
TeacherTr avelTime	Pearson Correlation	-,005	-.477*	-,286	-,372	-.604**	.792**	1	-,301	,143	,150	,165	-,283
	Sig. (2-tailed)	,980	,018	,176	,073	,002	,000		,153	,506	,485	,441	,180
	N	24	24	24	24	24	24	24	24	24	24	24	24
SPLACE	Pearson Correlation	-,058	.511*	,403	.647**	,202	-,154	-,301	1	,142	,049	-,081	,264
	Sig. (2-tailed)	,789	,011	,051	,001	,343	,472	,153		,507	,822	,707	,212
	N	24	24	24	24	24	24	24	24	24	24	24	24
TPLACE	Pearson Correlation	,125	,116	,066	,342	-,057	.443*	,143	,142	1	-,283	-.540**	-,328
	Sig. (2-tailed)	,562	,589	,759	,102	,790	,030	,506	,507		,181	,006	,118
	N	24	24	24	24	24	24	24	24	24	24	24	24
ConsultCo mmunity	Pearson Correlation	,143	-,146	-,078	-,052	-,338	-,078	,150	,049	-,283	1	.854**	-,136
	Sig. (2-tailed)	,505	,497	,718	,808	,106	,717	,485	,822	,181		,000	,526
	N	24	24	24	24	24	24	24	24	24	24	24	24
TTCA	Pearson Correlation	,029	-,167	-,190	-,152	-,375	-,086	,165	-,081	-.540**	.854**	1	,068
	Sig. (2-tailed)	,893	,437	,374	,480	,071	,690	,441	,707	,006	,000		,753
	N	24	24	24	24	24	24	24	24	24	24	24	24
ClassSize	Pearson Correlation	-,034	,258	,024	,222	,070	-,391	-,283	,264	-,328	-,136	,068	1
	Sig. (2-tailed)	,874	,224	,913	,297	,747	,059	,180	,212	,118	,526	,753	
	N	24	24	24	24	24	24	24	24	24	24	24	24

	StudentAttitudeLAN	SLANTeacherUse	TLANTeacherUse	TADF	Library	ProfessionalDevelopment	Textbook	PrincipalTimeAway	PDISTRACT	MathsScore	EngScore
TeacherTravelTime	-,099	,011	,022	-,016	,271	,067	,058	-,131	,419	,017	-,174
	,647	,958	,918	,941	,200	,757	,786	,540	,052	,938	,437
	24	24	24	24	24	24	24	24	22	23	22
SPLACE	-,267	,179	,247	,006	-,191	-,342	-,321	,214	-.579**	,109	,117
	,207	,402	,245	,976	,371	,102	,126	,314	,005	,622	,605
	24	24	24	24	24	24	24	24	22	23	22
TPLACE	-.452*	-.408*	-,040	,178	,104	-,119	-.438*	-.480*	-,078	-,300	-,154
	,027	,048	,852	,406	,628	,580	,032	,018	,729	,164	,493
	24	24	24	24	24	24	24	24	22	23	22
ConsultCommunity	-,072	,186	,271	,368	.512*	.538**	,217	,063	,150	,110	-,015
	,739	,385	,200	,077	,011	,007	,308	,770	,507	,617	,946
	24	24	24	24	24	24	24	24	22	23	22
TTCA	,099	,241	,116	,320	.489*	.642**	.435*	,122	,167	,301	,121
	,646	,257	,589	,127	,015	,001	,034	,570	,456	,163	,590
	24	24	24	24	24	24	24	24	22	23	22
ClassSize	,065	,077	-,076	-,291	-,167	-,096	,104	,237	-,196	.485*	,367
	,765	,721	,725	,167	,434	,655	,629	,266	,382	,019	,093
	24	24	24	24	24	24	24	24	22	23	22

		Health	Social	Socioeconomic	Home	TSPACE	DistancetoWHome	TeacherTravelTime	SPLACE	TPLACE	ConsultCommunity	TTCA	ClassSize
StudentAttitudeLAN	Pearson Correlation	-,259	-,189	-,090	-.537**	-,034	-,219	-,099	-,267	-.452*	-,072	,099	,065
	Sig. (2-tailed)	,221	,376	,677	,007	,876	,304	,647	,207	,027	,739	,646	,765
	N	24	24	24	24	24	24	24	24	24	24	24	24
SLANTeacherUse	Pearson Correlation	-,026	,191	,220	-,093	-,069	-,159	,011	,179	-.408*	,186	,241	,077
	Sig. (2-tailed)	,903	,370	,302	,666	,748	,458	,958	,402	,048	,385	,257	,721
	N	24	24	24	24	24	24	24	24	24	24	24	24
TLANTeacherUse	Pearson Correlation	,025	,113	,161	,071	,110	-,034	,022	,247	-,040	,271	,116	-,076
	Sig. (2-tailed)	,907	,600	,453	,742	,608	,873	,918	,245	,852	,200	,589	,725
	N	24	24	24	24	24	24	24	24	24	24	24	24
TADF	Pearson Correlation	,166	-,120	,186	-,051	-,097	-,010	-,016	,006	,178	,368	,320	-,291
	Sig. (2-tailed)	,438	,578	,385	,813	,650	,963	,941	,976	,406	,077	,127	,167
	N	24	24	24	24	24	24	24	24	24	24	24	24
Library	Pearson Correlation	,031	-,154	-,233	-,008	-,395	,175	,271	-,191	,104	.512*	.489*	-,167
	Sig. (2-tailed)	,885	,471	,274	,970	,056	,412	,200	,371	,628	,011	,015	,434
	N	24	24	24	24	24	24	24	24	24	24	24	24
ProfessionalDevelopment	Pearson Correlation	-,035	-,300	-.432*	-,152	-,355	-,022	,067	-,342	-,119	.538**	.642**	-,096
	Sig. (2-tailed)	,870	,154	,035	,478	,089	,919	,757	,102	,580	,007	,001	,655
	N	24	24	24	24	24	24	24	24	24	24	24	24

	StudentAttitudeLAN	SLANTeacherUse	TLANTeacherUse	TADF	Library	ProfessionalDevelopment	Textbook	PrincipalTimeAway	PDISTRACT	MathsScore	EngScore
StudentAttitudeLAN	1	.461[*]	-,076	-,135	-,087	,047	,146	.452[*]	-,042	-,027	-,222
		,023	,723	,529	,686	,827	,495	,027	,853	,903	,320
	24	24	24	24	24	24	24	24	22	23	22
SLANTeacherUse	.461[*]	1	-,063	-,226	-,231	-,003	,103	,180	,072	,244	-,024
	,023		,769	,288	,277	,988	,631	,399	,749	,261	,917
	24	24	24	24	24	24	24	24	22	23	22
TLANTeacherUse	-,076	-,063	1	-,159	-,229	-,110	,033	,213	-,035	-.460[*]	-.446[*]
	,723	,769		,458	,282	,610	,879	,317	,876	,027	,037
	24	24	24	24	24	24	24	24	22	23	22
TADF	-,135	-,226	-,159	1	.508[*]	,179	-,113	-,296	-,091	,017	-,100
	,529	,288	,458		,011	,402	,598	,160	,687	,939	,659
	24	24	24	24	24	24	24	24	22	23	22
Library	-,087	-,231	-,229	.508[*]	1	,372	-,238	-,186	,080	,032	-,066
	,686	,277	,282	,011		,073	,262	,384	,722	,883	,770
	24	24	24	24	24	24	24	24	22	23	22
ProfessionalDevelopment	,047	-,003	-,110	,179	,372	1	.581[**]	-,199	,250	,097	,012
	,827	,988	,610	,402	,073		,003	,352	,262	,659	,959
	24	24	24	24	24	24	24	24	22	23	22

		Health	Social	Socioeconomic	Home	TSPACE	DistancetoWHome	TeacherTravelTime	SPLACE	TPLACE	ConsultCommunity	TTCA	ClassSize
Textbook	Pearson Correlation	-,065	-,266	-.478*	-,328	-,153	-,143	,058	-,321	-.438*	,217	.435*	,104
	Sig. (2-tailed)	,762	,209	,018	,118	,476	,504	,786	,126	,032	,308	,034	,629
	N	24	24	24	24	24	24	24	24	24	24	24	24
PrincipalTimeAway	Pearson Correlation	-,072	,030	-,036	-,080	,105	-,208	-,131	,214	-.480*	,063	,122	,237
	Sig. (2-tailed)	,738	,891	,866	,709	,626	,329	,540	,314	,018	,770	,570	,266
	N	24	24	24	24	24	24	24	24	24	24	24	24
PDISTRACT	Pearson Correlation	-,303	-,085	-.479*	-,221	-,327	,256	,419	-.579**	-,078	,150	,167	-,196
	Sig. (2-tailed)	,171	,708	,024	,322	,137	,250	,052	,005	,729	,507	,456	,382
	N	22	22	22	22	22	22	22	22	22	22	22	22
MathsScore	Pearson Correlation	,052	,062	-,247	,188	-,368	-,045	,017	,109	-,300	,110	,301	.485*
	Sig. (2-tailed)	,812	,777	,255	,390	,084	,838	,938	,622	,164	,617	,163	,019
	N	23	23	23	23	23	23	23	23	23	23	23	23
EngScore	Pearson Correlation	,265	,040	-,268	,290	-,029	,004	-,174	,117	-,154	-,015	,121	,367
	Sig. (2-tailed)	,234	,860	,228	,190	,900	,987	,437	,605	,493	,946	,590	,093
	N	22	22	22	22	22	22	22	22	22	22	22	22

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

	StudentAttitudeLAN	SLANTeacherUse	TLANTeacherUse	TADF	Library	ProfessionalDevelopment	Textbook	PrincipalTimeAway	PDISTRACT	MathsScore	EngScore
Textbook	,146	,103	,033	-,113	-,238	.581**	1	,090	,311	,202	,236
	,495	,631	,879	,598	,262	,003		,676	,159	,355	,291
	24	24	24	24	24	24	24	24	22	23	22
PrincipalTimeAway	.452*	,180	,213	-,296	-,186	-,199	,090	1	-.489*	,042	,151
	,027	,399	,317	,160	,384	,352	,676		,021	,850	,502
	24	24	24	24	24	24	24	24	22	23	22
PDISTRACT	-,042	,072	-,035	-,091	,080	,250	,311	-.489*	1	,051	-,209
	,853	,749	,876	,687	,722	,262	,159	,021		,826	,377
	22	22	22	22	22	22	22	22	22	21	20
MathsScore	-,027	,244	-.460*	,017	,032	,097	,202	,042	,051	1	.783**
	,903	,261	,027	,939	,883	,659	,355	,850	,826		,000
	23	23	23	23	23	23	23	23	21	23	22
EngScore	-,222	-,024	-.446*	-,100	-,066	,012	,236	,151	-,209	.783**	1
	,320	,917	,037	,659	,770	,959	,291	,502	,377	,000	
	22	22	22	22	22	22	22	22	20	22	22

Appendix Z: Interview design logic

Why is improvement so challenging in rural schools and, in cases where there is evidence of improvement, how does this improvement occur?

Question 1a: What evidence is there of improvement or stagnation?

Which schools are improving?
- ANA/NSC results
- Attendance

Question 1b: How does this evidence of improvement 'map' onto the conceptual framework?

Are there distinctive elements of school organisation and culture that seem pervasive?
- Survey data
- Observation/ethnographic data

Which factors seem to be associated with improving schools?

- Survey data
- Rasch analysis
- Statistical analysis for relationships

Question 2a: What constitutes the predominant organisational and individual habitus?

Question 2b: What are the effects of this?

Interview questions that seek to understand: 1) *why schools and individuals operate the way they do; 2) people's expectations and how they see the world.*

Question 3a: In cases where there is evidence of improvement, what enabled this to happen?

Interview questions that seek to understand: 3) *what enables some schools (and people) to be 'different'; 4) why some schools are able to develop strengths in the factors associated with improvement and others are not; and 5)how school leaders and other change agents in the*

Question 3b: What levers could be used by policymakers and change agents to promote this 'enabling' to happen in individuals and schools?

Why is improvement so challenging in rural schools and, in cases where there is evidence of improvement, how does this improvement occur?

Appendix AA: Specific organisational measures to consider for this context

Given what appears to be an acceptable starting point for modelling school improvement in rural South Africa, it may be useful to identify some of the measures that seem particularly useful, as well as those that seem not to be. If widespread applicability of this model is to be tested, then some refinement of the items and measures will be needed, and this is a starting point for this process. Here I define a 'useful' measure to mean: 1) there is some internal correlation with other measures; 2) there is some indication that the measure is connected to student performance; and, 3) that the measure has sufficiently high reliability (PSI>0.7). Using these criteria, the following organisational[65] measures could be considered useful and worth retaining in their current form:

Table AA1: Recommended organisational measures

Measure	Number of items	Internal correlations	Student performance	Reliability (PSI)
Principal instructional leadership	5	Yes	Some	0.75
Operations management	10	Yes	Some	0.78
Teacher ties to the community	6	Yes	Most	0.66
Teacher outreach to parents	6	Yes	Some	0.76
Public classroom	8	Yes	Most	0.85
Collaboration	11	Yes	Some	0.70
Safety	8	Yes	All	0.81
Student responsibility	5	Yes	Most	0.82
Classroom behaviour	6	Yes	All	0.72

Conversely, some measures fared very poorly against these three criteria and should either be discarded entirely, or the items adjusted dramatically. In particular, *Quality of human resources* and *Program coherence around the School Improvement Plan* require substantial

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[65] Later analysis of *Teacher-parent trust* (not an organisational measure, but one that Bryk et al. developed) suggested that it was one of only a few measures to correlate directly with maths performance, as well as with a number of key **School-community ties** measures, and thus should be included in future analyses.

further work if they are to provide meaningful constructs. The remaining measures fall somewhere between the first group and the second and should require less major restructuring in order to produce useful constructs in the future.

Appendix AB: Detailed analysis of additional organisational measures

The typical starting point for most analyses of this type would be to perform a linear regression of the additional factors against the dependent variables of English and maths performance, adding additional variables in a step-wise approach. However, given the limited number of schools and the questionable nature of the ANA and combined results' data, it is unlikely that such an approach would yield much fruit[66].

A simpler, but possibly more meaningful approach is to check for associations between variables using Pearson Correlations, and, based on the outcomes of this examination, to identify key indicators to test against student performance data using the quartile method used earlier. The results of such an analysis are discussed here. Including the maths and English scores, this involved some 41 variables in all – too many to present in one table here[67]. Instead, I have attempted to summarise the findings by discussing broad themes that emerged from each of the additional factors.

Before doing so, it is worth pointing out:

- Most of the additional indicators had questionable reliability: many of the Rasch measures had PSI as low as 0.5; some indicators were based on single items; and some were being used for the first time for such a purpose. Given the small number of schools and the large number of variables in this exercise, there is a high probability that some of the correlations will be due to chance.
- In particular, the measures of 'deep disadvantage' generated from the ZiBFUS data were highly experimental. Since all the schools in my study fall into a very similar band of socioeconomic and community disadvantage, one would not expect there to be a great deal of variation between schools on these measures – certainly not when

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[66] Indeed, this approach was trialed for TPIL and the measure of Socioeconomic status in Appendix X for both English and maths performance. The outcomes were not promising.

[67] See Appendix Y for the full table of Pearson Correlations.

compared on a national scale. For instance, it is well established that socioeconomic status is highly predictive of school results. The fact that this may not be the case in my data set, should not be interpreted as evidence to the contrary. Rather, it may suggest that in the very narrow band of the socioeconomic spectrum in which these schools lie, variations in socioeconomic status are not significant.

With these points in mind, any findings from this investigation should be treated with a high degree of tentativeness. What this analysis seeks to do is, given the limitations of the data set: 1) assess the value of the indicator constructs[68], and; 2) explore possible connections between the indicators in order to dig deeper into these linkages using the qualitative data. In thinking about the correlations presented below, it is therefore just as important to note correlations that make no qualitative sense, as it is to note ones that do. A summary of the key findings from the Pearson correlation analysis can be found in Table 7.8.1 and in the discussion, grouped by theme, that follows.

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[68] To assess indicator value, a rough guideline was that there needed to be supporting evidence from at least two correlation pairs before an indicator was categorized as not meaningful. If only one correlation pair produced a qualitatively suspicious result, it was not possible to ascertain, which indicator was at fault. Obviously, the significance level was also taken into account – there needed to be more evidence to discard a correlation at the 0.01 level than at the 0.05 level.

Table7.8.1: Summary of significant correlations from Pearson Correlation analysis of additional factors

	Health	Social	S Economic	Home	TSPACE	DW Home	TTTime	SPLACE	TPLACE	ComCon	TTCA	Class Size	SAttLAN	SUseTLAN	TUseTLAN	TADF	Library	ProfDev	Textbook	PTime Away	PDISTRACT	Maths Score	EngScore
Measure	SCLP	Home	TOPS	Social	TT Time	T SPACE	Social	PDISTRACT	TPGMSIP	Prof Dev	TTIES	Math Score	Home	SAttLAN	TPIL	TSCP	TPIL	TOPS	SEconomic	TPIL	SEconomic	TPUB	TSAF
Pearson	-0.432	0.772	-0.408	0.772	-0.604	-0.429	-0.477	-0.579	0.471	0.538	0.527	0.485	-0.537	0.461	-0.643	0.452	0.51	0.443	-0.478	-0.409	-0.479	0.498	0.465
Sig. level	0.05	0.01	0.05	0.01	0.01	0.05	0.05	0.01	0.01	0.01	0.01	0.05	0.01	0.05	0.01	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Measure	SCCS	TT Time	Health	SPLACE	DW Home	TT Time	T SPACE	Home	DW Home	Library	TSCP		TPLACE	T PLACE	TOPS	SCLP	TOPS	TTIES	TPLACE	TPGMSIP	SPLACE	TSAF	TCLB
Pearson	-0.481	-0.477	0.457	0.647	-0.429	0.792	-0.604	0.647	0.443	0.512	0.412		-0.452	-0.408	-0.63	0.406	0.5	0.555	-0.438	-0.484	-0.579	0.479	0.669
Sig. level	0.05	0.05	0.05	0.01	0.05	0.01	0.01	0.01	0.05	0.05	0.05		0.05	0.05	0.01	0.05	0.05	0.01	0.05	0.05	0.01	0.05	0.01
Measure	SPDA	SPLACE	Prof Dev	SAttLAN	TPUB	T PLACE	DW Home	Social	TTCA	TTCA	TTPA		SUseTLAN		TOPA	Library	TTIES	TTPA	TTCA	TOPS	SPLACE	TCLB	TUseTLAN
Pearson	-0.499	0.511	-0.432	-0.537	-0.476	0.443	0.792	0.511	-0.54	0.854	0.652		0.461		-0.627	0.508	0.517	0.524	0.435	-0.427	-0.579	0.493	-0.446
Sig. level	0.05	0.05	0.05	0.01	0.05	0.05	0.01	0.05	0.05	0.01	0.01		0.05		0.01	0.05	0.01	0.01	0.05	0.05	0.01	0.05	0.05
Measure	TTTE		Textbook					TSCP	SAttLAN	TTPA	TPLACE		PTime Away		TPUB		TOPA	SEconomic	Prof Dev	TOPA	PTime Away	TTPA	Maths Score
Pearson	-0.481		-0.478					-0.419	-0.452	0.561	-0.54		0.452		-0.702		0.495	-0.432	0.581	-0.446	-0.489	0.524	0.783
Sig. level	0.05		0.05					0.05	0.05	0.01	0.01		0.05		0.01		0.05	0.05	0.01	0.05	0.05	0.05	0.01
Measure	SEconomic	PDISTRACT						TOPA	SUseTLAN		ComCon				TCOLAB		TSCP	ComCon			TPLACE	Class Size	
Pearson	0.457	-0.479						-0.457	-0.408		0.854				-0.737		0.575	0.538			-0.48	0.485	
Sig. level	0.05	0.05						0.05	0.05		0.01				0.01		0.01	0.01			0.05	0.05	
Measure								TOPS	Textbook		Library				TCLB		TPUB	TTCA			SAttLAN		TUseTLAN
Pearson								-0.432	-0.438		0.489				-0.535		0.44	0.642			0.452		-0.46
Sig. level								0.05	0.05		0.05				0.01		0.05	0.01			0.05		0.05
Measure									P Time Away		Prof Dev				Maths Score		TTPA	Textbook			PDISTRACT		Eng Score
Pearson									-0.48		0.642				-0.46		0.409	0.581			-0.489		0.783
Sig. level									0.05		0.01				0.05		0.05	0.01			0.05		0.01
Measure											Textbook				Eng Score		Com Con						
Pearson											0.435				-0.446		0.512						
Sig. level											0.05				0.05		0.05						
Measure																	TTCA						
Pearson																	0.489						
Sig. level																	0.05						
Measure																	TADF						
Pearson																	0.508						
Sig. level																	0.05						

1. Local community context

1.1 Deep Disadvantage

Three measures of 'deep disadvantage' (*Health, Social* and *Socioeconomic)* do not seem to be meaningful constructs, either because there was very little correlation with any other measures, or the correlations did not make qualitative sense. For instance, it is difficult to see how community *Health* could have any relationship with three measures of students' perception of the quality of instruction at their school (*Classroom personalism*, *Teaching practice*, and *Assessment and feedback*). All correlations were significant at the 0.05 level – and thus can be regarded somewhat lightly - except for the positive correlation between *Social* and *Home,* which was significant at the 0.01 level. This relationship is hard to explain, since the connection between homes that have electricity having a higher rate of teenage pregnancy is tenuous at best.

This suggests that my scepticism about the use of these measures of disadvantage in an area that is fairly homogeneously disadvantaged was well founded. The fourth measure of disadvantage, *Home*, is discussed in the section on language, below.

2.1 Constraints of space, place and time

SPLACE had a strong (significant at 0.01 level) correlation with Home (the ZiBFUS measure that is based on the presence of electricity in the home). SPLACE is a Rasch measure (PSI=0.51) taken from the student survey, which also includes a question about electricity in the home. The fact that there is such strong correlation between these two measures suggests some level of support for the SPLACE measure, despite its poor reliability.

SPLACE had negative correlations (significance level 0.05) with *Operations management*, *Teacher outreach to parents* and *School-community organisation partnerships* – in other words, communities disadvantaged by place (low SPLACE) are more likely to have schools that have strong operations management, community outreach and external engagement. These findings for SPLACE are difficult to explain, and may be an indication that the indicator construct is unhelpful or inaccurate.

TPLACE had negative correlations (all at 0.05 signficance level) with *Use of Traditional/Community authorities*, *Textbook* availability and *Principal time away from school*. In other words, schools where teachers stayed in LESS disadvantaged conditions were less likely to make use of traditional authorities, experienced less Principal absenteeism and were less likely to have textbooks to take home. The first two of these relationships seem to have some good reasoning to support them, but it is difficult to understand the relationship between textbook availability and teachers' home conditions.

TSPACE had a strong negative correlation (significant at 0.01) with Teacher travel time – this makes sense, since teachers with high travel time likely travel to more remote schools – and gives some credence to this measure. There is also a negative correlation (0.05) with *Distance to Week Home*[69], which again makes sense since this question forms part of the Rasch measure TSPACE.

The strong positive correlation (significant at 0.01 level) between *Distance to Week Home* and *Teacher travel time*, both single questions from the teacher survey, give support to these measures of space and time respectively.

3.1 Rural resources

Community consultation had a strong positive correlation (significant at 0.01) with the Rasch measure for *Teacher-parent Trust*. This lends support to this measure of trust and will be worth exploring further.

TTCA, the Rasch measure (PSI=0.5 only) of how well the school makes use of community or tribal authorities, had strong positive correlations (significant at 0.01) with *Teacher ties to the community* and *Teacher-parent trust* as well as a positive correlation (0.05) with *School-*

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[69] Since many teachers stay in a 'Weekday Home' and a weekend home (their *real* home), this measure is intended to capture their daily (rather than weekly) commute.

community organisation partnerships[70]. It seems the large number of interconnections between the school, the community and outside support organisations are worth substantial further investigation.

2. Structural factors

2.1 Class size

There was a positive correlation (significant at 0.05 level) between *Class size* and *Maths score*. Since few other measures were directly linked to the school performance measures, this suggests something worth investigating further, despite the extensive literature on class size that suggests no effects for developed contexts and only moderate effects in less developed countries.

3.1 Attitude to and use of the Language of Instruction

There was a strong (significant at the 0.01 level) negative correlation between *Home* and *Student attitude to language.* In other words, communities with electricity tend to have students who prefer learning in English.

There were negative correlations (significant at 0.05 only) between *TPLACE* and both *Student attitude to language* and *Teacher use of English* (both from the student survey). In other words, where teachers stayed in LESS disadvantaged conditions students said that they were more likely to be taught in English AND that the students preferred being taught in English.

Student attitude to language had positive correlations (0.05) with *Language use of teachers* (according to students) and *Principal time away from school* – in other words, students who prefer learning in isiXhosa, have teachers who predominantly teach in isiXhosa and principals

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[70] Note: TSCP 'School-Community organisation partnerships' is actually more about relationships with outside organisations like hospitals, police, NGOs – than about community. This may be an effective measure of what Bryk et al. call 'bridging capital'? TSCP has PSI=0.69 = reasonable reliability.

who are away frequently. The connections between these three issues seem important to explore further.

Language use of teachers (according to teachers) had strong negative correlations (all significant at 0.01 level) with *Principal instructional leadership*, *Operations management*, *Teacher outreach to parents*, *Public classrooms*, *Collaboration* and *Classroom behaviour* – in other words schools where teachers predominantly teach in isiXhosa perform poorly on a number of important organisational measures. There are also negative correlations (significant at 0.05) with English and maths scores – in other words, schools where teachers teach predominantly in isiXhosa perform worse in English and maths assessments.

Together these findings about language usage in school and its connections to students' language preference, school organisation and student performance present compelling motivation for further exploration.

3. System factors

3.1 Material support: facilities

TTCA, the Rasch measure (PSI=0.5 only) of how well the school makes use of community or tribal authorities, had positive correlations (at 0.05 significance level) with *School-community organisation partnerships*, and the likelihood of having a *Library* and *Textbooks*.

TADF, a Rasch measure (PSI=0.57) of the facilities available at the school, had positive correlations (0.05) with *School-community organisation partnerships* and *Classroom personalism*. In other words, schools with better facilities tended to have good partnerships with other local organisations, and teachers who were dynamic, caring and motivating.

The degree to which schools had some sort of a library seemed to be an especially important measure, with correlations with more other measures than any other indicator. *Library* had strong positive correlations (significant at 0.01 level) with *Teacher ties to the community* and *School-community organisation partnerships*, and positive correlations (at 0.05) with *Teacher outreach to parents*, *Teacher-parent trust*, *Community consultation* and *Use of community authorities* (the last two are linked). Together these represent a fairly compelling set of

evidence about the connections between strong social bridges and improving school infrastructural resources that warrants further exploration.

Library also had positive correlations (significant at 0.05) with *Principal instructional leadership*, *Public classroom* and *Operations management*. These are all important organisational measures that appeared to be associated with strong student performance, and again the connections here require more investigation.

4.1 Material support: professional development

Professional development had strong positive correlations (significant at 0.01 level) with *Teacher ties to the community*, *Teacher-parent trust*, *Community consultation*, *Use of community/tribal authorities* (linked to *Comcon)* and *Textbooks*. In other words, schools with good professional development seem to have strong community and outside ties, as well as be able to supply textbooks to students. It also had a positive correlation (0.05) with *Operations management*. Since district-provided professional development should be the same across all schools (except two which fell in a different district), this measure may represent the degree to which individual schools provide opportunities for growth, motivational retreats and reflection. The nature of these events and experiences needs further examination in the light of the multiple connections to school-community partnerships.

5.1 Material support: textbooks

The *Textbooks* measure correlated (significant at 0.01) with *Professional development* and three other measures at the 0.05 level*.* There seemed to be no meaningful connections to this measure.

6.1 Distraction

Principal time away from school had negative correlations (at 0.05 significance level) with *Principal instructional leadership, Program coherence around SIP, Operations management, Teacher outreach to parents, TPLACE*, and *PDISTRACT* (as expected since these are linked). In other words, schools with principals who were regularly away rated low on other leadership measures, and on one of what seems like a core function of school leadership: coordinating

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teacher outreach to parents. There was a positive correlation (at 0.05) with *Students' attitude to language of instruction*, as discussed above.

4. A note on school results

Maths score had positive correlations (at 0.05 significance level) with *Public classroom, Safety, Classroom behaviour, Teacher-parent trust* and *Class size*. This suggests confirmation of some of the findings of the quartile analysis for some of the key organisational measures – as well as an additional measure to explore: *Teacher-parent trust*. A strong positive correlation (significant at 0.01 level) with English score, which was the same result obtained in Appendix …. Maths score had a negative correlation (at 0.05) with *Teacher use of language of instruction*, as discussed.

English score had positive correlations (at 0.05 significance level) with *Safety* and *Classroom behaviour* – more confirmation of these important organisational measures. There was a negative correlation with *Teacher use of language of instruction*, as discussed.

5. Motivation for the inclusion of *Language, Home and Class size* in future models

To summarise the evidence:

1   *Class size* had a correlation at the 0.05 significance level with *Maths score*, one of only a few variables to directly connect to student performance measures. Schools strong in this measure (in other words, low class sizes) were four times more likely to be in the top quartile for maths performance and five times more likely to be in the top quartile for English performance, than schools weak in this measure (high class size). The evidence for its impact on low performing schools was less clear. The literature on class size has suggested that in general class size little impact on learning gains, but my findings may suggest that in the specific context of rural schooling with *severe* overcrowding (at times as high as 130 students in a classroom), class size *does* become important. At the least, these findings warrant further investigation in similarly high-load environments.

2   *Language* was measured through three indicators: *Language use of teachers (as reported by students), Language use of teachers (as reported by teachers)* and *Student attitude to language.* There were negative correlations (significant at 0.05) between *Language use of*

teachers (reported by teachers) and both student performance measures – in other words, schools where teachers teach predominantly in isiXhosa perform worse in English and maths assessments. The results for high performing (top quartile maths and English - see Figures 8.1 and 8.2) schools were mixed. However, for low performing schools (Figures 8.3 and 8.4) all three of these indicators suggested that schools with weak scores for language would be several times more likely to be in the lowest quartile for maths and English performance. There thus seems support for including a measure of language use in future analyses of rural schools where the language of instruction is different from the home language.

3   *Home* was in theory a measure of facilities and resources available at students' homes, using the ZiBFUS data. However, this was distilled into a single indicator, Electricity in the home. This was linked very strongly (significant at 0.01) with *Students attitude to language*, suggesting that students from homes with electricity were more likely to prefer learning in English. This was supported by the fact that schools strong in the *Home* measure were three times more likely to be in the top quartile for maths and twice as likely to be in the top quartile for English performance. These findings are marginal at best, given the high error potential, but much more notable was the examination of low performing English schools: five out of six or 83% of bottom quartile schools on English performance were classified as 'weak' on the *Home* indicator, while there were no strong schools in this quartile. It should be noted that in this particular rural context there are no apparent economic differences between homes with electricity and homes without – as there might be between suburban households and those in townships. For the most part, having electricity is simply a factor of where each community lies on the government's rural electrification schedule. It therefore seems that having electricity in the home is an important variable to measure in rural contexts, particularly for the lowest performing schools.

6. Recommendations for further studies using the additional factors

There were a number of correlations between the various measures of *Space* and *Time*, which one would expect given that they are in a sense measuring the same thing – the remoteness of the school. These correlations lent credence to these measures. However, there were no interconnections between these measures and other measures. Similarly, the two measures of *Place* did not seem to produce much in the way of meaningful relationships with other measures. This is not to say that *Space, Place* and *Time* are unimportant. Rather, I suggest that they need to be seen in the context of their impact on teacher capacity and motivation, a point I pick up in the second half of Chapter 5. The lack of a comparative sample in an urban setting may (again) have had an impact here, and thus I motivate for further piloting of these measures on a wider sample of schools.

Rural resources was an attempt to measure the degree to which schools made use of social resources uniquely available in rural contexts, such as tribal or community authorities. There were a high number of correlations between these two measures and other community measures such as *Teacher-parent trust* and *School-community organisation partnerships.* I suggest that these are indeed an important resource for schools, but that they can be incorporated into a broader discussion on ***School-community ties*** in a subsequent section. Including an item or two that explicitly probe for these rural resources in a measure of *School-community partnerships* seems worthwhile.

I have recommended a specific focus on the two ***Structural factors***, *Class size* and *Language*, above. The ***System factors,*** *Adequate facilities* and *Professional development,* had a number of important correlations, which I believe have implications worth considering in more detail later. I argue that these two measures have an important bearing on the support that teachers perceive they have for doing their jobs. *Textbooks* did not seem to be particularly relevant in this context. *Distraction*, a measure of the principal's time away from school, had important correlations with a number of key leadership measures, as well as *Language.* I suggest, practically, that: a separate measure for *Adequate facilities* be included in future surveys; items that speak to the unique requirements of rural schools be included in the existing measure of

Quality of professional development; and that items about the principal's presence at school be included in the existing measure of *Principal instructional leadership*.

Appendix AC: Alternative explanations for inconsistencies between the ANA and NSC data

There is a fairly well-documented migration of rural students from the Eastern Cape to metropolitan areas around the country at the start of Grade 10 (Phakathi, 2014; WCED, 2014). The students that leave tend to be the better students for whom money is found to make this transition. Thus one might expect the students that remain behind at local senior schools to perform worse on average. However, we also know that there is a significant drop-out rate between Grade 9 and 12, with on average weaker students typically the ones that drop out. In conclusion, while I don't have the exact numbers[71] to support either of these trends, I do not think the migration issue is large enough to overcome the drop-out effect *and* affect the senior school results to the degree illustrated in Table 5.7.

Given that teachers at senior secondary level tend to be better qualified than teachers at junior secondary level, the perception of superior professional capacity and organisation may be well-founded. However, when these schools' performances are compared to national means, their performance is compared with schools operating at the same level, not across levels. So the differences in these means may be because senior secondary schools in this area are comparatively weaker (organisationally) relative to their peers across the country, than local junior secondary schools are – again, relative to their peers nationally. This may well be possible, but given that most teachers in the area share very common background and education patterns (largely rural Transkei born, raised and educated) there is no reason to expect organisation and capacity levels at junior secondary schools to be any better or worse than their senior school neighbours, when comparing each level to schools at the equivalent level across the country.

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[71] An analysis of the numbers of students in each grade is available in Appendix U. Total student numbers in Grade 9 (949), 10 (1585), 11 (1198) and 12 (646) showed significant variation, but it is difficult to pin down exactly what causes the fluctuations since this is not an isolated system.

Another alternative explanation is of the cumulative effect of learning deficits. If learning is seen as a cumulative set of experiences that are built on over time, it is possible that deficits acquired in the early years of schooling (or even before) grow bigger over time, particularly in school settings that are unable to catch students up effectively. Thus by the time senior secondary is reached, teachers face an impossible task trying to catch students up and teaching new, more challenging content. This results in comparatively worse performance in senior secondary schools than in the junior secondaries. Again, while I have experienced this cumulative effect at play in schools in the area, I am reluctant to attribute the quite marked differences seen in Table 5.6 to this effect. In fact, my experiences of senior schools suggest that they do a remarkable job of catching students up in the very short three years they have with students. This is consistent with the remarks from both junior and senior teachers I interviewed about the comparatively 'relaxed' atmosphere of junior secondaries compared to the senior schools.