The state of education in KwaZulu-Natal

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The state of education in KwaZulu-Natal

A report for KZN Treasury

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Abbreviations

ABET	Adult basic education and training
ART	Antiretroviral therapy
DHET	Department of Higher Education and Training
ECD	Early childhood development
ELRC	Education Labour Relations Council
EMIS	Education Management Information Systems
FET	Further Education and Training
HEMIS	Higher Education Management Information System
HSRC	Human Sciences Research Council
IQMS	Integrated Quality Management System
LER	Learner-educator ratio
LOLT	Language of learning and teaching
LSEN	Learners with special educational needs
LTSM	Learner and teacher support material
NEIMS	National Education Infrastructure Management Systems
NQF	National Qualifications Framework
NSNP	National Schools Nutrition Programme
NVC	National Certificate (Vocational)
OECD	Organization for Economic Cooperation and Development
OSD	Occupation Specific Dispensation
PED	Provincial Education Department
PERSAL	Personnel salary system
PMDP	Principals' management development programme
SACMEQ	Southern and East African Consortium for Monitoring Educational Quality
SETA	Sector Education and Training Authority
SGB	School governing body
SMT	School management team
TVET	Technical and vocational education and training
UCT	University of Cape Town
UKZN	University of KwaZulu-Natal
WHO	World Health Organisation
Wits	University of Witwatersrand (Wits)

1. Executive summary

An overview of the provincial education sector

Data quality

Two surveys are the principal data sources for surveying the state of the education system: the Snap Survey and the Annual Survey. Neither have thorough and reliable checks and balances at a systemic level, yet they are used to assess staffing and resource requirements, infrastructure backlogs, system bottlenecks and district inequalities. There is substantial evidence of systematic over- or under-reporting of key data. New data systems such as LURITS and SA SAMS should bring these practices to a halt, opening out a portion of the budget for reallocation.

Geography of education in KZN

The Department of Education in KwaZulu-Natal (DoE) KZN currently has a *three-tiered organisational structure* consisting of districts, circuits and wards. Education districts vary considerably in terms of their geographic extent, numbers of schools served and educational circumstances. Rural districts have greater numbers of small schools and education personnel have to contend with travelling large distances to reach them. Urban districts such as Umlazi and Pinetown generally have larger and better resourced schools in terms of physical infrastructure. Each education district in the province is divided into two or more circuits. A circuit is a grouping of approximately 150 schools, although they also vary considerably in size. There are currently 45 circuits in the province. Circuits are further divided into wards, which consist of groupings of roughly 30 schools. There are 205 wards in KwaZulu-Natal. Recently at national level *standardization norms for districts and wards* were mooted. An acceptable ratio of schools to district was set at 300:1 and schools to wards at 30:1, with recognition that rural districts should have more staffing to deal with increased distances and disadvantaged schools. Only within this norm would it be possible to effectively undertake all the roles and responsibilities increasingly expected of districts and wards. In effect this would mean the creation of another eight districts in KZN and the removal of the circuit level from the administrative layer. The level of increased funding and staffing is a clear indication that the current structure expects too much of the district level, and given that this is the key link between schools and head office, the centrality of this weakness cannot be ignored.

Access, retention and pass rates of school children

Performance in education and levels of poverty are linked. Using a poverty index based on functional literacy, per capita income and percentage of households with electricity, a *poverty profile of districts* was calculated. Obonjeni was the poorest, followed by Umzinyathi and Vryheid, indicating that the highest levels of poverty exist in our northern provinces. Umlazi, Pinetown and Umgungundlovu were lowest on the poverty index scores.

The more rural the district the more small schools it tends to have, with all the attendant costs. Urban areas have fewer schools, with more learners in them. Umlazi, for example, has the second largest number of learners but the eighth largest number of schools. This makes rural schooling one of the biggest expenses of the KZN DoE, an expense for which it is hard to establish any financial and academic accountability. Furthermore, it is schools in the more urbanized areas that perform better and more efficiently and are easier to keep account of. This is a central tension that has no easy answer as it speaks to the difficulties involved in the social justice project of ensuring the least well off receive the most resources.

Of the 5,945 *functioning public schools* in the province 64% are primary schools, 26% are high schools, and 10% combined primary and high schools, most of which cater only up to grade 9, effectively meaning a 70/30 split between primary and high schools. Systemic evaluation at grade 3 and 6 levels will provide a much needed national, provincial and district level picture of learner performance, as well as the leverage points to analyse and respond to difficulties within the primary sector. There are nine multi campus *Further Education and Training colleges*. The college sector is a very complex terrain that has multiple role-players working within it and major recent changes. This area has been taken over by the Higher Education Ministry so we will not detail this in the executive summary although it is dealt with in the report.

Enrolment trends in public ordinary schools have tended to be erratically recorded and overestimated, given the perverse incentive to inflate numbers in the system. In 1999 there were 2,698,207 learners enrolled. In 2009 this figure was 2,612,065 learners, and with SA SAMS we expect this figure to drop to under 2,500,000 as the real enrolment figures emerge. It is clear that the actual numbers of school- going children has slowly declined over the last five years.

The fastest growing part of the school population is at grade R level, given the decision to include grade R into mainstream schooling. This was a key move directed at ensuring school readiness for the majority of our learners who do not benefit from family pedagogy at home and pre primary schools. Historically there has been around a 30% over-enrolment at grade 1 level as many learners need some school readiness and repeat at this level, causing much disruption and inefficiency. Grade R will mean increased effectiveness across the system at grade 1 level as mainly learners ready for grade 1 tend to enter it, especially with the new focus on the foundations of learning. This will mean a strong demand for educators at grade R for the foreseeable future. There is thus a real danger that a massive influx of poorly trained educators with low levels of achievement in their own schooling careers are allowed into the official schooling system through grade R, and increasingly get used at foundation phase level. This would be catastrophic for the education system, as it is precisely at the foundation level that we currently need our best teachers who are skilled in the complexities of literacy and numeracy education.

A similar pattern to grade 1 is found at grade 8 when learners enter high school and again struggle to adapt, with subsequent high failure rates. This pattern points to systematic inefficiencies at primary school level with learners entering high school without sufficient levels of literacy or

numeracy. The pattern recurs at grade 10 level as learners enter the FET phase. At each entry point to a higher phase the educational system has to struggle with repetitions blocking and disrupting the system. The policy of allowing only one repetition in each phase ensures that learners who fail once as they enter a new phase can only be failed again when they enter the next phase. The solution here is certainly not a 'pass one, pass all' policy but rather to improve the fundamentals of learning at each level, so that learners are capable enough to cope with the increasing levels of difficulty. The current attempt to both simplify and make more explicit what is expected of both teacher and learner in the curriculum should help to ensure that the fundamentals are learnt.

This failure rate pattern also results in an increase of over-age enrolment, starting at 42% in grade 1 and increasing to 78% in grade 12. Rural areas show this pattern quite severely. For example, in Obonjeni at grade 12 level, 21% were aged 19, 14% were age 20 and 21% were 21 or older. In effect adults are being schooled with children. Only a small proportion of learners make it through to Matric level (under half), and almost half fail at this level. Over-age enrolment is intimately tied to *repetition rates*, with repetition rates being a key *indicator of efficiency* in the education system. The repetition rate of learners is highest in grades 10 and 11, pointing to learners (and educators) being unable to cope with levels of difficulty expected at this level, as well as some level of gate-keeping to ensure Matric results are bolstered.

One key *performance indicator* for educational quality is the *learner-educator ratio* (LER). The current average for the province in 2009 is 31:8 but this goes up to 33:7 if only state-paid educators are counted. It should be noted that districts such as Pinetown, Umgungundlovu and Umlazi have far lower LERs than the northern districts of KZN, but that this is due to the high number of SGB posts in the wealthier districts.

Resource targeting in the province and country has been adapted to respond to poverty levels by funding poorer schools more than rich schools and poorer provinces more than richer provinces. The sole indicator used is the poverty of the community around the school, expressed by the division into *quintiles* with quintile 1 being poorest and quintile 5 richest. This in effect punishes many schools in urban areas dealing with the massive influx of rural and peri urban poor learners. They have many of the issues of poverty to deal with and less of the funds. Similar points can be made about schools located in quintiles 3 and 4. It is undoubtedly the case that a major step forward has been taken to address the gap between rich and poor communities through differentiated funding. Nevertheless, the instrument used is primitive and does not systematically deal with the difficulties faced by many schools dealing with impoverished learners.

No-fee schools have been successfully implemented at quintile 1 and 2 levels and this is being extended to quintile 3 schools in 2010. Over half of the school children in KZN do not pay school fees (and also get a meal). These schools are mostly located in Obonjeni (84%), Sisonke (82%) and Vryheid (79%). Exactly the opposite trend is shown in Umlazi and Pinetown where over 95% of the schools are fee paying. It should be noted that school fees quickly make up

for the loss of income caused by the quintile system, increasing school income far beyond the government subsidy and easily outstripping the amount received by quintile 1 schools.
In order to encourage decentralization of financial control and to place decision-making in the hands of those closest to the problem there has been pressure to increase the number of *section 21* schools in the province. These are schools which have shown themselves able to administer their finances, manage the curriculum and have a functioning SGB. These schools receive recurrent funding straight into a bank account. Curiously it is Vryheid that has the most section 21 schools (68%) and Umlazi the least (38%). This partly has to do with the sheer amount of schools in Vryheid and the distances that must be travelled, but the likelihood of these schools fitting the three criteria mentioned above is slim. This indicates that much of the expenditure directed towards these schools has no secure accounting process attached. In effect, most of the schools that we know to be dysfunctional in rural areas have section 21 status. Again, this points to a central tension within the social justice education project in the country and the province.

The relationship between home language and the language of teaching and learning at school is a vital one. 88% of our learners speak isiZulu at home, 8% English, 3% isiXhosa and 0.7% Afrikaans. However, the language of teaching and learning is English for 70% of our learners, with 27% taught in isiZulu. There is strong evidence for code switching but research has indicated that many of our isiZulu speakers are falling between isiZulu and English and are not able to use either language effectively for learning. Because schools were allowed to choose their language policy there is a split in isiZulu communities between schools that teach from grade 1 in English and those that try to keep isiZulu as the language of instruction up to grade 6, with most schools shifting at some stage from isiZulu to English. Only around half of isiZulu speakers are taught in their home language in primary school, despite strong researched evidence of the benefits of home language instruction. This is a clear example of lack of political will to make tough decisions in the interests of communities who are now divided in their educational language practices to the detriment of their learners.

In terms of *learner achievement*, KZN takes (on average) 19 years of learner effort to produce a grade 12 learner. The ideal would be 12 years. In terms of passing Matric, the learner effort years increase dramatically to 32 years. This is a measure of the inefficiency of the system and the high repetition and drop-out rates. In terms of pass rate, KZN improved in 2009 and achieved a 61.1 % average pass rate. Because of its size it produced the most matriculants, but also the most failures. Pass rates vary significantly by district with rural districts like Sisonke, Obonjeni and Vryheid faring worst. There is a relatively weak correlation between poverty quintile and pass rate, with lower quintile schools more likely to have lower results. But there are exceptions at both extremes, suggesting that the resources of the school and community do not determine the pass rate. There has been significant intervention in the system to improve the worst performing schools and thus there are only 162 schools that still have pass rates below 20%.
Comparing South Africa with SADC neighbours reveals that while enrolment and expenditure is generally good, performance in reading and numeracy tests are generally below the level of our neighbours. When these test results are disaggregated by province, KZN's mean is third best - for both tests - after Gauteng and the Western Cape. Further interrogation reveals a

highly differentiated system with some outstanding schools and some very weak schools. KZN has the highest level of differentiation between its poorest and richest learners and in the results these learners get, with the province often getting both the highest and the lowest results in systematic evaluations. All the tensions shown within South African education as a whole exist in their sharpest form in KZN.

Teachers

There are 87,255 teachers employed in KZN DoE schools. Of these, 82,363 are paid by the state and the balance by school governing bodies. Once again the quality of data is a serious management problem as little information about the teachers is available in the system, making planning difficult. Seventy-one per cent (71%) of the workforce is female, although women are underrepresented at management level, with men being three to four times more likely to be principals or deputies. The racial composition is in line with the demographics of the province. One third of the current teaching force is aged 45 years or older, whereas less than a quarter are 35 years or younger. There is thus concern over the long term supply of teachers.

About 61% of all *educators are qualified* at REQV14 level or higher and 25% are at REQV13. The remaining 14% (some 12,000 educators) are unqualified or under-qualified. Qualification, however, does not necessarily imply that teachers are doing the teaching that they are qualified for. For example, data quality does not enable us to establish whether all teachers teaching maths have a maths qualification, but anecdotal evidence and smaller studies show that this is not the case. There is also a marked difference in qualification level between deep rural districts such as Obonjeni and Vryheid, where fewer than half of teachers are at REQV14, and urban districts like Umlazi, where over 70% are at this level. There is a strong correlation between educator qualification level and student performance.

Teacher pay is regulated at national level through the Education Labour Relations Council (ELRC) and thus the province has no direct control over the wage bill. Teachers in South Africa are paid comparatively well when compared to the per capita income of the population as a whole, and compare favourably with other developing countries, but they are less competitive in comparison to other graduate professions. Seventy-eight per cent (78%) of the education allocation goes towards salaries, making this the key area of intervention from a financial perspective. The new Occupation Specific Dispensation (OSD) has significantly improved salaries for certain categories of teachers and has opened new career paths within the profession; but its implementation has not been smooth.

In order to develop a more detailed picture of the *quality of teaching and learning* delivered in classrooms, the team participated in an international comparative study examining maths teaching at grade 6 level. Forty schools were sampled, the learners were tested against grade 5 level maths at the beginning and end of the year and the teachers were observed in classrooms. The picture that emerges confirms other international benchmark tests such as

TIMMS and SACMEQ. The 1,870 learners sampled did poorly in the tests, with the correct item responses averaging at 37%. The teacher tests showed that, despite being qualified, only 47% managed to get each test item correct. The highest scoring respondent got just over two thirds of the questions correct. It is rather frightening to note that no teacher got 100% on a test of the curriculum they are teaching. More detailed analysis of the teacher responses shows that even those teachers who got responses correct did not always understand why they were correct. Analysis of the videotaped lessons looked for the following: cognitive demand made on learners; mathematical proficiencies facilitated by the teacher; content coverage and the teachers' content knowledge; pedagogical knowledge; and pedagogical content knowledge. The major observation is of low performance reflecting absent or incorrect content knowledge, for both teachers and learners. Essentially, teachers avoid teaching curriculum areas they do not understand, and focus on teaching procedures through memorisation. Teachers showed almost no ability in recognizing why a learner might be doing something incorrectly, indicating that the most important feature of quality education – feedback – is almost non-existent. The report proposes a range of interventions and strategies to address these shortcomings.

A *survey of 1,000 teachers* was conducted to examine some of the issues related to quality education. Sixty questions were asked, focusing on a range of issues: qualifications of the teacher; opportunity to learn; disruptions; curriculum coverage; departmental support; language of teaching and learning; use of textbooks; parental, family and community involvement; class size; learner motivation; and school management. Teachers were also asked what their biggest challenges were, what problems their learners faced and what their employment conditions were like.

Key findings from the survey relate to issues that impact negatively on teaching and learning such as absenteeism, class disruption, parental support and so forth, and issues that relate directly to learning and teaching such as curriculum coverage, support from district offices, and lack of resources. Not surprisingly, teachers externalised most of the problems, focusing primarily on issues such as poor learner discipline and lack of resources rather than their own subject content knowledge. However, significant numbers of teachers cited poor management and lack of qualifications as obstacles in their schools. In terms of job satisfaction and recompense, 80% of teachers felt their pay was low or very low, but 73% rated job satisfaction as Okay or High. Eighty per cent (80%) indicated that they saw themselves as still teaching in ten years time, suggesting a long term commitment to the profession. This contrasts with HSRC studies that suggest large portions of the teaching force wish to leave the profession.

Overall, the teacher survey reveals clear differences between teachers in quintiles 1-3 schools and quintiles 4 and 5 schools. The latter schools are less disrupted, complete the curriculum and have far fewer constraints in relation to resources, discipline and absenteeism. The schools in poorer quintiles have a wider range of challenges such as violence, hunger, sickness and absenteeism to deal with on a daily basis.

The *impact of HIV and AIDS* on educators is a significant factor impacting on a range of issues. Teachers are infected and affected like the rest of the population. The national HIV prevalence amongst teachers is 12.7% but in KZN this is significantly higher at 21.8%. In some districts the prevalence rises to 30%. This may not have as dire consequences as originally predicted, given new ARV treatment, but there are still high rates of sick leave in the system.

One of the recurring concerns about the education system is the confusion over *supply and demand of teachers*. The closure of colleges of education and the incorporation of teacher training into universities significantly reduced the capacity to produce new teachers. However, rationalising allocation of posts consistently shows up surplus posts and there are recurring reports of unemployed teachers. The reason for the confusion is a combination of poor data and planning both on the demand side and the supply side, as well as a failure to recognise that many teaching posts are not generic and require teachers with specific qualifications. The report explores a range of factors impacting on demand and supply and proposes better data management as a first step to resolving this area.

Curriculum

The curriculum is at the heart of the education process. In this light there has been quite massive reform of the curriculum since 1994 which has fundamentally altered the nature of learning and teaching in schools and colleges. One of the best known and most criticised aspects of the new curriculum is the introduction of outcomes based education (OBE). The critiques of this approach have led to a series of revisions. These have increasingly made the curriculum more specific and explicit. However, one cannot simply conflate curriculum with OBE and the effective delivery of the curriculum is impacted on by all the factors that are discussed in the report including infrastructure, LTSM, teacher quality and management. Effective curriculum support and development requires different strategies for different parts of the system which are spelt out in some detail. Essentially there must be a strong recognition within the system that the best performing and worst performing schools in the province need completely different kinds of interventions. The key areas of differentiated focus are around human resource development of teachers and managers, classroom based support from the curriculum advisors and specific infrastructure development to enable certain specialised curriculum activities.

Principals

There has been increasing recognition and research within South Africa focused on the importance of how principals manage learning. Although all of a principal's functions are vital to a well run school, the management of teaching and learning has the most direct impact on the performance of learners.A concerted effort has been launched to improve the management qualities of principals in KZN through the Advanced Certificate in Education (School Leadership and Management) and various short courses like the *Principals' Management Development*

Programme. UKZN and the KZN DoE are increasingly recognizing what can be done to change and improve the practices of principals. Courses should involve principals in doing clear and specific tasks that are directly related to their responsibilities and configured with what the DoE actually expects. Ward and district managers are involved in the process and work with the principals to ensure that the tasks are carried out in practice. Nevertheless, there is still a long road to travel.

Results from a *questionnaire answered by 103 principals* across KZN point to administrative duties dominating their time, as do difficulties with staff, learner absenteeism and late-coming. Respondents increasingly recognised the importance of paying close attention to the management of teaching and learning; but the actual day-to-day issues of dealing with schools that are vulnerable to disruption takes up considerable energy. Principals pointed to lack of parental interest in their children as a key problem, with 45% of the principals feeling that parents did not try to help at all. Although 68% of the principals indicated that their SGBs were keen to help, most of the principals felt that the SGBs did not have enough skill and resources to be of real value. Without substantial support from educators, learners, parents and the community, a principal is hamstrung.

A *qualitative account of a successful principal* in the Vryheid district who turned his school around indicates that it really is possible to shift both expectations and performance within schools if one is prepared to engage with key stakeholders (officials, parents, teachers, learners) and develop a turn-around strategy that involves time on task, systematic evaluation and feedback, reporting and monitoring procedures and active pledges from teachers and learners to come to school and participate in teaching and learning.

The KZN DoE

The KZN DoE has undergone several reconstructions over the last 16 years, the most recent being in 2006. This has resulted in a number of inconsistencies and inefficiencies as the various sections and layers struggle to communicate with each other. With the recent splitting of the education ministry into Basic and Higher Education further changes are expected, especially around the FET sector. A number of radical changes are under consideration, the most important of which revolve around strengthening capacity at the district level. Currently the district level finds itself sandwiched between numerous other layers that prevent it operating effectively. Above it are clusters (and service centres) that combine districts into regions, below it are circuits and wards that reach directly into the schools. There are probably two levels too many, with clusters and circuits being the most obvious candidates to be streamlined. This would effectively mean upgrading districts to the level of chief directorates. The complexities of this re-organization need to be discussed in detail with the KZN DoE, but whatever the outcome, the increased capacity and functioning of the district level is absolutely crucial to the ability of the KZN DoE to deliver on its mandate to improve the quality of education in KZN. The department currently works in silos and communication between directorates is difficult. There is a lack

of specialist training for working at levels of management beyond principal level. Serious consideration should be given to a short course on Education Planning that is based on the research findings of this project and that increases understanding of what it means to improve the quality of education in the province. This would improve synergies within the department across directorates and districts and enable a clear informed focus on the core function of the DoE.

Infrastructure

Infrastructure is commonly cited as a reason for the poor quality of education in South Africa. This is due to apartheid resource allocations that left many rural and township schools without sufficient classrooms and toilets. Many of these schools also lack science labs and libraries. There are also new pressures on schools arising out of changes in the curriculum and new technologies. The *National Education Infrastructure Management Systems* (NEIMS) survey of 2006/7 remains the best data source available. Some of the key features of infrastructure in KZN were that while over half the schools were deemed to be in excellent condition, there were still 886 schools in very poor condition, 648 schools with no water on site, 209 without toilets, 1,612 schools with no electricity and 4,633 without libraries. Fifty-four per cent (54%) of schools lacked computer access. According to 2008 estimates by the KZN DoE it would cost the province R30 billion to address the *backlog*. This is an unrealistic goal, given that it does not include ongoing maintenance of existing infrastructure. The KZN DoE is systematically addressing the key backlogs in its annual budget cycles but there will still be backlogs for the foreseeable future. Undoubtedly it is more difficult to teach science without a laboratory, but if the teachers don't have good scientific training then the laboratory will not solve the problem. There are many examples of labs, libraries and computer rooms mothballed because the teachers do not know how to use them. Infrastructure development needs to focus on the essentials (water, toilets) and then progressively improve teaching and learning facilities in conjunction with teacher development.

Barriers to basic education

Barriers to learning in the province are pervasive, with high levels of poverty, social marginalization and HIV and AIDS prevalent. There is still strong evidence of human rights violations with widespread neglect of schoolchildren in the family setting. Systematic monitoring of the HIV and AIDS pandemic is crucial and the recent and ongoing efforts to ensure all South Africans know their HIV or AIDS status will assist in this regard. Teachers, parents/caregivers and community members seem powerless to question pressures on learners such as: payment of school fees; the cost of school uniforms; the lack of learning resources such as books and pens; the practice of corporal punishment; poor infrastructure in schools; poor commitment and accountability on the part of teachers; and corruption in schools. There are tangible examples

of caring school environments with teachers in rural areas showing authentic instances of care, but the overriding sense of vulnerability caused by economic pressure, fragile families, stigma, discrimination, lack of social support, difficulties of accessing the social support system, fear of death and sickness, sexual and physical abuse, substance abuse and burdensome domestic responsibilities result in an inability to engage with the rigours of learning.

The budget

The *budget for education* (national and provincial) went through a period of actual decline from 1994 to 2003, with inflation taken into account. Given that at the same time there were massive reforms throughout the system it is not surprising that there was no radical improvement over this time period. Since 2004 there has been an increase in spending on education with current expenditure around 20% higher in real terms in comparison with 1996. Total spending on education in 2008/9 was 5.5% of the GDP, well within the norm of similar middle-income countries. Provincial spending on education in KZN is increasing, with the province expected to move from sixth place to fourth place in terms of the percentage of the provincial budget allocated to education. This should herald long term improvement in the performance of the province educationally. Extra money has been allocated for improving data capturing in the province as well as public special schools and early childhood development. The introduction of SA SAMS, and LURITS needs funding, as does the mainstreaming of learners with mild disabilities and the integration of grade R into mainstream schooling. Compensation of employees dominates the overall budget at 78%. Goods and services are at 10% and include the Norms and Standards for School Funding allocation which actively redistributes resources in favour of poorer schools. Payment for capital assets account for 5% (2.2 billion), a radical improvement on the historical allocation to this area, but with a backlog of R30 billion there is still a long way to go. Transfers and subsidies make up 7% of the total budget and consist of monies paid directly to schools, either no-fee schools or section 21 status schools or both. Increasing no-fee schools to quintile 3 levels effectively means an additional R1.6 billion will be needed to meet funding norm commitments. This will result in 80% of KZN schools become 'no-fee' schools. Payments to the 46% of schools in KZN that have section 21 status is the other major slice of transfers and subsidies, with not much oversight as to how this money is spent, especially in rural areas.

Conclusion

Education in KZN strongly mirrors the state of education in South Africa as a whole. There are provinces that are richer with better performance levels, such as the Western Cape and Gauteng, and provinces that are poorer with worse educational levels, such as the Eastern Cape and Limpopo. KZN straddles this range and is the most differentiated system within the country. Its poorest learners have some of the worst results, its richest learners some of the best, indicating high levels of social and educational inequality within the province. Education

is not really doing its job of breaking the cycle by which inequality is reproduced. Our poor learners do badly, our better off learners do well. A number of factors point to effective leverage points within the province, however. Firstly, there are really only two dominant languages within the province: IsiZulu, the dominant home language, and English, the dominant language of learning. Engaging with the intersection between IsiZulu and English is crucial to enabling effective learning across the school system. Secondly, KZN has dedicated university faculties of education that are producing new teachers for the province and are extensively engaged in upgrade programmes for both teachers and management. Thirdly, the province has a history of inspirational and committed education leadership at its highest levels, ensuring that the system has both vision and example to guide its functioning. Fourthly, the province has a working Department of Education that, with some reform, can deliver on its mandate to ensure that education of quality is delivered across the system. If the province can effectively deal with the transition between home language and language of learning, the injection of new teaching blood into the system and the ability of districts to deliver and monitor quality teaching and learning –- along with the national initiative to simplify and make more explicit the processes of teaching and learning –- then it should be able to make systematic improvements to the quality of education and life chances of its youngest members.

2. Introduction

In October 2008, the KwaZulu-Natal provincial Treasury issued a call for tenders to conduct a study on improving the quality of education in KwaZulu-Natal. A statement by the ruling party earlier that year suggested that a renewed focus on education was required to ensure improved access of poor South Africans to quality education. "The idea (of the research) is to conduct robust analyses of the performance of our education sector in the KZN province with a view to identifying gaps and making practical recommendations on possible policy interventions the province can implement in order to improve the quality of our education system". The terms of reference requested, among other things: an international literature review; an overview of education that includes enrolment, pass rates, drop out, assessment of conditions of employment, remuneration; infrastructure; credentials of teaching staff; an analysis of current policy interventions; a set of policy considerations; and assessment of budgetary allocations to education.

The present paper exists as the second deliverable product in the Treasury research project. The first deliverable product was a literature review that discussed what international and regional research is telling us about understanding the nature of 'quality' in a developing context, and various principles and initiatives used to improve quality within educational systems and practices. This paper specifically focuses on education in KZN and provides a clear and up-to-date account of the geography of education in KZN, the nature of its schools, teachers, principals, and curriculum, the structure of the KZN Department of Education (DoE), the schooling infrastructure, barriers to learning, and the budgeting and financing structure of education in the province.

By combining a number of sources (data bases like EMIS and NIEMS, principal and teacher surveys, teacher and learner questionnaires, individual and group interviews, desk top reviews of international, African and South African research, pre and post tests, classroom visits etc) we have put together a composite picture of what education looks like in KZN. It is the first such document to be compiled that combines an institutional focus with statistical and qualitative data that uses key indicators of quality in education drawn from international, African and South African research, to produce a rich portrait of the quality of education in a province dealing with 12 districts, 45 circuits, 207 wards, 6,166 schools, 87,000 educators and around two and a half million learners.

These two documents provide the way forward for the third phase of the project, in which stakeholders in the educational system are consulted and a set of policy recommendations are drawn up on how to improve educational quality in the province.

This introduction sets out the informing principles of the study; outlines the current national context in education given that there have been rapid and extensive changes at this level in 2010; describes existing efforts within the KZN DoE to improve quality in education; and finally identifies the key distinguishing features of education in KZN and how many of these point to positive and productive possibilities for improving the quality of education in the province.

The call for tenders and this research project was a timely intervention by Treasury. While there is legitimate concern over the quality of education, teaching and learning in South Africa, strides are being made in national and provincial education policy to streamline and improve quality. South African education is entering a transition phase, where minimum standards and procedures are critical. While Treasury may be concerned about the inefficiencies in the current system, this research will help identify appropriate policy and professional options to ensure that educational systems become more streamlined, simple and efficient.

Informing principles

1. ***Educational reform within a developing context is different to educational reform in an already developed context.*** This is an obvious principle but it is often not taken seriously. Educational systems that have poorly educated and trained teachers working in a poverty-stricken context and with minimal resources, need to define what quality is in a very different way to educational systems that have well educated and trained teachers working in well resourced middle class areas. In the literature review, we used the work of C.E. Beeby to make this clear. The point cannot be over-emphasised. Often what is effective and useful as an educational reform in an already developed country can be poison if implemented in a developing country.

2. ***Quality must be linked to equity.*** The comparisons drawn between South Africa and Western countries do not take into account the massive disparities in development. Countries dealing with severe levels of poverty cannot be measured purely on how well they perform in comparative evaluations. Distributional quality must be taken into account where the quality of an educational system is measured by the gap in performance between its poorest and richest learners. The smaller the gap between rich and poor learners and the closer poor learners perform to their better off counterparts are key determiners of what quality really means in a developing context.

3. ***Sustained educational reform is a long term process that goes through recognizable phases and takes generations.*** There is a recognizable pattern to the reform process in a developing context, especially a setting with a colonial past. The first phase consists in stripping a system of its past discriminatory policies, curriculum content and frameworks, establishing legal and qualifications frameworks and consolidating the bureaucracy. The second phase involves establishing minimal standards of efficiency and quality and ensuring that these apply across the system. The third phase is establishing a high quality, internationally competitive educational system that is highly adaptive and responds to global and national demands in a rapid and effective manner. We are currently located at the shifting point between phase one and two and should not imagine we are actually in phase three.

4. ***Bottom-up and top-down synergies.*** In this project we are looking not only at policy reform driven from above but also at practice-driven engagement driven from below. There are complaints from teachers about the curriculum reforms currently being mooted: there is the sense that they have been created by political diktat rather than consultation. This compromises effective reform strategies.

The national picture

Many of the observations and insights of the KZN Treasury literature review on the quality of education in a developing context also came out in the ministerial review of the national curriculum. It picked up on similar research of the difficulties experienced by the extended reform period in South African education. As this national picture plays an important role in the provincial set-up, we provide a summary of what these new developments have been and the strategies in place at a national level to deal with the increasing recognition that the educational system as a whole has been performing very poorly.

At the heart of the recommendations lies a recognition that South Africa is a development state that needs to simplify and explicitly specify the various activities of the whole educational system, and then ensure these are carried out to the benefit of those most in need. Rather than attempt to sophisticate the education system, the recent reforms have recommended stripping the system down to its essential functions and then ensuring that these core functions are correctly performed, by making explicit and clear what they are and then evaluating their performance. A number of factors were responsible for this pragmatic shift: the downward trend in the Matric pass rate; the poor results at foundation phase in terms of literacy and numeracy; time on task studies that showed high levels of absenteeism and late-coming from learners, teachers and principals; shocking results in international and regional benchmark evaluations and national systemic evaluations; the increasing identification of dysfunctional schools, dysfunctional principals and dysfunctional district officials; and the poor levels of teacher knowledge revealed in teacher tests. This was combined with increasingly powerful research claims pointing to the failure of outcomes-based education (OBE) due to its overly complex machinery and administration load combined with its under-specification of content and sequencing.

The first key shift made by the department is the increasing recognition that the foundations of learning provide the base on which everything else depends. If children and adults do not learn to read, write and calculate at the foundation phase level then many of the other interventions throughout the system will not be successful as they are dependent on the basic foundations holding up. This had not been a primary focus of the department over the last 15 years, attested to by the poor focus on this sector at a resourcing and training level, and the focus on ensuring key skills are produced at secondary and tertiary level (ASGISA, JIPSA). The department has recently set itself the priority of getting all children to participate in grade R by 2014 and to provide these learners and teachers with basic learner packs to ensure there is foundational

learning rather than mere warehousing. Specific lessons, charts, posters, reading books and learner workbooks have been put together and distributed to all 13,900 schools in the country that have grade R classes. At foundation phase level there has been a strong tightening of teaching and learner activities with clear guidelines (and learning materials) provided on what should be taught, in what sequence, at what pace and how it is to be assessed. Rather than specify the outcome and then expect teachers across South Africa to develop their own learning pathways (as occurred with OBE), the department has now made explicit what is to be taught when and how. These materials are to be distributed to all schools up to grade 6 level. This has been backed up with key funding initiatives at foundation phase level, for example providing more bursaries for foundation phase teaching.

The department has recognized the key role played by textbooks and learning materials, especially in under-resourced schools, and will distribute (to all schools) materials that provide all the basics needed to cover the curriculum. This will be combined with standardized national assessments of the quality of learning in public schools at grade 3, 6 and 9 levels, which will be used as a feedback mechanism for teachers, principals, wards, districts and provinces. In order to ensure that this gets proper focus, education has been separated into Basic Education on the one side and Higher Education and Training on the other.

The motto of the Department of Basic Education can be summarized as "getting schools working" by aiming for schools that have - as a bare minimum - a capable leader, committed teachers, supportive parents and disciplined learners working in an environment that has adequate teaching and learning materials and is also safe and healthy. This is held together under the Quality Learning and Teaching campaign. There is a strong recognition that parents and the community play a vital role in supporting the school. The department is also ensuring that the teacher unions support its policies, by entering into a social compact with the unions around the initiatives outlined above.

The national department has taken steps to reduce the administrative load of teachers by terminating continuous tasks of assessment and portfolios, along with reducing the number of projects required. Three ministerial project committees have been set up to: provide step by step, grade by grade, subject by subject outlines of what should be taught; to reduce the number of learning areas in the intermediate phase; and to increase the use of textbooks as a basic tool in classrooms.

At the same time the department has also introduced the Annual National Assessment at grade 3, 6, and 9 levels, to measure if the above interventions are having any impact on the literacy and numeracy performance of learners across the country. Further, this is being combined with a targeting of all the dysfunctional schools that attained below 20% in the Matric exam. A Rapid Assessment and Remediation Initiative has been set up in collaboration with provincial departments in order to investigate the causes of this dysfunction, support improvement and monitor the progress.

This is part of a broader recognition by the DoE that it needs to sharpen its monitoring and evaluation arm. The National Education Evaluation and Development Unit (NEEDU) has been finalized, and although it will not be based on the old apartheid inspectorate, it will assess the performance of the education system at all levels. This will have a specific impact on the roles that district officials play and will direct their roles more specifically in terms of evidence-based performance levels.

The national department has increasingly recognized the key role quality teachers play and is currently putting together recommendations based on a National Teacher Development Summit. Suggestions of a National Teacher Development Institute, a National Education Management Development Academy and a Curriculum Research and Development Institute have been mooted. The Fundza Lushaka bursary system is beginning to play a role in improving the output and quality of teachers, especially maths and science teachers and foundation phase teachers.

The Kha Ri Gude Adult Literacy Campaign has now managed to produce approximately one million new literate adults. Although the levels of literacy of these adults are still very low, it has meant the overall improvement of adults able to engage with what literacy means for their own children at school.

These are all very powerful intentions and interventions that show a strong sense of pragmatism and adaptability to new developments and research, along with a preparedness to listen to what intellectuals, teachers and administrators have been saying for a while.

The provincial picture

Moving from national to provincial levels, the specificity of the issues becomes sharper although the concerns and issues are similar.

The focus on foundational issues has been picked up on by the KZN DoE, but only in a limited manner. The strongest focus is still on Matric results. In terms of early childhood development (ECD) there has been a focus on training practitioners, although these are still in the early stages and have still to reach the majority of practitioners who are under-qualified. Systemic evaluation at grade 3 and 6 level has revealed serious underperformance in literacy/numeracy (grade 3) and mathematics and language (grade 6). These are analysed by the KZN DoE, areas of improvement are identified and each district is tasked with formulating its own improvement plans, although the current ability to monitor this actively is weak. Learner materials have also been designed for those areas the systemic evaluations have shown to be problematic, especially in numeracy and literacy. A major issue is that that quality control of these resources is weak, with little testing, trialling or co-ordination of the material happening on a systematic basis. Primary school learners are also provided with standardized question papers and assessment

resource banks that provide questions benchmarked at provincial and national levels. Educator guides have also been developed and these are available in five languages. There has been a concerted effort in the last year (2009) to ensure learning and teaching support materials (LTSM) are delivered to schools.

In line with the increased national focus on poor performance, KZN DoE has a strategy to deal with schools that achieved under 50% in the 2008 Matric exams. The strategies are interesting as they entail the auditing of qualifications to ensure educators are genuinely qualified in the right area. Anecdotal evidence points to falsification and buying of degrees and certificates to gain employment, after which principals find the person cannot actually teach in the given area. Only R2.4 million has been put aside for these schools and given that the task is enormous, entailing monitoring of educator, learner and management attendance and late coming, ensuring time on task, developing management and administration structures, checking for inefficiencies at ward level, sustained focus and better funding is needed.

There has been a concerted effort by the KZN DoE to increase the number of section 21 schools. However, the department still keeps certain core functions basic to the functioning of teaching and learning to itself, like the provision of LTSMs. The issue of the ability of many of these schools to manage their own finances must be raised, but if effectively implemented there is no doubt this policy results in schools being able to take active control of their own circumstances in ways more nuanced than the department could do.

The number of no-fee schools has been increased and currently (2010) stands at 3,513. This has increased access and there is an almost 100% enrolment rate of children between the ages of seven and 15.

There is a strong literacy campaign in KZN (Masifundisane) that has currently graduated 360,000 learners, which exists along side Kha Ri Gude.

There has been a concerted effort to deal with some of the human resource and administration issues in the KZN DoE. In particular, 582 subject advisors have recently been appointed, although there was some difficulty in finding discipline specialists. Numerous education and training programmes have been initiated: in leadership and management, maths and science, literacy and numeracy - all to upgrade teacher qualifications, knowledge and skills.

The KZNDoE has responded to the high rate of HIV and AIDS in the province by developing a life skills programme for 7,800 teachers on how to integrate HIV and AIDS education into the curriculum. Another 1,200 will be trained up in lay counselling and peer education.

There has been a concerted effort to improve the data management of the KZNDoE, specifically through the South African Schools Administration System (SA-SAMS) and the Learner Unit Record and Information Tracking System (LURITS). The first ensures that enrolment figures in school are based on correct numbers of learners, and the second keeps a track on learners across their school career. This is a key intervention that should improve the ability of the department

to make informed decisions based on the correct size and shape of the system.
There has been a concerted programme to build and develop 93 education centres across the province, mostly funded by the Royal Netherlands Embassy. Furthermore, the department is actively supporting the 81 DINALEDI schools in the province tasked with dramatically improving maths and science results.

The department is increasing the connectivity of schools to the internet, aiming at all its schools having email by 2012. 1,481 schools already have email and another 1,000 schools are earmarked for email access this financial year

The National School Nutrition Programme (NSNP) currently feeds 55% of KZN learners daily. In some areas, local co-operatives have been trained, food gardens promoted, vegetable tunnels established and food security fortified, in projects sponsored by the Flemish government.

Most schools are fenced and 2,890 security guards are positioned in quintile 1 and 2 schools.

Seven agricultural high schools and 32 technical high schools are being recapitalized as part of the government's drive for rural development. The department is also focusing on establishing and developing public special schools along with 100 education therapist posts. It has also initiated inclusive centres of learning, care and support.

Finally, the KZN DoE does attempt to engage actively with other ministries and departments. Co-operation with the transport ministry, health ministry and Department of Economic Development is extensive, and although these connections have often proved problematic there are good examples of co-operation working.

Key distinguishing features of education in KZN

Feature 1: High differentiation in achievement

In country-wide systematic evaluations, KZN consistently has a combination of very high and very low scores that gives it a very different profile to other provinces. It consistently competes with Gauteng and the Western Cape for the highest scores, but then along with the Eastern Cape and Limpopo also has representation at the lowest scores. It has one of the highest poverty ratings, with an extensive rural base, but also has strong industrialized areas with well developed facilities.

Feature 2: Relative linguistic homogeneity

Although both isiXhosa and Afrikaans have a community base, isiZulu is by far the major home language in the province, with English established as the language of power and access and the language of learning at secondary and tertiary level.

Feature 3: Highest HIV and AIDS rate amongst teachers and community

Educators in KZN have the highest rate of HIV and AIDS in the country with certain districts showing rates of over 30%. Given that a large component of HIV-positive people are women aged between 25 and 39, and that women constitute a major element of the teaching force in KZN, this must be considered a key crisis within the profession.

Feature 4: Very poor numeracy and literacy levels in primary schools.

Systemic evaluations reveal that KZN has a very poor level of performance in the majority of its primary schools throughout the province. Our own research on grade 6 learners and teachers in one of the best performing districts of the province revealed very poor performances - both by learners and teachers - in tests as well as teaching and learning practices.

Feature 5: Basic TVET structure in place

Much undervalued and understudied, technical and vocational education and training (TVET) plays a key role in educational systems. KZN is well placed to make a useful contribution at this level. Although much has still to be done at this level, the TVET structure in KZN is relatively better off than in other provinces.

Feature 6: Visionary leadership

Strong, insightful leadership can bring the vision and direction needed for improving the quality of education in a province. Both Ina Cronje and Senzo Mchunu have provided (and are providing) such leadership, emphasizing moral values, citizenship and quality education. This is bolstered by the effective and principled running of the superintendent general's office.

Feature 7: Local teacher training institutions and programmes of recognized quality

The province has a university with one of the largest and most successful faculties of education that is engaging extensively with both initial and continuing teacher education. Although the UKZN faculty of education cannot respond to all the demands of the province, it is a very effective resource for ensuring that teachers of quality enter the teaching profession and existing teachers improve their existing skills.

Conclusion

There are cautious grounds for optimism in the pursuit of educational quality in our province. At both national and provincial levels, we are showing adaptability and pragmatism. We are responding to issues with a renewed focus on our own specific conditions rather than using international models and experts, and are beginning to configure the education system to local interests. We have become less sensitive to ideological dogmatism and are responding to critique

and research as they arise with new and creative directives. We are more open to critique and change, especially with regards to OBE. We are working on our institutional capacity to carry out and monitor basic educational reforms aimed at establishing minimum standards. We have increasingly put a high priority on adult literacy and universal primary education with a focus on literacy and numeracy, whilst also recognizing the role of technical and vocational education and training.

Enabling conditions continue to hold at a national level, even with the recession. Sound macroeconomic policies and political commitment to education have not wavered. This has ensured continued budgetary support and high profile focus on education. In the medium term this should set up a golden circle between economic growth and quality of human resources. We have focused on a policy of shared growth with strong equity principles in place: that is, with poorer learners getting substantially more funding than their wealthier compatriots. Consistent law machinery and legislation (such as the South African Schools Act) has been put in place to enable the education system to function. There is demographic stability, although this is a consequence of HIV and AIDS and is the most pressing problem facing our province. Consensus-building mechanisms have been prioritized, although these can be improved.

There is, however, an urgent need for a joint vision and agreement to be forged between different sectors and communities. This is crucial if the latest reform initiative is going to work. Such compacts have been negotiated between the teacher unions and the DoE. Deliberative councils where academics, officials, practitioners and interest groups meet are crucial: something like this will be set up by this project in its next phase.

Reform goes through a number of different phases. We have reached the point where we have addressed the legal machinery and the unitary functioning of the DoE, reformed the examination system and qualification framework, standardized procedures of schools, reworked funding mechanisms and reworked the national curriculum away from the apartheid past. We have also expanded access, partly at the cost of quality. We have attempted to upgrade the worst-off schools so that basic services enabling learning exist in most schools; and we have also instituted upgrading qualifications and programmes for principals and teachers.

This first phase normally takes around 15 years. Given the divisions and rifts wrought by apartheid, there should be some acknowledgement of how far we have come in South Africa over the last 15 years. The second phase shifts into a focus on efficiency and minimum standards. This can take up to 20 years to establish. We are currently beginning to shift into this stage. The third phase consists in an ability of the system to produce high quality results in a number of knowledge areas, with strong abilities to adapt to current demands and international standards. This phase should in no way dominate the South African or KZN educational mindset at present. We should be focusing on getting from phase one to phase two.

The urgency now is to get minimal levels of efficiency and quality operating properly across the whole system at all the different levels before a concerted push can be made for high levels of

quality across the system. In effect, this means that a differentiated policy of reform is needed that recognizes that high quality is an impossibility in large areas of the educational system and that a minimal level needs to be articulated and implemented before higher expectations and demands are made and enforced. We should be focusing on minimal rather than optimal levels of performance for most of the system. There is a need across the educational spectrum for progressive and continuous improvement that is reasonably paced and realistically ordered. Although priority areas (like foundation phase and TVET) must be identified, there must be sustained focus on minimal levels of performance across the system. There is increasing recognition of this within the DoE, and the Treasury project will go some way towards providing the resources and intellectual leadership for the pursuit of quality within education in KZN.

Guide to the rest of the document

This document begins with a chapter entitled "Overview of the provincial education sector" offering an overview of the geography of the province and its educational districts, with enrolment trends, resource targeting, language issues, Matric results and grade 12 indicators. Where possible, these issues are disaggregated to district level so that a differentiated picture is developed. Comparative data with other Southern African countries is presented.

The next chapter examines teachers: their qualifications according to the department's own records; pay structures and recent changes in these; how HIV and AIDS has and will impact on teachers; and the supply of new teachers or the replacement of those leaving through natural attrition. In this section, two empirical research processes are reported upon. The first is our research into content knowledge and teaching practices of grade 6 mathematics. The second is a survey of over 1,000 teachers undertaken by the research team, to identify their own views on management, curriculum, problems facing schools and learners, recompense and job satisfaction.

The following chapter details curriculum changes, outlining the major shifts in policy and including the rise and fall of OBE. It also covers all the factors that impact on curriculum. Next, the report examines principals in the context of schools management systems. Three pieces of research are offered here: the first is a questionnaire conducted by the research team; the second is a report on a management development programme, piloted with 50 principals over a period of six months; the third is a qualitative account of a principal turning his school around in a rural KZN context.

A comprehensive outline of the current structure and hierarchy of the department and the policy initiatives they are engaging with is then presented. Achievements in the provision of new infrastructure, both nationally and provincially, are detailed in the next chapter, as well as a district-level backlog of infrastructure needs. The penultimate chapter examines children's barriers to basic education, with a firm emphasis on giving children themselves a voice in explaining those barriers. This research focused on the extent HIV and AIDS are barriers

to education and elicited opinions from children, community members and teachers in an extensive process.

Finally, we look at the budget of the department, both nationally and provincially, over a five year period.

This comprises a full overview of the state of education in KZN. In the next stage of this research, once stakeholders have been consulted, a set of policy considerations will be generated for Treasury to examine, and the budgetary implications of each will accompany these considerations.

3. Overview of the provincial education sector

In keeping with the terms of reference of this research study, chapter 3 seeks to reflect as much relevant information as possible about various features of the KZN education sector that bear crucially on educational quality: the structural hierarchy, the number and type of schools, enrolment trends within those schools, repetition rates, and learner-to-educator ratios. It looks at no-fee schools and section 21 schools, as well as language issues of learners and teachers. It also breaks down Matric results by district and school quintile and offers research on how many years it takes the system to produce a grade 12 certificate. Performance levels within the KZN system are then juxtaposed with other provinces and surrounding countries to develop a bigger comparative picture.

In surveying and interpreting all these aspects, the chapter takes careful account of the informing principles for the research study, as set out in the introduction: namely, that the above information needs to enable a very specifically local, contextualized definition of quality that is also linked to equity; a realistic understanding of where we are in the process of reform; and a strategic engagement with practices on the ground.

3.1 Data quality

3.1.1 Information on schools

Schools have a duty to provide information in terms of the South African Schools Act No. 84 of 1996. The KwaZulu-Natal Department of Education runs two main surveys of public ordinary schools during the course of each year. The first, called the SNAP or 10th Day Survey, is usually conducted on the 10th day of the school year. The second, called the Annual Survey, was given to schools on 3rd March 2009 and scheduled for return within three weeks. It generally takes a lot longer than that for all schools to submit their forms.

The survey forms are completed and signed by the school principal or other designated person together with a declaration certifying that the information provided is, to the best of their knowledge, correct and complete. They are then supposedly checked and signed by an education manager (usually at ward level, but sometimes at the circuit or district office) before being returned to the Education Management Information Systems (EMIS) Unit at head office in Pietermaritzburg for data capture.

The SNAP Survey is a short two-page survey focussing mainly on enrolment and staffing. It requests information on the following:

- General school information – school name, level, ownership, district, circuit, ward, nearest town, email address
- Learner information – number of learners enrolled at the school by grade and gender

- Staff information – number of educators, administrative and support staff who are either permanent, temporary or substitutes according to whether they are remunerated by the state or governing body.

The Annual Survey is a much longer survey focussing on the characteristics of learners and educators, efficiency of the system, subject choices etc. The survey requests the following information from schools:

- General school information – postal address, telephone, principal's contact details, school fees, etc.
- Learners by population group, grade, gender, age, home language, language of teaching and learning
- Learners with special education needs by grade, primary barrier to learning, language
- First time enrolments, transfers to and from the school
- Learners receiving a social grant or whose parents are deceased
- Learners who stopped attending, are repeating a grade or who were not promoted
- Mortality statistics for learners and educators
- Subject choices of learners in Grades 10 to 12
- Educator information – name and surname, ID number, PERSAL number, post level, remuneration, etc.

3.1.2 Data reliability

A recurring theme in this research was the issue of data reliability. The two surveys described above are the principal data sources from which the state of the provincial education system is assessed. They are used to assess staffing and resource requirements, infrastructure backlogs, system bottlenecks as well as district inequalities. They impact the way in which billions of rands are spent, yet they are flawed. Schools sign a declaration certifying completeness and accuracy of the data supplied on the forms, but it is known that it is often not complete and often inaccurate. The most common malpractice is for some schools to inflate enrolment numbers in order to qualify for more teaching posts or more resources.

It is imperative that the department takes steps to identify and deal with those schools that do not supply accurate information so that the data collected can be reliably and confidently used for budgeting and planning. Until this happens there will continue to be a degree of guesswork and of unnecessary expenditure in the province. This unnecessary expenditure could be in the region of 10 - 15% of the total education budget.

There are positive developments with regard to data. The SA-SAMS and LURITS systems that are being introduced will yield much better data if it is properly implemented and this needs priority resourcing.

3.2 The geography of education in KwaZulu-Natal

3.2.1 Administrative tiers

The Department of Education in KwaZulu-Natal currently has a three-tiered organisational structure consisting of districts, circuits and wards. Immediately below head office there are 12 districts (see Map 1 on page 29). The boundaries of education districts are the same as district municipality boundaries except in the case of eThekwini, which owing to its size (schools and learners), was divided into two districts called Umlazi and Pinetown. The education districts have generally adopted the same name as district municipalities, except in the case of Umkhanyakude (DC27) called 'Obonjeni', Zululand (DC 26) called 'Vryheid', Uthungulu (DC 28) called 'Empangeni' and Uthukela (DC23) called 'Othukela' (see Map 1).

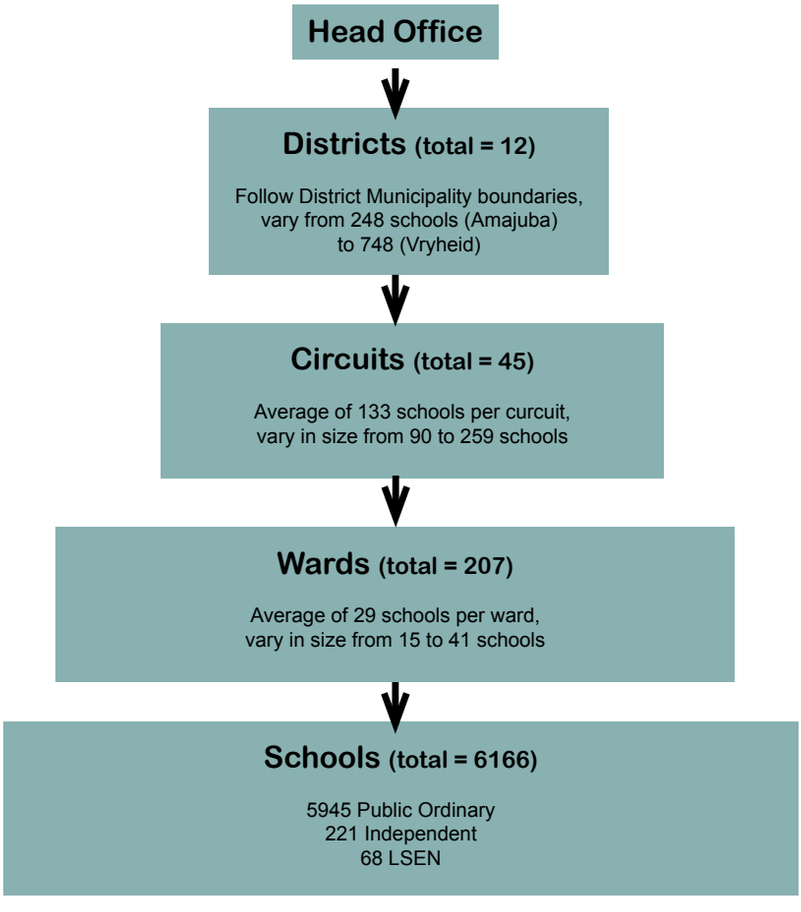
Education districts vary considerably in terms of their geographic extent, numbers of schools served and educational circumstances. Rural districts have greater numbers of small schools and education personnel have to contend with travelling large distances to reach them. Urban districts such as Umlazi and Pinetown generally have larger schools, more of which are better resourced in terms of physical infrastructure. One of the major challenges facing the education department, given the huge variation between districts, is how to provide a consistent level of service to its schools. Vryheid district for example has three times more schools than Amajuba but only twice the number of learners. It therefore has more small schools, and large distances must be travelled from the district office in order to reach them.

Each education district in the province is divided into two or more circuits. A circuit is a grouping of approximately 150 schools, although they also vary considerably in size. There are currently 45 circuits in the province (see Map 1). Unlike districts, which follow the same boundaries as district municipalities, the boundaries of circuits do not follow any existing (legislated) boundaries. A circuit is simply a grouping of schools in a common geographic area, ranging in size from around 60 schools to 259. Hence, like districts, there is little consistency in their size and it is difficult to envisage how their performance can be measured and compared when they vary so dramatically. It is also unclear what their precise role is in terms of providing support to schools and in liaising with districts. This would need to be clarified before their function can be clearly defined and steps are taken to introduce a degree of standardisation of their size and role.

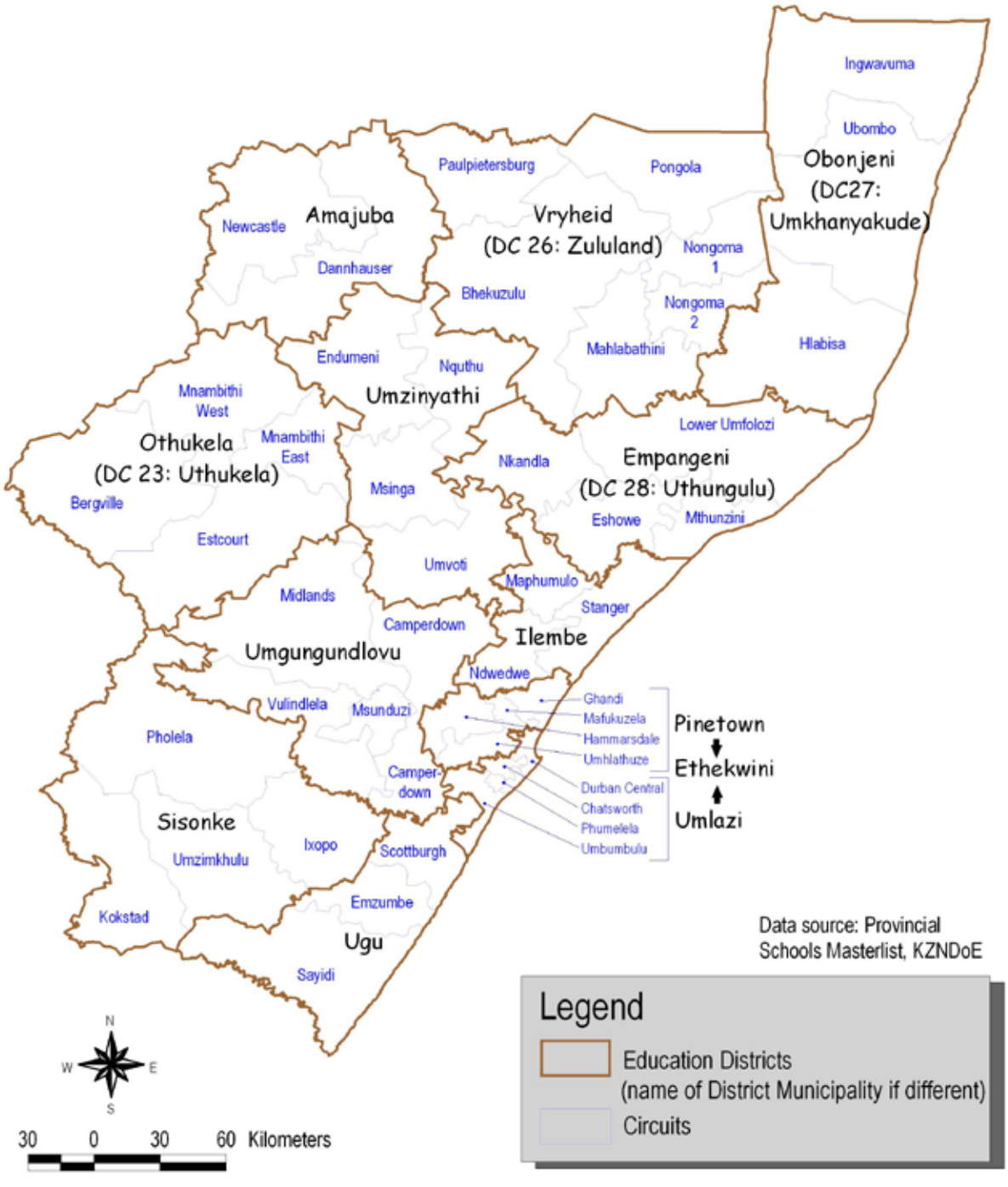
Circuits are further divided into wards, which consist of groupings of roughly 30 schools. There are 205 wards in KwaZulu-Natal, each of which is managed by a Senior Education Manager

(SEM). Wards range in size from 20 schools to over 40. Currently, there is little standardisation in the sizes of education wards, rather a variable arrangement that differs from district to district. In most cases, a ward is a clustering of schools in a distinct geographic area, but there are a few cases where ward boundaries overlap. The three-tiered management structure described above is summarised in Figure 1 .

Figure 1: Management structure for schools in KwaZulu-Natal



Map 1: Distribution of districts and circuits in KwaZulu-Natal



3.2.2 Standardising the size of districts and circuits

In April 2008, the National Department of Education released a working document entitled: 'Towards A Draft National Policy on the Organisation, Roles and Responsibilities of Education Districts'[1]. The document has important implications and recommendations for the way in which provinces organise their schools, aiming to foster a "common approach to the demarcation, organisation, and delegation of powers and resources of education districts across all provincial education departments"[2]. It is recognised that up to now there has been no national pattern regarding the demarcation and staffing of education districts or the powers and responsibilities of district directors. The document aims to address this.

A crucial aspect of the draft policy is to attempt to "bring district sizes within an acceptable range for effective service delivery, ensure that all district offices have the necessary roles, delegated powers, functions, and ensure that special support is given to districts where the educational needs are greatest"[3]. It is noted that education districts vary considerably in terms of the success of their schools and the educational opportunities that are offered to learners. Rural districts in particular suffer from large numbers of disadvantaged and under-performing schools. Similarly, district offices vary in terms of their level of efficiency and their understanding of what they are required to do.

In short, the recommendations are that provinces should adopt a two-tiered management structure consisting of districts and circuits. Districts should have no more than 300 schools and circuits a maximum of 30 schools. Furthermore, districts should be staffed in recognition of the number of disadvantaged schools they serve and the distances travelled to reach them. This clearly has far reaching implications for KwaZulu-Natal in that it would require an additional eight districts to be created with a much more systematic approach to their staffing and resources. Similarly, it would require the removal of one of the three current administrative tiers (what are referred to as circuits in KwaZulu-Natal with approximately 150 schools in each). The Department is currently considering the implications of the document and has undertaken an extensive school mapping exercise to assess its practicality and affordability.

3.3 Poverty profile of districts

The information used for this brief socio-economic profile is primarily the 2001 Census. Although this dataset is now several years out of date, it remains the best source of disaggregated socio-economic data for the province. The purpose of this section is mainly to highlight differences

1 Working Document towards a Draft National Policy on the Organisation, Roles and Responsibilities of Education Districts, National Department of Education, Pretoria as at July 2008.

2 *Ibid.*

3 *Ibid.*

between districts in terms of their population and poverty profiles. This provides a context for the delivery of education in the province.

3.3.1 Population

According to the 2001 Census, there were approximately 9.4 million people living in KwaZulu-Natal in 2001. One third (3.0 million) of these lived in eThekwini, and a further million in Umgungundlovu, which includes Pietermaritzburg. Although the proportion of the population aged 7 to 18 was 29%, there were marked differences between districts. In the predominantly urban districts, children of school-going age represented around one-quarter (23 – 27%) of the total population whereas in areas such as Zululand or Umkhanyakude it was more than a third (35%) (see Table 1).

Table 1: Proportion of total population aged 7 to 18 (2001) and estimated population 7 to 18 (2008)

District	% of District population aged 7 to 18, Census 2001	Estimated population aged 7 to 18, 2008	Proportion of total provincial population aged 7 to 18 per district
Amajuba	29%	153 000	5%
eThekwini	23%	804 000	26%
Ilembe	30%	186 000	6%
Sisonke	32%	163 000	5%
Ugu	32%	248 000	8%
Umgungundlovu	27%	270 000	9%
Umkhanyakude	35%	226 000	7%
Umzinyathi	34%	180 000	6%
Uthukela	32%	235 000	8%
Uthungulu	31%	313 000	10%
Zululand	35%	306 000	10%
		3 084 000	100%

It was estimated that the current population of KwaZulu-Natal had reached 10.6 million by 2009[4], a figure which included the addition of Umzimkhulu which was incorporated from the Eastern Cape. The growth rate of the South African population has slowed significantly since 2001 and Statistics South Africa notes that KwaZulu-Natal now has the lowest life expectancy at birth of all provinces[5]. Fertility rates have declined as a result of HIV, but may recover depending on the uptake of treatment options such as Nevirapine for pregnant HIV-positive women.
Table 1 shows the proportion of total population aged 7 to 18 by district in 2001 and an

4 Department of Water Affairs. *Population Profile for District Municipalities in KwaZulu-Natal*. Estimated current population based on Census 2001 population and grown annually with Statistics SA population growth formula.

5 Statistics South Africa. (2007). *Mid-year population estimates 2007*. www.statssa.gov.za

estimate of the current population that would be expected to be of school-going age in 2008[6]. eThekwini leads the way with an estimated 0.8 million 7 to 18 year olds, followed by Uthungulu (Empangeni), with 313,000 and Zululand with 306,000. The smallest district is Amajuba, with just 153,000. As stated earlier, it unclear whether the staffing of district offices in KwaZulu-Natal is commensurate with the numbers of learners and schools that they have to serve.

3.3.2 Poverty

Since communities play a vital part in supporting the provision of education, it is important to review the socio-economic environment in which those communities exist. In order to undertake a comparison of districts, a socio-economic poverty index was calculated for education districts by combining various social and economic criteria from the 2001 Census[7].

The following criteria were used to create the index:

- Functional literacy - percentage of the adult population that has attained at least grade 6 schooling, divided by the total number of adults (age 20 and above)
- Per capita income - total annual income divided by the total population
- Percentage of households with electricity (supplied by Eskom or a local municipality)

Each criterion was ranked from worst to best, given equal weight and combined into a single standardised index ranging from 1 (most poor) to 0 (least poor). The score measures relative rather than absolute disadvantage within KwaZulu-Natal, and compares the performance of districts to one another and not to a defined national benchmark.

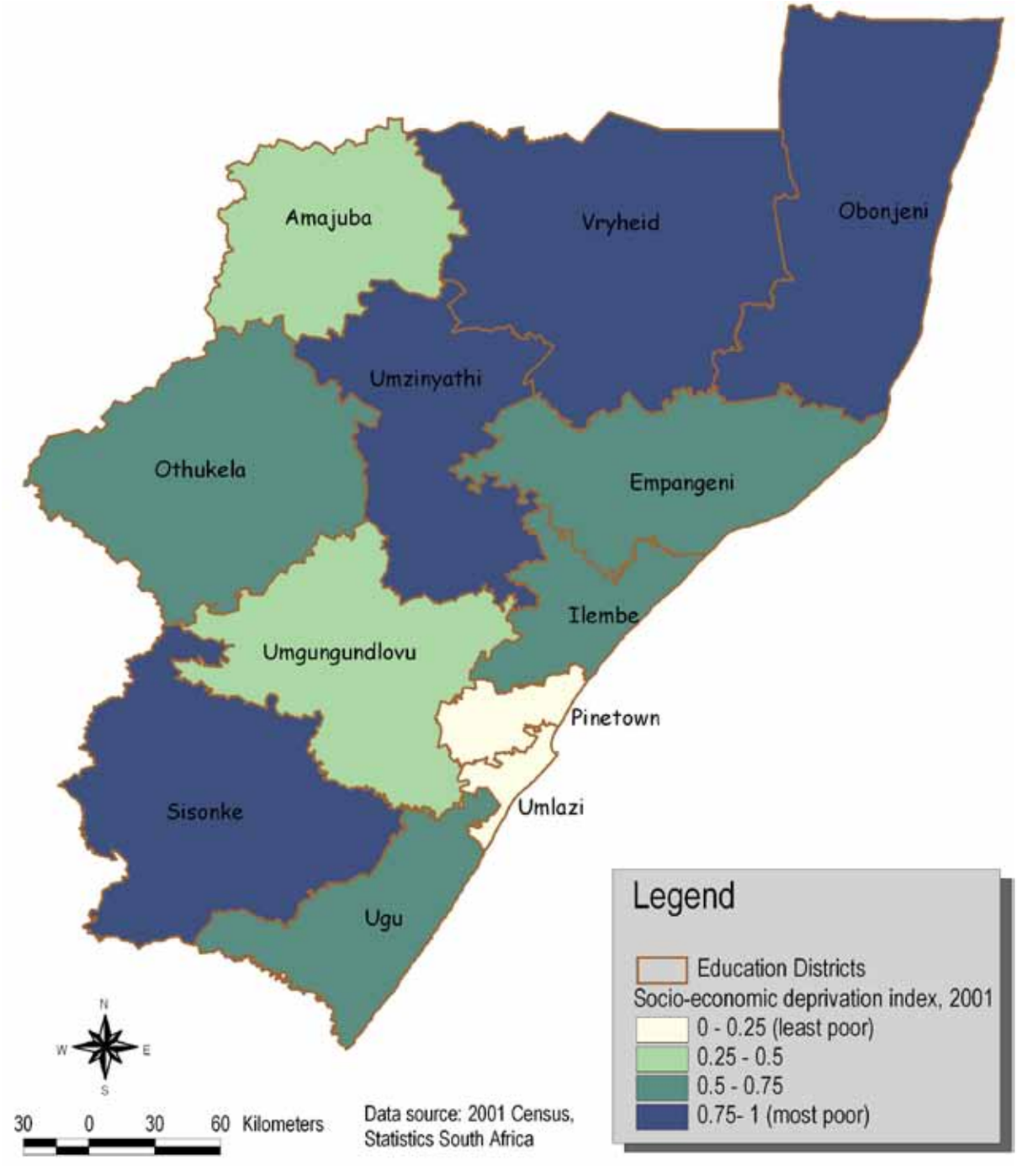
Using this index, the most disadvantaged district (see Map 2) in KwaZulu-Natal was Obonjeni with a score of 1.0, followed by Umzinyathi with 0.96 and Vryheid with 0.84. These districts are all in the north of the province, and cater for around 25% of all learners. The socio-economic context from which learners in these districts attend schools clearly calls for greater developmental assistance and school support. Learners are less likely to be commencing their school careers in a state of readiness and more likely to experience home circumstances that are not conducive to learning.

At the other end of the poverty spectrum are the districts of Umlazi, Pinetown and Umgungundlovu, which, in comparative terms have much lower poverty index scores and could be considered better off in provincial terms. These districts, which cater for around one third of all learners in the province, are clearly not uniformly better off. Each one represents a

6 The age group 7 to 18 usually corresponds to grades 1 to 12 in the schooling system although many learners start at age 6 (and finish aged 17). Many more learners repeat one or more grades and end up completing their schooling aged 19 or older.

7 See EduAction. (2005). *Review of Education Indicators 1995 – 2004*. Eastern Cape Department of Education

Map 2: Socio-economic deprivation in KwaZulu-Natal, by education district, 2001 Census



microcosm of the disparities that are typical of the South African education system, namely a proportion of well managed, productive schools and a large number of schools that could best be described as dysfunctional.

3.4 Schools by number and type

3.4.1 Number of schools

KwaZulu-Natal has the second largest number of public ordinary schools in South Africa. According to the Department's master list, there were 5,945 functioning public schools in 2009[8]. There were also an additional 221 independent schools[9], together with 68 LSEN (learners with special educational needs) institutions for learners with special education needs. A breakdown of the number of public and independent ordinary schools by district is shown in Table 2 .

Table 2: Public ordinary, LSEN and independent schools per district

District	Public ordinary	LSEN	Independent schools
Amajuba	242	6	6
Empangeni	661	7	14
Ilembe	429	2	3
Obonjeni	538	2	6
Othukela	444	3	12
Pinetown	499	11	45
Sisonke	444	1	6
Ugu	491	3	16
Umgungundlovu	503	9	43
Umlazi	461	20	56
Umzinyathi	481	2	6
Vryheid	752	2	8
Total	5 945	68	221

Table 2 illustrates the degree of variation between districts in terms of the number of schools that they administer. The largest district, Vryheid, administers three times as many schools as the smallest, which is Amajuba. A further complication for some of the larger districts such as Vryheid and Empangeni is that many of their schools are in remote rural locations. Either an effort should be made to reduce the size of districts in keeping with the proposed national

8 Functioning public ordinary institutions, which excludes independent schools, pre-primary and LSEN institutions

9 Does not include independent pre-primary institutions of which there were 142

norm of 300 schools as discussed earlier, or a staffing norm should be applied where districts are staffed in accordance with the number of schools they serve, sensitive to the distances that support staff have to travel to reach schools.

Note that Umlazi district is only eighth largest in terms of numbers of schools, yet has the second largest number of learners in the province. This hints at one of the more significant fiscal challenges of education provision in KwaZulu-Natal, which is the large number of small schools distributed throughout mainly rural areas, each of which needs a package of basic services such as electricity and water as well as properly constructed classrooms, in order to function effectively.

3.4.2 Schools by type

Public ordinary schools in KwaZulu-Natal are divided into three different types:

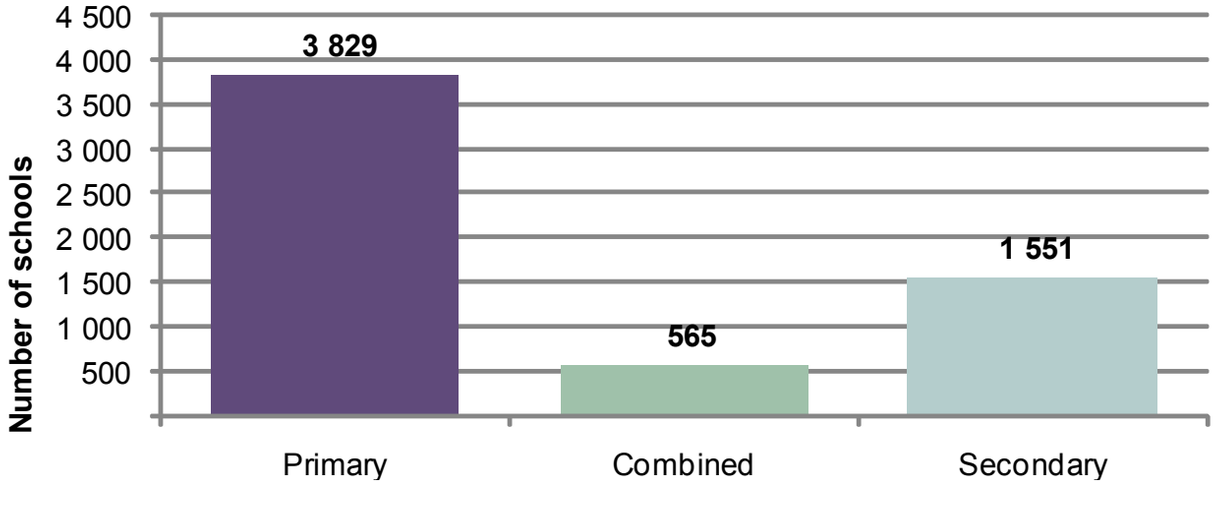
Primary = schools that offer education from Grade R (0) through to Grade 7

Secondary = schools that offer education from Grade 8 through to Grade 12

Combined = schools that offer a combination of grades across the primary and secondary levels

Primary schools constitute 64% of schools in the province, followed by 10% that are categorized as combined and 26% as secondary schools. The majority of combined schools offer grades R through to 9. Only one-fifth offer the full complement of grades R through to 12.

Figure 2: Number of public ordinary schools by type in KwaZulu-Natal



3.5 FET colleges

The KwaZulu-Natal province has nine multi-campus Further Education and Training (FET) Colleges. They are:

- Mthashana FET College (Vryheid)
- Umfolozi FET College (Zululand)
- Majuba FET College (Newcastle)
- Mnambithi FET College (Ladysmith)
- Elangeni College For FET (Pinetown)
- Coastal KZN F.E.T. College (Durban South)
- Thekwini FET College (Durban)
- Umgungundlovu FET College (Pietermaritzburg and Midlands)
- Esayidi FET College (Port Shepstone)

In the budget allocation for 2010, the colleges constituted a financial commitment of R 561.2 million. This is a sizeable part of those budget allocations. However, recent policy shifts take this component of the education budget out of the provincial ambit and therefore this report does not examine this sector in detail.

The FET colleges have undergone significant changes over the past decade. Prior to the reforms of the education system in the 1990s and 2000s, the technical and vocational education and training (TVET) landscape consisted of an apprenticeship system with significant in-house training facilities, specifically in the large state-owned utilities such as ESKOM, South African Harbours and Railways (later named TRANSNET which included ports, the national airline, railways, petroleum and gas transportation and other logistical operations), the Post Office, SASOL, ISCOR and others, as well as in the private sector. Small and medium enterprises would also often take on apprentices but the majority of the training happened in the large state-owned industries. Technical colleges were established to provide theoretical training for the apprentices and typically apprentices would spend blocks of three months completing courses that were designated as N1-N6. A small number of technical high schools offered a combination of academic school subjects and technical subjects at N1-N3 levels that enabled pupils to complete their Senior Certificate (commonly known as the Matric) school leaving certificate with a vocational orientation. Technical high schools tended to carry a degree of stigma within the white South African community and were regarded as schools catering for children with behavioural or learning difficulties. Agricultural high schools provided a combination of academic and agricultural subjects, and unlike technical high schools, many of these schools were highly regarded in the agricultural sector and were well supported by farmers. At the level of higher education, technikons were established in the 1970s to offer post-secondary advanced technical and vocational training up to a diploma and Bachelor of Technology level. These

were equivalent to the British Polytech. Alongside these institutions there were a number of specialized colleges that provided training for careers in teaching, nursing, agriculture, police, and the military. These colleges usually offered a range of diplomas and many had high status in their specific sectors.

With the advent of the first democratic government the entire education and training system was re-engineered, driven in large part as a consequence of the adoption of a National Qualifications Framework (NQF) that sought to place all qualifications in a single system, with high levels of mobility within the system. The NQF divided the education system into three bands, with most of the TVET programmes falling into the Further Education and Training (FET) Band. This level corresponded to the last three grades of schooling, and consequently TVET has formally ceased to be a post-secondary system. The reorganization of the system as described above has had a number of intended and unintended consequences.

Firstly, the apprenticeship system has been replaced by a learnership system that is managed by Sector Education and Training Authorities (SETAs). The success has been uneven and there has not been significant buy-in by many companies since learnerships are very bureaucratic and require extensive commitment from the company. Secondly, the curriculum has been changed and the NATED 550 N1-N6 subjects are being phased out. The replacement has been the introduction of the National Certificate (Vocational) or NCV at NQF levels 2, 3 and 4. This has left a question mark about the higher level training that technical colleges used to offer which now falls into the Higher Education band. It has also fundamentally changed the type of learner being enrolled in colleges as they are now recruiting learners from the age of 15 rather than the typical college student being 18 or older. The intention was that the bulk of the work of colleges should be the NCV, and this could be supplemented with skills development programmes geared towards learnership students. In 2010 the total enrolment across the nine colleges of NCV students was just over 22,500 students with a further 55,000 students enrolled for skills courses or old N4-N6 programmes.

After the installation of the new government in 2009 there have been rapid and significant shifts in policy. The new minister of Higher Education and Training has indicated his intention to reverse the emphasis away from the NCV towards a reinstatement of the apprenticeship model and he wishes to retain the so-called N courses. Furthermore, colleges are seen as a priority for addressing skills shortages and there is an intention to expand the enrolment rapidly.

More importantly from a provincial budget perspective was the change in governance that came about as a consequence of the FET Act 2006. This shifted the colleges' governance to a council and changed the status of college employees from being provincially funded CS educators to being college employees. In effect this shift has removed the college staff salaries from the provincial budget. The more recent national realignment of colleges under the Department of Higher Education and Training's (DHET) jurisdiction further removes colleges from provincial responsibility and the property and other assets will presumably transfer to the college under the DHET. In the light of this shift, there is limited value in including colleges into the sets

of recommendations from a budgeting viewpoint. However, the colleges remain a crucial provincial educational resource and can play a role specifically in the provision of certain levels of educators.

Colleges are key to the provision of technical skills. But colleges also play a role in offering qualifications up to the Higher Certificate and Diploma level that address a key gap between schools and higher education. They are also increasingly able to respond to specific skills-development needs and thus the public sector is a key 'client' of the more entrepreneurial colleges. In particular, some of the colleges in KZN offer NCV (Education and Development) that focus on early childhood education practitioners. ECD has been identified as a crucial intervention point, and this training should therefore be included in a more systematic plan for increasing the quality of ECD practitioners. Direct funding for bursaries and a partnership with universities in order to ensure pathways into higher qualifications could be a key leverage point for deepening quality in this sector. FET Colleges are also involved in the training of ABET lecturers and therefore can play an important role in providing educator training for this sector.

3.6 School enrolment trends

The total enrolment for public ordinary schools in the province for each year from 1997 to 2009, Grades 1 to 12 inclusive[10], was as shown in Table 3. The trends are illustrated graphically in Figure 3. A short glance at Table 3 and Figure 3 reveals that there have been fluctuations in enrolment during the 13 year period. Enrolment remained around 2.6 million learners for eight years. It peaked in 2003, where it reached 2.74 million, but in subsequent years it has declined to the present figure of around 2.61 million, a reduction of 136 000 learners since 2003. In the last few years enrolment has stabilised, showing relatively little fluctuation from one year to the next. This is encouraging and hopefully indicates consistent coverage of schools in the province by the Annual Survey and an improvement in the Department's EMIS (Education Management Information System).

What is clear from Figure 3 is that although enrolment in recent years has not changed much from year to year, the trend is downwards. This is due both to school closures and fewer learners in existing schools. This is also despite the fact that the department acquired an additional 162 schools in 2007 that were in the Umzimkhulu District[11] – a gain of approximately 100,000 learners. An analysis of those schools that have consistently supplied enrolment data for each year since 1997 (4,197 schools) shows an overall decline of approximately 6% in enrolment over the 13 year period.

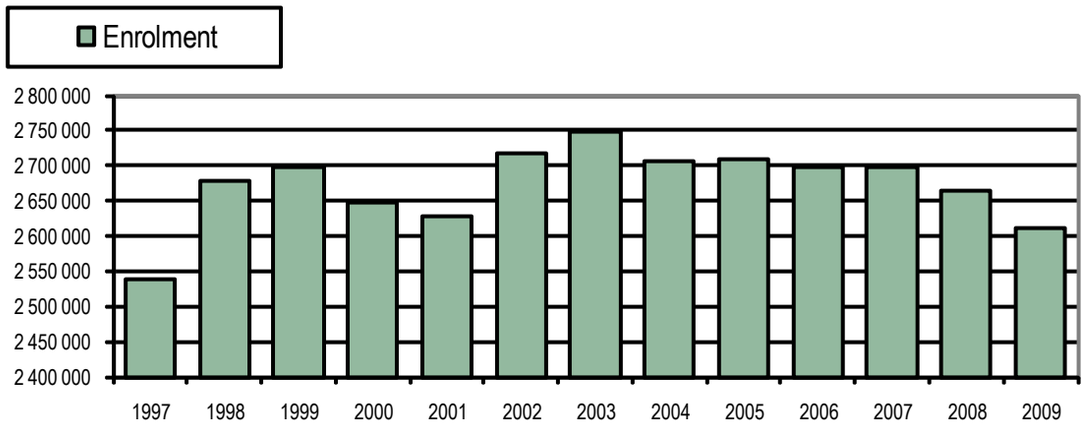
10 Based on information in the Department's Annual Survey and SNAP databases.

11 20 schools in the Matatiele District were transferred to the Eastern Cape Department of Education.

Table 3: Total enrolment in public ordinary schools grades 1 to 12, KwaZulu-Natal 1997 to 2009

Year	Enrolment	Year on year change
1997	2 539 775	
1998	2 679 359	5.5%
1999	2 698 207	0.7%
2000	2 647 893	-1.9%
2001	2 628 526	-0.7%
2002	2 716 430	3.3%
2003	2 748 915	1.2%
2004	2 705 369	-1.6%
2005	2 709 078	0.1%
2006	2 697 163	-0.4%
2007	2 698 731	0.1%
2008	2 663 803	-1.3%
2009	2 612 065	-1.9%

Figure 3: Total enrolment in public ordinary schools grades 1 to 12, KwaZulu-Natal 1997 to 2009



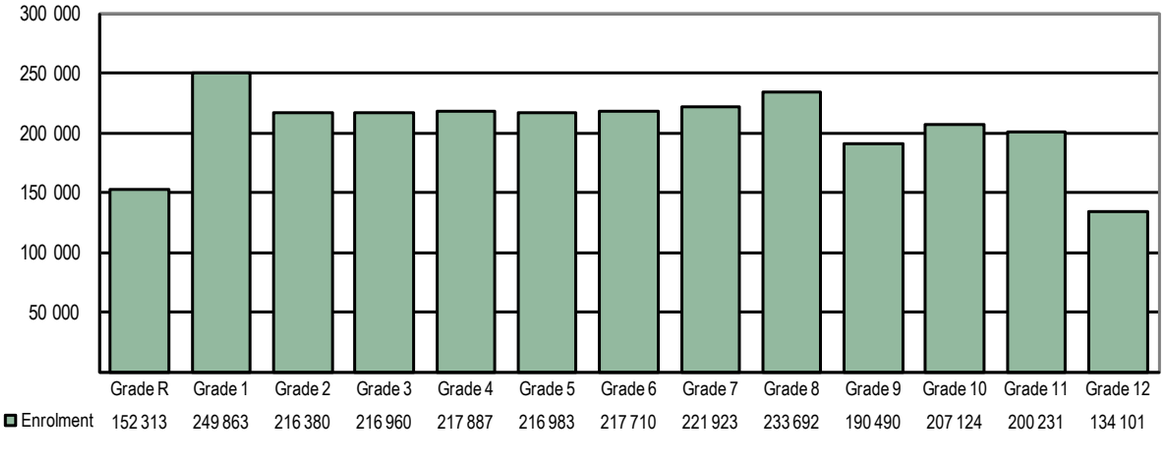
Some historical changes in enrolment may have more to do with data quality issues than major demographic trends. There have been instances in the past where data was not captured completely, survey forms were not returned and/or enrolment data was not properly verified. A continuing and frustrating theme in the Department's planning process is the extent to which the learner enrolment data supplied by schools is either accurate or inflated. As stated before, independent audits of enrolment in KwaZulu-Natal indicate that some schools may routinely

inflate their enrolment figures in order to obtain additional teaching posts or other benefits. This practice plays havoc with budgeting and planning, distorting resource allocation as well as post provisioning. Some provinces, notably the Free State, have taken steps to prosecute principals who supply false (inflated) enrolment data. This has led to them becoming one of the better provinces in terms of the accuracy of their enrolment data, with major benefits for planning as well as significant cost savings.

3.6.1 Enrolment by grade

Figure 4 shows enrolment by grade for the province, based on the department's Annual Survey data for 2009. Although enrolment in grade R (referred to as the Reception grade) is low (152,000) in comparison to other grades, it represents the fastest growing proportion of the schooling population in the province. This follows a decision by the national department of education to integrate grade R into mainstream schooling - the target being that by 2010 all public primary schools offer grade R and are funded accordingly. In 2009, 86% of primary schools in KwaZulu-Natal offered grade R. The demand for educators in this grade is likely to be strong for the foreseeable future as schools formalise their provision of grade R and enrolment increases.

Figure 4: Enrolment by grade in public ordinary schools, 2009



In 2005, grade R enrolment in the province was 90,000 and hence has shown a 70% increase to its current figure of 152,000 in just four years. A proportion of the increase can be accounted for by former grade 1 learners who used to repeat grade 1 as they were not yet ready to proceed to grade 2.

Grade 1 has the highest enrolment of all grades, accounting for 9% of total enrolment and nearly a quarter of a million learners. The reason why there is such a sharp decline in enrolment from grade 1 to grade 2 (33,000 learners) has been a source of much consternation for education analysts. Some have suggested a sudden dropout of learners after grade 1, but this is unlikely.

What is more probable is that learners in some schools are 'cycling' in grade 1 until ready to proceed and that grade 1 has in effect been fulfilling the intended purpose of Grade R, which is to prepare learners for schooling. One analyst estimated that grade 1 enrolment is 'perhaps 30% higher than the population of appropriate age, because grade 1 has traditionally been 'bloated' due to the absence of ECD opportunities'[12].

The rollout of grade R will hopefully help resolve this problem and lead to a much more even transition in learner numbers between grade 1 and the rest of the primary school grades. Enrolment from grades 2 to 7 is fairly consistent, averaging 217,000 learners per grade.

There are much greater grade to grade fluctuations in the secondary phase (grades 8 to 12). Between grades 8 and 9 for example, there is a difference of 43,000 learners. This implies that grade 8, the first grade of the secondary phase, may be performing a similar function to grade 1 with a high proportion of learners routinely having to repeat this grade before proceeding to grade 9 (which is borne out by the repetition data discussed later in this report).

In grade 9, there were about 16,000 less learners enrolled than in grade 10. This difference may be due to a repetition bottleneck in grade 10 as learners enter the FET phase of their schooling. In grades 11 and 12, enrolment tailed off to 200,000 and 134,000 learners respectively. Since only grades 1 to 9 are compulsory, one would expect to find lower enrolment in grades 10 to 12 than in earlier grades (notwithstanding the high repetition in grade 10). After grade 9, learners can opt to leave school to pursue work opportunities or technical training (although enrolment at FET colleges does not currently account for this).

The huge difference between enrolment in grade 1 and grade 12 is worthy of comment since it provides an indication of how much shrinkage (or inefficiency) there is in the schooling system. The number of learners in grade 12 is only 50% of those in grade 1. This will shrink further as a proportion of learners in grade 12 sit the Matric exam and a smaller proportion pass. Although one can't make direct comparisons between grades 1 and 12 in the same year (a 12 year historical analysis would be needed), it is sufficient to reflect that only a small proportion of those who start school in grade 1 will make it through with a Matric pass. In between lies a series of hazards including poor teaching and learning conditions, repetition, dropout and, for some, failure at the final hurdle.

3.6.2 Enrolment by district and grade

Once again, there are significant differences between districts in terms of the proportion of learners enrolled in each grade. There is a striking difference between Umzinyathi district for example, where grade 1 enrolment is 2.5 times larger than grade 12 and Umlazi where it is only a third larger than grade 12. Table 4 below shows that the proportion of total enrolment in

12 Crouch, L. "Fruitless debates based on bad information". DoE Website.

Umzinyathi district was highest in grade 1 (11%), declining to just 4.4% in grade 12. In Umlazi, the highest proportion of total enrolment was in grade 8 (10.8%) and lowest in grade 12 (6.5%).

The reasons for these differences are not necessarily easy to determine. The high proportion of learners in grade 1 in Umzinyathi district in 2009 may be due to recent population increases creating a bulge in learner numbers. This is not borne out by historical enrolment or demographic trends, which indicate that Umzinyathi has below average rates of population growth[13]. An alternative explanation is that a much higher proportion of learners in Umzinyathi district repeat grade 1 than in Umlazi district, creating a bottleneck. This more plausible explanation is not supported by reported repetition data (see Table 8), which indicate that Umzinyathi's grade 1 repetition rate is lower than in Umlazi (5% versus 6%). One can only conclude that either repetition rates in Grade 1 in Umzinyathi are systematically under-reported or that the enrolment is an inaccurate reflection of actual learner numbers.

Table 4: Proportion of total enrolment by grade 2009: comparison of Umlazi and Umzinyathi districts

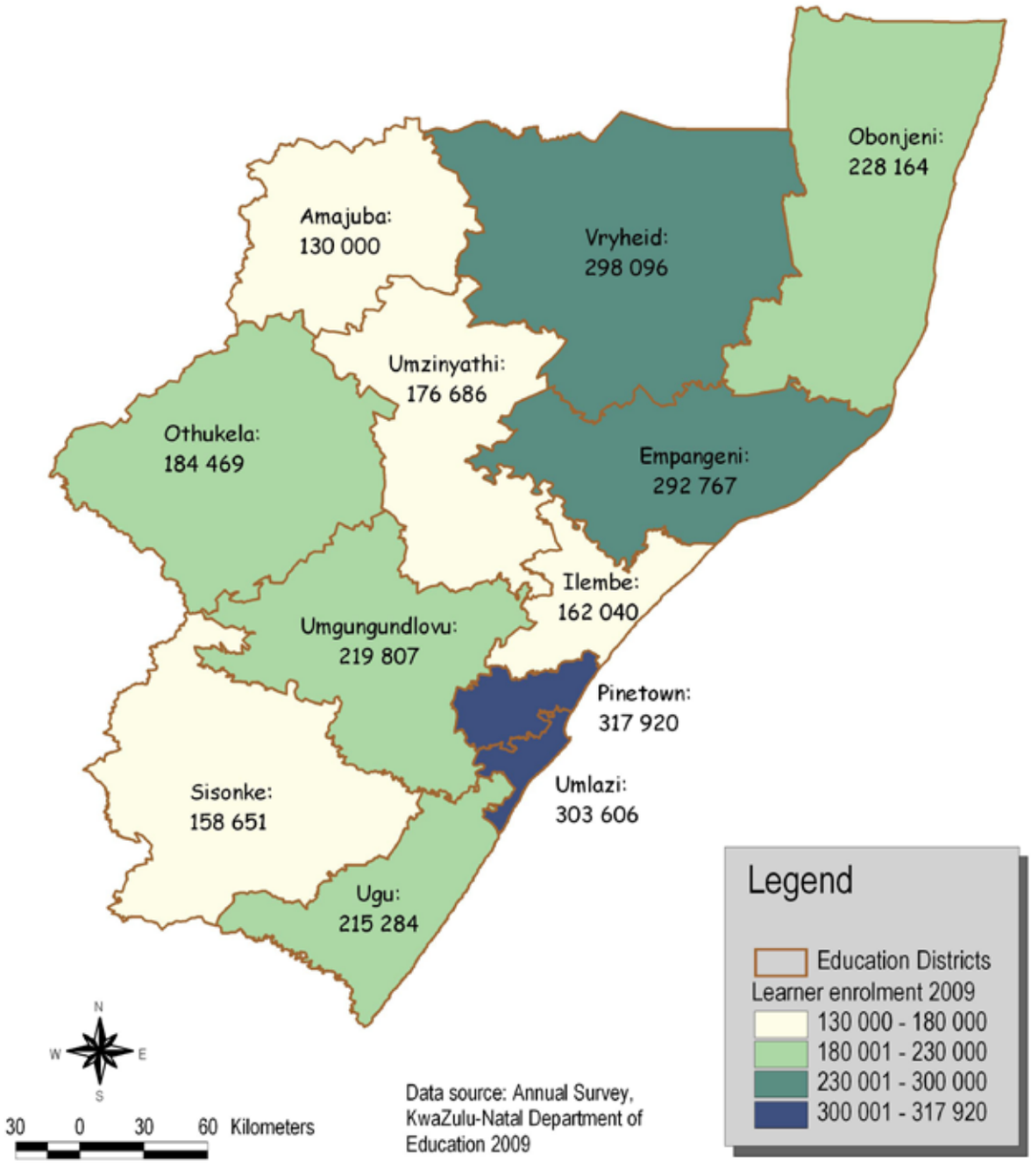
Year	Enrolment	Year on year change
1997	2 539 775	
1998	2 679 359	5.5%
1999	2 698 207	0.7%
2000	2 647 893	-1.9%
2001	2 628 526	-0.7%
2002	2 716 430	3.3%
2003	2 748 915	1.2%
2004	2 705 369	-1.6%
2005	2 709 078	0.1%
2006	2 697 163	-0.4%
2007	2 698 731	0.1%
2008	2 663 803	-1.3%
2009	2 612 065	-1.9%

3.6.3 Learners by district

Map 3 shows the distribution of learners enrolled in public ordinary schools per district in 2009. The highest enrolment is in the two mainly urban districts of Pinetown and Umlazi both of which have over 300,000 learners. The next highest is Vryheid with 298,096, followed by Empangeni with 292,767. The smallest district is Amajuba, which had 130,000 learners, followed by Sisonke with 158,651.

13 Department of Water Affairs. *Population Profile for District Municipalities in KwaZulu-Natal.*

Map 3: Total learners per district, Annual Survey 2009



3.6.4 Learners by age: over-age and under-age enrolment

A large proportion of learner enrolment in KwaZulu-Natal is above the appropriate age for the respective grade. Nearly 70% of learners in the province start primary school (grade 1) aged six. This is fine if these learners are sufficiently prepared and able to proceed through the grades without repetition or dropout. What is more problematic is the problem of over-aged learners, who due to repetition are often two to three years older than their classmates. The temporary application of an age-grade admission policy a few years ago, since abandoned, prevented learners who were younger than 7 from entering grade 1, but high rates of repetition in later grades continue to result in large numbers of over-aged learners.

Table 5 shows the percentage of learners in each grade in the year 2009 that were either below age, appropriately aged or over-aged. The percentage of below-aged learners is calculated by totalling those learners who were younger than the appropriate age for that grade (e.g. less than age 9 in grade 4), and dividing this by the total enrolment in the grade. Similarly, the percentage of over-aged learners is calculated by dividing those learners who are older than the appropriate age for that grade (e.g. older than age 17 in grade 12) by the total enrolment for the grade. Currently the admission age for a learner to grade 1 at a public school is age 5 turning 6 by 30 June in the year of admission. Parents may opt to send their children a year older, namely 6 turning 7 in the year of admission[14].

Since most learners commence grade 1 aged 6, the proportion indicated as 'below appropriate age' in Table 5 is only 5%. Some may turn 6 during the course of the school year. The fact that many learners start before age 7 is not a significant problem unless they are admitted to school before they are ready and are forced to repeat several grades. If they do have to repeat a grade, class sizes will increase and the learning experience of all other learners will be affected. The data on enrolment by grade (see Figure 4 on page 40) implied that grade 1 was a bottleneck with high repetition rates. One can only assume that many learners are starting grade 1 before they are ready and hope that the introduction of grade R in all primary schools will remedy this over time.

Of far greater consequence is the percentage of over-aged enrolment in KwaZulu-Natal. It starts at 42% in grade 1 and climbs steadily until it reaches 78% by grade 10. There is then a small decline to 74% in grade 11 and 68% in grade 12. Only one fifth of enrolment is appropriately aged in secondary schools, with over-age enrolment averaging 74% of the total.

To illustrate the implications of this, it implies that a 17 year-old in a grade 12 class of 40 learners in a 'typical' KwaZulu-Natal school might well be sharing the class with three learners aged 16, nine other learners aged 17, and 27 learners aged between 18 and 25+. This no doubt makes for a problematic teaching and learning environment, particularly in mixed sex classes.

14 National Department of Education. http://www.education.gov.za. Response to question: "What is the admission age for Grade 1?"

Table 5: Percentage of learners enrolled in 2009 that were below appropriate age, appropriately- aged and over-aged

Grade	Age	Below appropriate age for grade	Appropriate age for grade	Above appropriate age for grade
Grade 1	6	5%	53%	42%
Grade 2	7	5%	40%	55%
Grade 3	8	5%	36%	59%
Grade 4	9	6%	33%	62%
Grade 5	10	6%	30%	64%
Grade 6	11	6%	28%	67%
Grade 7	12	5%	26%	69%
Grade 8	13	5%	24%	71%
Grade 9	14	4%	21%	76%
Grade 10	15	4%	18%	78%
Grade 11	16	5%	21%	74%
Grade 12	17	7%	25%	68%
Average		6%	32%	62%

Table 6: Percentage of learners enrolled in Grade 12 in 2009 that were below appropriate age, appropriately- aged and over-aged

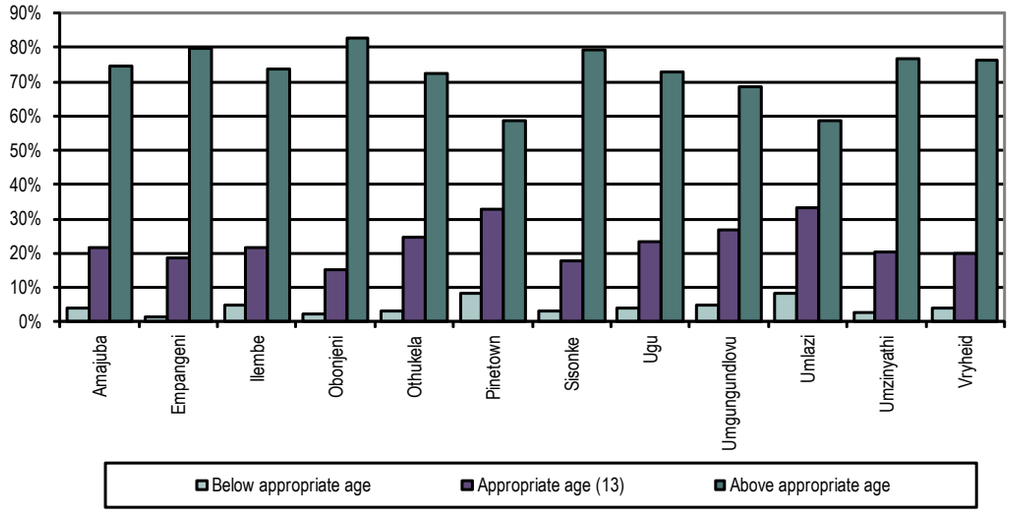
District	Grade	Enrolment aged 16 or younger	Enrolment aged 17	Enrolment aged 18 to 25+
Amajuba	12	6%	24%	70%
Empangeni	12	4%	21%	74%
Ilembe	12	7%	22%	71%
Obonjeni	12	5%	16%	79%
Othukela	12	3%	24%	73%
Pinetown	12	12%	32%	56%
Sisonke	12	4%	20%	76%
Ugu	12	6%	23%	71%
Umgungundlovu	12	8%	28%	64%
Umlazi	12	11%	34%	54%
Umzinyathi	12	7%	23%	70%
Vryheid	12	5%	21%	74%
Total	12	7%	25%	68%

Table 6 shows the proportion of learners by district in grade 12 that were 16 or less, 17 and 18 to 25+. In all districts, the largest proportion of learners studying for their Matric exams were age 18 and above. The highest proportion of age appropriate learners was in the predominantly urban districts of Umlazi, Pinetown and Umgungundlovu.

In Sisonke and Obonjeni districts, over three quarters of learners in grade 12 were over age in 2009. In Obonjeni district, which represents the worst case, 21% of learners in grade 12 were aged 19, 14% were age 20 and a further 21% were 21 years or older. This surely creates a difficult learning and teaching environment and highlights one of the many difficulties faced by schools in some rural districts. It may also be a contributing factor to the high rates of teenage pregnancy reported by schools.

Figure 5 provides a graphical illustration of how learners in Grade 8 vary by age from district to district. In Umlazi and Pinetown districts, roughly 40% of learners are between the ages of 12 and 13. Obonjeni, Sisonke, Umzinyathi and Vryheid have a different experience, having to deal with learners in grade 8 that range in age from 12 right up to 20. In Sisonke district for example, 14% of grade 8 learners were age 17 or above.

Figure 5: Percentage of learners enrolled in grade 8 in 2009 that were under-aged, appropriately-aged and over-aged



3.7 Performance indicators

3.7.1 Repetition

An important indicator of the efficiency of the education system is the repetition rate (RR). It measures the extent to which learners repeat grades and is calculated by dividing the number of learners repeating a specific grade by the enrolment in that grade for the previous year. High repetition rates give rise to a number of problems, most notable of which is increased class sizes. A repetition rate of 15% in a class of 34 learners means that there are five extra learners in the class who are repeating the grade. If learners repeat grades more than once, the problem of over-aged learners compounds difficulties.

The information on number of repeaters is supplied by schools as part of the Annual Survey for Ordinary Schools (see Data Source), repeaters being defined as "learners who are in the same grade as they were last year"[15].

Table 7 and Figure 6 show the repetition rate per grade for KwaZulu-Natal schools in 2009. The average repetition rate for all grades was 6%. In the primary phase, the main bottleneck was grade 1 where the repetition rate is 7%. The lowest repetition in the primary phase occurred in grade 7 where the repetition rate is 7%. The lowest repetition in the primary phase occurred in grade 7 where it was 2%.

In the secondary phase, repetition rates were considerably higher and tended to peak in the higher grades, particularly grades 10 and 11. In 2009, 15 out of every hundred learners in the province were repeating grade 11. There may be some 'gate-keeping' occurring, which refers to the practice of schools keeping learners back until they are deemed to be ready to proceed to the next grade. Since grades 10 and 11 precede Matric, some schools may be attempting to 'protect' their pass rates by ensuring that only learners considered likely to pass Matric are allowed to enter grade 12.

The repetition rates go some way to explaining the 'bulges' in learner enrolment that occur in grades 1, 8 and 10 (see Enrolment by grade on page 40). Disparities are often masked at a provincial level though, so it is useful to disaggregate repetition rates by district, to see whether there are significant differences. The bulges in these grades can partially be explained by the National Curriculum policy which allows for an individual learner to repeat once in each phase, and the structure of the schooling system in which primary schools go to the end of grade 7. One would expect there to be lower repetition rates in grade 2, 3, 5, 6 and 9.

15 Province of KwaZulu-Natal, Department of Education – SNAP Survey 2009. Survey Form NEMIS 004B ORD SNAP09-1

Table 7 and Figure 6: Repetition rates by grade, KwaZulu-Natal 2009

Grade	Repetition rate
Grade R	2%
Grade 1	7%
Grade 2	5%
Grade 3	5%
Grade 4	5%
Grade 5	4%
Grade 6	3%
Grade 7	2%
Grade 8	7%
Grade 9	9%
Grade 10	14%
Grade 11	15%
Grade 12	3%
Average	6%

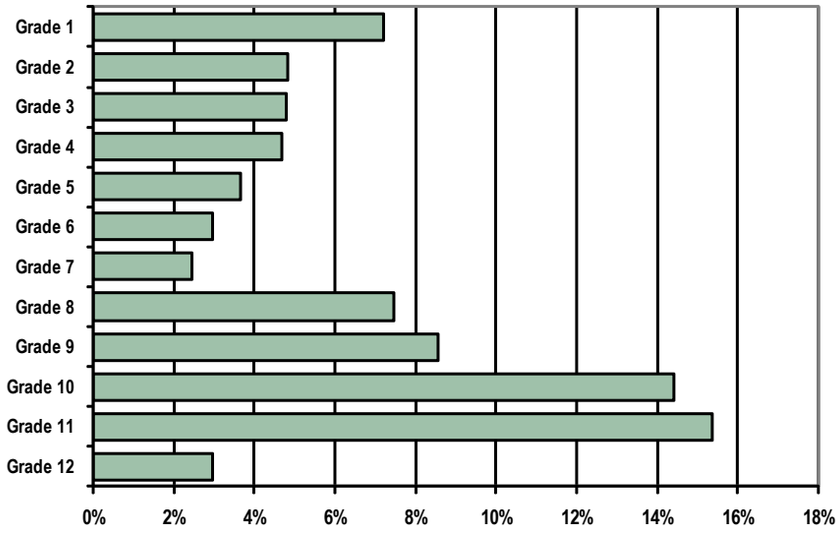


Table 8 shows repetition rates for 2009, disaggregated by district. The highest reported repetition rate for grade 1 was 10%, which occurred in Amajuba and Empangeni districts. Repetition was significantly lower for most districts between grades 2 and 7 except in Sisonke where it remained above 5% right up to grade 7. Repetition climbed a great deal from grade 7 to grade 8, the highest increase being from 3% in grade 7 to 10% in grade 8, which was in Amajuba district.

In grades 10 and 11, some districts were reporting that between a fifth and a quarter of all learners were repeating. In grade 11, repetition peaked at 23% in Amajuba and 18% in Sisonke and Obonjeni. Without any repetition, the average class of 40 learners in grade 11 in the province would be reduced by six learners. These disparities can become self-perpetuating since high repetition rates increase class sizes and stretch teaching resources, thus making it more difficult for learners in the classroom and reducing the amount of available contact time.

The fact that the highest repetition rates are not necessarily occurring (or being reported) in the weakest districts is interesting. As Table 8 shows, the repetition rates in Amajuba were a good deal higher than those of Obonjeni (averaging 9% versus 6%), yet Amajuba's Matric pass rate in 2009 was 60% as opposed to just 49% in Obonjeni (see Figure 13 on page 69). This raises three possibilities. The first is whether repetition is being under-reported in some districts to avoid drawing unnecessary attention to schools. This would explain lower (apparent) repetition rates, implying greater efficiency, but poor pass rates in the final Matric exams. The second possibility is that learners are being forced through the system (automatically promoted) even though they are not ready. This has the effect of lowering repetition rates, but increasing the chance of failure in the final Matric exam. The third possibility is that some principals do not

understand the question in the survey form correctly and opt to leave it blank. In any event, the department should take action and target the weaker districts for assistance as well as implementing standard practices in terms of repetition policy.

Table 8: Repetition rates[16] by district and grade, KwaZulu-Natal 2009

District	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	Average
Amajuba	10%	6%	5%	4%	3%	3%	3%	10%	14%	22%	23%	6%	9%
Empangeni	10%	5%	6%	6%	5%	3%	3%	8%	9%	16%	16%	4%	7%
Ilembe	5%	4%	4%	4%	3%	3%	2%	7%	8%	13%	12%	3%	5%
Obonjeni	5%	4%	5%	5%	4%	3%	3%	7%	9%	15%	18%	3%	6%
Othukela	8%	6%	5%	5%	4%	3%	2%	8%	9%	16%	15%	3%	7%
Pinetown	5%	3%	3%	3%	3%	2%	1%	8%	8%	13%	15%	1%	5%
Sisonke	8%	6%	7%	8%	6%	5%	5%	10%	9%	18%	18%	7%	8%
Ugu	8%	5%	5%	5%	4%	3%	3%	9%	9%	14%	17%	2%	7%
Umgungundlovu	8%	5%	5%	5%	4%	3%	3%	7%	7%	13%	14%	2%	6%
Umlazi	6%	4%	3%	3%	2%	2%	1%	5%	7%	10%	10%	1%	4%
Umzinyathi	5%	4%	4%	4%	3%	2%	2%	5%	6%	12%	16%	6%	5%
Vryheid	9%	6%	6%	6%	4%	4%	3%	8%	9%	15%	16%	3%	7%
Average	7%	5%	5%	5%	4%	3%	2%	7%	9%	14%	15%	3%	

The value of district comparisons such as those shown in Table 8 is that they provide a basis for district-targeted interventions to improve teaching and learning in specific grades. This can only occur though if schools apply repetition policy consistency and supply accurate data.

3.7.2 Learner to educator ratios

The learner-educator ratio is a measure of the average number of learners per educator. It is often cited as a measure of education quality. This is on the assumption that fewer learners per educator improves contact time and enhances their learning experience. It will depend of course on teacher qualifications and experience, as well as many other factors including the availability of learning materials, level of organisation of the school (timekeeping, management), the socio-economic background of the learners and the motivation of the teachers concerned.

Table 9 and Figure 7 show the learner-educator ratio (LER) by school type in KwaZulu-Natal for 2009. The table shows the difference between the gross LER (which includes educators paid by

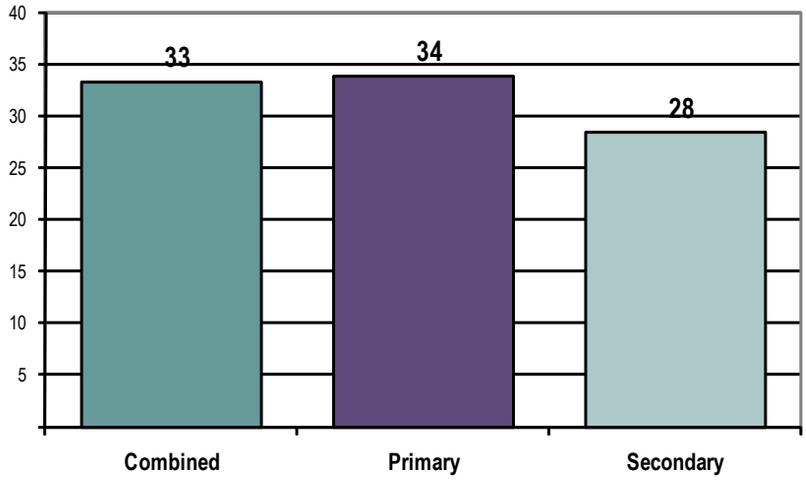
16 Includes learners who were not promoted as well as learners repeating for other reasons

School Governing Bodies) and the adjusted rate which excludes them. For primary schools, the gross LER was 34 and for secondary schools it was 28, but without SGB appointed educators the respective figures were 36 and 30. The LER for the province as a whole in 2009 was 31.8, slightly higher than the equivalent national average for 2008 of 31.4[17]. The provincial LER for state-paid educators only was 33.7, which was the same as the national average for 2008[18]. The 'true' LER for the province may be lower given the propensity for some schools to supply inflated enrolment figures. It is not yet clear what the overall level of enrolment inflation is, but this would certainly tend to exaggerate the need for educators. It is therefore imperative that the department ensures the accuracy of its learner numbers, since they are the primary cost driver in terms of resourcing and staffing of schools.

Table 9: Learner to educator ratios by school type – all educators and state-paid educators only

Level	Learner to educator ratio 2009	State-paid only learner to educator ratio 2009
Combined	33	35
Primary	34	36
Secondary	28	30
Total	31.8	33.7

Figure 7: Learner to educator ratios by school type - all educators, SNAP 2009



17 National Department of Education EMIS. (September 2008) *School Realities 2008*. http://www.education.gov.za

18 *Ibid.*

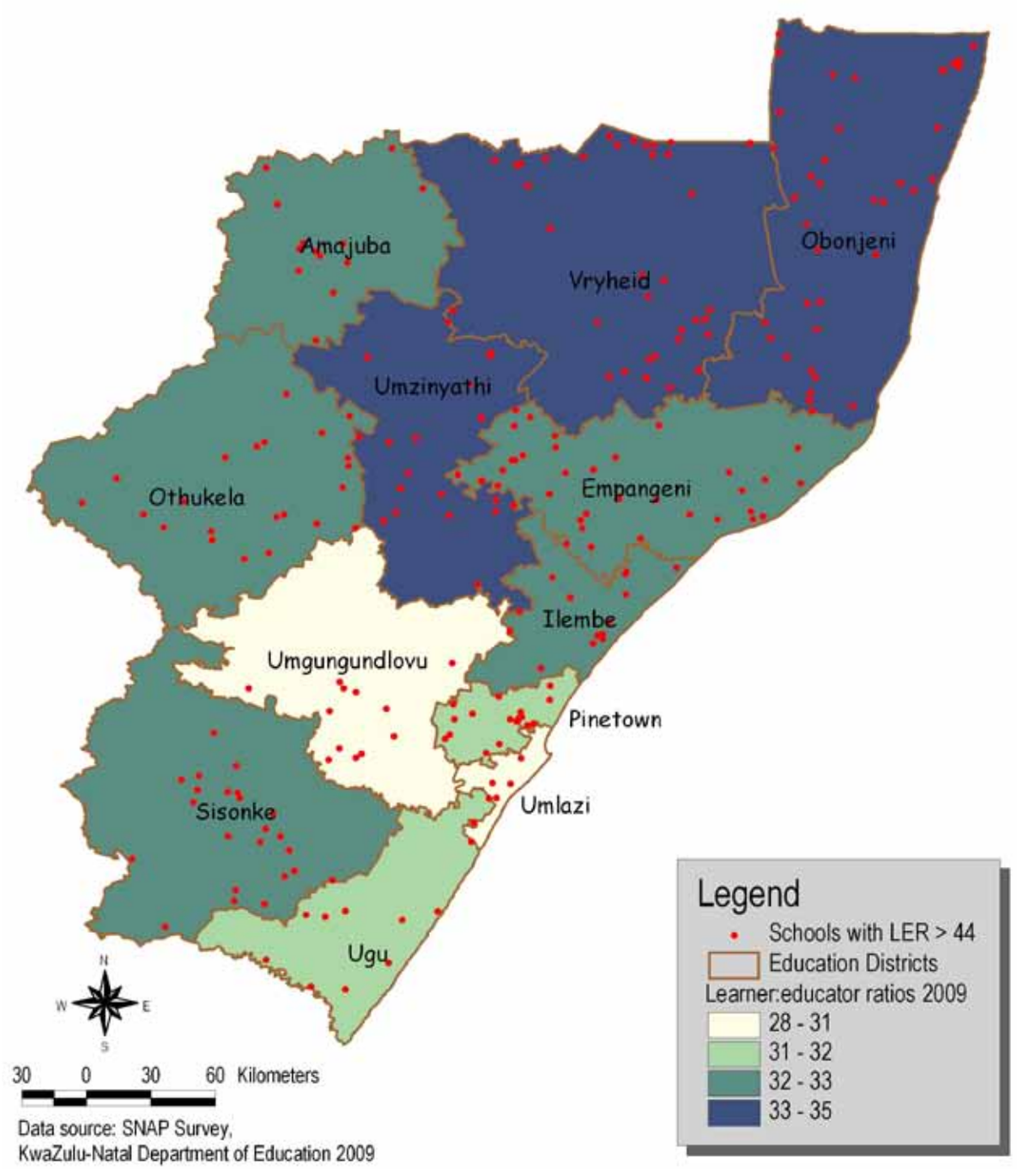
Table 10 shows the LER by district for all educators and for state-paid educators only. The highest LERs are in Obonjeni, Umzinyathi and Vryheid and the lowest are in Pinetown, Umgungundlovu and Umlazi districts. Taken at face value, there are on average six more learners per educator in Obonjeni than there are in Umlazi (LER of 35 compared to 29). Much of this discrepancy would be due to privately paid (SGB) educators who are not paid out of the public purse. The difference is less marked when only state-paid educators are considered with the gap narrowing to a LER difference of 35 to 33. There are only marginal differences between districts in terms of their state-paid learner-educator ratios. Note that although aggregated learner-educator ratios may be useful for broad scale planning at the provincial or district level, they can hide a multitude of disparities at the local level. These disparities can entrench problems of repetition, over-age enrolment and drop-out and take no account of curriculum specialisation, particularly at secondary school level. The LER also does not factor in the degree to which educators in management positions are relieved of teaching, which inflates the real numbers in classrooms.

Table 10: Learner to educator ratios by district – all educators and state-paid educators only, SNAP 2009

District	Learner to educator ratio 2009	State-paid only learner to educator ratio 2009
Amajuba	33	35
Empangeni	32	34
Ilembe	32	33
Obonjeni	35	35
Othukela	32	34
Pinetown	31	34
Sisonke	32	34
Ugu	31	33
Umgungundlovu	30	33
Umlazi	29	33
Umzinyathi	33	34
Vryheid	33	34
Total	31.8	33.7

Map 4 overleaf shows learner-educator ratios by district as well as the distribution of schools with a learner-educator ratio greater than 44. The map is intended to highlight those schools that appear to be facing overcrowding and which may, subject to data verification, need additional educators as a matter of urgency. There were 288 such schools in the province in 2009.

Map 4: Average Learner to Educator Ratios (LERs) per district and the distribution of schools with an LER greater than 44



3.8 Resource targeting, no-fee paying schools and section 21 schools

3.8.1 Introduction

The National Norms and Standards for School Funding (funding norms) were perhaps the most significant recent development in terms of allocation of resources to schools in South Africa. At present (2009), they are used to determine how R1.5 billion of recurrent expenditure is distributed amongst schools in KwaZulu-Natal[19] and therefore play a major role in determining school resources. "Recurrent expenditure" in this case refers to items like books and stationery, minor capital equipment, repairs and classroom furniture as distinct from personnel expenditure (teachers' salaries) and capital equipment costs such as new classrooms and other construction allocations.

One of the key requirements of the funding norms was as follows:

Each PED[20] is required to produce a "resource targeting list" of all schools in its province, sorted on the conditions at the school and the poverty of the community served by the school, so as to produce five groups of schools, and to be able to allocate resources accordingly, based on this list.[21]

The funding norms have since been amended but in their initial incarnation they required provinces to consider both school and community-based indicators in determining resource targeting tables. Most provinces used data relating to the physical conditions, facilities and overcrowding at schools together with Census data relating to community poverty. The resource targeting tables were used to rank schools and divide them into five quintiles from poorest to least poor. Each quintile was meant to have approximately 20% of the learners in the province. Allocations were made on a per-learner basis favouring the poor: the neediest and largest schools received priority in funding.

The funding norms no longer require provinces to use school conditions to determine their resource targeting table. At present the sole factor that is used to decide the school quintile is the poverty of the community around the school. This is currently determined by indicators derived from the 2001 census pertaining to the place names and sub-place names in which schools are located. Schools in poor areas such as Msinga are likely to be in quintile 1 whereas schools in areas like Umhlanga Rocks would be in quintile 5.

19 KwaZulu-Natal Department of Education, resource targeting table.

20 Provincial Education Department.

21 National Department of Education. (1999). *Norms and Standards for School Funding*.

The second main amendment to the funding norms has been the implementation of national quintiles with prescribed rand per learner allocations for each one. It was recognized that provinces varied a great deal in terms of disadvantage and poverty. Therefore, on the basis of equity, it makes sense to divide the whole country up into quintiles with 20% of learners in each and to target funding accordingly. The new sub-divisions mean that poorer provinces have a much higher proportion of learners in quintiles 1 and 2 and better off provinces have a higher proportion in quintiles 4 and 5. In KwaZulu-Natal for example, approximately 25% of learners in the province were allocated to national quintile 1 and only 14% to quintile 5.

3.8.2 Current allocations

The distribution of schools and learners per quintile is shown in Table 11 below. One quarter of the province's learners is in quintile 1, which represents 2,105 schools (35%). It is therefore clear that the poorest quintile has a disproportionate number of small schools, most of which are located in rural areas. Taken together quintiles 1 and 2 represent nearly half of the learners in KwaZulu-Natal. The allocation per learner for 2009 in quintile 1 was R794.90. This means that a school of 100 learners would be allocated a total of R79,490 for recurrent expenditure in the financial year[22]. By contrast, a school with the same number of learners in quintile 5 would be allocated R16,000, approximately one-fifth of the quintile 1 allocation.

Table 11: Resource targeting table, KwaZulu-Natal, 2009

Quintile	Schools	Learners	% Learners	Per learner allocation 2009	Allocation for LTSM R millions)	Non LTSM allocation (R millions)	Total allocation 2009 (R millions)
1	2 105	664 695	25%	R 794.90	317	211	528
2	1 408	555 074	21%	R 728.90	243	162	405
3	1 262	610 187	23%	R 595.93	219	146	365
4	657	442 971	17%	R 397.94	107	71	178
5	516	355 119	14%	R 160.00	35	23	58
Total	5 948	2 628 046	100%		920	613	1 534

The last three columns in Table 11 indicate the total allocation, in millions of rands, per quintile for learner and teacher support material (LTSM) and non LTSM. In 2009, the total allocation for quintile 1 was R528 million and in quintile 5 it was R58 million. The table provides a clear example of how financial resources are being targeted towards schools that are located in poorer areas. In general, the allocation of schools to quintiles follows the spatial distribution of poverty in the province. Detractors have argued that there are still many poor schools in quintiles 3 and 4 that are penalized for not being as poor as those in quintiles 1 and 2. Another criticism is that the policy of determining the school's quintile by using the poverty profile of the community in

22 Recurrent expenditure: books and stationery, minor capital equipment, repairs and classroom furniture.

which it is located does not cater for schools serving learners from other (poorer) communities. An example would be a former House of Delegates school in an Indian area that serves learners from a nearby township. The area in which the school is located might not be poor, but the areas the learners come from are.

The current per learner allocation has a number of unintended consequences. Firstly, as has been noted, there is a direct incentive to either inflate learner numbers or to admit more learners than the school can realistically accommodate. Secondly, there is no direct relationship between the real cost of running the school and allocation. For example, if the school is not connected to the Eskom grid there is no electricity cost, yet the allocation will be the same. Schools with laboratories, computers, workshops, boarding establishments and libraries receive the same allocation as schools without these, with the result that much of this infrastructure is not maintained. There is thus the danger that in better resourced schools with no fees the infrastructure could progressively deteriorate. Funding norms have to be adjusted for specific types of schools or schools offering certain curriculum options.

3.8.3 Quintiles per district

Table 12 shows the proportion of schools per quintile by district. In Umlazi and Pinetown districts very few of the schools are in quintiles 1 and 2. Most schools in these predominantly urban districts are in quintiles 4 and 5, particularly in the case of Umlazi (75%). The 41% of Umlazi schools that are in quintile 5 would have received an allocation of R160 per learner in 2009 (Table 11).

Table 12: Proportion of schools per quintile by district

District	Schools per quintile					
	1	2	3	4	5	Total
Amajuba	21%	21%	23%	28%	8%	100%
Empangeni	39%	31%	19%	4%	7%	100%
Ilembe	48%	22%	21%	6%	3%	100%
Obonjeni	50%	34%	15%	1%	1%	100%
Othukela	33%	24%	29%	11%	4%	100%
Pinetown	1%	3%	38%	32%	26%	100%
Sisonke	40%	42%	15%	3%	0%	100%
Ugu	41%	35%	15%	4%	5%	100%
Umgungundlovu	18%	21%	34%	15%	12%	100%
Umlazi	0.4%	2%	22%	34%	41%	100%
Umzinyathi	67%	15%	12%	5%	1%	100%
Vryheid	51%	28%	15%	4%	1%	100%

This differs markedly from the districts of Umzinyathi, Vryheid and Obonjeni, each of which has over half of its schools in quintile 1, schools which were allocated R794.90 per learner in 2009. Districts such as Umgungundlovu and Amajuba are relatively balanced having a more even distribution of schools between the quintiles.

3.8.4 No-fee schools

The no fee policy was introduced in 2005 to ensure that all children of school going age have access to education[23]. Concerns were raised by government and civil society that the charging of school fees was preventing poor learners from attending school and that some schools were excluding learners or withholding report cards/examination results from those who could not afford to pay fees[24]. It was also noted that the school fee exemption policy at the time was not being implemented, partly due to poor awareness and partly due to its negative effect on school revenues. A decision was taken by the National Department of Education to limit fee charging in poor schools and the South African Schools Act was amended in 2005 to abolish school fees in poor schools. The first no-fee schools were declared for the 2007 financial year, with a per learner allocation that was intended to more than compensate for the loss of income due to the abolition of fees.

Parents of children attending no-fee schools therefore do not have to pay school fees and do not have to apply for exemption from paying school fees. No-fee schools will also supply all learners with support materials. Initially schools in quintile 1 were designated as no-fee, but this has been extended to schools in quintiles 1 and 2. There are plans to extend it further to quintile 3 schools in 2010. According to the 2009 resource targeting table there were 3,513 no-fee schools in KwaZulu-Natal and 2,435 fee paying (see Table 13). The proportion of learners at no-fee schools was over half (54%). Figure 8 shows the fee status of schools per district. The district with the highest proportion of no-fee schools is Obonjeni with 84%, followed closely by Sisonke (82%), Umzinyathi (82%) and Vryheid (79%). This situation is reversed in Umlazi and Pinetown where 97% and 96% of schools are fee paying.

Concerns about the no-fee policy include the perception amongst some parents that such schools may provide inferior education, which could create a flow of learners to former Model C schools, most of which are fee paying. Conversely, some no-fee schools have reported an influx of learners from schools that were fee paying since the parents can no longer afford to pay the fees[25].

23 Department of Education. (7th March 2006). *No Fee Schools*. Presentation to the Education Portfolio Committee.

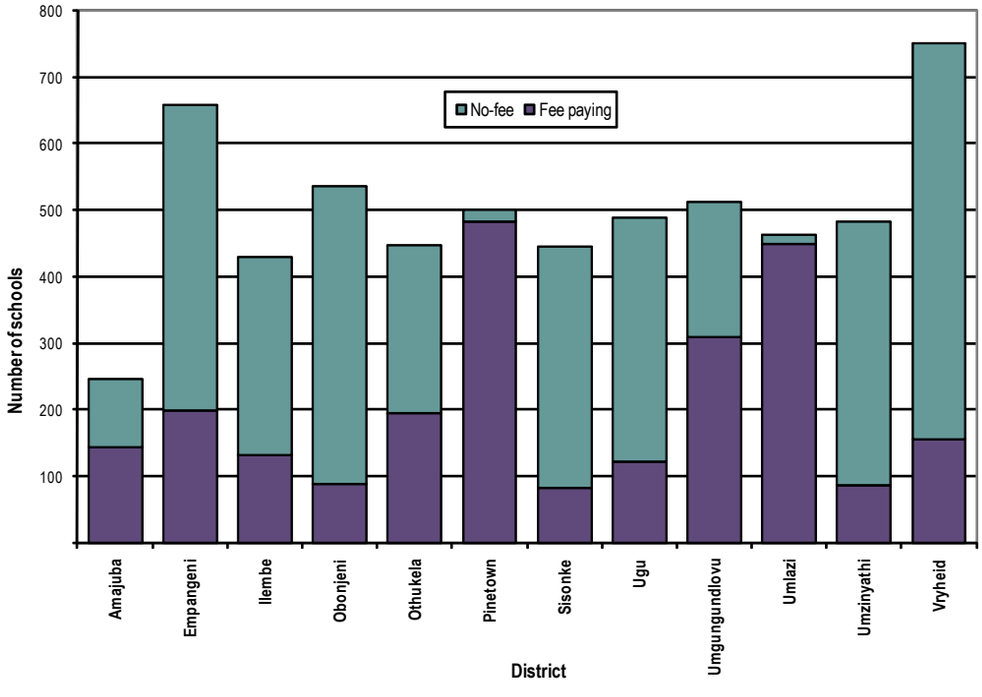
24 Department of Education. (20th July 2006). Media Release on No Fee Schools: Pietermaritzburg.

25 Sunday Times. (February 22, 2009). "No Fee Policy has unintended consequences - Schools in suburbs swamped".

Table 13: Fee-paying and no-fee status: schools and learners in KwaZulu-Natal

Fee status	Schools	Learners	Percentage learners
Fee paying	2 435	1 408 277	54%
No-fee	3 513	1 219 769	46%
Total	5 948	2 628 046	100%

Figure 8: Proportion of fee paying and no-fee schools per district in 2009



3.8.5 Section 20 and section 21 schools

The South African Schools Act makes provision for school governing bodies of section 21 schools to assume responsibility for managing recurrent expenditure. This means that section 21 schools have functions that allow them to manage their own finances and that they receive their allocated recurrent funding directly into a bank account. This funding includes a basic allocation as well as an allocation for textbooks and stationery.

In order to qualify for section 21 status a school must demonstrate that it is capable of administering its own finances, has a properly functioning school governing body and is

managing issues such as its curriculum competently[26]. Schools may apply to their provincial education department and once granted, will have the financial flexibility to purchase textbooks and equipment, fund improvements and repairs and pay for services and maintenance. Once section 21 functions have been granted, the school must supply annual financial statements to the education department.

The granting of section 21 functions to schools is based on the belief that there is a pressing need for decentralization of financial control in education departments. It is felt that many schools make better decisions when controlling their own finances and, given that they can deal directly with suppliers, are often able to procure goods and services more cheaply. Currently, there are 2,776 schools in KwaZulu-Natal with section 21 status, which is nearly half of all schools.

Unlike section 21 schools, section 20 schools do not receive their funding into a bank account. These schools are "controlled by the department on their behalf"[27] and receive a paper budget (allocation letter) informing them of their annual allocation. They can then use this to procure services via the department, a process which can be time consuming and subject to delays at times. If section 20 schools have been designated as no-fee schools then they receive a proportion of their allocation as a cash transfer into their bank account. This is to give them some funds for petty cash and day to day expenses.

Table 14: Number and proportion of section 21 schools by district in KwaZulu-Natal

District	Schools		Percentage	
	Section 20	Section 21	Section 20	Section 21
Amajuba	106	139	43%	57%
Empangeni	369	289	56%	44%
Ilembe	239	190	56%	44%
Obonjeni	191	344	36%	64%
Othukela	324	122	73%	27%
Pinetown	234	266	47%	53%
Sisonke	342	102	77%	23%
Ugu	275	213	56%	44%
Umgungundlovu	279	232	55%	45%
Umlazi	285	176	62%	38%
Umzinyathi	290	192	60%	40%
Vryheid	238	511	32%	68%
Total	3 172	2 776		

26 BMW SEED Programme. *Towards Effective School Management Manual 6: Effective School Management*. KwaZulu-Natal Department of Education.

27 Media Release on No-Fee Schools: Department Of Education, KwaZulu-Natal, 20th July 2006, Pietermaritzburg.

Table 14 shows the number and proportion of schools with section 20 and 21 status per district. It is interesting that Vryheid, which has many of the poorest and most rural schools in the province, has achieved the greatest level of delegation of financial functions. It has the highest proportion of section 21 schools (68%). Obonjeni, perhaps the most isolated of all districts, also has a high proportion, with 64%. Umlazi district by comparison has only 38% of its schools with section 21 functions, whereas its neighbour Pinetown has over half (53%). These anomalies are surprising given that one would expect larger numbers of schools in more accessible urban districts to have fulfilled the criteria for being granted section 21 functions.

3.9 Language issues

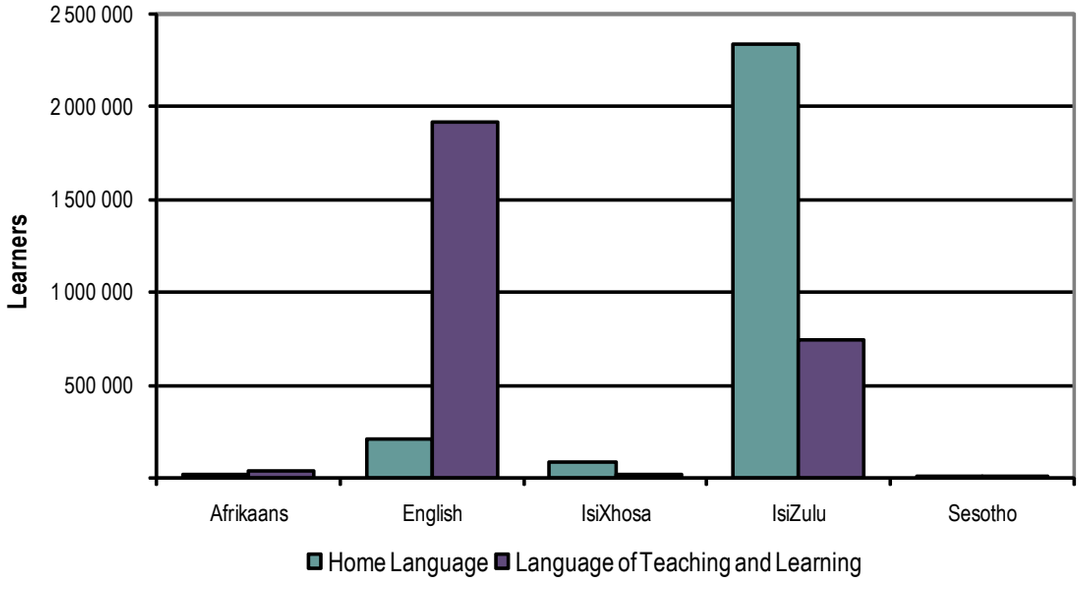
3.9.1 Background

The Annual Survey form asks schools to provide information on learners according to home language and grade as well as according to language of teaching and learning. All eleven official languages are included as well as sign language. Information from the two relevant tables on the form can be analysed together to assess the extent to which learners are being taught in their home language and to gain some understanding of the difficulties that learners in certain areas may be facing if they are not being taught in their home language. It is generally acknowledged that instruction in one's home language is much more conducive to learning, particularly during the first few years of schooling. It is could also be a determining factor in relation to promotion and repetition of learners in early grades.

3.9.2 Learners' home language versus language of instruction

Although the Annual Survey form makes provision for twelve languages including sign language, nearly all (99.8%) learners in KwaZulu-Natal speak either Afrikaans, English, IsiXhosa, IsiZulu or Sesotho, so the analysis of languages will focus on these five. Figure 9 overleaf provides a clear indication of the breakdown of learners in terms of their home language versus their language of instruction. The graph makes it very clear that isiZulu is the dominant language spoken at home by learners, with 88% using it as a home language. A further 8% of learners speak English at home, 3% speak isiXhosa and 0.7% Afrikaans. This distribution can be sharply contrasted with the language of teaching and learning, where English is by far the dominant language accounting for 70% of learners. Only 27% of learners are taught in isiZulu and 1.4% are taught in Afrikaans. This leads one to the conclusion that Afrikaans and English speakers are being taught in their home language but a huge proportion of isiZulu speaking learners are not. To be more precise, according to the Annual Survey there are 1.5 million isiZulu home language learners who are being taught in English, which is nearly 60% of all learners in the province.

Figure 9: Learners' home language versus language of teaching and learning



3.9.3 Language of instruction in primary schools

The use of English as a medium of instruction is perhaps to be expected in the higher grades and particularly in secondary schools. However, research has shown that mother tongue instruction during the early years of schooling is particularly important and likely to greatly enhance the learner's comprehension ability to adjust and progress. It is therefore worrying to see the very high proportion of isiZulu learners in the primary grades that are not being taught in their home language. There are currently 3,132 primary schools in the province where the majority (75% or more) of learners are isiZulu home language speakers, but isiZulu is the main language of teaching and learning in only half of these. There are 421 schools where English is the only medium of instruction although the majority of learners are isiZulu home language speakers.

Table 15 provides a detailed district breakdown for these two languages at primary schools in the province. The columns indicate the number of learners speaking either English or isiZulu as a home language versus the number receiving learning and teaching in each language. The percentages indicate the proportion of either language group that is receiving instruction in its home language. In the case of English home language speaking learners, 100% are taught in English in each district.

The columns for isiZulu home language speakers show that in most districts over half the learners are not taught in their home language. In the case of Umlazi only a third of isiZulu home language learners are taught in isiZulu. Overall only 52% of isiZulu speakers in primary

schools are taught in their home language despite the renewed emphasis on the mother tongue being the language of learning and teaching (LOLT) in the foundation phase, which ends at grade 3.

Since English is the main language of communication in business and government, it is not surprising for it to be preferred as a medium of instruction for learners. The implications of mother tongue instruction for the development of learners during the foundation phase should be carefully considered though, especially in districts where 90% of learners speak isiZulu at home – that is, eight of the 12 districts in this province. The gradual introduction of English at a later stage in primary schools and use of isiZulu in grades 1 to 3 may improve the early learning and developmental process, which in turn would enhance the transition of learners through the first few grades of schooling.

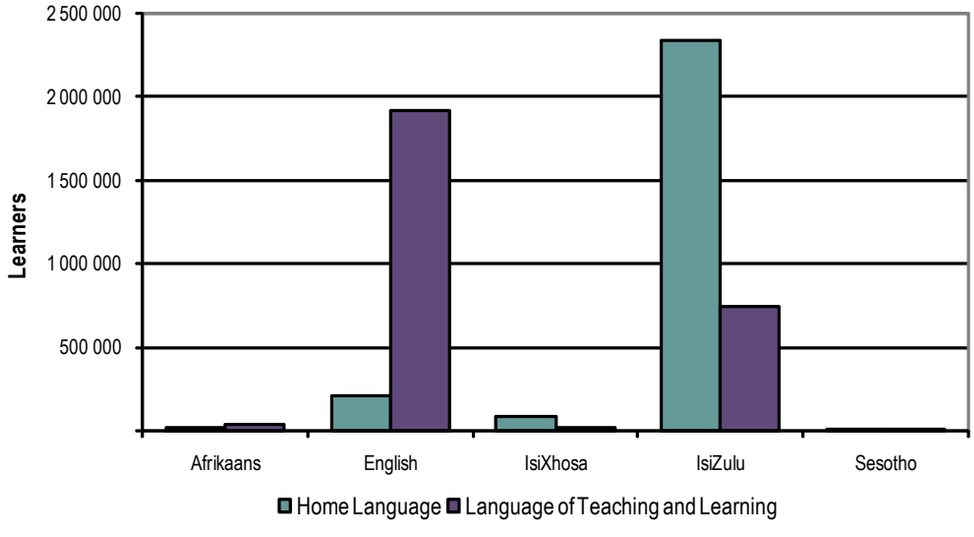
Table 15: Learners' home language versus language of instruction in primary schools, 2009

District	English			isiZulu		
	English as home language	English as language of learning and teaching	Proportion of English speakers taught in English	isiZulu as home language	isiZulu as language of learning and teaching	Proportion of isiZulu speakers taught in isiZulu
Amajuba	1 530	36 350	100%	61 840	30 110	49%
Empangeni	6 150	102 200	100%	177 980	78 530	44%
Ilembe	4 860	55 220	100%	89 850	46 240	51%
Obonjeni	420	75 250	100%	140 050	66 620	48%
Othukela	5 390	56 030	100%	98 350	48 010	49%
Pinetown	28 510	118 940	100%	154 550	72 720	47%
Sisonke	1 620	33 070	100%	48 700	23 660	49%
Ugu	6 800	72 020	100%	119 800	55 930	47%
Umgungundlovu	14 160	79 680	100%	111 510	49 450	44%
Umlazi	40 010	133 250	100%	126 830	43 780	35%
Umzinyathi	1 090	52 830	100%	91 040	44 600	49%
Vryheid	3 110	78 590	100%	159 030	82 170	52%
Total	113, 650	893, 430	100%	1, 379, 530	641, 820	52%

3.9.4 Educators' home language

The home language of educators not surprisingly matches that of learners. Of the total number of teachers 77% are isiZulu home language speakers, 15% are English, 3% isiXhosa and 2% Afrikaans. It is therefore safe to assume that a great many isiZulu home language speakers are teaching in English, which may or may not be a problem depending on levels of competence and levels of experience. Figure 10 shows the distribution by school level of home language speakers. Eighty per cent (80%) of all teachers at primary schools are isiZulu home language speakers compared to 75% in secondary schools. Eleven per cent (11%) of all teachers who speak isiZulu as a home language teach at schools where English is the only medium of instruction.

Figure 10: Educators' home language by school level



3.10 Matric results and grade 12 indicators

3.10.1 Background

The year 2008 was the first that the matriculation examinations were based on the new outcomes-based curriculum. Most learners wrote the National Senior Certificate (NSC) papers in October 2008. The new exam does not have higher and standard grades as was the case previously, but single papers which include levels equivalent to higher and standard grades. Given that the exams were 'new', there were concerns around maintaining consistency with previous years and setting of standards. The annual quality assurance task was undertaken by the Council for Quality Assurance in General and Further Education and Training (Umalusi). Its task involved

moderation of question papers, maintaining fairness and consistency with previous years, assessing the quality of marking and the standardisation of results[28].

3.10.2 Number of years to produce a grade 12 entrant

Table 16 shows the number of learner years required to produce one grade 12 entrant in 2002, 2008 and 2009. This indicator is calculated by dividing enrolment in grade 12 in a particular year by the total enrolment for grades 1 to 12. The resulting ratio is an instantaneous snapshot of learner effort to produce a grade 12 entrant.

Theoretically, in an education system with no repetition, no dropout and perfect flow-through, the ratio would be 12, since it would take learners 12 years to progress from grade 1 to grade 12. The fact that it is much higher is a reflection of the various difficulties that learners experience along the way, including repetition and dropout. The table shows that on average it took 25 years of learner effort to produce a grade 12 entrant in 2002 but that this had improved considerably to 18 years in 2008. In 2009 it had worsened slightly to 19 years. The social and financial cost to the country is significant. If the ratio can be reduced, there will be more resources available for individual learners. Reducing repetition rates through policy has probably had the biggest effect, but there is not sufficient evidence to argue that the system has become more efficient from a quality perspective.

Table 16: Learner years of effort to produce one grade 12 entrant

	2002	2008	2009
Years to produce a grade 12 entrant	25	18	19

3.10.3 Number of years to produce a grade 12 certificate

This indicator takes into consideration the number of Matric passes in relation to total enrolment. The indicator is a reflection of how many learner years of effort are required to produce a single grade 12 pass. Once again, it is a snapshot since it does not take historical data trends into consideration, but it does provide a rough measure of the degree of efficiency of the education system. An imaginary 'perfect' education system with a 100% Matric pass rate would require 12 years of learner effort to produce a matriculation pass. KwaZulu-Natal departs considerably from this imaginary situation. In 2005 it took an average of 32 learner years of learner effort to produce a single pass (see Table 17). This situation worsened slightly to 33 in 2006, then improved to 29 in 2007. Although total enrolment declined in 2008 there was a proportionately larger decline in the number of passes (80,301 passes), which meant that the number of years of effort to produce a single Matric pass in 2008 increased to 32. In 2009, total enrolment

28 *Education South Africa*. (2008). Vol 2 (8 & 9) (October and November).

remained stable but the number of passes increased by 1,132, so the pupil-years of effort to produce a single Matric pass improved to 31.

Table 17: Learner years of effort to produce a Matric pass

	2005	2006	2007	2008	2009
Total enrolment grades 1 to 12	2 709 078	2 697 163	2 698 731	2 577 941	2 523 344
Number of Matric passes	84 842	82 460	94 421	80 301	81 433
Pupil-years of effort to produce a single Matric pass	32	33	29	32	31

3.10.4 Years to produce a grade 12 entrant and grade 12 certificate by district

Table 18 compares the number of learner years required to produce a single grade 12 entrant and Matric pass by district in 2009. Table 16 showed that the provincial average to produce a grade 1 entrant was 19. In Umlazi it was considerably lower at 15. The districts that required the most years of pupil effort to produce a grade 12 entrant in 2009 were Othukela (21), Sisonke (22) and Umzinyathi (23). There is therefore a seven year performance gap between Umlazi and Umzinyathi, which means that Umlazi has 50% more learners in grade 12 in relation to its total enrolment than Umzinyathi. Repetition and dropout are major factors as well as possible gatekeeping and the nefarious influence of inflated enrolment data.

These differences become more stark when the number of years to produce a grade 12 in each district are compared. Bearing in mind that an imaginary 'perfect' education system would require just 12 years of learner effort to produce a Matric pass, the closest district to this is Umlazi at 19 years. At the other end of the spectrum are Sisonke, where it takes a massive 52 years (only 2,830 matric passes against a total enrolment of 147,300), Umzinyathi (42 years) and Obonjeni (41 years). Although learners have the option of leaving school before grade 12, a Matric pass is clearly one of the key (and most robust) indicators of education efficiency. Table 18 shows therefore that some districts in KwaZulu-Natal are a great deal less efficient than others. Put in more stark terms it means that an average learner at school in Umlazi District is 2½ times more likely to complete their schooling with a matric pass than a learner in Sisonke.

Table 18: Learner years of effort to produce one grade 12 entrant and a Matric pass by district, 2009

District	2009 Data				
	Grade 12 Enrolment	Total enrolment Grades 1 to 12	Years to produce a Grade 12 Entrant	Number of Matric Passes	Pupil-years of effort to produce a single Matric pass
Amajuba	6 394	121 984	19	4 054	30
Empangeni	14 471	273 235	19	7 282	38
Ilembe	7 400	151 443	20	4 359	35
Obonjeni	11 030	212 251	19	5 142	41
Othukela	8 360	172 640	21	5 514	31
Pinetown	16 453	300 143	18	11 200	27
Sisonke	6 569	147 300	22	2 830	52
Ugu	10 344	202 055	20	6 049	33
Umgungundlovu	12 084	207 868	17	8 023	26
Umlazi	18 920	289 335	15	14 883	19
Umzinyathi	7 268	166 316	23	3 958	42
Vryheid	14 808	278 774	19	8 139	34
Total	134 101	2 523 344	19	81 433	31

3.10.5 Provincial Matric pass rates

Initial comments on the 2008 Matric results were mixed and somewhat confusing. On the one hand, it was noted that more students had graduated than ever before (344,794) but equally there were over 200,000 learners who had failed, representing a national pass rate of 62.7%. Two out of every five schools had a pass rate of less than 50%. The Department of Education was ambiguous, noting that there was "nothing startlingly new about the Matric results" yet at the same time saying "we can't make comparisons with 2007, because this really was a new curriculum"[29].

The 2009 Matric pass rate of 60.6% represented the sixth successive decline in the national pass rate. This time the comments were less ambiguous with most people agreeing that the results were a disaster. The Minister of Basic Education, Ms Angie Motshegka, indicated that she was

29 *Education South Africa*. Jan 2009. Vol 3(1). Quoting Education Department Director General Duncan Hindle.

"most unhappy" with the "disappointing results"[30]. She listed a familiar catalogue of failings in South African schooling – "poor teaching, weak management and inefficient systems", and promised "urgent action" and improvements in the 2010 results[31]. SADTU, the largest teachers union, noted that the 2009 results were "a cause for concern", and that "we must all take responsibility"[32]. Their prognosis was that "teacher development is key" and that resource allocation and inequalities were "a challenge"[33].

The one exception in all this doom and gloom was KwaZulu-Natal, which improved its pass rate by 4% from 57% to 61%. It was the only province that managed to do this and seven other provincial pass rates declined, while the Eastern Cape's remained stable at 50%. KZN MEC Senzo Mchunu attributed the improvement to "turnaround strategies", indicating that "among these initiatives were regular visits to underperforming schools by district, provincial and national officials"[34]. He also indicated that:

> the area of focus was on critical resources required to facilitate and support teaching and learning in schools. We also focused on teaching and learning monitoring and support[35].

Figure 11 shows the provincial Matric pass rates for 2008 and 2009. The figure shows that the average pass rate for KwaZulu-Natal in 2009 was 61%, one percent above the national average of 60%. It performed better than the Eastern Cape, Mpumalanga and Limpopo provinces but worse than five other provinces. There was a significant performance gap (11% or more) between KwaZulu-Natal and the provinces of Gauteng and the Western Cape. On the positive side, KwaZulu-Natal had the most graduates of any province (81,540), but it also had the most failures (52,975)[36].

A comparison with data for previous years reveals that KwaZulu-Natal's pass rate had, until 2009, been steadily declining in relation to the national average (see Figure 12). In 2004, it was 3% above the national average but by 2006 had dropped to 1% below and in 2008 had slipped to 5% below the average. One year later, a 3% improvement in the province's results together with a 2% decline in the national pass rate meant that KwaZulu-Natal rose above the national average for the first time in four years.

30 *Tshikululu Social Investments - http://www.tshikululu.org.za/thought-leadership/matric-results.*

31 *Ibid.*

32 *South African Democratic Teachers' Union – SADTU - Matric Results 2009: SADTU response, Media Release, 07 January 2010, http://www.sadtu.org.za.*

33 *Ibid.*

34 http://www.sagoodnews.co.za/education/interventions_helped_kzn_to_improve_results, Thursday, 07 January 2010

35 *Ibid.*

36 *National Department of Education, Matric Results 2008 and 2009.*

Figure 11: Matric pass rates by province, 2008 & 2009

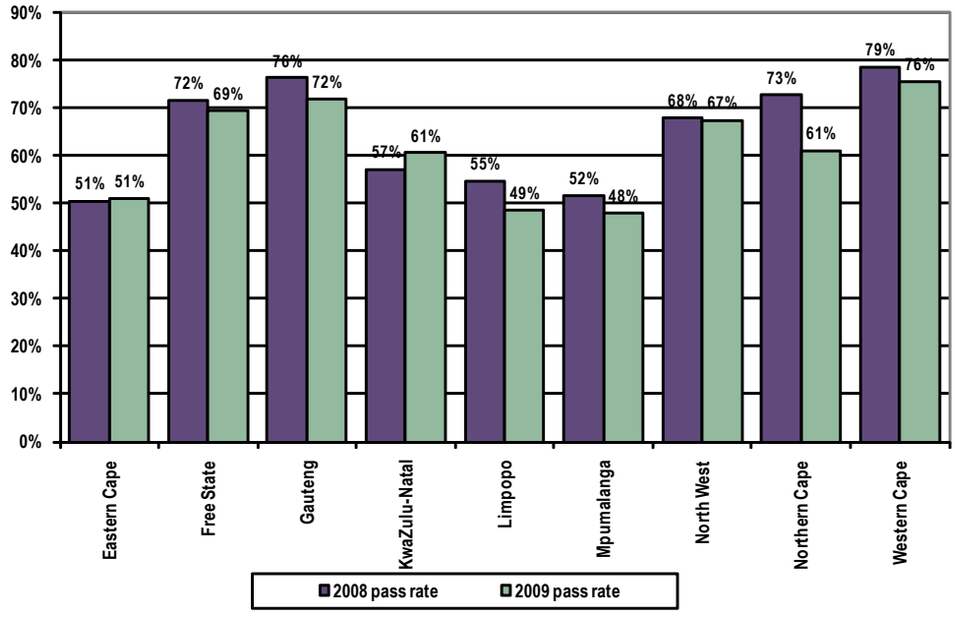
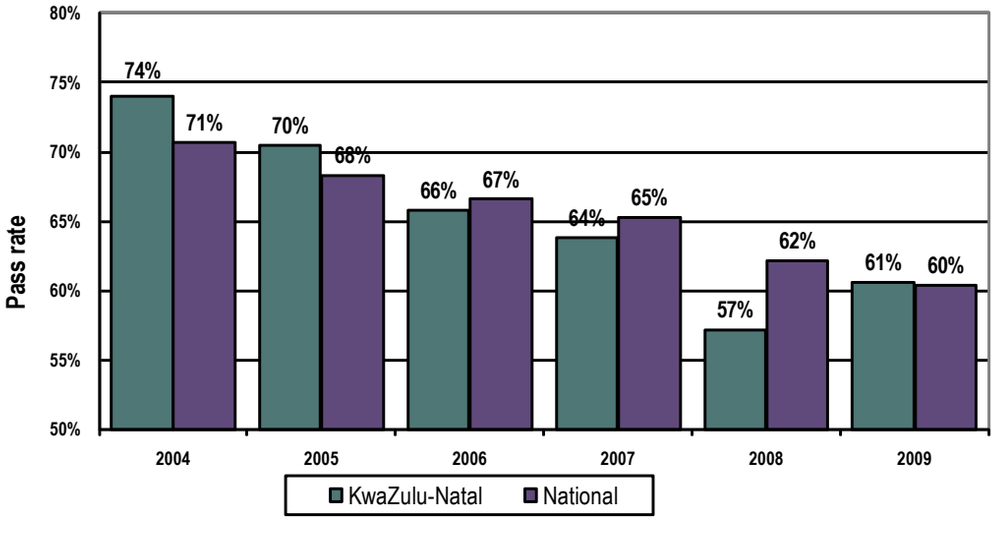


Figure 12: KwaZulu-Natal's Matric pass rate in relation to the national average, 2004 to 2009



Over six years KwaZulu-Natal has dropped from fifth to sixth position in terms of its pass rate and the gap between it and the best performing province (Western Cape) has widened from 11% to 15%. The actual number of matriculants has remained fairly stable throughout this period, from 81,830 in 2004 to 81,540 in 2009. The 3.4% improvement in 2009 meant that an extra 1,239 learners passed their Matric exams, although it is worth noting that nearly 6000 *less* learners wrote the Matric exam in 2009 in KwaZulu-Natal than in 2008. The drop in the number of learners who wrote Matric in 2009 was greater than in any other province, and if caused in part by gatekeeping[37], the apparent improvement should be viewed with some caution.

In many respects the rate of achieving endorsements is the key benchmark for the system as it is only these learners who have any prospect of entering higher education. Thus, the high level skills development of the province is dependent on the numbers of learners who achieve an endorsement. It should be noted that an endorsement is the minimum entry requirement for a university programme, but the universities usually set higher level requirements by allocating points to the grades achieved and in some cases making prerequisites in subjects such as Maths and Science. Thus, the numbers achieving endorsement do not translate into actual acceptances into university programmes. As can be seen in Table 19 below, the endorsement rate has declined slightly since 2003, although the actual numbers have increased slightly.

Table 19: Results for full-time candidates with six or more subjects 2000 – 2007, plus 2008 & 2009 summary data

Year	Candidates who wrote (excluding awaiting results)	Candidates failed		Candidates passed					
				Without endorsement	With endorsement		Total		
	Number	Number	%	Number	%	Number	%	Number	%
2000	96 392	41 264	43%	39 473	41%	15 655	16%	55 128	57%
2001	93 338	34 718	37%	42 923	46%	15 697	17%	58 620	63%
2002	97 487	28 514	29%	51 337	53%	17 636	18%	68 973	71%
2003	97 210	22 133	23%	55 190	57%	19 887	20%	75 077	77%
2004	110 635	28 805	26%	60 880	55%	20 950	19%	81 830	74%
2005	120 392	35 550	30%	63 837	53%	21 005	17%	84 842	70%
2006	125 438	42 978	34%	63 344	50%	19 116	15%	82 460	66%
2007	148 088	53 667	36%	72 978	49%	21 443	14%	94 421	64%
2008	140 472	60 131	43%	Not applicable/no data				80 341	57%
2009	134 515	52 975	39%					81 540	61%

37 The practice of preventing learners who are perceived as weak from entering grade 12 and/or from entering the Matric exam.

3.10.6 District comparisons

Predictably, the Matric pass rates results per district for 2009 were a mixed bag in KwaZulu-Natal (see Figure 13). They ranged from 72% in Umlazi, which is the same as the average for Gauteng, to Sisonke, which with 46% had one of the lowest district pass rates in the whole of South Africa. From the point of view of equity, KwaZulu-Natal has a very high differential between its best and worst performing schools in the Matric exams[38] and similar results are evidenced in the SACMEQ studies. On the one hand, there were 221 schools that achieved a pass rate of over 90%; yet there were also 238 schools that achieved less than 30%. Schools of comparative excellence are juxtaposed in the same province with schools of failure.

Figure 13: Matriculation pass rate by district, 2009

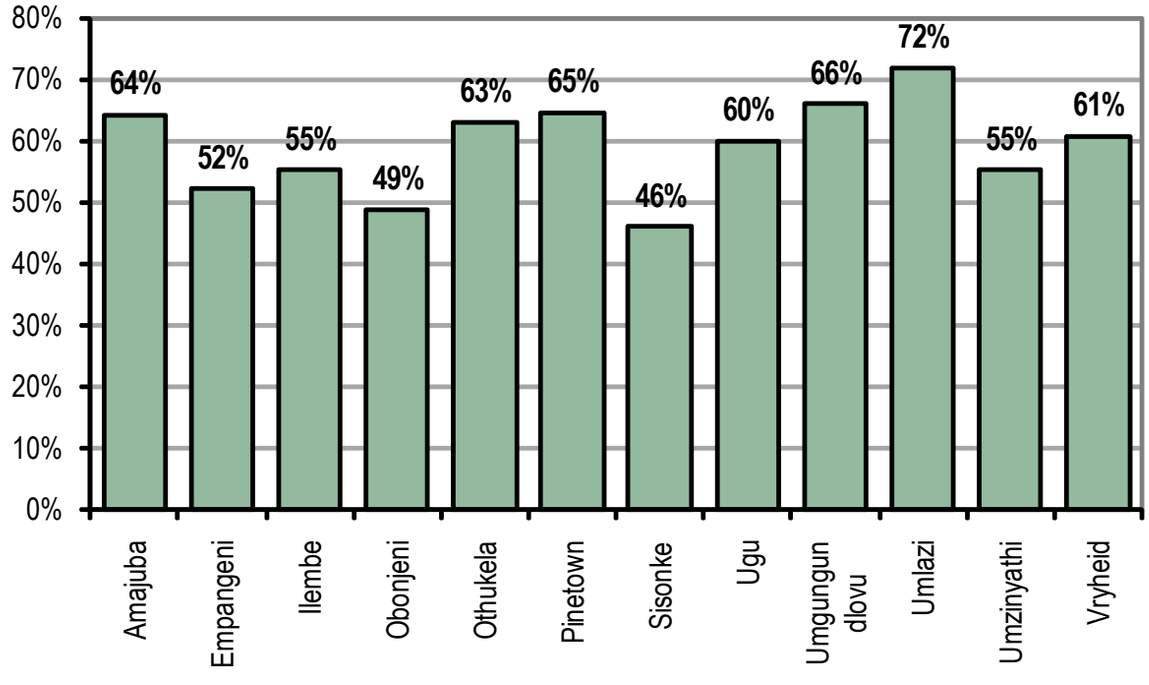


Table 20 overleaf shows the distribution of schools by pass rate range. Over 26% of schools in Empangeni and Sisonke achieved a pass rate of less than 30% in 2009 – a clear case for a major intervention and support programme for secondary schools in these districts. Other districts with high numbers of badly performing schools were Ilembe and Obonjeni in which one fifth of all schools (21%) achieved a pass rate of less than 30%.

38 The Eastern Cape has the highest standard deviation of Matric pass rates, followed by KwaZulu-Natal. National Department of Education, Matric Results, 2008.

The district of Empangeni is a good example of the dichotomous performance of schools in the province. Table 20 shows that one quarter of its schools perform very poorly, one quarter perform very well and the remainder span the area in between. This reflects the longstanding performance gap between better-off urban and rural schools, as well as the fact that rural schools tend to receive less attention from the department and are less likely to get the corrective help they need.

It should be noted there were some dramatic shifts in the relative performance of districts between 2008 to 2009. In Obonjeni district for example, the proportion of schools achieving a pass rate of less than 30% halved from 41% to 21%. At the same time its pass rate improved from 39% to 49%, meaning that it no longer occupied bottom position, having leapfrogged Sisonke, which at 46% was firmly at the bottom of the log[39].

Table 20: Distribution of schools by Matric pass rate range, KwaZulu-Natal, 2009

District	Proportion of schools with a Matric pass rate between:		
	0 to 30%	31 to 70%	70 to 100%
Amajuba	7%	55%	37%
Empangeni	26%	49%	24%
Ilembe	21%	55%	24%
Obonjeni	21%	61%	18%
Othukela	7%	53%	40%
Pinetown	9%	45%	45%
Sisonke	26%	59%	15%
Ugu	14%	55%	31%
Umgungundlovu	11%	49%	40%
Umlazi	6%	39%	55%
Umzinyathi	15%	54%	31%
Vryheid	8%	61%	32%
Total	**14%**	**52%**	**34%**

3.10.7 Pass rates versus poverty

An important question in relation to the Matric exams is whether the performance of schools in the province is determined by the profiles of the communities that they serve. In other words, do schools in poor areas generally perform worse than schools in relatively wealthy

39 Approximately 10% less learners sat the Matric exams in Obonjeni in 2009 than in 2008.

areas? If this is the case, then it could be said that community poverty is a determining factor in the performance of schools. One way of testing this is to examine the correlation between the Matric results and school quintiles. The quintiles assigned to schools are a direct reflection of the poverty of the community in which schools are located since quintile 1 schools are located in the poorest communities within the province and quintile 5 schools are in the least poor communities[40].

Table 21 shows how schools in each quintile are distributed within the various pass rate categories, ranging from 0 - 20% up to 80 - 100%. Many quintile 1 (poorest) schools in the province produced poor results – 168 achieved a pass rate of less than 40%. It is very encouraging to note however that 99 quintile 1 schools achieved a pass rate of between 60 and 80% and that 60 were in the 80 to 100% category. These are schools that, despite serving learners from poor communities, were able to excel, and which provide perhaps the best indication of how schools should be managed in disadvantaged communities. The distribution of these schools within districts is shown in Figure 14, with Vryheid, Umzinyathi and Empangeni having the highest numbers. Clearly, there are pockets of excellence in many districts that deserve further investigation.

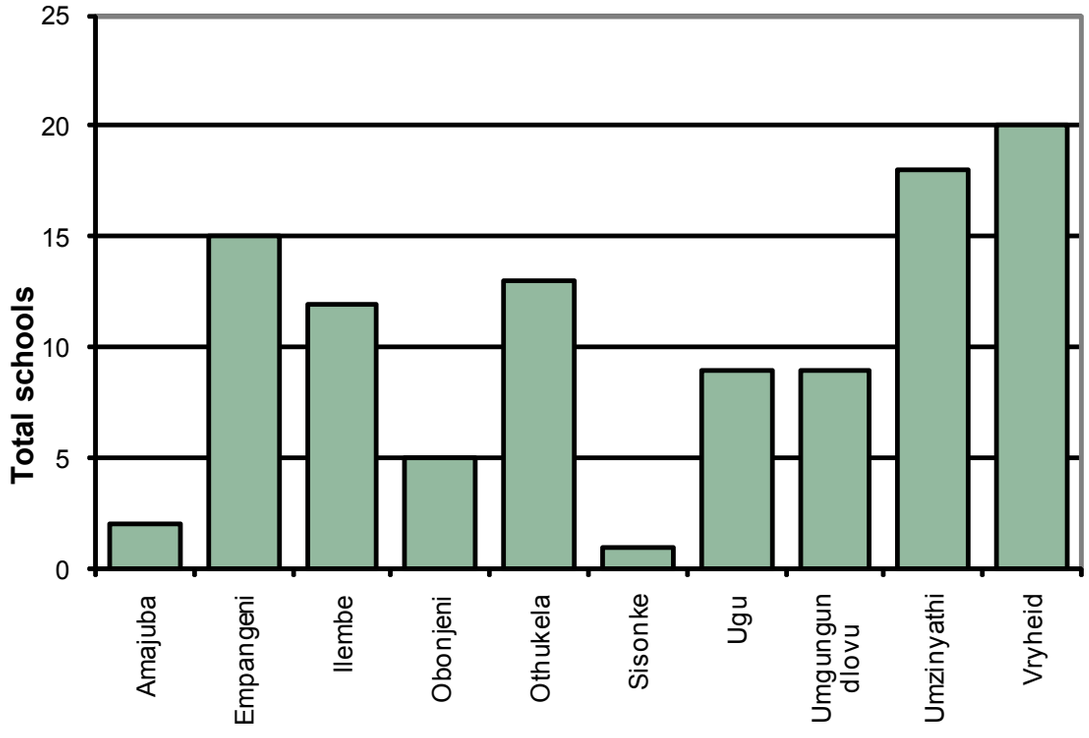
Table 21: Comparison of school quintiles with Matric pass rates, 2009

Quintile	Schools by 2009 Matric pass rate category					
	0 to 20%	20 to 40%	40 to 60%	60 to 80%	80 to 100%	Total
1 (Poorest)	50	118	143	99	60	470
2	29	94	119	111	47	400
3	20	76	124	87	58	365
4	4	37	44	60	52	197
5 (Least Poor)	0	6	24	32	113	175
Total	**103**	**331**	**454**	**389**	**330**	**1 607**

Most quintile 5 schools are concentrated in the 80 to 100% pass rate category. There are none that produced a pass rate of less than 20%, but several with less than 60%. Map 5 on page 73 shows the location of schools at both ends of the pass rate spectrum, confirming that there are pockets of excellence throughout the province and not just in the established urban areas. The same applies to the worst performing schools, which are fairly common in districts such as Obonjeni, Empangeni and Umzinyathi but also occur in Umlazi, Pinetown and Ugu.

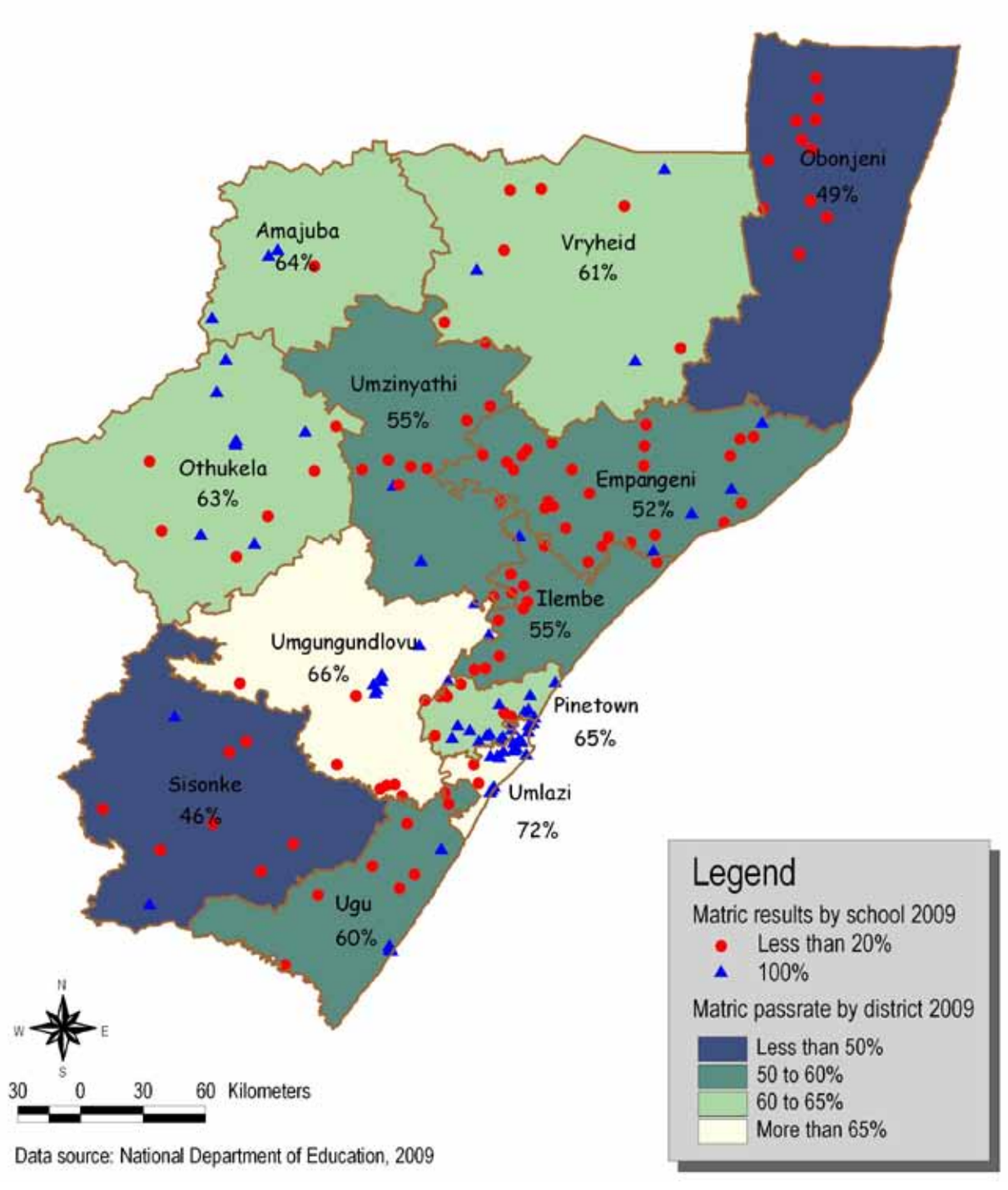
40 See section 3.8 on Resource targeting, section 21 and no-fee schools (page 53) .

Figure 14: Quintile 1 and 2 schools achieving more than a 80% Matric pass rate in 2009



To test the relationship between school quintiles and poverty statistically, the 2009 Matric pass rates for 1,607 schools in KwaZulu-Natal were correlated against their respective quintiles. The correlation coefficient is a statistical measure that helps to determine the relationship between two variables, on a scale ranging from +1 that denotes a perfect positive correlation and -1 a perfect negative correlation. The resulting correlation coefficient was **0.36**, which is a positive, but very weak correlation. This means that the quintile of a school (i.e. the poverty of the community around the school) does influence its pass rate, but that there are many exceptions to this rule. In other words, lots of schools in poor communities (quintiles 1 and 2) get poor Matric results, but there are also many that get good results. Similarly, there are many quintile 5 schools in better-off communities that do not perform very well, producing a pass rate of less than 40%, for example.

Map 5: Matric pass rate by district for 2009 & distribution of schools with a pass rate either below 20% or equal to 100%



3.11 Comparative data within Southern and East Africa

When looking at the state of education in a country or province, it is useful to compare to other countries. A number of studies have done this and UNESCO keeps data on many countries' access, retention and pass rates.

The following table offers some comparative data within Southern and East Africa. The figures for South Africa are highlighted. What the table shows is that South Africa has a fairly high per capita income, and very high secondary enrolment compared to the other countries. Children in South Africa spend more time in school than any other country (school life expectancy) and have a fairly low primary pupil-teacher ratio (PTR). However, spend on education as a percentage of GDP and as a percentage of total expenditure is low for South Africa compared to other countries. Distribution of public spending per school level (primary, secondary, tertiary) is lower than many other countries for primary, but higher than many other countries for secondary, which is probably due to the fact that gross and net enrolment ratios (GER and NER) are so high for South African secondary schools as compared to other countries.

Notes to Table 22:

- *School life expectancy ISCED 1-6 (years)* is the average number of years a child will spend in school.
- *Percentage of repeaters, primary* is the number of pupils who are enrolled in the same grade as the previous year, expressed as a percentage of the total enrolment in the given grade of education.
- *Gross intake rate to last grade of primary* is the percentage of children that complete primary school.
- *Primary to secondary transition rate (%)* is the number of new entrants to the first grade of secondary education in a given year, expressed as a percentage of the number of pupils enrolled in the final grade of primary education in the previous year.
- *PTR* is the pupil/teacher ratio for primary schools.
- *Public expenditure on education as a percentage of GDP* is the total public expenditure on education at every level of administration, expressed as a percentage of the Gross Domestic Product.
- *Public expenditure on education as a percentage of total government expenditure* is the total public expenditure on education at every level of administration, expressed as a percentage of total government expenditure on all sectors (including health, education, social services, etc).

Table 22: Comparative education indicators for a range of countries [41]

			Botswana	Kenya	Lesotho	Mozambique	Namibia	SA	Swaziland	Uganda	Zambia	'07 regional averages
GDP/cap US$ ('06)			12,508	1,467	1,440	739	4,819	9,087	4,671	893	1,259	
Primary enrolment (all '07 figures unless noted)												
GER		MF	107 ('02)	113	115 ('02)	111	109	103	113	116	119	99
M		108	113	114	119	110	104	118	116	121	104	
F		107	112	116	103	109	101	109	117	117	94	
NER	MF		84	86	78	57 ('02)	87	86	87	95	94	73
	M		83	86	75	61	84	86	86	93	94	76
	M		85	86	81	53	89	86	88	96	94	71
Secondary enrolment												
GER	MF		76 ('02)	53	33	18 ('07)	59	97	54	23	43	34
	M		74	46	29	21	54	95	58	25	46	37
	F		78	49	37	15	64	99	51	20	41	30
NER	MF		50	45	21	3	50	73	29	19	41	27
	M		68	47	17	3	44	71	32	20	44	29
	M		53	43	26	2	55	76	27	18	38	24
School life expectancy			11.9	10.5	10.3	8.3	10.8	13.1	10.5	10.3	7.0	
% repeaters (primary)			5	6	21	6	16	8	18	13	6	
Gross intake rate to last grade of primary			83	93	78	46	77	84	75	54	88	
Primary to secondary transition %			95	-	68	58	77	94	89	58	58	
PTR (primary)			24	46	40	65	30	31	32	57	49	
Public expenditure on education												
As % GDP			8.1	7.1	13.3	5.2	6.9	5.4	8.0	5.2	1.5	
As % total expenditure			21.0	17.9	29.8	21.0	21.0	17.4	24.4	18.3	14.8	
Distribution of public spend / level												
Pre-primary			-	0	0	-	0	1	-	-	-	
Primary			19	55	38	56	59	41	38	62	59	
Secondary			48	27	21	29	29	35	30	24	15	
Tertiary			32	16	39	14	11	13	27	12	26	

41 http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=198&IF_Language=eng

Given the mainly positive figures of South African GDP per capita, enrolment ratios and PTR, how does South Africa fare in achieving quality education, compared to its neighbours?

The Southern and East African Consortium for Monitoring Educational Quality (SACMEQ) is an international non-profit developmental organisation of 15 ministries of education in Southern and East Africa that aims to share experiences and expertise to develop the capacities of education planners to monitor and evaluate the conditions of schooling and the quality of education[42]. SACMEQ II, completed in 2005, was a research study to compare reading and mathematics skills levels in grade 6 learners in a range of Southern and East African countries. The same tests were administered in all the countries, and results are divided into eight distinct levels of skill ability.

The following table shows the percentage of learners in each reading level for nine countries[43].

Table 23: Percentage of grade 6 pupils at each reading level

Level	SA	Botswana	Kenya	Lesotho	Mozam-bique	Namibia	Swazi-land	Uganda	Zambia
1	12.2	2.8	1.0	5.6	2.3	12.8	0.3	7.2	19.9
2	18.8	7.7	4.6	23.8	3.9	**30.6**	1.7	18.3	**27.8**
3	**19.1**	15.7	10.8	**33.8**	11.2	26.6	10.9	**21.8**	20.9
4	16.0	23.0	20.4	24.2	28.8	14.3	**31.7**	21.5	14.2
5	9.4	**24.1**	**25.3**	8.7	**32.7**	6.0	31.4	14.8	7.9
6	7.0	14.0	19.2	2.5	16.1	3.6	15.3	8.2	5.6
7	10.9	9.5	13.6	1.3	5.0	3.9	6.9	5.3	2.9
8	6.6	3.2	5.1	0.3	0.1	2.2	1.8	2.9	0.9

The highest percentage for each country is in bold, indicating in which level most of the country's children fall. In four countries (Botswana, Kenya, Mozambique and Swaziland) the level with the highest number of grade 6 learners are at higher levels than South Africa. This suggests that South Africa's relatively high resource base is not being converted into quality education, particularly since the results show that Kenya, Mozambique and Swaziland have higher PTRs than South Africa. A similar picture emerges when looking at mathematics skill. However, we show higher levels of reading than other countries at the highest levels, along with Kenya. This points again to the polarised nature of the system.

42 See http://www.sacmeq.org/about.htm.

43 http://www.sacmeq.org/education-(various countries).

The reading levels are defined as follows[44]:

Level 1: Pre-reading	Matches words and pictures involving concrete concepts and everyday objects, and follows short, simple written instructions.
Level 2: Emergent reading	Matches words and pictures involving prepositions and abstract concepts; uses cueing systems (by sounding out, using simple sentence structure, and familiar words) to interpret phrases by reading on.
Level 3: Basic reading	Interprets meaning (by matching words and phrases, completing a sentence, or matching adjacent words) in a short and simple text by reading on or reading back.
Level 4: Reading for meaning	Reads on or reads back in order to link and interpret information located in various parts of the text.
Level 5: Interpretive reading	Reads on and reads back in order to combine and interpret information from various parts of the text in association with external information (based on recalled factual knowledge) that "completes" and contextualizes meaning.
Level 6: Inferential reading	Reads on and reads back through longer (narrative, document or expository) texts in order to combine information from various parts of the text so as to infer the writer's purpose.
Level 7: Analytical reading	Locates information in longer (narrative, document or expository) texts by reading on and reading back in order to combine information from various parts of the text so as to infer the writer's personal beliefs (value systems, prejudices, and/or biases)
Level 8: Critical reading	Locates information in a longer (narrative, document or expository) text by reading on and reading back in order to combine information from various parts of the text so as to infer and evaluate what the writer has assumed about both the topic and the characteristics of the reader – such as age, knowledge, and personal beliefs (value systems, prejudices, and/or biases).

44 http://www.sacmeq.org/reading-math-levels.htm#reading

The following table shows the percentage of learners in each mathematics level for nine countries[45].

Table 24: Percentage of grade 6 learners at each mathematics level

Level	SA	Bot-swana	Kenya	Lesotho	Mozam-bique	Na-mibia	Swazi-land	Uganda	Zambia
1	7.8	3.3	0.6	8.6	0.4	19.6	0.8	5.4	16.8
2	44.4	25.8	10.1	57.3	12.6	57.0	21.3	33.4	54.4
3	23.8	35.8	30.7	28.6	41.7	14.9	44.3	31.6	21.5
4	8.8	19.6	25.7	5.9	32.1	3.5	21.8	12.3	5.0
5	6.1	10.2	17.9	1.0	11.4	2.0	8.6	6.0	1.8
6	5.8	3.8	10.4	0.3	1.7	2.1	2.4	5.5	0.4
7	2.1	1.2	3.3	0.1	0.1	0.7	0.7	5.2	0.0
8	1.3	0.2	1.3	0.0	0.0	0.1	0.2	0.6	0.0

The highest percentage for each country is in bold, indicating in which level most of the country's children fall. Again, looking at the bold figures, there are five countries that have the largest groups of children at higher mathematics skills levels than South Africa.

Average scores for 12 countries are given below. All data is from SACMEQ[46] except mean pupil teacher ratio (PTR), which is from van der Berg and Louw (2007)[47].

The levels are defined as follows[48]:

Level 1: Pre-numeracy	Applies single step addition or subtraction operations. Recognizes simple shapes. Matches numbers and pictures. Counts in whole numbers.

45 http://www.sacmeq.org/education-(various countries)

46 http://www.sacmeq.org/

47 Van der Berg, S. and Louw, M. (2007). *Lessons learnt from SACMEQII: South African student performance in regional context*. Stellenbosch Economic Working Papers: 16/07: Stellenbosch. (p. 21) Found at http://ideas.repec.org/p/sza/wpaper/wpapers47.html

48 http://www.sacmeq.org/reading-math-levels.htm#mathematics

Level 2: **Emergent numeracy**	Applies a two-step addition or subtraction operation involving carrying, checking (through very basic estimation) or conversion of pictures to numbers. Estimates the length of familiar objects. Recognizes common two-dimensional shapes.
Level 3: **Basic numeracy**	Translates verbal information (presented in a sentence, simple graph or table) using one arithmetic operation in several repeated steps. Translates graphical information into fractions. Interprets place value of whole numbers up to thousands. Interprets simple common everyday units of measurement.
Level 4: **Beginning numeracy**	Translates verbal or graphic information into simple arithmetic problems. Uses multiple different arithmetic operations (in the correct order) on whole numbers, fractions, and/or decimals.
Level 5: **Competent numeracy**	Translates verbal; graphic; or tabular information into an arithmetic form in order to solve a given problem. Solves multiple-operation problems (using the correct order of arithmetic operations) involving everyday units of measurement and/or whole and mixed numbers. Converts basic measurement units from one level of measurement to another (for example metres to centimetres).
Level 6: **Mathematically skilled**	Solves multiple-operation problems (using the correct order of arithmetic operations) involving fractions, ratios, and decimals. Translates verbal and graphic representation information into symbolic, algebraic, and equation form in order to solve a given mathematical problem. Checks and estimates answers using external knowledge (not provided within the problem).
Level 7: **Concrete problem solving**	Extracts and converts (for example, with respect to measurement units) information from tables, charts, visual and symbolic presentations in order to identify, and then solves multi-step problems.
Level 8: **Abstract problem solving**	Identifies the nature of an unstated mathematical problem embedded within verbal or graphic information and then translate this into symbolic, algebraic, or equation form in order to solve the problem.

Table 25: Comparison of mean performance on reading and mathematics levels, 12 countries

Country	Population	Rural pop %	Mean PTR	Learner performance on all items			
				Reading		Mathematics	
				Mean	SE	Mean	SE
Botswana	1.85 mill	42.6%	28.3	521.1	3.47	512.9	3.15
Kenya	36.5 mill	79.3%	33.4	546.5	4.97	563.3	4.64
Lesotho	1.99 mill	81.3%	53.9	451.2	2.93	447.2	3.24
Malawi	13.5 mill	82.8%	70.0	428.9	2.37	432.9	2.25
Mozambique	20.9 mill	65.5%	51.3	516.7	2.29	530.0	2.08
Namibia	2.04 mill	64.9%	31.5	448.8	3.13	430.9	2.94
South Africa	48.2 mill	40.7%	36.5	492.3	9.00	486.1	7.19
Swaziland	1.13 mill	75.9%	35.1	529.6	3.74	516.5	3.41
Tanzania	39.4 mil	75.8%	47.1	545.9	5.03	522.4	4.20
Uganda	29.8 mill	87.4%	58.0	482.4	6.12	506.3	8.17
Zambia	13.2 mill	64.1%	53.7	440.1	4.47	435.2	3.54
Zimbabwe	11.6 mill	65.0%	-	504.7	3.67	-	-

With a reading mean of 492.3, South African learners are out-performed by learners from Botswana, Kenya, Mozambique, Swaziland, Tanzania and Zimbabwe.

With a mathematics mean of 486.1, South African learners are out-performed by learners from Botswana, Kenya, Mozambique, Swaziland, Tanzania and Uganda.

Public spending on education currently constitutes the single largest government budget line item, accounting for approximately 6% of GDP, and indeed, South Africa has the third highest per capita income of the 14 countries tested by SACMEQ[49]. It is surprising then that educational achievements are so low. It is suggested that converting resources into outcomes is poor in South Africa, and particularly in schools of low socio-economic status (SES) and Van der Berg and Louw offer reasons for this. They evaluate the impact of principal priorities, teacher absenteeism, and teacher quality and suggest that "results indicate that more information on student performance as well as attention to quality assurance and accountability procedures may be cost-effective ways of improving the quality of schooling offered in South Africa" [50] .

It is suggested that there is no direct correlation between school and class resources and high quality education since the issue of efficiency of translating inputs into outputs emerges.

49 *Ibid.* p. 3

50 *Ibid.* p. 4

One might look at pupil-teacher ratio (PTR) as a measure of quality. However, South Africa is below the SAQMEC mean for this and is still outperformed by Mozambique and Uganda in mathematics scores. Rural schools are more likely to perform worse than urban schools due to teacher qualifications: rural schools find it difficult to attract teachers to remote areas. As a result, "in 2000 approximately 20% of grade 6 students in rural areas were taught by mathematics teachers with degrees, compared with more than double that number in urban areas"[51]. While they are more likely to perform worse than urban schools, not all do. Some low SES schools perform well, despite resource constraints. This would suggest that it is the management of the resources that is key, rather than the resources themselves. And the SACMEQ data shows that all the countries that out-perform South Africa have higher rural populations and thus many of their schools are likely to be of low SES.

> Regional comparison shows that weak performance of the schooling system cannot be ascribed to the resource endowment of schools or even to the poverty of the households from which their learners are drawn. In particular, teacher absenteeism, principal monitoring of learner progress, and teacher quality are all factors that determine performance, and that interact with learner socio-economic background in determining performance[52].

3.12 KZN comparative data with other provinces

To compare KZN education quality and context with other provinces in South Africa, a number of indicators will be presented.

The same mean SACMEQ indicators have been disaggregated by province in South Africa, as the following table shows. In addition, indicators have been disaggregated by gender, SES, and school location[53].

KZN has the third highest SACMEQ scores, after Western Cape and Gauteng. However, in South Africa there is high variation between low and high SES schools and between rural and large city school locations. If Van der Berg and Louw are correct, this means that low SES schools and rural schools have poor management and learner monitoring systems and that these should be investigated.

51 *Ibid*. p. 8.

52 *Ibid*. p. 16ff.

53 http://www.sacmeq.org/education-south-africa.htm

Table 26: SACMEQ indicators for South Africa by province, gender, SES and school location

Province	Learner performance on all items			
	Reading		Mathematics	
	Mean	SE	Mean	SE
Eastern Cape	444.1	14.02	449.3	10.74
Free State	446.2	12.46	447.5	6.00
Gauteng	576.4	35.23	552.4	26.02
KwaZulu-Natal	517.5	21.63	510.3	17.48
Mpumulanga	428.1	17.54	433.4	10.82
Northern Cape	470.3	13.37	460.9	8.24
Limpopo	436.7	19.65	446.0	18.81
North West	427.7	9.61	419.6	10.60
Western Cape	629.3	17.95	591.1	23.94
South Africa	492.3	9.00	486.1	7.19
Gender				
Boys	478.3	7.96	482.1	6.74
Girls	504.8	10.28	489.8	8.03
SES				
Low SES	440.2	4.87	446.8	3.97
High SES	543.6	12.91	524.3	11.03
School location				
Isolated/rural	426.6	5.13	436.6	4.20
Small town	482.9	14.57	472.4	10.61
Large city	600.4	16.70	571.3	15.47
South Africa	493.3	9.09	486.3	7.26

3.13 Concluding comments

This chapter has attempted to set the current overall educational scene in KwaZulu-Natal by exposing significant trends and issues related to educational quality and some implications for policy development. The following chapters will delineate in appropriate detail the role and performance of crucial players and elements within this overall scenario: teachers, the curriculum, school management, the DoE, infrastructure, barriers to learning and educational budgeting. The comments below note persistent, key themes that are evident in this overview; these will be explored from chapter to chapter as appropriate.

Firstly, much of the information on KZN schools and learners is generated by the department's own data and systems. A thread running through this chapter is that data quality may not be very high. Indeed, surveys that are completed by schools themselves are the basis of this data, which in turn is the basis of all planning and resource allocation. If schools are inflating their enrolment numbers right from grade R or 1 in order to get more money, teachers, classrooms or kudos, the department and Treasury are planning for a system bigger than it actually is, perhaps by 10 or 15%. Stringent consequences for principals who give incorrect information are suggested as a key recommendation of this research.

Secondly, both Matric results and comparative tests indicate that it is rural schools in KZN that perform the worst, with stronger results shown in small towns and cities. Funding of schools, however, works in exactly the opposite direction, with rural schools receiving the most funding, often with section 21 status, and urban schools receiving the least funding. The KZN DoE management of rural schools need attention. With national assessments happening at grade 3 and 6 levels, the precise nature of the underperformance of rural schools will emerge and it will then be up to the KZN DoE to ensure it has a careful plan in place to address this issue, both constructively and punitively.

Another key finding is that the quality of education a child receives depends on the district in which their school is located. While the poverty ranking of the districts is fairly old (it is taken from the 2001 census), it is unlikely that radical shifts in poverty levels have taken place. Specific districts such as Obonjeni and Sisonke have very poor results that need specific and dramatic interventions to ensure that some minimal level of performance is insisted upon. Again, systematic evaluations will dramatically assist both the diagnosis of this issue and point to the weakest schools and performance areas. Furthermore, the structural organization of the KZN DoE into districts, wards and circuits needs to be explored so that the districts can deal with the increasing workload that will come the districts' way once clear feedback on the national assessments can be given to schools.

Finally, as the focus turns to the critical area of teachers in the next chapter, some pointers can be taken from this overview. For example, it has emerged here from the SACMEQ findings that South African grade 6 learners are performing poorly in carefully specified reading and mathematics compared with learners from Southern and East African countries who experience similar or higher learner-to-teacher ratios, resource constraints at school, or poverty at home. Such findings must call in question the qualifications and practice of teachers in the classroom.

The high proportion of learners who are not taught in their home language (over half the learners, in most districts in KZN) has also been exposed here together with evidence of the very many isiZulu home language speakers who are teaching in English (that is, as the language of learning and teaching) at primary level in the province. These severe and very immediate constraints on learning and teaching must set considerable challenges to the competence and morale of many teachers in an educational terrain that is not short of other stressors.

4. Teachers

The literature review preceding this study identifies the quality of teaching as the crucial variable impacting on the quality of education in both developed and developing countries. The large gap between the ambitious educational targets set in post-apartheid South Africa and the actual attainments on the ground to date (in KZN as in the other provinces) clearly does have much to do with the quality of teachers and teaching. However, the literature review also emphasises that in developing countries, critical contextual factors act on or compound this key variable. Chapter 3 of the present report has surveyed how some of these factors play out in the KZN educational landscape. It has looked at aspects such as the poverty profile of the districts, learner-to-teacher ratios, resource provision, indications of problems with basic literacy and numeracy development and the extent to which the home language is (or is not) used for the learning and teaching of foundational skills.

The present chapter homes in on the profiles and practices of teachers, as well as teacher supply and demand. The data available for the report contains information on 87,255 educators who work for the KwaZulu-Natal Department of Education. Ascertaining biographical information from these teachers as well as levels of qualification and teaching subjects, and allocating them to schools, is a bureaucratic challenge. The chapter covers the following: the number of teachers and their qualifications; their recompense; research on the content knowledge and teaching methods of grade 6 mathematics teachers, in order to assess quality of teaching; and a survey of over 1,000 teachers to identify their views on the above issues. Three other aspects stand out for attention. The first is the impact of HIV and AIDS on the profession. The second is the challenge for KZN DoE of finding enough teachers to fill existing empty posts and replace those lost by natural attrition and exit from the profession. Thirdly there is the challenge of training teachers to acceptable standards.

4.1 Qualifications

This section disaggregates data on 87,255 teachers by gender, race, age, and years of teaching experience. It also presents data on teachers' REQV levels and breaks them down to district level.

4.1.1 Data sources

The two main data sources for the information that appears in this profile are the Annual Survey of Educators dataset and the SNAP Survey. The Annual Survey has a specific one-page form that requests the name, PERSAL and ID number, gender, age, population group, home language and contact phone number of each educator. It also requests details of the educator's post level, personnel category, type of appointment, qualification level and remuneration type. Since this is a form that must be completed for every educator at the school, it represents a very large amount of data and a daunting data capture task. For this reason, as well as resource constraints, it is not always captured in its entirety by EMIS.

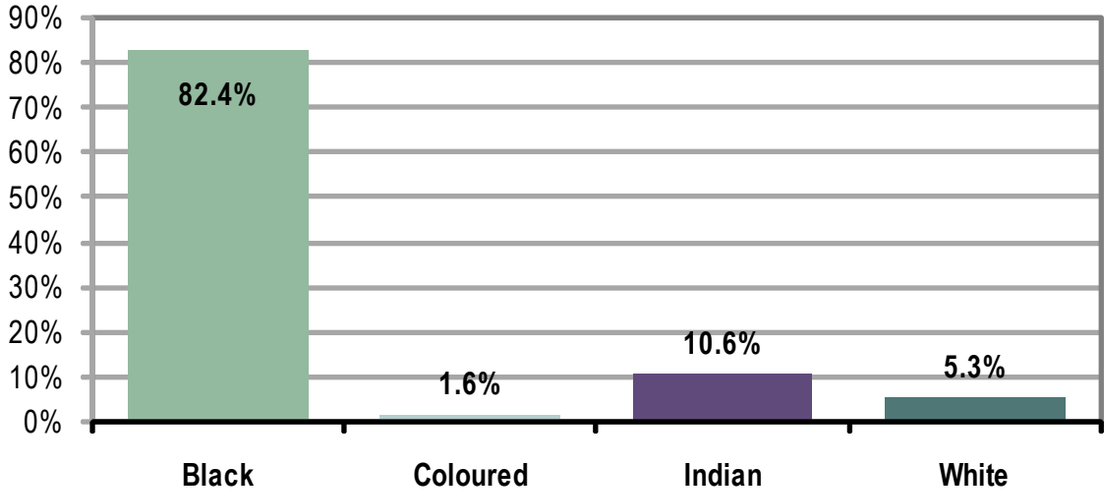
The Annual Survey of Educators dataset that is used for this analysis contains information for 87,255 educators, of which 25% is obtained from the 2007 Annual Survey and the remainder from 2008. It includes educator information for 5,443 of the 5,945 public ordinary schools in the province and is therefore about 91% complete. A large proportion of the schools for which educator data has not been captured (or has perhaps not been provided by schools) are from Vryheid district (167 schools), Obonjeni (83 schools) and Umgungundlovu (72 schools).

The data analysed is therefore representative rather than definitive, but it is hoped that it will provide a general picture of the characteristics of educators in KwaZulu-Natal and, more importantly, one that can inform future planning.

4.1.2 Characteristics of the workforce

Approximately 71% of the educator workforce in KwaZulu-Natal is female. The racial breakdown is indicated by Figure 15 below and is similar to the demographic profile of the province as a whole. The proportion of black African teachers is slightly lower than their equivalent proportion of the provincial population (85%); for Indian teachers it is a few percent higher (10.6% compared to 8% in the population[1]); and for white teachers it is the same.

Figure 15: Proportion of educators by race, 2007/2008



A breakdown of educators by five-year age band is shown in Figure 16 below. In 2007/08 the average age of educators in the province was 40 years. Over two-fifths of all educators were aged between 35 and 44, with a sharp tail off in the number of educators below the age of 35.

1 Statistics SA. (2001). *Census in brief*. Pretoria: Statistics SA.

Educators aged 35 to 39 represent 23% of the teaching force at public schools, whereas those in the preceding 5 year age category (30 to 34) are only 13%. This may imply a problem for the supply of educators in years to come, since in theory there should be a relatively even transition between age groups to allow old educators to retire and be replaced by new ones.

One third of the current teaching force is aged 45 years or older, whereas less than a quarter are 35 years or younger. In the absence of detailed historical data it appears that the educator workforce is slowly aging and may experience future supply problems. One potential reason for this could be the reduction in the number of people that entered teacher training at the time when teacher training colleges were closed and universities took over this function. Other reasons might be the perceived low rewards of teaching and the image problem that the profession has experienced in the past few years.

In any event, the large gap in numbers between educators aged 30-34 and those aged 35-39 (11,000 versus 19,000) could signify future supply problems and will therefore need to be considered in future planning. The recent moves to fund students through bursaries as well as improving salary scales are already playing a role in this regard.

One of the necessary features of successful educational reform is flooding the system with new teachers who are not tied to old ways of doing things. In South Africa this has not happened. The vast majority of practising teachers were trained under the old system at institutions ,following curricula that have all been removed. This is a seldom recognised factor that makes for a conservative teaching force.

Figure 16: Number of educators by five-year age band, 2007/2008

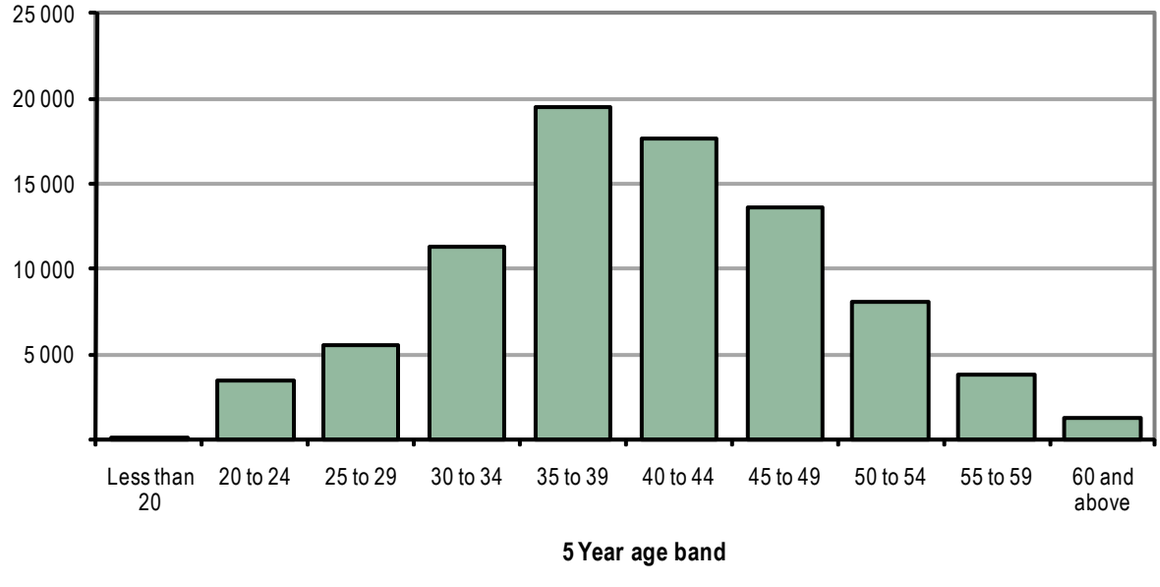


Table 27 shows the average age of educators in each district, together with the average years of teaching experience and the proportion of female teachers. Teachers in Umlazi, Pinetown, Umgungundlovu and Amajuba tend to be slightly older than the average for the province, which is 40, whereas the rural districts of Umzinyathi, Obonjeni and Vryheid have slightly younger teachers. The district with the youngest educators, Obonjeni, also has the dubious distinction of teachers with the lowest average years of teaching experience and the lowest Matric pass rate[2]. This is unlikely to be a coincidence.

Whilst there are only minor differences between districts in terms of the average age of their educators or the proportion that are female, the difference in terms of average years of teaching experience are far greater. Teachers in Umlazi district for example, have on average seven years more teaching experience than those in Obonjeni (17 compared to 10), which implies that Umlazi teachers are almost twice as experienced. Teachers in rural districts such as Umzinyathi and Vryheid are distinctly less experienced than those of urban districts such as Umgungundlovu or Pinetown, a fact once again reflected in the differing Matric pass rates of schools in these districts[3].

Table 27: Educator related indicators per district, 2007/08[4]

District	Average age of educators	Average years of teaching experience	Proportion of teachers that are female
Amajuba	42	15	71%
Empangeni	39	12	70%
Ilembe	40	13	70%
Obonjeni	38	10	68%
Othukela	40	13	69%
Pinetown	42	15	73%
Sisonke	40	13	73%
Ugu	41	14	72%
Umgungundlovu	42	15	72%
Umlazi	43	17	75%
Umzinyathi	39	12	68%
Vryheid	39	11	69%
Average	40	14	71%

2 See section 3.10 on Matric pass rates on page 62.

3 *Ibid.*

4 KwaZulu-Natal Department of Education. Annual Survey. Educators were asked to indicate their years of teaching experience.

Table 28[5] shows that males are over three times more likely to be represented at post levels 3 and 4 (deputy principal and principal) at schools. Only 5% of female educators are employed at these levels compared to 18% of males, indicating that the promotion prospects for female educators are considerably worse than for males.

Table 28: Educators by post level, 2007/08

Post level	Females		Males	
	Total	Percentage	Total	Percentage
1 - Educator	48 134	82%	16 189	67%
2 - HOD	7 123	12%	3 548	15%
3 - Deputy principal	1 809	3%	2 196	9%
4 - Principal	1 435	2%	2 058	9%
Total	58 501	100%	23 991	100%

4.1.3 State versus school governing body

Educators at schools can be remunerated by either the state or the school governing body (SGB). An SGB can employ extra teachers to reduce learner-to-educator ratios to within what are deemed suitable limits, and use school fees to pay their salaries. Sometimes this means that the majority of teachers in a state school are in fact employed by the SGB. There are 33 such schools in KwaZulu-Natal, all of which are former Model C schools. Many have seen their state subsidy decline considerably over the past few years, in particular those classified as quintile 4 and 5 schools, so fees have risen in order to supplement declining state funds for recurrent expenditure, as well as raise learner-to-educator ratios. In some schools the ratio of fees collected to monies received from the state (via teacher's salaries and recurrent expenditure) can be as high as three to one, meaning that for every R1 that the school receives from the state, it collects R3 via school fees. Such schools are in the minority and are in effect treading a line between private and public status. They are, however, increasingly racially integrated, educating the children of middle class families in the suburbs, be they white, black, coloured or Indian.

Table 29[6] indicates the number of teachers that are employed by governing bodies and the state according to nature of appointment. This data is derived from the Department's 2009 SNAP Survey and is for public ordinary schools. There are three classes of educator appointment: permanent, temporary and substitute. Temporary appointments are made when vacancies occur which have not yet been advertised. Substitute appointments occur when educators are on maternity, sick leave or absent for more than 30 days. One half of all SGB-paid educators in state schools occur in just two districts, namely Umlazi and Pinetown.

5 For 91% of schools only – 87,255 educators.

6 KwaZulu-Natal Department of Education. (2009). SNAP Survey.

Table 29 shows that the proportion of educators employed by the state and SGBs as substitutes in 2009 was very low (2% and 1%). SGBs employed twice the proportion of temporary educators that the state employed: 23% as opposed to 12%. The issue of temporary educators is hotly contested by the teacher unions, with frequent calls for permanent appointments to be made once a defined period of service has been completed. The teacher unions hold no sway over governing bodies, though: the SGBs make arrangements that suit the school rather than the unions.

Permanent appointments comprised 86% of all state-paid educators whereas for SGBs it was 76%. Overall, state-paid educators made up 95% of the teaching force in public ordinary schools in KwaZulu-Natal and SGB-paid educators 5%.

Table 29: Educators by nature of appointment and remuneration, SNAP 2009

Nature of appointment	Governing body		State		Total
	Total	Percent	Total	Percent	
Permanent	3 612	76%	71 227	86%	74 839
Substitute	38	1%	1 276	2%	1 314
Temporary	1 114	23%	9 860	12%	10 974
Total	4 764	100%	82 363	100%	87 127

4.1.4 Levels of qualification of educators

Educators had to answer an important question in the Annual Survey that related to their qualification category. The form listed specific qualification types ranging from 'REQV 10 (Matric, no training)' to 'REQV 17 (Matric + 7 years training)'. Educators had to identify the qualification that was applicable and specify that on the form. It was stressed that this related to the formal duration of the qualification rather than the time taken to complete it.

The pie chart, Figure 17, provides a graphical picture of the qualifications levels of educators in KwaZulu-Natal. Bear in mind that this dataset includes educator information for 5,443 of the 5,945 public ordinary schools in the province and is therefore about 91% complete. Nonetheless it gives a fairly clear picture of what is going on.

The pie chart shows that in 2008, roughly 14% of the educator workforce in the province was unqualified, i.e. had less than the minimum qualification level of REQV13 which is Matric plus three years of study. A further 25% had the minimum qualification of REQV13 and 61% had Matric and four or more years of training. If the 14% unqualified educators indicated below was extrapolated for the entire teaching force in the province (86,017 in 2009[7]), this would imply that

7 Mchunu, Senzo. (2009). *Budget Speech 2009/2010*. KwaZulu-Natal Department of Education: Pietermaritzburg.

over 12,000 educators are in need of proper teacher training in the province. This equates to an average of two untrained educators for every school in KwaZulu-Natal although the situation is far worse in some districts and some schools than in others. One alarming phenomenon is that over the past decade more than 6,000 teachers have been through an upgrading programme to bring them up to professionally qualified status, but the total number of teachers who are below REQV13 has remained fairly constant. This suggests that a significant number of unqualified teachers are still being employed. This is discussed further in the supply and demand section below.

Figure 17: Proportion of educators by qualification

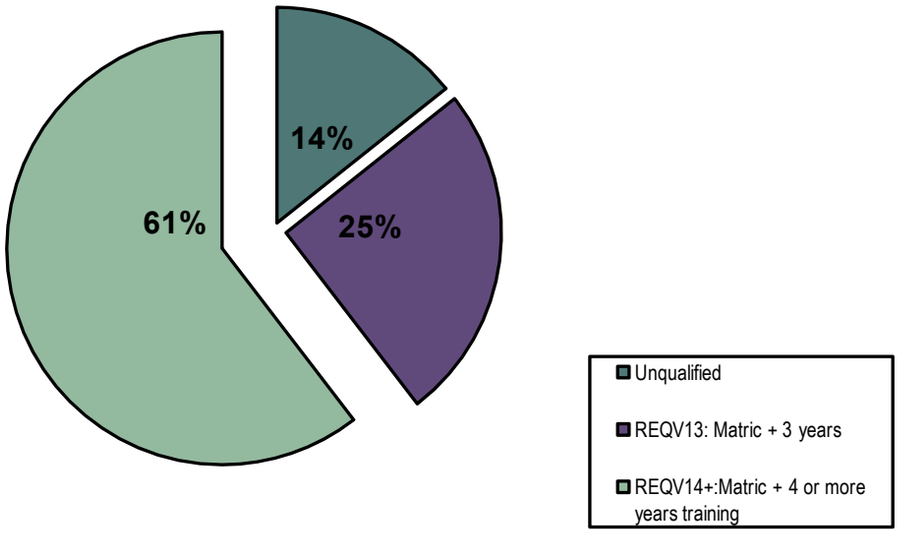


Table 30[8] provides a summary of the REQV qualification levels of educators by district. Some of the values are a cause for concern. One example is the very high proportion of unqualified educators (REQV12 or less) in Obonjeni, Umzinyathi and Vryheid (20%, 20% and 22%), compared to Umlazi where it is only 7%.

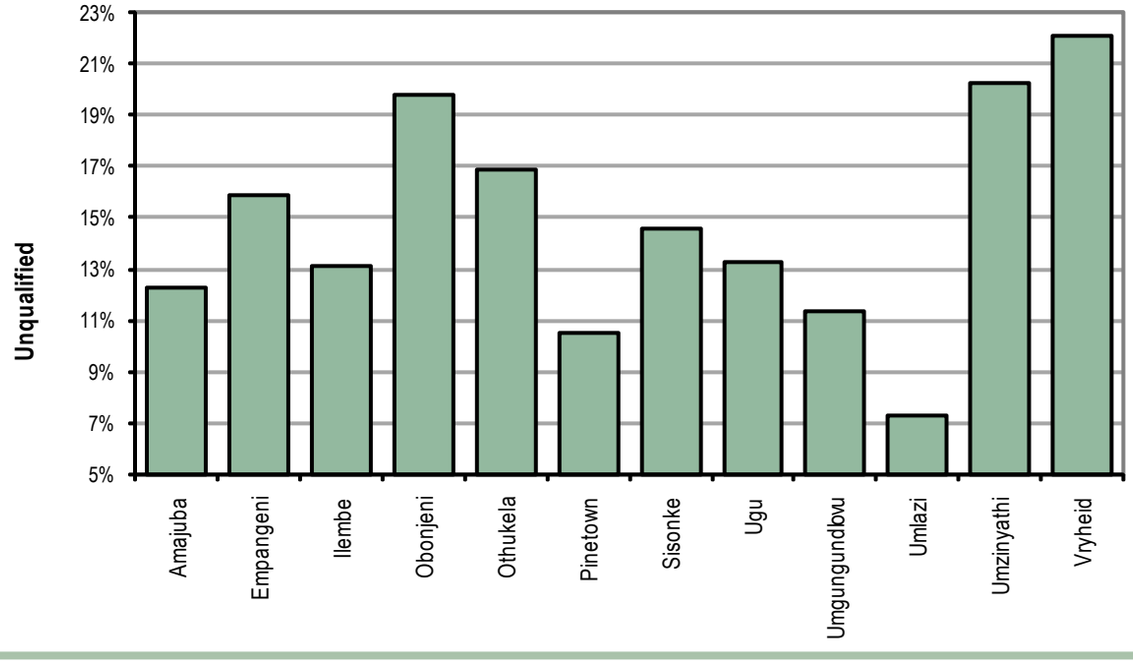
Another major difference between districts is in the proportion of educators who are "well qualified" i.e. have Matric and four or more years of training (REQV14 or higher). The proportion of well qualified educators in Umlazi is 77% whereas in Vryheid it is only 48%. In Pinetown it is 69% whereas in Umzinyathi it is only 49%. These stark differences in levels of qualification and teaching experience surely manifest in the classroom and represent radically different learning experiences and opportunities for pupils. It seems that a great deal depends on which district one

8 For 91% of schools only – 87,255 educators.

Table 30: Proportion of educators by qualification (REQV) level per district

Description	Unqualified	REQV13 : Matric + 3 years training	REQV14+: Matric plus 4 or more years training	Total
Amajuba	12%	31%	57%	100%
Empangeni	16%	24%	61%	100%
Ilembe	13%	24%	63%	100%
Obonjeni	20%	29%	51%	100%
Othukela	17%	33%	50%	100%
Pinetown	10%	20%	70%	100%
Sisonke	15%	35%	51%	100%
Ugu	13%	25%	61%	100%
Umgungundlovu	11%	21%	68%	100%
Umlazi	7%	16%	77%	100%
Umzinyathi	20%	31%	49%	100%
Vryheid	22%	30%	48%	100%
Total	14%	25%	60%	100%

Figure 18: Proportion of unqualified educators per district 2008



goes to school in. Learners in rural areas unfortunately do not have the choice to switch schools if their local one is dysfunctional or if the teachers are inexperienced and under-qualified. If they happen to be attending schools in certain districts they face a potentially difficult path through schooling.

4.2 Recompense

In KwaZulu-Natal there are approximately 86,017 publicly paid educators, making them the largest group of public employees in the province. Educators' pay makes up 3.5% of the GDP and teachers are 3% of the country's economically active population. The total national budget for education for 2010 is R165 billion, of which approximately 15 % goes to KZN i.e. R24,6 billion. The province's total annual budget is R70.8 billion, making education the largest recipient of the provincial allocated budget. Out of the total educational budget, 84%, i.e. approximately R20.7 billion, goes to paying public educators in the province[9]. With such a huge budget, South Africa today has secured a general education enrolment of over 95% of children aged 7 to 14, putting the country ahead of all other African countries, except Seychelles, and making it comparable to countries such as Mexico, Botswana and Thailand[10].

There is detailed and lengthy coverage of the determinants of quality in education in this report. However, there has been very little work done on the relationship between learner performance and teachers' pay in South Africa. This is partly because teachers' pay is essentially a proxy for some other factors, such as the years of post secondary education and training of teachers and/ or years of experience in teaching. This in turn is a proxy for teachers' ability. The little work that has been done[11] shows a strong correlation between teachers' pay and learner performance. However learner performance is attributed to teacher qualification and not simply to pay.

4.2.1 The determination of teachers' pay

It is accepted that teachers are central to the functioning of the educational system and to its success. Unlike many other jobs, teaching requires a relatively stable and secure environment to be creatively productive. This demands that society values teaching and compensates it accordingly.

Unlike many other jobs where salaries and wages are influenced by the demand and supply of labour, in teaching the state as the employer regulates the demand side. The government's demand or allocation of teachers depends principally on the number of learners in each school. However the supply for labour is subject to market forces: people employed in this sector are in

9 Mchunu, Senzo. (2009). *Budget Speech 2009/2010*. KwaZulu-Natal Department of Education: Pietermaritzburg.

10 Teacher Summit, 2009. Pretoria. http://www.tdsummit.co.za/

11 Van der Berg, S. & Burger, R. (2003). "Education and socio-economic differentials: study of school performance in the Western Cape". *South African Journal of Economics*. 71(3): 496-522.

the labour market and are able to compare their own earnings with the alternative levels of pay, to the extent that the relevant information is available to them. In other words, individuals have to weigh their opportunity costs since they have a choice of working in a different sector of the economy or not working at all, depending partly on whether or not they are satisfied with the terms of employment and compensation in education.

In South Africa, since the government is the main source of demand for teachers, the pay is managed through a national pay system that also centrally manages the pay scales and the promotion rules. Although teacher unions have played a significant role in influencing changes in the system through the Education Labour Relations Council (ELRC), the ultimate power to change the pay system resides with the national Ministry of Basic Education.

Since 1994, the government has steadily increased teachers' pay, closing the former gap between white and black teachers. The new 2008 pay system, Occupational Specific Dispensation (OSD), initiated radical ways of improving salaries, thus boosting the pay level, and making it comparable to many other professions in the country.

The state in South Africa, despite the limitations imposed by the budget funding of the national pay system, has introduced flexibility, linking reward to demonstrable improvements in a teacher's performance. The progression to the new OSD pay system is expected to serve as a positive incentive to large numbers of teachers, given that many are currently unqualified or under-qualified, as shown in the following table. In 2007, 40% all teachers in South Africa had fewer than four years of training. Of this group of unqualified teachers 12% were white while 44% were Africans[12]. Of specific concern is that the majority of M+0 teachers are from KZN.

Table 31: Teachers' years of post-secondary education and training[13]

Years of post-secondary education and training	% of all employed educators
0	2
1	1
2	4
3	33
4	40
5	15
6	5
7	1
	100%

12 Gustafsson, M. and Patel, F. (2008). "Managing the teacher pay systems: what the local and international data are telling us". Paper presented at the Development Policy Research Unit Conference: Johannesburg.

13 National Treasury (2007).

Three salient points can be made about this new pay system:

1 It incentivizes existing teachers and new entrants to the profession to upgrade their qualification to M +4 level.

2 By linking pay to teaching and not only to progression to management, it is encouraging teachers to value classroom teaching as equal to any other means of progression in the management hierarchy.

3 Future progress in pay is also linked to performance at school and in the classroom.

The OSD has therefore been able to create the mechanism conducive to teacher professional development and performance. The following table compares the 2007 and 2008 OSD salary structures[14].

Table 32: Comparison of 2007 with 2008 OSD salary structures

General classroom teacher	2007 salary structure		2008 OSD salary structure		
	Minimum salary	Maximum Salary	Minimum Salary	Maximum salary for 'satisfactory'	Extended maximum
Teacher (REQV11/12)	49 974	80 565	51 488	80 569	80 569
Teacher intern			85 526	85 526	85 526
New entrants			115 276	115 276	115 276
Teacher (REQV13)	85 908	184 248	85 526	156 926	195 332
Teacher (REQV14)	107 007	184 248	117 593	215 768	263 277
Senior teacher (REQV13)	132 897	154 293	137 887	158 498	195 332
Master teacher (REQV13)	158 688	184 248	163 301	195 332	195 332
Senior teacher (REQV14)			137 887		263 277
Master teacher (REQV14)			163 301		263 277
Teaching and learning specialist			168 249		365 611
Senior teaching and learning specialist			189 587	347 866	395 904
Management (school based)					
Head of Department	132 897	184 248	144 921	265 910	365 611
Deputy principal	158 688	229 968	173347	318 068	395 904
Specialist (office based)					
Education specialist	132 897	184 248	144 921	266 910	365 611
Senior education specialist	158688	229 968	173 347	318 068	395 611

14 ELRC. (3 April 2008). *Education Labour Relations Council: Collective agreement Number 1 of 2008.*

4.2.2 National and international comparison

The relative size of teachers' pay to per capita income is a useful indicator of the standing of teachers' income in relation to the national average income per capita. Comparing South Africa to the countries listed in the following table[15], teachers' pay in South Africa shows the highest difference to the national average earnings. In other words, teachers in South Africa earn much more (38% more) than the national average income per capita. Compared to many middle income countries, this is an extremely generous and attractive offer.

Table 33: Salaries and wages in education compared to the per capita income

Country	Teachers' pay per annum (new entrant)	Per capita income purchasing power	Percentage Difference
Brazil	R22 759	R85 041	-73 %
Malaysia	R61 024	R116 034	-47 %
Botswana	R101 340	R110 629	-8%
Thailand	R51 371	R50 586	1.5%
South Africa	R115 276	R 85 400	38%

With the present structure of unemployment in South Africa, and the national per capita income being lower than teachers' pay, it could be expected that the present teachers' pay structure would attract a large number of potentially bright teachers, particularly from the historically disadvantaged group whose limited social and financial capital would constrain them from pursuing other economic and business activities. To harness this would require wide publicity among secondary school learners, as there remains a perception that teachers are underpaid. The difficulty is that most teachers compare their pay with other graduate professions and not with the national per capita income.

4.2.3 Challenges

In the short term, however, the full benefits of the OSD system may not be attainable due to the problems of attracting fully qualified teachers to work in many rural and some township schools. Past inequalities created rural areas and townships with little prospect of attracting serious economic activities and it is these places that are finding it difficult to attract teachers. Although the long term prospect will depend on the economic renovation of these places, in the short term targeted social and financial incentives can hopefully attract qualified and experienced teachers. The Department of Education introduced a new policy measure in 2008

15 World Bank. (2009). World Development Indicators database. http://www.Worldsalaries.org/teacher.shtml; Teacherswww.jobzing.com (2010); author's calculation.

to incentivize academically qualified educators to take up posts in rural areas. The financial benefit of an additional R 10,700 per year may not be enough on its own i.e. without other social support services. In addition, even this modest start is at present awaiting implementation, in part because there is contestation over the definition of a rural school.

While pay structures may be better organised and recompense used to reward good teaching and attract better quality teachers, all is not rosy. The number and capacity of the present teacher training institutions may also limit the supply of fully qualified teachers, perpetuating the current impasse with regard to 'temporary educators'. The issue of temporary educators is dealt with in more detail in the section on teacher supply and demand.

4.3 Quality

4.3.1 A study of grade 6 mathematics teachers

In order for us to develop some insight into the quality of the education process, we linked this analysis to a wider national and international classroom based study of teacher quality and performance. This was a replication of a study already conducted in Latin America and piloted in Gauteng by a research team led by the Human Sciences Research Council (HSRC) and including the University of Cape Town (UCT), University of Witwatersrand (Wits) and University of KwaZulu-Natal (UKZN). The purpose of the study was to explore and establish the relationship between teachers' mathematical content knowledge, teachers' practice and learner outcomes in grade 6 mathematics classrooms. The study involved assessing teachers' mathematical content knowledge, teachers' pedagogical content knowledge and teachers' practice in mathematics classrooms.

While we have already analysed system level data, this study allows us to enter into selected classrooms and develop an insight into the practices of teachers. This moves away from notions of quality linked to qualifications or experience, and towards observed quality practices.

4.3.2 Methodology

The study was conducted in three phases. **Phase 1** took place between May and August 2009, and involved administering a learner questionnaire and test to approximately 1,800 grade 6 learners in 39 public schools. This questionnaire included questions on learner biographical details, their family and socio-economic status, language and their perceptions about school violence. The test comprised items from the grade 5 and grade 6 mathematics curriculum.

Phase 2 was conducted between August and September 2009 and involved videotaping teachers teaching in the grade 6 mathematics classrooms. It also involved administering a teacher and a principal questionnaire. The teacher questionnaire had a general component and a mathematical knowledge component. The general component included teachers' biographical

information, education and training, socio-economic status, home language curriculum coverage, supervision, school violence and questions on absenteeism. The mathematical knowledge component included questions that required teachers to identify common errors made by learners in primary mathematics, and other similar tasks. The principal questionnaire included questions related to those asked of teachers about language, curriculum coverage, school violence, absenteeism and supervision. The second phase of the study also included examining learners' books in each class as a way of measuring the "opportunity-to-learn". This was aimed at providing sufficient information to assess how much was covered during the year, and thus how much opportunity the learners had to learn mathematics.

Phase 3 of the study was conducted in October and November 2009 and involved conducting the learner questionnaire as a post-test to assess whether there were any gains learners made when compared to the pre-test.

Forty primary schools were sampled from the Umgungundlovu education district in KwaZulu-Natal, using stratified random sampling. All schools categorised by the Department of Education as quintiles 1, 2 and 3 were recoded into category 1 for this study, representing poorer schools, and schools usually categorised as quintiles 4 and 5 were recoded into the category 2 representing affluent schools. Approximately 76% of KZN grade 6 schools fall within the study's category 1 (old quintiles 1, 2, 3) and 22% into category 2 (old 4 and 5), and 2% still need to be updated. The first 30 schools were selected from the list of category 1 schools and the first 10 from the list of category 2 schools. Thus the study sample was stratified to comprise 75% of less-resourced schools and 25% of better-resourced schools.

While the full data set will require more time to analyse, preliminary results are discussed below.

4.3.3 Preliminary results of the first learner test

A total of 1,870 grade 6 learners from 39 schools wrote a test of 40 multiple choice items mostly from the grade 5 mathematics curriculum. The following results are from 724 learners, which is 40% of the total sample. This group represents 21 schools of the study sample, two of which were from quintile 2 (well resourced) schools. However, the results do not necessarily represent all the learners in each of these schools.

Of this group, there was an almost equal number of boys and girls. isiZulu is the home language of 86% of this group, and English is the home language of 11%. The rest of the group indicated Afrikaans, Sesotho or 'other' as their home language. Over half of the group (59%) indicated that they had piped cold water at their home, and 24% had hot piped water. Sixty-seven per cent (67%) said that they had electricity in their homes. Less than one half (45%) indicated that they had between 10 and 20 books, magazines and newspapers in their home. Only 7% said that they had more than 100 of these items at home, and 13% said that they had none at all. One fifth of this group (21%) had a computer in their home.

The following table indicates the results from the 724 learners for the first 15 items of the test. The percentage of learners who chose the correct answer is shown, as well as the incorrect answer that was chosen by the most learners.

Table 34: Number and percentage of children choosing correct answers on maths test and most popular incorrect answer

Test question	Correct answer and % who chose it	Most popular incorrect answer and % who chose it
1. Select the number that follows in a table	37 (70%)	27 (18%)
2. There are 12 bottles in a crate. How many in 5 crates?	60 (30%)	17 (36%)
3. Write the following words in numbers: six thousand and twenty one	6,021 (53%)	621 (21%)
4. Add 6 327+364	6,691 (56%)	9, 967 (14%)
5. Mr Ali buys nine ½ kg packets of sugar. How many kilograms of sugar is this altogether?	4 ½ kgs (24%)	9 ½ kgs (50%)
6. What is the greatest difference between the number of tickets sold?	17 (19%)	19 (62%)
7. What is the value of 6 in the number 7,652?	600 (44%)	60 (29%)
8. 25 x __ = 50 x 2	4 (17%)	2 (31%)
9. 120 children sitting in 6 equal rows. How many in each row?	20 (30%)	120 (29%)
10. Counting the number of children represented by four bars on a bar graph.	70 (38%)	25 (35%)
11. Which fraction is greater than ½?	¾ (19%)	$^1/_3$ (44%)
12. 2/8 of a cake is equivalent to what other fraction of this cake?	¼ (22%)	$^1/_8$ (52%)
13. What is the missing number: 532 487 = 500 000 + _____ + 2 000 + 400 + 80 + 7	30 000 (64%)	3 000 (22%)
14. Choose the best way to round off to the nearest 100 to estimate the sum of 423 and 865.	400 + 900 (18%)	400 + 800 (37%)
15. 12 × 500 =	6 000 (46%)	600 (22%)

The preferred answer to question 2 comes from adding rather than multiplying the two numbers in the question. This reflects a common strategy amongst learners, as documented in the international literature, namely to choose an operation based on the value of the numbers. However, in the light of 89% of the respondents completing the test in a language other than their home language, this must also be seen as a contributing factor. It is possible that learners do know or are able to work out what 12 × 5 is, but that they did not understand that this is the operation that was required in this question.

Language may also have been a major factor in the learners' difficulties in answering question 10, where 35% of the learners chose the largest group rather than the sum of the four groups as their answer, and question 6, where two thirds of the learners simply read the greatest value on the graph rather than finding the greatest difference.

Our number system is a base 10 positional system. While it seems obvious to many adults, learning about the different values carried by, say, a 6, depending on its position in a number, is a major stumbling block for many learners. It is what a lot of the work in the foundation phase is meant to address. Thus, we would expect a fair share of learners to have a good understanding of place value once they reach grade 6. These results show that this is not true for our learners. Questions 7 and 13 required that learners could identify place value. These were answered correctly by 44% and 64% of learners respectively. Just more than half the learners could apply their knowledge of place value to write correctly a number stated in words (question 3), 44% could state the value of ' in 7,652 (question 7) and 56% could add a four digits to a three digit number (question 4). The last one is perhaps the most shocking: 17.3% of the learners added from the left, *de facto* adding 3640 instead of 364.

Fractions pose another large problem for the majority of the learners. More than half of the learners interpreted "nine ½ kg" as "9 ½ " – this could reflect another language decoding problem. Forty-four per cent (44%) of the respondents thought that $^1/_3$ is greater than ½ - a common stage in learners' understanding of fractional symbols where the symbol is broken into components which are then compared (in this case, 3>2), but one that should have been addressed in grade 3 or 4. Five out of 9 of the learners chose $^1/_8$ to be equivalent to $^2/_8$ (an answer that is difficult to explain). While the language difficulty must be considered, these results still strongly indicate that most learners are not comfortable even with the most common unit fractions and that they have little understanding of the fraction symbols.

In the light of these results, it is proposed that what is needed is a language-based analysis of the learners' preferred answers[16] to determine the extent to which the results spring from problems decoding the test as much as from difficulties with the mathematical content.

16 Zuma, S. C. & Dempster, E. R. (2008). isiZulu as a language of assessment in science. *African Journal of Research in Mathematics, Science and Technology Education, 12*(2), 31-46.

4.3.4 Analysis of teachers' test results

4.3.4.1 Who are the teachers?

This analysis refers to the biographical data of 34 teachers from 33 of the sample schools. It represents 83% of the total schools in the sample. Eighteen (18) of the teachers were male and 16 were female. This means there are slightly more male teachers in this sample: however, this is not reflective of the whole teacher workforce in KwaZulu-Natal which is 71% female. The minimum age of the sample was 21 years and the maximum age was 57 years. The mean is 41 years which is close to the KZN average age of 40 years in 2007/2008. More than two thirds (69%) of the group had been teaching for 11 years or more. This seems to fit well with the average years of teaching experience of teachers in the Umgungundlovu district, which is 15 years. Two of the teachers had one year of teaching experience, three had between two and five years' experience and four had between six and 10 years of teaching experience.

Two teachers did not answer the question about their pre-service professional teacher training. Eighteen of the teachers had passed grade 12 without exemption or endorsement and 14 had passed with exemption. Two of the teachers had no teacher training, four had one year of teacher training, five had two years and eight (25%) had three years of teacher training. Forty per cent or 13 teachers had more than three years of teacher training. This is representative of both the district of Umgungundlovu, where 39% of teachers are on REQV 14, and the province, where 40% of teachers have REQV 14.

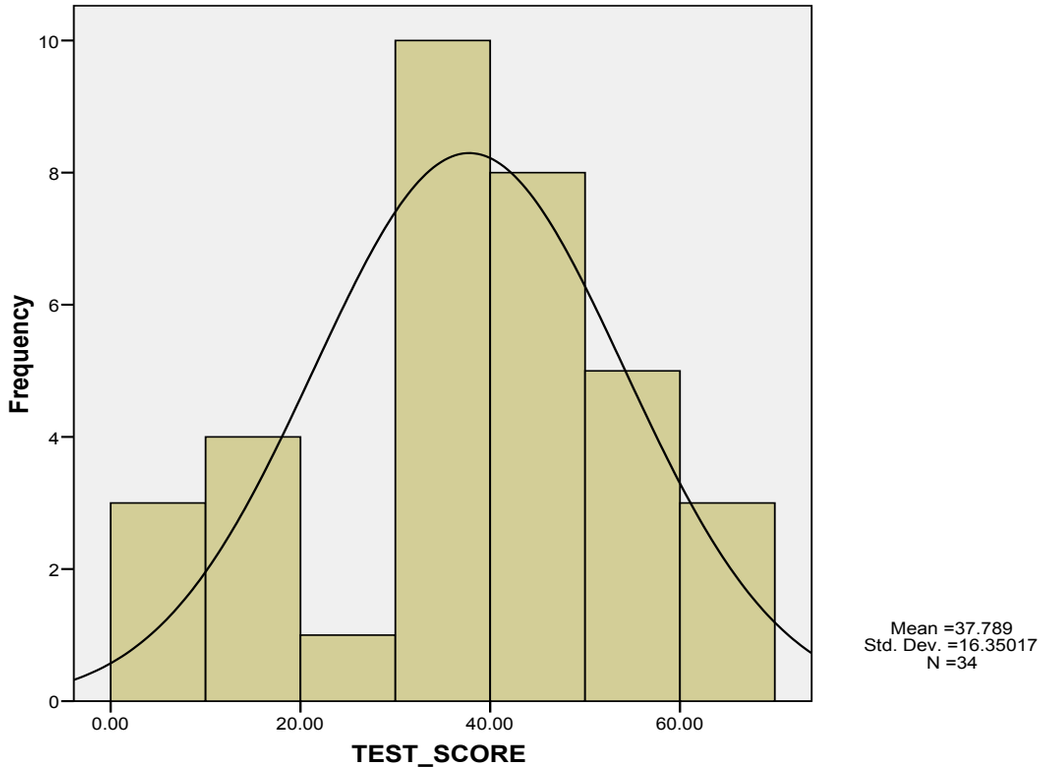
More than two thirds of the group (72%) said that they felt adequately prepared to teach the current mathematics curriculum. However, 33% had not been on any in-service training courses that were specific to mathematics. In terms of support from the provincial DoE, 73% of the teachers said that the maths curriculum or subject advisor had not visited their classroom during 2008. Four teachers (12%) reported that they had received one visit in 2008, two had been visited twice and one teacher reported more than two visits.

4.3.4.2 Preliminary analysis of teachers' results

On average, 47% of the respondents got each question correct.

The graph overleaf shows the frequency of scores from the respondents. Three teachers answered less than 10% of the questions correct. Eight out of the 34 respondents got more than half of the questions correct. The highest scoring respondent got just over two thirds of the questions correct. It is of concern to note that no teacher attained 100% for a test on the curriculum they were teaching.

Figure 19: Frequency of maths test scores by maths teachers



Below, the statistical results are used to explore the knowledge areas with which respondents had most difficulties, as well as those where they appeared to fare fairly well.

4.3.4.3 What the respondents found difficult

In this analysis, the questions that could easily have been misinterpreted have not been engaged with.

1. Statistical descriptors and representations

This was the most marked problem area, showing up in a question which asked the teachers to choose appropriate statistical descriptors (mean, median, mode). Thirty-eight per cent (38%) of teachers think (incorrectly) that the mean and/or the median are appropriate descriptors to determine which category is the most popular. This would seem to reflect a complete lack of conceptual understanding of the concepts 'mean' and 'mode'. 41% thought the range would be an appropriate descriptor. Thus, it appears that roughly 40% of the respondents have no knowledge (or very little) of the most common statistical descriptors, despite this being part of the grade 6 syllabus.

While almost half the respondents (15) picked appropriate descriptors, many of them also picked an inappropriate descriptor as well. For instance, of those 10 who said that the mode of frequencies is appropriate, six also said that the median is appropriate, six that the mean is appropriate and four that the range is appropriate. This indicates to the researchers that there was less understanding of statistical descriptors than the 15 correct answers would signify.

Clear difficulties also showed up in deciding between representation of data as categorical (bar graph and pie chart) or numerical (histogram and line graph).

These results indicate that it is not enough to consider the answer to each question in isolation; a respondent may pick the correct answer, but then also choose an incorrect answer. This indicates that the boundaries of the concepts or their applications are not clear to most respondents.

2. The real numbers

All the respondents answered the question which asked them how many decimal numbers there are between 0.30 and 0.40. Forty-seven per cent (47%) of the respondents said that there are nine, 24% aid 10. This is in line with other research on this topic, and may well reflect 'successor' thinking incorrectly transferred from the natural numbers to the rationals/reals – in other words, because there is always a unique natural number following (2 follows 3, 45 follows 44, and so forth) the same assumption is made about the rational numbers. Only 29% chose the correct answer, "an infinite number". The researchers argue that this reflects the strong emphasis on the earlier number systems in primary school, wherefore the teachers rarely engage the real numbers. It is fair for learners in grade 6 not to know the answer to this question, but is it fair for their teachers not to know?

3. Ratio problems

Fifty-seven per cent (57%) of the respondents had problems with a ratio question which compared part to part rather than part to whole. Only 32% of the respondents could correctly determine the number of sweets of two kinds when the total number and the ratio were given (though it is possible that 21% of the teachers confused the two kinds of sweets). Thirty-five percent (35%) of the teachers appear to simply have added the numbers in the ratio (3:1) to get the answer 4. Still, the simpler ratio problems were easy for many of the respondents.

4. Applied algebra

One of the questions asked the teachers to identify correct rules to predict a number in a pattern. This is above grade 6 level, but the teachers must lay the foundation for such algebraic work during the intermediate phase, and therefore should be familiar with it themselves. Four options were given, and teachers were allowed to choose more than one. The first was not a rule as much as a process through which to develop a rule (but in all fairness, at grade 6 this would have been a reasonable answer). Seventy-one per cent (71%) of the teachers said this was a rule. Only 15% picked the correct formula for the sum of the first n integers:

$$\frac{(\text{number of steps}) \times (\text{number of steps} + 1)}{2}$$

Nine per cent (9%) picked the incorrect formula looking similar to the correct one, and thus may not have taken the time and effort to check it against the examples provided. Twenty-four per cent (24%) picked the fourth option (*number of steps + 1*), which is very difficult to explain, since it does not fit the examples provided and is easy to check. Our only possible explanation is that these respondents lack an understanding of variables.

5. Geometry difficulties

Many of the respondents appear to operate on a low Van Hiele level. For instance, 71% of the respondents claimed that it is impossible to construct a square which is also a rectangle. This is a common misconception, which has its root in the visual introduction of the common shapes not corrected through later engagement with the qualities and characteristics of geometrical figures. In other words, it is van Hiele level 1 thinking which is carried through. The same thinking shows up when 10 (29%) of the teachers think it is possible to construct a rectangle which is not a parallelogram – impossible, since all rectangles are parallelograms.

Fifty-nine per cent (59%) of the respondents did not consider it a mistake for a learner to split a figure up into two rectangles in order to find the perimeter. This reflects a confusion of area and perimeter, which can be recognised by UKZN work in teacher education as a result of a procedural focus on finding area and perimeter. The method of dividing an area up into smaller parts cannot be transferred to finding perimeter, but if the concepts are not fully comprehended, this is not obvious.

6. Recognising thinking in learners' alternative methods

One question in the test asked the teachers to assess a learner's invented algorithm for multiplication of a one digit by a three digit natural number. Four options were given, and the teachers' responses were almost equally distributed over the four options (29%, 24%, 21% and 24%, respectively). What is interesting is that 47% of the teachers were not capable of identifying what the fictional learner was doing, and 24% could not see that it was a systematic approach.

One could argue that this is testing pedagogical content knowledge, but it is also appropriate to consider it profound understanding of fundamental mathematics to be able to recognise meaningful approaches to simple number operations.

Another pedagogical content knowledge issue is the teachers' difficulty explaining what is wrong with a learner's representation of a mixed number. An alarming 44% of the teachers simply stated that what is wrong with the learner's reasoning is that the answer was incorrect, thus completely ignoring that the fictional learner had used correct thinking and giving no cognisance to the learner's method. Twenty-four per cent (24%) of the respondents simply said that the learner does not know what a mixed number is, thus de facto also ignoring the correct elements in the learner's thinking. Only 12% of the respondents were able to recognise exactly what was problematic in the learner's reasoning.

4.3.4.4 What the respondents did fairly well on – fake blessings?

As argued above, what teachers did well on should not be seen in isolation from their wrong answers, since the two may indicate profound confusion about concepts.

Sixty-five per cent (65%) of the teachers were able to recognise the same error in simple addition with regrouping tasks, while 18% thought it was the same error in all three cases – perhaps signifying simply that they were all wrong.

Seventy-seven (77%) of the respondents could relate decimals to fractions and use this in comparing. However, 35% of the respondents thought 0.3 was greater than 0.35 because 0.3 has fewer decimals, and 47% because they thought $^{3}/_{10}$ is greater than $^{35}/_{100}$. De facto, of the 26 respondents who picked the correct explanation, 10 also accepted that 0.3 is larger because it has fewer decimals and half of them (13) said that $^{3}/_{10}$ is greater than $^{35}/_{100}$. So while some of the answers may reflect a tendency to accept reasonable even if incomplete learner explanations, 10 respondents reflected incorrect understanding of fractional comparison themselves.

Similarly, the fact that 77% of the teachers could identify a learner's work on one percentage task as correct fades in significance when held together with the fact that 59% of them also thought the learner's work on the inverse task was correct when it was not.

Eighty-eight per cent (88%) of the teachers knew that $15 - 2 - 3 = 10$, only 1 (3%) did not (the remainder giving unclear answers) and 65% recognised that $80 \div 4 \times 2 \neq 10$ while 24% thought otherwise. But this is not a sign that the teachers understand order of operations: only about half could tell whether expressions involving both addition/subtraction and multiplication/division were correct.

When it comes to pattern recognition, two-thirds of the teachers could pick up on a visual number pattern, while 71% could see the procedure to find the sum of the first n counting numbers. But as discussed previously, when it came to identifying the correct algebraic expression for the final sum, only 15% of the teachers could do so. This reflects an absence of algebraic competence. In light of this, it is not surprising that the learners do not have the foundation for algebra in place when they leave primary school.

Although 74% of the teachers said it was possible to construct a parallelogram with diagonals of equal lengths, the limitations of this apparent result have already been discussed. Sixty-two per cent (62%) correctly said that it is not possible to construct an equilateral right-angled triangle. Only 6% of the teachers correctly identified that the perimeter of a figure was 20 cm, yet about 50% of the respondents could not identify the errors in learners' workings.

While 77% of the teachers could see that a bar graph would be an appropriate representation for a categorical frequency chart, only 50% could see that a pie chart would be as good, while 29% incorrectly thought a histogram would be appropriate, and 32% suggested a line graph. So while

a large portion of the respondents can identify the most common representation as appropriate, many are clearly not sure when the less common representations are useful.

In conclusion, linking the results from one question to another has shown that it would be misleading to take a high percentage of correct responses as an indication of strong teacher knowledge in that area. It is more complex than this. As John Mason[17] and Liping Ma[18] have argued, to have profound understanding of a concept, one most understand its connections to other concepts, its limitations, and its applications. In this respect, many of the teachers' correct answers are deceptive, because the comparison shows that they do not have profound understanding. The strength of this test is that it allowed for such comparisons and explorations.

4.3.5 Analysis of video recordings of grade 6 lessons

This preliminary analysis is based on video recordings of only 10 classrooms of a total of 37.

Teachers were videoed in their classrooms giving lessons, and these videos were watched and analysed for four aspects:

- Cognitive demand made on learners
- Mathematical proficiencies facilitated by the teacher
- Content coverage
- The teachers' content knowledge, pedagogical knowledge, and pedagogical
- content knowledge

4.3.5.1 Cognitive demand made on learners

The cognitive demand of tasks is considered in terms of what the teacher presents to the learners and also what the learners actually engage with. However, in this study, there has mostly been a focus on the opportunities to learn, not on the extent to which learners manage to utilize these opportunities. The cognitive demand of the teachers' presentations, questions and tasks was assessed using the framework of Stein et al. (2000)[19] which developed four main categories of cognitive demand, each characterised in a number of respects, thus making it a rubric applicable to analysis of classroom interactions. The four categories are:

- *Memorisation* – submitting to memory or recollection of facts, formulae, or definitions;
- *Procedures without connections* – performing algorithmic type of problems without connection to the underlying concept;

17 Mason, J. (2002). *Mathematics Teaching Practice: A Guide for University and College Lecturers*. Chichester: Horwood.

18 Ma, L. (1999). *Knowing and Teaching Elementary Mathematics: Teachers' Understanding of Fundamental Mathematics in China and the United States*: Lawrence Erlbaum Associates.

19 Stein, M. K., Smith, M. S., Henningsen, M. A., & Silver, E. A. (2000). Implementing Standards-based Mathematics Instruction: A casebook for professional development. New York: Teachers College Press.

- *Procedures with connections* – use of procedures for the purpose of developing deeper levels of conceptual understanding;
- *Doing mathematics* – complex and non-algorithmic thinking, typified by learners exploring and investigating the nature of the concepts and relationships, conjecturing, proving, refuting, exemplifying, testing boundaries of concepts, generalising[20].

After each five minute segment, the video was stopped and the segment coded for the presence of each coding category. This allows us to see in how many of the five minute segments of a lesson 'procedures with connections' were present, and similarly for the other categories. Thus, it is possible for more than two categories to be present in the same segment.

Ten video recordings out of the total 37 have been analysed at the time of writing (March 2010). As Table 35 shows, 'memorisation' and 'procedures without connections' were the only types of cognitive demand made on learners in these schools. There are significant differences in how much weight is given to the categories. In one extreme case, only memorisation was required. In another, very little memorisation occurred (only 6.7% of the time). The two teachers who focused throughout on 'procedures without connections' differed in the amount of memorisation they encouraged.

Table 35: Cognitive demand in 10 grade 6 mathematics lessons

	Percentage of time each category is observed			
School No.	Memorisation	Procedures without connections	Procedures with connections	Doing mathematics
1	81.8	100	0	0
2	28.6	85.7	0	0
3	11.1	88.9	0	0
4	16.7	100	0	0
5	22.2	88.9	0	0
6	83.3	0	0	0
7	50	83.3	0	0
8	100	50	0	0
9	44.4	55.6	0	0
10	6.7	86.7	0	0

The absence of 'procedures with connections' and 'doing mathematics' is not surprising, in the light of case studies from the past decades. It has often been hypothesised that this is a strong factor behind the low learner performance. However, we suspect the connection is more complex; if 'procedures without connections' are taught with careful progression, then learners may construct conceptual understanding without direct instruction. It is more problematic if

20 cf. Mason, J. (2002). *Mathematics Teaching Practice: A Guide for University and College Lecturers*. Chichester: Horwood.

the teaching of procedures is done without *reflecting* the underlying concepts and the structure of mathematics. A more detailed analysis of the videos will help us explore that aspect in more depth.

4.3.5.2 Mathematical proficiency facilitated by the teacher

The notion of mathematical proficiency was developed by a team of researchers in mathematics education[21]. It uses five strands to characterise the dimensions of successful mathematics learning (later, a sixth was added). These five strands are:

- *Conceptual understanding* (comprehension of concepts and relations, explaining 'why');
- *Procedural fluency* ("skill in carrying out procedures flexibly, accurately, efficiently and appropriately");
- *Strategic competence* (the ability to formulate a mathematical problem, represent it, and choose an appropriate solution method);
- *Adaptive reasoning* (capacity for logical thought, ability to explain and justify choice of method as well as answer);
- *Productive disposition* (the inclination to see mathematics as useful, coupled with a belief in own efficacy).

It is of course possible for more than one strand to be present at any time.

Table 36: Strands of mathematical proficiency in six recorded maths lessons

School	Conceptual understanding	Procedural fluency	Strategic competence	Adaptive reasoning	Productive disposition	Learning area
1	50.0	50.0	0	0	50.0	Geometry
2	0	62.5	0	0	0	Number
3	28.6	85.7	14.3	0	14.3	-
4	60	80	0	30	50	Number (measurement)
5	3.0	70.0	0	6.0	2.0	Number
6	20.0	60.0	0	0	0	Number

To date, only six videos have been analysed using this framework. Again (as with the analysis of cognitive demand), the video was stopped every five minutes and the presence or absence of each strand was noted. The result is a percentage signifying the extent to which a strand was represented in a lesson. For five of the lessons, the specific learning area has also been noted.

21 Kilpatrick, J. Swafford, J., & Findell, B. (Eds.). (2001). Adding it up: Helping Children learn Mathematics. Washington: National Academy Press.

The dominance of procedural fluency is perhaps not surprising, given the prevalence of 'procedures without connections'. But it must be noted that conceptual understanding is supported by the teacher to a fair or large degree in four of the six schools reported on here. Taken together, this indicates that the teachers may include the conceptual aspect in their explanations, but do not engage this in the tasks and questions given to learners. In other words, there is a strong degree of teacher control over the conceptual aspect of mathematics. This is supported by the low occurrences of strategic competence and adaptive reasoning strands. However, at this stage, this is only a hypothesis, which would require further investigation.

4.3.5.3 Content coverage

The content area was also noted with five minute intervals. The specific learning area 'number' dominates, which is in line with the findings from the pilot study in Gauteng. There could be various reasons for this. It could be a matter of curricular organization, i.e. the number topics tend to be taught at a particular time of the year. It may be because the teachers are more comfortable with this learning outcome and chose this in the knowledge of being video recorded. Or it could be that this learning outcome does indeed dominate in grade 6 classrooms. This will only be revealed when the researchers look at learners' workbooks and thus get a better sense of the curriculum coverage.

What these results do not show is the extent to which the disciplinary content is coherently and logically structured. The instruments that have been used so far are not fine-grained enough to address this, but so far, the personal impression of the researchers is that in about half of the video recordings, the teacher is not presenting the content in a coherent and logically structured fashion. It hinders students from constructing meaning and developing concepts on their own when these are not explicitly taught.

4.3.5.4 Teacher knowledge

So far, only four video recordings have been analysed for teacher knowledge. In all four videos, the core knowledge of teachers (of grade 6 maths) was not found to be wanting. All four teachers also seemed to have adequate pedagogical knowledge, i.e., classrooms were fairly well-organised (mostly in groups), teachers seemed to be well prepared, and had good control over the classroom environment.

Only two of the teachers were found to demonstrate pedagogical content knowledge. In both of these instances, the teachers used different representations to explain concepts that they were teaching. For example, these teachers used everyday illustrations: a loaf of bread to explain fractions; a learner's schoolbag; and a learner himself (used for demonstration). These teachers showed creativity in using different ways of explaining concepts/terms to learners in order to enhance/facilitate understanding.

4.3.5.5 What does this tell us about primary school maths learning and teaching in KZN?

The first observation is obviously one of low performance, reflecting absent or incorrect content knowledge, for both teachers and learners. And this must be seen in the light of the district generally being one of the better performing in the province. The observed low performance is unlikely to be because our sample is not representative of the district: generally, schools are probably more likely to opt out of a research study if they are struggling than if they are not. Thus, there is no doubt the situation is grave. But there is also no doubt that this result was to be expected.

There has already been a discussion on how language appears to be a main factor in the learners' performance, in the sense that they do not know common terms used in mathematics, such as 'equivalent' or 'difference'. The language issue is not new, but what is disturbing is how many of our learners are caught in a linguistic no-where land. As we know[22], learners do not perform better if they are assessed in their home language, which indicates that they do not know the formal school discourse in any language.

Until the statistical analysis is complete it will not be possible to gauge the extent of the correlation between socio-economic factors and performance, or between teacher knowledge and learner performance. However, the preliminary results from the corresponding study in the North West province indicate a strong correlation.

Comparison of the findings from the teacher test and the analysis of the video recordings suggest an insight into teaching practices in our schools. On the one hand, the test reveals that the teachers' content knowledge and pedagogical content knowledge is generally weak. While on the other hand, the video recordings did not show many content errors in the teaching, this is not to say that the teaching reflected underlying concepts or mathematical structures. We also saw that the teachers mostly taught number, geometry and some measurement. No video recordings showed engagement with learning outcome 2 (patterns, functions and algebra), and only one revision lesson touched on learning outcome 5 (data handling and probability).

On this basis, we hypothesize that the teachers select content with which they are comfortable, and spend less time on the sections they consider more difficult, such as algebra and statistics/ probability. With a procedural focus, it is possible to teach rules which are well known, without running into conceptual difficulties.

Comparing the table on cognitive demands made on learners during maths lessons with strands of maths proficiency in lessons gives the impression that the teachers do not engage the learners in problem solving or other ways of engaging conceptually with the mathematical content. This

22 Zuma, S. C. & Dempster, E. R. (2008). isiZulu as a language of assessment in science. *African Journal of Research in Mathematics, Science and Technology Education, 12*(2), 31-46.

is in contrast to the focus of all the policy documents and workshops on learner-centred teaching. We suspect there are a number of reasons why the current practices are as they are. For one, the teachers draw on their own experiences as learners; and the communities of practice at each school also encourage a strong inertia in the ways of teaching. As some newly graduated teachers tell us, they are under pressure from their colleagues not to teach in 'different' ways. Perhaps this goes together with a lack of faith in learners' ability to master problem solving and independent thought.

More importantly, it is not possible to use learner-centred practices without a very strong content knowledge: a teacher needs to understand which incorrect answers reflect underlying mathematical structures or concepts, and which do not. A teacher also needs to understand how the concepts link, so that conceptual progression and pacing can reflect the nature of the concepts and mathematical structures. The teacher test results indicate that the teachers are making a good choice not to use learner-centred or problem-based practices, because most of them do not have the content knowledge to ensure that these situations would lead to meaningful learning.

4.3.6 Recommendations

The key elements in improving learner performance are:

- General improvement in socio-economic conditions of our learners;
- Increasing content knowledge of teachers; and
- Carefully paced and sequenced textbooks with carefully organized conceptual progression.

4.3.6.1 Socio-economic improvement

As the Copenhagen consensus clearly stated, the benefit-to-cost ratio of addressing nutrition and hunger is higher than that of promoting economic growth as the means to eradicate poverty[23]. This is not a report on economic or social development, but it must be emphasised that the problem of learner performance cannot be considered separate from the general socio-economic situation of the learners and their families. It would be naïve to think that any educational initiatives could stand alone.

The economic aspects of poverty mean that children may be coming to school hungry and that they may not have money to pay school fees, uniform, stationery and transport costs associated with schooling. Children growing up in poor homes often do not develop the language and number concepts and the disposition to enquiry and active learning which are fundamental for

23 Behrman, J. R., Alderman, H. & Hoddinott, J. (2004). Copenhagen Consensus - Challenges and Opportunities: Hunger and Malnutrition. Copenhagen Consensus Challenge Paper. http://www.copenhagenconsensus.com/Files/Filer/CC/Papers/Hunger and Malnutrition 070504.pdf

effective literacy and mathematics learning in school[24]. Of the learners reported on in this study, 13% had no books or magazines in their home, and 45% had between 10 and 20 items. Thus it is likely there is an absence of modelling of reading in the home and that young children are not read to by adults. Research shows that home literacy practices are a key determinant in later success at school. Thus another key area for change is to focus on encouraging and developing home literacy practices.

4.3.6.2 Increasing content knowledge of teachers

We strongly recommend focusing on the content knowledge of the teachers, not on initiatives to change their pedagogical practices. As the literature indicates and our own experience in teacher education confirms, teachers do not have the basis for engaging with pedagogical practices on facilitating learners' conceptual understanding and competencies until the teachers themselves have strong content knowledge. It is also clear to us that for the primary school teachers, this should comprise a profound understanding of fundamental mathematics[25].

The curriculum format is based on a perception of South African teachers as competent professionals who could develop their own teaching plans, materials and assessment tasks. However, these competencies all rely on strong content knowledge and this assumption has therefore left the teachers caught between professional-pedagogical demands and their own knowledge limitations.

We have to acknowledge that the graduates from some current programmes do not necessarily achieve the necessary understanding. For instance, van Wyk[26] found that graduates from the UKZN NPDE programme can pass the mathematics modules with distinction without having achieved a profound understanding of fundamental mathematics. For the secondary schooling context, this finding was confirmed by Likwambe[27], who showed that most of the historically disadvantaged students do not significantly develop their concept images of the derivate through the UKZN Advanced Certificate in Education.

Thus, there is a strong reason to rethink our in-service teacher education programmes. A recently completed study of how to improve the algebra skills of students in our science foundation programme indicated that this is best done through the use of cognitive conflict as a teaching

24 Fleisch, B. (2007). Primary education in crisis. Why South African schoolchildren underachieve in reading and mathematics. Cape Town: Juta and Co.

25 Ma, L. (1999). Knowing and Teaching Elementary Mathematics: Teachers' Understanding of Fundamental Mathematics in China and the United States: Lawrence Erlbaum Associates.

26 van Wyk, A. (2008). SA Educators' Profound Understanding of Fundamental Mathematics. University of KwaZulu-Natal, Pietermaritzburg, South Africa.

27 Likwambe, B. (2007). Student teachers' concept images of the derivative. University of KwaZulu-Natal, Pietermaritzburg, South Africa.

approach[28]. We have used this in parts of our teacher education programmes in recent years, with some success. For instance, student teachers were asked to explain why we cannot start long division from the right – since we start addition and multiplication from the right. Or they were confronted with ratio problems where $^{2}/_{5} + {}^{1}/_{3} = {}^{3}/_{8}$ makes perfect sense and were asked why we do not always add fractions this way. (The results are frightening; many students get excited, saying that "we always knew that other way with common denominators didn't make sense".)

4.3.6.3 Textbooks

Whereas the recent trend has been to encourage teachers to rely on textbooks as only one resource amongst many, the latest curriculum reform has moved more towards a stronger control with regard to the knowledge component of the curriculum. Whether the teachers have pedagogical freedom or not, the countries whose learners perform best are those where the curricular standards are derived from the logical progression of the mathematical content. Given the current situation in South Africa, our recommendation would be to support teachers with carefully paced and sequenced materials, which are designed in such a way that learners (and teachers) are likely to construct the underlying concepts and mathematical structures.

The Primary Mathematics Research Project has shown that the use of a carefully structured set of learner and teacher materials over a period of 14 weeks increased learners' achievement in Numbers, Operations and Relationships (Learning Outcome 1) in 40 Limpopo schools[29].

4.4 Teachers' views

As part of this research into improving the quality of education in KZN, the research team undertook to conduct a survey of 1,000 teachers to investigate their qualifications, recompense, job satisfaction and the support they request and receive from the DoE.

A teacher questionnaire was designed by the research team after the literature review had opened out some of the key factors involved in quality education in a developing context. Sixty questions were asked, focusing on a range of issues: the qualifications of the teacher; opportunity to learn; disruptions; curriculum coverage; departmental support; language of teaching and learning; use of textbooks; parental, family and community involvement; class size; learner motivation; and school management. Teachers were also asked what their biggest challenges were, what problems their learners faced and what their employment conditions were like. Although the questionnaire does provide a picture of what teachers report their activities to

28 Campbell, A. (2010). Remediation strategies for algebra competencies in mathematics students at UKZN. University of KwaZulu-Natal, Pietermaritzburg, South Africa.

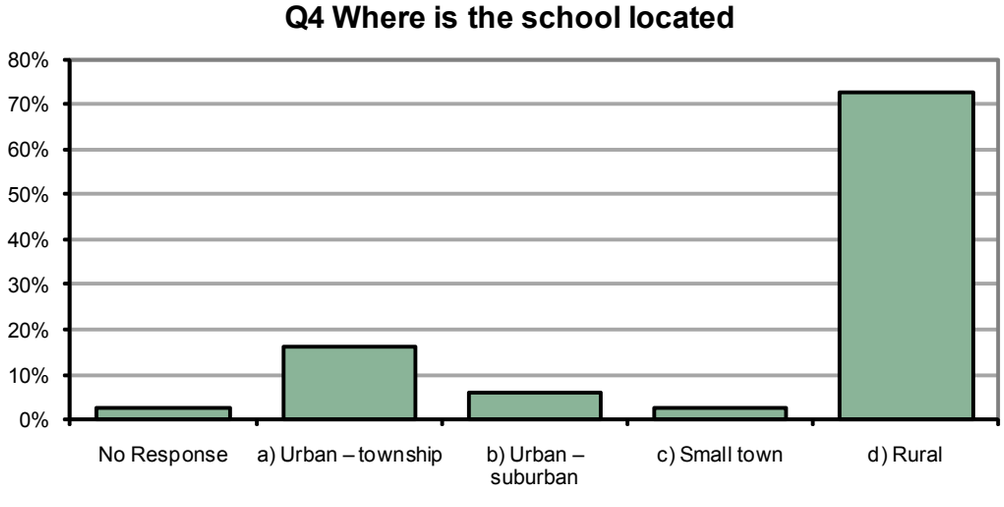
29 Schollar, E. (2008). Final report. Primary Mathematics Research Project 2004 - 2007. Towards evidence-based educational development in South Africa. Johannesburg.

be, this has to be supplemented by the detailed empirical study of what is actually happening inside the classrooms. Teachers who completed the questionnaire seem to have over-rated their abilities and performance. The empirical study reported on in section 4.3 (Quality) shows very clearly that many teachers in KZN might be basically managing to cover the curriculum, but are doing so in a manner which is impacting severely on learner performance. Nevertheless, the questionnaire provides a clear account of teacher perceptions and attitudes on some of the key variables that impact on the quality of education in KZN.

4.4.1 Teacher survey

A total of 1,092 teachers answered the questionnaire and were drawn from all districts of KZN. Seventy-three per cent (73%) of the schools were located in rural areas and another 16% in urban township areas, with suburban and small town schools making up the other 9% (with a 3% no response).

Figure 20: School location of participants in the teacher survey



Only 7% of the teachers came from quintile 4 and 5 schools; 65% of the teachers came from quintile 1 and 2 schools. Eight-two per cent (82%) of the teachers reported that their schools have a nutrition scheme. Ninety per cent (90%) of the teachers had been teaching for more than five years.

4.4.2 Analysis of results

The analysis looked at the aggregated results but for a number of questions we disaggregated the results into quintiles. It must be borne in mind that there was a low base for quintile 5 schools, but the results still reveal some interesting comparisons.

One of the key issues explored was teacher absenteeism, given that this plays a key role in learner performance. There is bound to be some under-reporting of this in the questionnaire since it is teachers reporting on their own behaviour; nevertheless some interesting trends manifested. When asked if teacher absenteeism was a significant problem in the teacher's school, quintile 5 teachers responded overwhelmingly that it was not a problem (95%). This was on average 40% higher than the other quintiles, who clearly are dealing with issues of teacher absenteeism on a far larger scale. Of interest is that the teachers felt this was mainly the fault of a small number of teachers and not a systemic problem.

Table 37: Teacher response to teacher absenteeism

Q15 Is teacher absenteeism a significant problem in your school	Quintile 1 (poorest)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (wealthiest)
No Response	7%	8%	4%	3%	0%
a) Yes, for a few of the teachers	31%	38%	36%	44%	5%
b) Yes, for about half of the teachers	2%	1%	1%	2%	0%
c) Yes, for most of the teachers	1%	2%	1%	5%	0%
d) No, it's not a problem	58%	51%	58%	46%	95%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Teachers reported that there were practices of children being left without a teacher, although 45% maintained that this happened only once a month on average. The high level of no response here probably indicates teachers who felt children were not left alone. Fourteen per cent (14%) said one day a week. More disturbingly, another 9% said that children were being left alone for two days or more in a week. This points to a major reason behind learners not completing the curriculum and not doing well in their tests.

Figure 21: How often children are left without a teacher

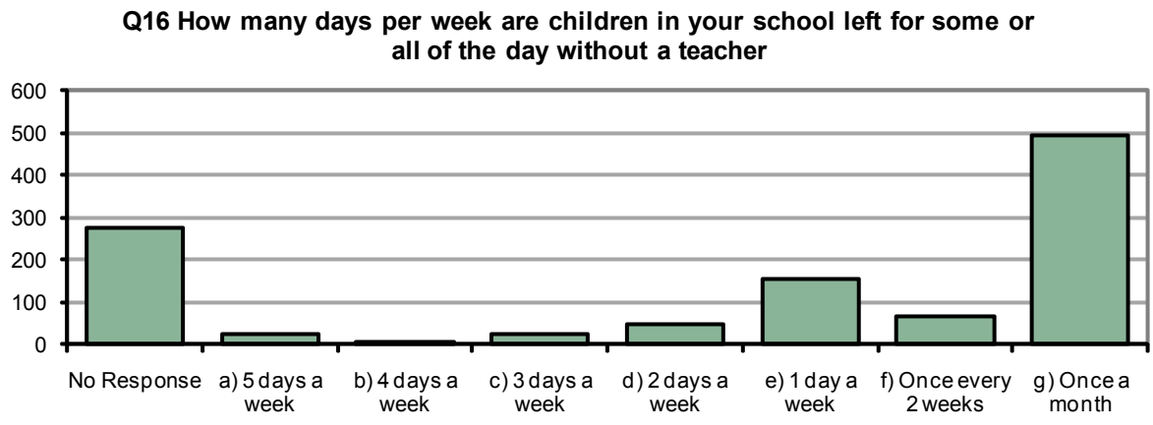
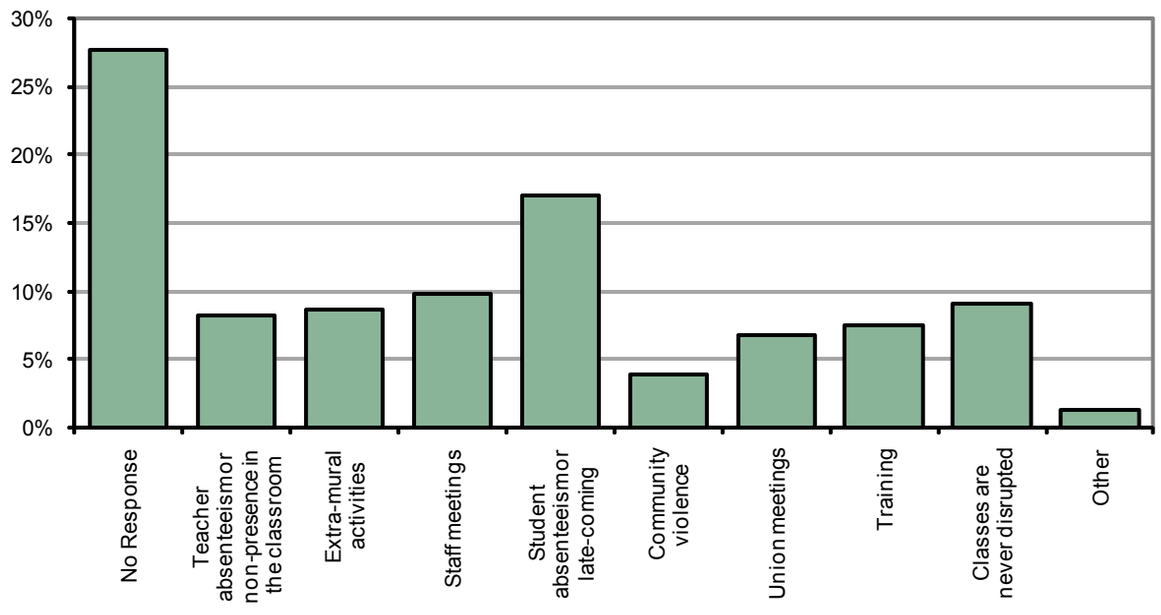


Figure 22: Reasons for disruption of classes



When asked what the main reasons for disruption of classes were the teachers pointed to student absenteeism and late-coming as the major reason (23%). Other reasons given were staff meetings (13%), teacher absenteeism (11%), extra-mural activities (11%), training (10%), union meetings (9%) and community violence (5%). Only 12% maintained that their classrooms were not disrupted. This is a clear indication that opportunity to learn is being hampered by the degree of interruptions from a variety of sources. Clearly, the classroom space is not held as sacred and non-interruptible. This is partly understandable given the actual quality of teaching and learning going on, as indicated in the qualitative study. If effective teaching and learning is not happening, it is easier to justify interrupting classroom time for both teachers and learners.

If one disaggregates the main reasons for disruption into quintiles a more complex picture presents itself.

All quintiles seem to have issues with student absenteeism or latecoming, but quintile 5 schools show that they are not interrupted by teacher absenteeism, community violence or training.

Only 7% of the teachers felt that the curriculum offered at the school was above standard. Most (58%) felt that the school was meeting the standards of the official curriculum. Only 13% felt that it was below standard. This is a disturbing finding, as the results of various assessments at provincial, national, regional and international levels indicate that the quality of curriculum

delivery at school level is low. Either the teachers are reporting their own practice with a positive bias or they do not fully recognize what the curriculum demands actually are. This is a key issue that must not be glossed over. Teachers are teaching what they know and feel that they are doing this adequately. The issue is whether what they know is what the curriculum actually demands of them.

Table 38: Reasons for disruption of classes by quintile

Q17 What are the main reasons for the disruption of classes 1	Quintile 1 (poorest)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (wealthiest)
No Response	4%	7%	4%	5%	11%
a) Teacher absenteeism or non-presence in the classroom	16%	18%	17%	14%	0%
b) Extra-mural activities	15%	13%	20%	20%	21%
c) Staff meetings	12%	16%	11%	8%	11%
d) Student absenteeism or late-coming	25%	15%	21%	14%	21%
e) Community violence	3%	2%	3%	3%	0%
f) Union meetings	6%	6%	3%	7%	11%
g) Training	6%	6%	4%	8%	0%
h) Classes are never disrupted	13%	15%	14%	20%	26%
i) Other	1%	1%	2%	0%	0%
Total	100%	100%	100%	100%	100%

In a similar vein, 62% of teachers reported that they always or often complete the required curriculum with only 28% saying that they never or sometimes complete the curriculum. When disaggregated into quintiles the following picture presents itself:

Table 39: Completion of the curriculum by quintile

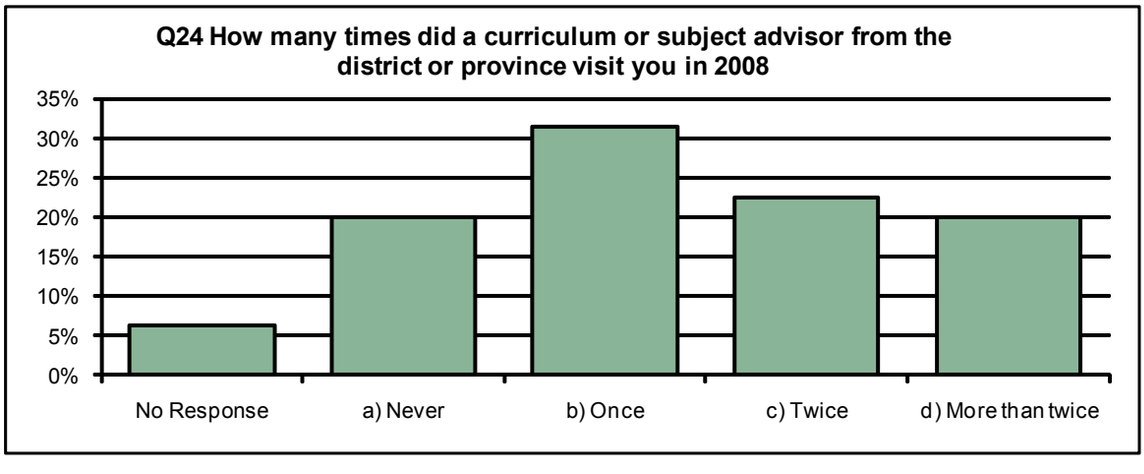
Q19 Do you always manage to complete the required curriculum	Quintile 1 (poorest)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (wealthiest)
No Response	8%	12%	6%	8%	5%
a) Never	3%	4%	5%	0%	0%
b) Sometimes	25%	25%	22%	34%	11%
c) Often	30%	26%	32%	25%	26%
d) All the time	33%	34%	36%	32%	58%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Quintile 5 schools have a far higher rate of completing the required curriculum, with not much difference shown between the other four quintiles.

Again there were similar results to how adequately prepared teachers felt they were to teach the current curriculum. 64% maintained that they were always or mostly prepared. Some exploration is needed into what teachers take 'adequately prepared' to mean.

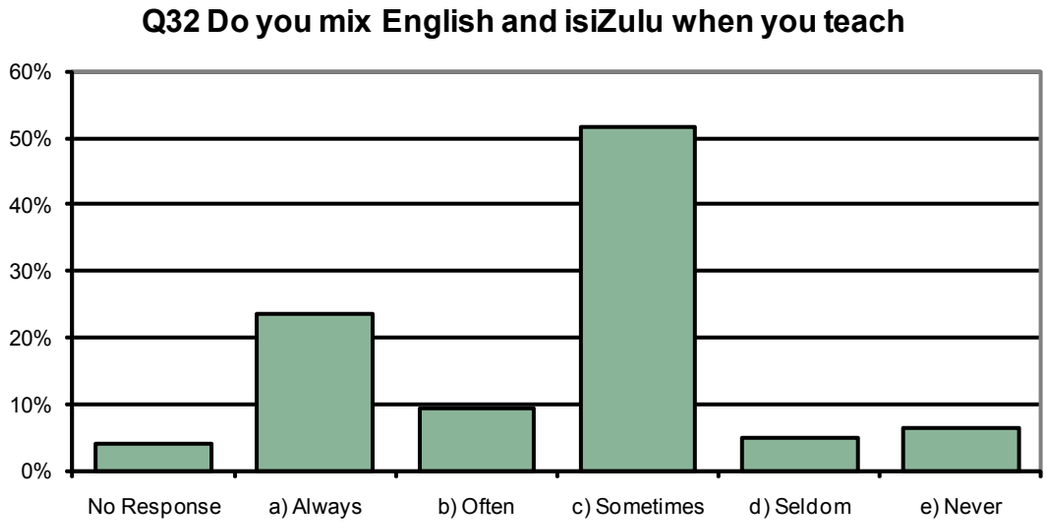
84% of teachers reported that they would like more curriculum support, but there is some indication that curriculum and subject advisors are getting to KZN schools. 42% reported that they had been visited twice or more by an advisor, that they had been given feedback on their teaching and that the feedback was mostly useful. There are indications that the functionality of both district and province is improving in terms of visiting schools. Only 20% of the teachers said that they had never been visited by an advisor in 2008. Of note here is that 47% of quintile 5 school teachers reported that they had never been visited, indicating the strong focus by advisors on the poorer schools.

Figure 23: Number of times a curriculum advisor visited teachers' schools



Ninety-two per cent (92%) of the teachers spoke isiZulu as their home language and most reported feeling confident about teaching in isiZulu and English. In the progression from quintile 1 to quintile 5 English increasingly became the home language of the teacher and the language of instruction. At the same time, isiZulu decreased in frequency both as home language and language of instruction. Only 7% of the teachers did not mix isiZulu and English in their classrooms and these teachers came mainly from quintile 5 schools.

Figure 24: Frequency of reported mixing of English and isiZulu when teaching



This strongly indicates a need to recognize that code switching happens as a matter of course in most schools up to quintile 4, and that both home language and English must be strongly supported from grade 1.

The language of textbooks ordered by quintile 5 schools was English. No textbooks were ordered in isiZulu. A quarter of the textbooks ordered by Quintile 1 schools were in isiZulu.

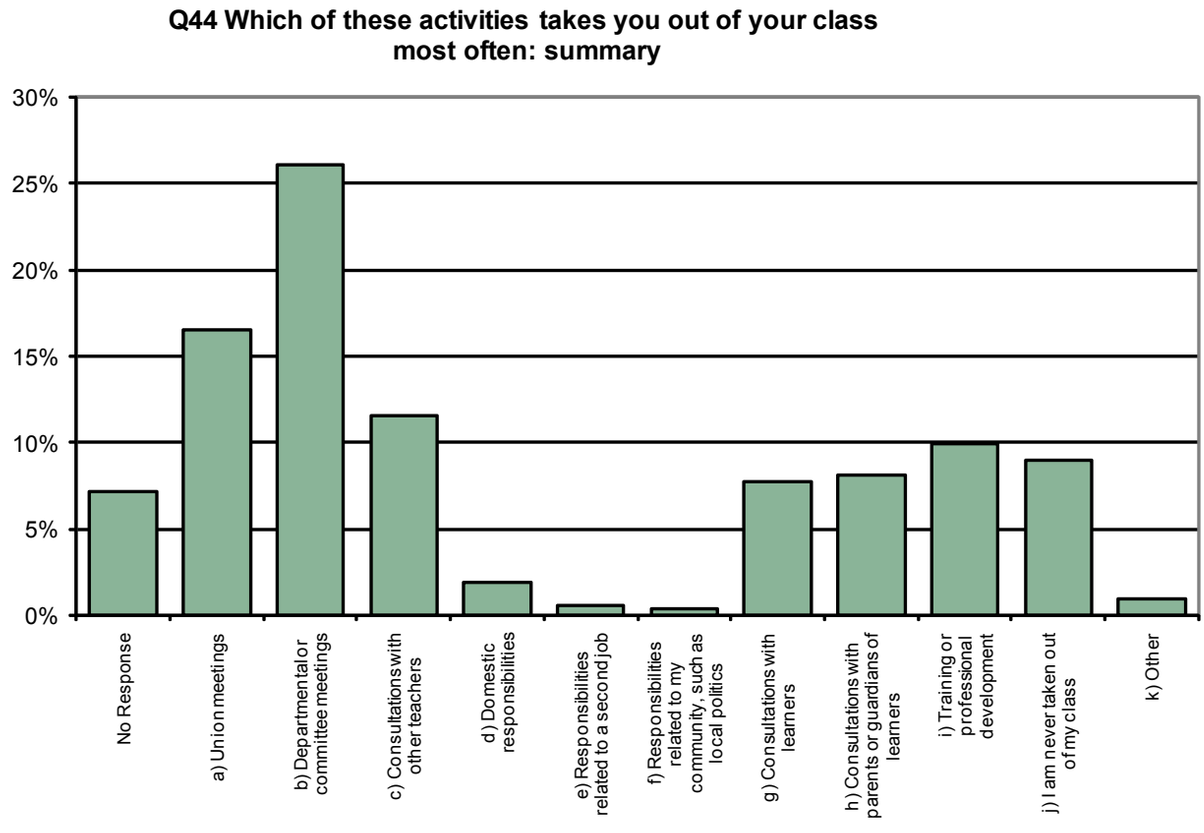
Eighty-one per cent (81%) of the teachers reported that textbooks were ordered for the school, but only 62% reported that the textbooks actually arrived. This is a disturbing finding, given how crucial textbooks are to teaching and learning in poorer communities.

Thirty-three per cent (33%) of teachers teach at a school a far distance from their families. This is a contributing factor to teacher absenteeism and late-coming.

There are strong indications that teachers are struggling with discipline in their schools, with only 20% of the teachers not dealing with discipline issues on a daily basis. Furthermore, 65% of teachers reported that learner-on-learner violence was an issue of concern. However, when it came to teachers threatening or hurting learners 76% of teachers indicated that this rarely or never happens, with only 2% saying this was a regular event. This is very likely interviewee bias or a reading of teacher violence as discipline. There was also an indication that outsiders threaten and hurt learners at school, with 28% of the teachers saying that this sometimes or often happens.

When asked what activities take the teacher out of the classroom, only 9% indicated that this does not happen.

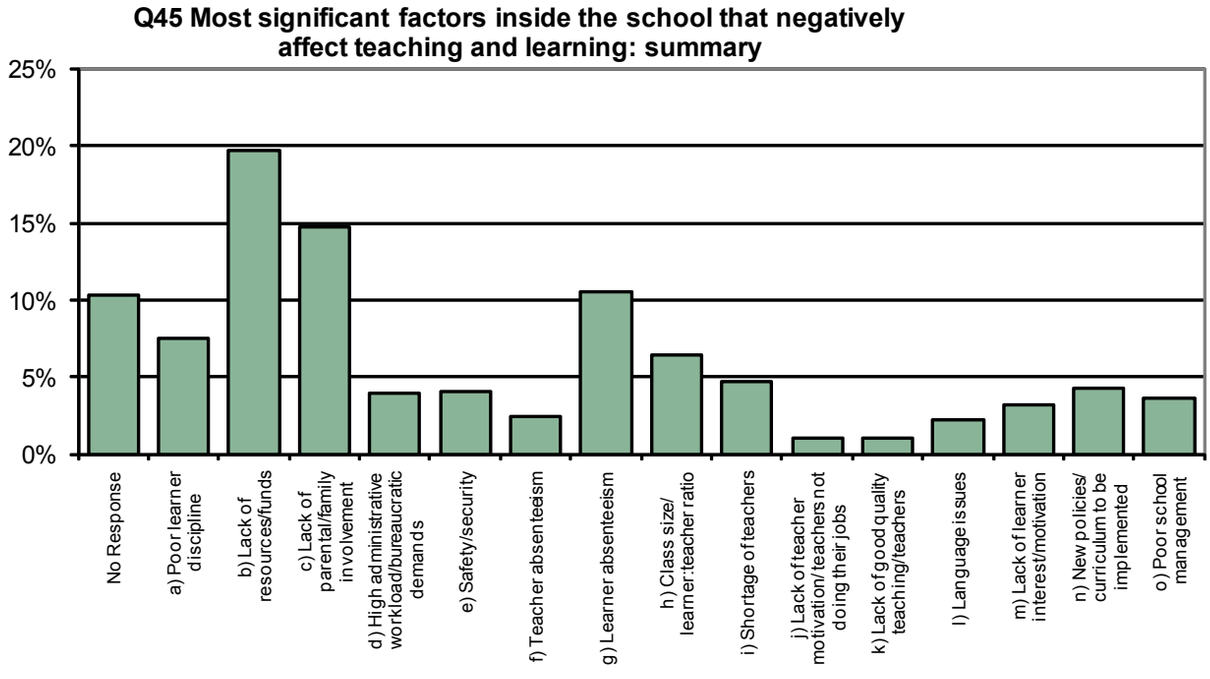
Figure 25: Activities that take teachers out of the classroom



Major reasons given for being out the classroom were: departmental or committee meetings (26%); union meetings (17%); consultations with other teachers (12%); and training and professional development (10%). Consultations with parents (8%) and learners (8%) also took teachers out the classroom.

Two key questions were asked about the most significant factors inside and outside of the school that negatively affected teaching and learning. From inside the school, the four major reasons that were rated as impacting on learning were: lack of resources (20%); lack of parental involvement (15%); learner absenteeism (11%); and poor discipline (8%). Other factors were class size (6%), shortage of teachers (5%), high administrative demands (4%), safety and security (4%), new policies and curriculum to be implemented (4%) and poor school management (4%).

Figure 26: Factors inside the school that negatively affect teaching and learning



When the factor given as the most important is disaggregated into quintiles, the following picture presents itself.

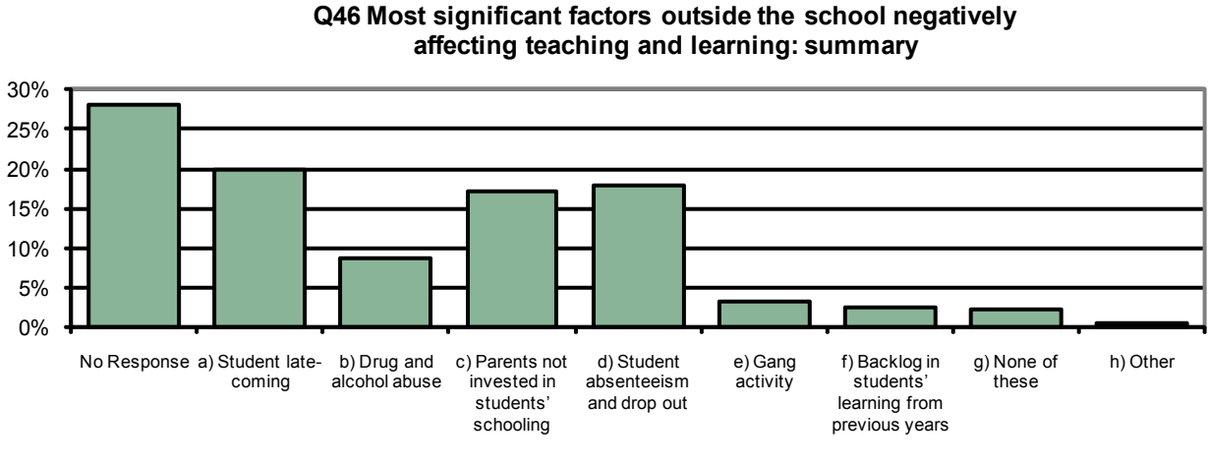
Although 26% of teachers from quintile 5 schools felt that lack of resources/funds was a key factor, this was closely followed by high administrative workloads (21%). Quintile 1 school teachers strongly felt that lack of resources was a key factor (56%) while high administrative workload/bureaucracy hardly featured at all (2%). Either this indicates that quintile 1 teachers are much more effective at getting their administration done, or that the administration load at quintile 5 schools is far heavier. The reasons for this need to be explored, but the major reason could be that quintile 1-4 schools are simply not doing all the administration tasks required of them, while quintile 5 schools are. Given that many of these demands have come from the curriculum reform process, this could indicate that much of the actual reform process was only fully engaged with by quintile 5 schools, while the other schools have tended to carry on much as they always have.

Factors outside the school that impact on teaching and learning were mainly: learners coming late to school (20%), being absent or dropping out of school (18%), and lack of parental interest and investment (17%). The high 'no response' comes from teachers who only gave one or two responses instead of three to this question.

Table 40: Factors inside the school that negatively affect teaching and learning by quintile

Q45 Most significant factors inside the school that negatively affect teaching and learning 1	Quintile 1 (poorest)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (wealthiest)
No Response	5%	5%	3%	3%	5%
a) Poor learner discipline	21%	25%	22%	31%	16%
b) Lack of resources/funds	56%	44%	50%	34%	26%
c) Lack of parental involvement	11%	17%	13%	20%	16%
d) High administrative workload	2%	2%	2%	3%	21%
e) Safety/security	1%	1%	1%	2%	0%
f) Teacher absenteeism	0%	1%	1%	2%	0%
g) Learner absenteeism	1%	2%	4%	0%	0%
h) Class size/ learner:teacher ratio	2%	0%	2%	2%	11%
i) Shortage of teachers	0%	1%	0%	0%	0%
l) Language issues	0%	0%	1%	2%	5%
m) Lack of learner interest/motivation	0%	0%	1%	2%	0%
o) Poor school management	0%	0%	0%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Figure 27: Factors outside the school that negatively affect teaching and learning

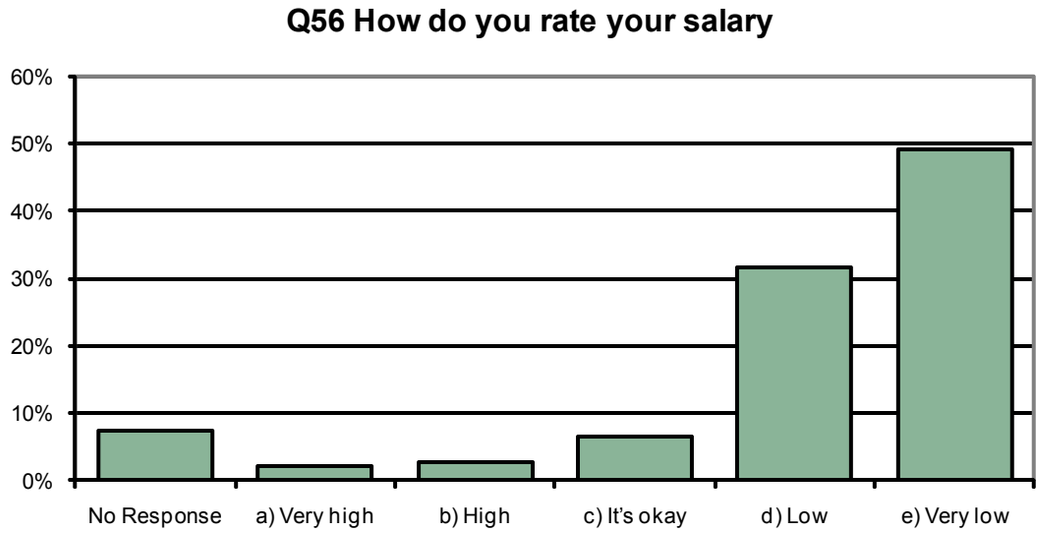


When asked what teachers felt their biggest challenges were, six factors were given prominence: lack of classes (13%); shortage of textbooks (12%); discipline of children (12%); inadequacy of qualification (11%); children's knowledge and skill not being up to standard (11%); and lack of management support (8%). When these results were disaggregated, one of the most interesting observations was that quintile 5 school teachers rated the weakness of children's knowledge and skills as their biggest challenge. Only 11% of quintile 1 schools felt the same way. More challenging to them was the lack of their own qualifications, lack of classrooms, and the discipline of their children. It is clear that teachers in quintile 5 schools can actually focus on the problems of teaching and learning, whereas teachers from the other quintiles are dealing with substantive issues that disable their teaching even before they start.

Various challenges to learning outside the actual processes of teaching and learning also play a key role. According to the teachers, 67% of children in their school face hunger, 31% disability, 75% live with an old carer, 78% are coping with the death of their parents, 44% with being bullied, 35% with substance abuse, 66% with HIV and AIDS. This points to severe challenges facing learners even before they get into the classroom. Chapter 9, focused on barriers to basic education, elaborates on this aspect.

In terms of school management, only 13% of teachers felt this was poor. We elaborate on the findings around school management in Chapter 6; however for present purposes, the teacher response showed some indication that management structures are basically functioning.

Figure 28: How teachers rate their salaries



Eighty per cent (80%) of teachers saw themselves as still teaching in 10 years time. Teaching is seen as a life time commitment.

Forty-nine per cent (49%) of teachers felt their salary was 'very low', with another 32% feeling it was 'low'. Only 12% felt their salaries were 'okay' to 'very high'.

In direct contrast to this, only 9% of teachers rated their job satisfaction as 'low' or 'very low'. 73% rated their job satisfaction between 'okay' and 'high', with another 10% putting it as 'very high'. This points to a low correlation between job satisfaction and perceived salary reward. Only 14% of the teachers responding said there were financial incentives to do extra work or perform well, and only 10% said there were non-financial performance incentives. The split between quintile 1 and 5 schools was clear here, with 32% of quintile 5 schools saying there were non-financial performance incentives as compared to only 8% at quintile 1 schools.

In the main, good communication was reported between teachers and management with only 13% disagreeing. A participatory culture of decision making also seemed to hold, with only 16% disagreeing. Contributions of teachers to the curriculum were valued, with only 14% disagreeing. Most teachers worked together to help each other with teaching and learning issues (9% disagree). 35% pointed out that there were not sufficient learning materials. Only 14% of the teachers felt that their school days were not structured for maximum student learning. Again this points to teachers having a sense that they are doing a good job in the schools. Given the public discourse around lazy incompetent teachers and the shocking systemic evaluation results, we need to carefully consider why there is such a disjuncture.

Another area of contrast between quintile 1 and 5 schools emerged around parental support for their children's school performance. 73% of quintile 5 teachers felt that parents are supportive in contrast to only 49% of quintile 1 teachers. Only 22% of quintile 5 teachers felt that parents are not supportive in comparison to 39% of quintile 1 teachers.

Table 41: Perceived parental support for children's education

Q60 Most of the parents of students in this school try their best to support students in coming to school, doing homework and learning for tests	Quintile 1 (poorest)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (wealthiest)
No Response	11%	10%	12%	8%	5%
a) Strongly agree	11%	10%	8%	15%	26%
b) Agree	38%	37%	37%	41%	47%
c) Disagree	28%	37%	34%	25%	11%
d) Strongly disagree	11%	6%	8%	10%	11%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

4.4.3 Conclusions

The teacher questionnaire provides one of the first snapshots of what teachers in KZN think about some of the key variables that impact on the quality of education in the province. There is a clear split between the responses of quintile 5 teachers and quintile 1-4 teachers, pointing to a deeply polarised system with very different kinds of experiences, depending on where one is located. Teacher absenteeism and latecoming is an issue in quintile 1-4 schools where around 10% of learners are partly left alone for two days or more. Quintile 5 schools mainly have teachers arriving every day and on time and if this is not possible, adequate plans are made to ensure learners have substitute teachers and work to do. Learner absenteeism and latecoming is just as serious an issue. When combined with teacher absenteeism a clear pattern of poor school attendance presents itself. This issue is already being attended to by all the major stakeholders in education with an increasing emphasis on time on task across the system. However, absenteeism and latecoming still seem to be endemic. The teaching and learning space of the classroom is not held sacred with many factors breaking through and interfering, ranging from staff meetings, union meetings, training meetings, learner meetings and parent meetings.

Quintile 5 schools in the main complete the curriculum whereas Quintile 1-4 schools tend to struggle. Given the issues identified in the previous paragraph this is not surprising. There is, however, increasing support offered by subject and curriculum advisors. One of the findings of this report, however, is that there is a shortage of appointments and skill at the level of subject advisors (See Chapters 5 and 7).

Almost all the teachers from quintile 1-4 schools reported that code switching was a part of the way they teach. It is clear that both home language and the language of power must be supported from the beginning of a learner's school experience and that this is the everyday practice of teachers in KZN. There was clear evidence of English becoming more dominant as the language of instruction as the survey focus moved onto quintile 5 schools.

Teachers are dealing on a daily basis with many barriers to learning, ranging from violence and death to sickness and hunger. Most teachers felt that a lack of resources impacted negatively on teaching and learning along with lack of parental support.

While teachers are unhappy with their salaries, they are satisfied with the nature of their work and remain committed to the profession.

4.5 HIV and AIDS

HIV and AIDS are commonly cited as serious threats to South Africa's development. HIV and AIDS affect everyone in a school community: teachers, principals, learners, parents, caregivers, grandparents, etc. Indeed, HIV and AIDS are considered major barriers to education on the

part of learners, and this topic is dealt with in Chapter 9. This section provides some statistics on the HIV status of teachers.

HIV mostly affects the economically active segment of the population and teachers fall into this category. Since good teachers require years of study and training, the loss of teachers constitutes a major development burden. In 2004, a study was conducted by the Human Sciences Research Council (HSRC) for the Education Labour Relations Council (ELRC) into the health of educators in South Africa, particularly their HIV status. A sample of 1,714 schools was drawn up, with a total of 24,200 state-paid educators as potential respondents. Only those educators who consented were included in the study and the actual sample size was 17,650 educators. Of these, 17,088 yielded results. In KZN, 365 schools were visited and 3,698 educators tested for HIV.

Nationally, of the 17,088 educators tested, 12.7% tested HIV positive[30]. There was variance based on race, and age, although not on sex, as the table below shows.

Table 42: Variance of HIV prevalence among teachers based on sex, race and age.

Characteristic	% HIV+
Sex	
Male	12.7
Female	12.8
Race	
African	16.3
White	0.4
Coloured	0./
Indian	1.0
Age	
<24	6.5
25-34	21.4
35-44	12.8
45-54	5.8
55 and above	3.1

National prevalence rates were disaggregated for age and sex, and large variations were found. In women aged 25 to 34, the prevalence rate was much higher than for men, while men showed higher prevalence levels in older age groups[31].

30 Shisana, O., Peltzer, K., Zungu-Dirwayi, M.A. & Louw, J.S. (2005). The health of our educators: A focus on HIV/AIDS in South African public schools. Cape Town: HSRC Press. p. 53.

31 *Ibid.*: p. 55.

Table 43: HIV prevalence in teachers of different sexes and age groups

Age	Male % HIV+	Female % HIV+
<24	6.6	6.5
25-29	12.3	21.5
30-34	19.0	24.2
35-39	16.6	14.1
40-44	10.5	10.1
45-49	7.6	6.3
50-54	5.8	3.8
55+	1.6	3.7

In addition, analysis of annual income showed differences in prevalence: those with low income (under R60,000) had a prevalence rate of 17.5%; those with medium income (R60,000-R132,000) had a rate of 12.1%; and those with high income (>R132,000) had the lowest rate of 5.4%[32]

Educators in KZN had the highest prevalence rate in the country (21.8%). However, there was a great variation in prevalence in districts, with one having a rate of 9.3% and two having rates of 30% or higher (Districts 6 and 7). Unfortunately, the districts were not named. The table below shows district prevalence rates[33].

Table 44: % HIV prevalence among teachers in education districts of KZN

District	% HIV+
1	22.0
2	19.0
3	28.2
4	28.9
5	15.2
6	30.0
7	32.5
8	26.3
9	22.8
10	27.4
11	9.3
Total	21.8%

32 *Ibid.*: p. 57.

33 *Ibid.*: p. 63.

As part of the study, HIV positive teachers' CD4 counts were measured to ascertain what proportion are in the later stages of HIV infection and at risk for progression towards AIDS. There are different guidelines on when to administer antiretroviral therapy (ART): a more conservative World Health Organisation (WHO) guideline, adopted by the South African government, that recommends initiating ART when the CD4 count is low; and more lenient guidelines developed by US Department of Health and Human Services that use a higher CD4 count as their initiation time.

Using the WHO and South African government guidelines on when to initiate ART, the study found that 22% of HIV-positive educators needed immediate ART. This translates into a suggested figure of 2.8% of all educators being eligible for immediate ART, or 10,000 out of a total of 356,749. Using more lenient US guidelines would increase the proportion of HIV-positive educators eligible for ART to more than 23,500[34].

The study suggests that the Department of Education develop targeted interventions to provide ART and treatment of opportunistic infection to HIV-positive educators. This is thought to be viable as a policy option for the following three reasons: "First, an estimated 67.8% of educators have medical aid. Second, about 75% of educators had been to a health practitioner within the last six months, suggesting that a programme that involves health care providers who already provide care to this captive audience is feasible. Thirdly, the majority of educators (95%) who were found to be HIV-positive in the study said they would be prepared to use the government's ART programme"[35]. This should be done on a district prevalence level basis, since demand is outstripping supply of ART.

4.6 Teacher supply and demand

Developing useful models for planning the dynamics of teacher supply and demand has bedevilled South African educational planning. These difficulties are not unique to South Africa and there is global concern about the adequate supply of high quality teachers.

In South Africa, a key problem is the poor quality of the data, both on the demand side and the supply side. Planning adequately in this sphere at provincial level is further complicated by the fact that the definition of a qualified teacher is set at national level, and the institutions responsible for the training of new teachers are a national competence and therefore outside the direct control of the provincial DoE.

34 Rehle, T., Shisana, O., Glencross, D. & Colvin, M. (2005) *HIV-positive educators in South African public schools: predictions for prophylaxis and antiretroviral therapy*. Cape Town: HSRC Press. p. 8.

35 *Ibid*: p. 9

4.6.1 Definition of a qualified teacher

In terms of the *Employment of Educators' Act no 76 of 1998*, the current definition of 'adequately qualified' for the appointment of teachers in public schools, is a three-year post-school qualification which includes appropriate training as a teacher. There are a range of qualifications that could lead to this level, so the DoE uses a Relative Education Qualification Value (REQV) as provided for in the *Criteria for the Evaluation of Qualifications for Employment in Education* (2000). The minimum level is defined as REQV 13. However, the intention is to move the minimum requirement up to REQV14 and all teachers are supposed to be at this level by 2013. In line with this, the current *Norms and Standards for Teacher Education* (NS) define a newly qualified teacher as someone with four years of post-secondary teacher education. The intention is that teaching should be a graduate profession and universities are thus tasked with the training of teachers either through a dedicated four year Bachelor of Education (BEd) degree, or a three year general Bachelor degree (BA, BSc, BSocSci, BCom etc) followed by a one year professional Postgraduate Certificate in Education (PGCE). Qualifications at this level are referred to as M+4 or REQV14 within the system. The NS are currently being revised and a new framework for teacher qualifications is being developed by the Chief Directorate for Teacher Education, to bring the system into alignment with the new Higher Education Qualifications Framework (HEQF). However, it is not envisaged that the basic definition of a qualified teacher will change.

The earlier data describing the teachers in the system shows that 40% of the teachers in the employ of the KZN DoE do not have REQV14 and that 14% are unqualified. Thus while there may not be a shortage of people, there clearly is a shortage of properly qualified people. Given the age of the majority of the teachers in the system most of the educators in KZN were trained under the old apartheid differentiated system and so there is an additional question about the level of preparation amongst teachers (even at REQV14 level) for the demands of the new curriculum. The quality of programmes at the former teacher colleges was also highly differentiated.

There is far less clarity on definitions of qualified status for ECD practitioners (although Grade R is now included as part of the Foundation Phase and therefore requires REQV14 teachers) and ABET practitioners. Currently many ECD and ABET teachers have either less than REQV10 or at best REQV11.

4.6.2 Calculating demand

When looking at demand, one of the aspects needing to be interrogated and agreed upon is the definition of what is being demanded. If the demand is for a fully qualified teacher at REQV14, or even a graduate teacher at REQV14, then the existing teaching corps is seriously under-qualified. Achieving a minimum of REQV14 requires the further training of 40% of the teachers in KZN, and if a degree were required then more than 80% of teachers in the province are not meeting the minimum requirement. However, demand for qualified teachers at this level does not mean that there aren't teachers in the system, and one is therefore looking at a human

resource development dynamic rather than a supply dynamic. Thousands of teachers currently in the employ of the DoE are being upgraded or retrained in a wide variety of DoE funded programmes (NPDE and ACE) that raise the REQV status of the teacher and consequently increase the salary bill for the DoE. The exact cost of having a fully qualified teaching force needs to be calculated.

Most demand models focus on bodies in classrooms regardless of the qualification. In this instance the numbers can be crudely calculated on the basis of the turnover rate in the system (currently nationally defined at 5.5%) through retirements, deaths and resignations. This global figure on the approximately 90,000 teachers (assuming all other things being equal) would mean that KZN would require about 5,000 new teachers each year. However, this crude calculation does not provide an adequate indicator of real demand as will be shown below.

4.6.3 Factors shaping demand

4.6.3.1 Advertising and appointments

Calculating demand in the short term would best be done through an annual process of advertising vacant posts in what is referred to as a bulletin. This would create a transparent market that could be carefully monitored. The last bulletin was published in 2007 after a long hiatus with over 5000 posts listed, but the process of appointing was not completed adequately. Senior DoE staff have indicated that a new bulletin would be released in 2010 with over 6000 vacancies advertised. The difficulty is that the process of appointment of school based educators involves districts and the schools themselves. Individuals may apply for any number of posts directly at district or school level and there is no mechanism for establishing when one individual has more than one application in the system. Because each process happens at a local level, an applicant may receive offers over a period of a number of months, resulting in acceptances and resignations as preferred posts become available and with limited scope for the proxime accessit being appointed.

An additional complication is that SGBs are involved in the process of appointment and anecdotal evidence from principals shows that in some communities there is pressure to appoint an unqualified local person over qualified outsiders.

These inefficiencies and corruption of the process result in schools needing to make temporary appointments, and over time the temporary educators are ‘upgraded’ and eventually appointed into permanent positions. This ‘backdoor’ into the teaching profession is a particular problem in KZN according to staff in the national Chief Directorate for Teacher Education.

4.6.3.2 Learner-educator ratios and post-provisioning norms

Teacher demand is regulated by norms for particular ratios between teachers and learners and specific post-provisioning norms. Adjusting the ratio or changing the PPN even on a small

scale can dramatically affect the demand for teachers. Possible over-reporting of enrolments by some schools may have inflated the demand for educators. In March 2010, the Senior General Manager for Human Resource Development reportedly indicated to the Parliamentary Portfolio Committee that there was a surplus of 4,500 posts in the system. Presumably these posts are linked to the learner numbers in specific schools and declining numbers overall have resulted in a number of posts being redundant.

4.6.3.3 Age cohorts

As has already been noted in the section on teachers, KZN has an abnormal age distribution in the teaching force, with over a third of the teachers being over 45. In the next 20 years there will be a significant exodus of teachers from the system that will need to be planned for, with enough lead-in time to make allowance for the time taken to train the teachers.

4.6.3.4 HIV and AIDS

The prevalence of HIV infection and morbidity and mortality rates amongst teachers is a further factor that needs to be considered in the development of models of supply and demand. KZN has the highest rates of infection, with some districts reporting 30% infection rates amongst teachers in the HSRC study (see section 4.5 above). Clearly the impact of this goes beyond the possible increase in the number of vacancies through death and disability, as very often teachers are absent for long periods while ill. However, the improved management of HIV and AIDS through better access to ARVs may already be reducing the impact of the virus on the teaching force.

4.6.3.5 Temporary educators

Currently a significant minority of the teacher cohort are 'temporary educators'. They are working without secure tenure and without the benefits enjoyed by the permanent staff. Some of these 'temporary educators' have been teaching in this capacity for many years. This has had a demoralizing effect in the education system. In her recent reply to the national assembly the Minster of Basic Education, Angie Motshekga,[36] admitted that there is a total of 13,555 temporary educators in the nine provinces. In KZN alone there are 4,617. This number only takes into account those who are occupying vacant posts and does not include those who are temporarily occupying filled posts. There needs to be long term planning in line with the projected demand and supply for teachers and a concerted coordination of policies and practices between schools, district and provincial education authorities with regard to temporary educators and the filling of vacant posts. The training and qualification of the existing temporary teachers in subject areas required by schools would also fill some of the existing vacant posts. Providing incentives for qualified teachers to work in rural areas is critical in filling longstanding vacant posts.

36 Department of Basic Education. (2010). Reply by the Minster of Basic Education, Angie Motshega to the National Assembly. http//www.education.gov.za

4.6.3.6 Teacher morale and mobility

In the context of constant change, new pressures for performance, changing youth culture and HIV and AIDS, there is significant concern that many in the existing corps of teachers are demoralised and seeking an exit from the profession. In the 2005 HSRC study, 45.4% of educators surveyed said they had "never" considered leaving the profession. Of those who had considered leaving, 24.9% said they had considered leaving "from time to time" while 29.3% considered leaving the profession "very often". And HIV-negative educators were more likely to want to leave than HIV-positive educators[37]. It is difficult to assess the level of risk to the system. On the one hand, the global recession has made alternative employment much less likely. On the other hand, over half the teachers in the system are not happy and would like to leave. Retention of these teachers remains a challenge, but improved remuneration and career pathing in the OSD, as well as reduced pull factors in the wider economy, may have removed some of this pressure. Nevertheless, if so many teachers report wanting to leave the profession, there are serious issues of morale that need to be addressed. Low morale in the teacher work force is likely to have a negative impact on productivity and ultimately the student achievement will be impacted negatively.

There has been extensive reporting on a 'brain drain' as teachers have left South Africa to take up teaching posts in other countries. However, recent studies have shown that this is better described as 'brain circulation' as many teachers do in fact return after a short period of working oversees. Furthermore, the actual numbers of teachers leaving has not had a significant impact at a system level, although individual schools may have been affected.

4.6.3.7 Teacher specialization

The specific areas of specialization that are required are difficult to ascertain in the demand models being used. There is woefully inadequate data on what teachers are qualified to teach and what they actually currently teach. PERSAL data only provides information on the REQV level for payment purposes but there is no data on what qualification or specialization people hold.

The added difficulty with the qualification data is that the qualification alone does not signal what type of teacher one is dealing with. In South Africa, secondary teachers generally qualify with two or three teaching specializations while primary teachers would cover the full curriculum. But since there are so many possible combinations of specializations in the initial qualifications (and these are often rendered more complex through upgrading and retraining), detailed individual data on the qualifications is required. This would mean much more detailed data to be entered on PERSAL and the EMIS annual Survey. Until this is done it will be impossible to tell whether a teacher – even a 'qualified' teacher – is actually qualified to teach the subjects they are teaching.

37 Shisana, O., Peltzer, K., Zungu-Dirwayi, MA. And Louw, J.S. (2005). *The health of our educators: A focus on HIV/AIDS in South African public schools*. Cape Town: HSRC Press. p. 130.

There is extensive anecdotal information on shortages in specific skill areas such as mathematics teachers, but the evidence is not robust enough. Shortages in specific subjects may be experienced even if sufficient qualified educators appear to be in the system. For example, when the KZN DoE surveyed teachers it found that a large number of qualified maths teachers were not actually teaching maths. For this reason, demand needs also to be linked to deployment. At a planning level, redeployment looks to be a useful way of ensuring that teachers are sent to where shortages are found. However, failure to acknowledge the personal circumstances of the individual teachers' lives often bedevils this approach. Teachers who are in their forties and settled in a specific town will simply not relocate to a school in a rural area where there are no services and the teachers' family cannot be accommodated. In the first rationalisation and redeployment exercise after the merger of the old apartheid education departments most teachers who were to be redeployed opted for retrenchment packages rather than uproot their lives; and thousands of experienced educators were lost to the system.

The problem with a demand model such as the PPN is based on is that it does not take cognizance of the specific needs of the curriculum. The PPN assume a generalist teacher, but in secondary schools this is not adequate. A simple application of the PPN can result in the only maths teacher being made redundant. Thus, the PPN have to be adjusted to accommodate these specific needs. It is always more difficult to provide sufficient posts in a small school and therefore the curriculum is inevitably more restricted in these kinds of schools.

4.6.4 Factors shaping supply

Historically, under apartheid, teacher supply was controlled to a degree by the education department itself in that each department had one or more colleges directly under its control. Teacher training was thus a department competence in much the same way that nurses are still trained directly by the Department of Health. In the late 1990s, following an analysis of the costs of teacher education and the quality of the products of the colleges, it was decided to close all colleges and locate responsibility for teacher education in universities. This process of incorporation and closure of colleges was completed during 2001 and in KZN this effectively reduced the number of sites of teacher education from 17 to four.

4.6.4.1 Teacher training facilities

Currently three universities in KwaZulu-Natal offer teacher education programmes, namely the University of KwaZulu-Natal (UKZN) at its Edgewood and Pietermaritzburg campuses, Durban University of Technology (DUT) in Pietermaritzburg and the University of Zululand (UniZul). UNISA also offers programmes via distance and there are private institutions offering the UNISA courses or NMMU programmes. In total these institutions (excluding UNISA which does not provide provincial data) have fewer than 5,000 students enrolled in initial teacher education programmes and graduate about 1,200 new teachers each year.

It must be noted that the students at universities come from all over the region and thus it cannot be assumed that all of the graduates are likely to enter the KZN teaching corps. Indeed, both

DUT and UKZN have had significant numbers of their students directly funded by Botswana, the Maldives, Mpumalanga and Limpopo and these groups of students are thus not going to remain in KZN.

Getting accurate data from higher education institutions (HEI) about the specializations that the students are enrolled for is critical for planning purposes. Currently HEMIS submissions do not require detailed information about the numbers enrolled for specific specializations, and because of the complexity of the curriculum this level of detail is seemingly difficult to provide.

Given the crude estimate of demand calculated earlier — that is that the province needs 5,000 teachers to cater for current turnover — it is clear that even if all 1,200 new graduates were to remain in the province the current gross supply would be insufficient. However, because so little is known about the demand it is not possible to examine accurately subject-specific shortfalls in supply.

There are some areas where there is widespread agreement that there are shortages. As part of the national Funza Lushaka bursary scheme, certain subject areas have been identified as shortage areas. These include: foundation phase teachers with African languages; mathematics, science and economics teachers; language teachers; and a number of other areas. It is also apparent that some subjects are simply no longer offered at HEIs as teaching subjects. Thus, while the curriculum makes provision for foreign languages, no teachers are being trained to offer subjects such as French, Portuguese or German. Similarly, there is almost no training of teachers in fields such as Agricultural Science despite the fact that this subject is widely offered. Technical subjects and new subjects that are in the curriculum statements, such as Design, are not being offered in BEd programmes in KZN, and there is little clarity as to what foundation knowledge is required in undergraduate degree programmes. While these small specialized subjects do not register as a shortage in the system, the fact that they are not being offered reduces choice in the curriculum and places programmes at special schools such as agricultural schools and technical schools at risk. Similarly, programmes for special needs educators and counsellors are almost non-existent.

The only other providers working in the field of educator development are FET Colleges, which offer Education and Development as a specialization in the NCV or run skills programmes. There are currently less than 400 students enrolled at the FET Colleges studying to be ECD practitioners and Coastal KZN FET College has been training ABET teachers for the Kha ri gude campaign.

4.6.4.2 Colleges

The closure of the colleges has been widely viewed as the reason for the mismatch between demand and supply. The colleges were closed largely because they were extremely expensive and the quality of teacher education offered was very uneven and problematic. Nevertheless, it is true that the sites of teacher training were significantly reduced and the system lost the

human resource capacity of the lecturers in many of the colleges. Of particular concern was the fact that universities historically had little involvement in primary teacher education and specialists in this area did not have the qualifications recognized for academic work in universities. Consequently there has been a very significant decline in the production of primary school teachers.

The location of teacher education within the higher education system has had funding consequences. Higher education policy is driven by high end skills and knowledge production and funding norms value postgraduate students and research. Education is placed on the lowest funding tier within the subsidy system and thus there has been little incentive for universities to grow their teacher education programmes. Nationally, many faculties of education were scaled down to the status of schools or departments within larger faculties and greater emphasis was placed on recruiting postgraduate students. The status of teaching as a profession also declined significantly in the post-apartheid era as opportunities in other sectors of the economy became available to more people. The consequence of these factors was that in the first decade after the closure of colleges, there was almost no growth.

While there is a fairly vocal lobby for the reopening of colleges, and the Polokwane ANC conference took resolutions to this effect, the reality is that colleges cannot very simply be resurrected. The plant and infrastructure are now used by other institutions and the lecturers are no longer available. Building new colleges and staffing them from scratch would be very costly. It would thus be more feasible to expand provision at existing universities, and look to increasing capacity at FET colleges. Neither of these institutions receives provincial funds so this would be dependent on national funding. However, the province could enter into a partnership with these institutions and explore possibilities for seconding staff to the institutions in order to increase capacity and have a direct role in teacher education.

4.6.4.3 Entry demand

Growing concern about supply has resulted in a more direct intervention in the system through the offering of large numbers of service linked bursaries and ring-fenced provision of financial aid packages. In addition some provinces (although not KZN) have made additional bursaries available. The funding available for students has proved a powerful incentive and there has been a significant improvement in the demand for places at teacher education institutions. UKZN had over 10,000 applications for 500 places while UniZul reported over 40,000 applications. Not all these applicants would have selected teaching as their first choice and over half the applicants did not meet the entry requirements, but the pool of applicants to fill the available spaces greatly exceeds the capacity of the system. Many universities including UKZN have received infrastructure grants in order to increase their capacity.

4.6.4.4 Unemployed graduates, unemployed teachers

There have been confusing reports about the presence of significant numbers of qualified teachers who are not employed. Recent attempts by the national department of education to

develop a register of unemployed teachers have however revealed that these tend to be located in specific provinces (Limpopo for example) and have generally been in subject areas that are no longer offered to large numbers of learners. While there is some oversupply in urban areas, this does not imply that these teachers are available for deployment to undersupplied areas; family circumstances usually preclude this.

There has been a suggestion that provincial departments who are faced with the seeming necessity of employing unqualified teachers in many posts, should prioritise the employment of unemployed graduates. This would certainly be preferable to the current practice of employing local school leavers, many of whom do not meet the entry requirements of a university. However in order to effect this satisfactorily there needs to be better control over the localized process at school level, where SGBs and principals are able to employ unqualified people and where there are many reports of systems of patronage being the primary determinant in the appointment process.

4.6.5 Teacher development

There has been significant investment in both the training of new teachers and the upgrading and professional development of teachers already in the system. Over the past decade thousands of teachers have been funded through provincial bursaries for private studies, and national bursaries and directly funded formal and non-formal programmes have been made available to teachers in the system. Some important examples include the funding of the National Professional Diploma in Education (NPDE) and a wide variety of Advanced Certificates in Education (ACEs) offered through a range of higher education institutions and funded from various coffers in the provincial department and through allocations made by the ETDP SETA.

A major difficulty has been poor coordination of the teacher development activities and very limited advance planning with many programmes being rushed through at short notice. The quality of many programmes is suspect and there seems to be too much emphasis on accommodation and catering. The prioritising of programmes has also been dependent on individual advocates and dominant trends, as opposed to a systematic needs analysis of the development needs of teachers.

There are positive signs that this is starting to be addressed in a more coordinated fashion through the creation of a single teacher development portfolio and longer term planning. Significant resources are available for this development through the 1% skills levy which can be utilised much more effectively if properly coordinated. Indeed, there is pressure to improve these systems because of the new requirements for qualified teacher status and the requirements by the SA Council of Educators that all teachers accumulate professional development points.

4.7 Conclusion

This chapter has attempted to clarify the current KZN teacher profile, the teacher supply and demand picture, and problems and possibilities inherent in prevailing teaching practices. Our educational system can only perform to the capacity of its teachers. With the new minimum qualification level of teachers being set at REQV 14, this in effect means that 40% of the teaching workforce will be under-qualified. This figure does not include all the teachers who are qualified but not teaching in their subject specialization or phase. If one adds that around 20% of the KZN teacher workforce is living with HIV and/or AIDs, it becomes clear that serious difficulties face the profession.

A long term view of this issue must be taken, coupled with sustained and measured attempts to upgrade the teaching profession. A quick fix is not possible: a couple of workshops are not going to solve the problem. The first step is to ensure that gaining access to the profession is not made easy for those who are not qualified. Only the best students possible must be allowed into the qualifications. Given that there were 8000 applicants for the BEd programme at UKZN alone, of which only 500 were accepted, this is quickly becoming a reality. But there is a continual hiring of unqualified teachers (UTEs) within our schools, especially in rural areas. This results in a situation where an unqualified teacher with poor intellectual abilities teaches thousands of learners over 40 years and does so mainly at grade R, foundation phase and intermediate phase - the phases that set up foundations for later learning. Given that with the high rates of HIV and AIDS there will be an increasing demand for new teachers, it is imperative that these new teachers are well trained and highly qualified.

Furthermore, the upgrading of existing teacher qualifications and skills must be strongly focused on basic content knowledge that ensures teachers have a solid grasp of the fundamentals of their subjects. Our study has shown that teachers have a poor grasp of the subject they teach. This can only be addressed by sustained programmes that take each element of core knowledge in a subject and teach it to ensure that teachers actually understand. Again, this will be a slow process, focused on teachers steadily gaining mastery of small areas rather than attempting an over-blown and over-generalised programme (4.3.5 and 4.3.6 offer some detailed conclusions and recommendations on relevant issues of quality in practice).

Similarly, the supply and demand debate needs to be informed by the strong link that exists between teachers' knowledge and learner achievement. This link has been shown in South Africa[38] and in studies elsewhere[39]. It has been corroborated by studies in South Africa which have identified teacher qualifications as correlated with learning outcomes[40]. Teacher supply

38 see, for example, Carnoy, Chisholm et al, 2008.

39 see for example, Carnoy, 2007; Morais et al, 2002; Reimers, 1993.

40 Crouch and Mabogoane 2001; Howie et al, 2007.

needs to focus on matching appropriately trained educators with specific posts rather than simply putting warm bodies in classrooms. In order to do this, better data is needed on what is currently in the system and what is required, looking ahead on a five and 10 year basis. This will assist with better planning for new teachers as well as better utilisation of funds spent on teacher development.

The curriculum is the ground or material in which the link between teacher knowledge and learner achievement develops and bears fruit - or fails to do so. Effective teacher qualification, deployment and development are essential to achieving a quality link and thus quality curriculum delivery. Issues of teacher qualification, development and support already raised in this chapter (together with other issues such as infrastructure which also bear on effective delivery) are therefore pursued further in the next one focused on the curriculum.

5. Curriculum

The learners and their engagement with the curriculum are at the heart of the education system. Without the curriculum, none of the other functions of the department make any sense. An awareness of the need for curriculum redress and development has been a concern of the KZNDoE and the national department practically since their inception. The gross inequalities in the system inherited by the democratic government are baldly visible to all. As will be seen below, there has already been significant progress over the past fifteen years in addressing a number of critical issues.

The complexities of the curriculum reform since 1994 cannot be detailed here. It suffices to say that the curriculum has been totally overhauled and then revised twice since the advent of democracy. The first reforms resulted in a single national curriculum eventually covering grades R-12 for schools (Curriculum 2005) and the parallel National Certificate (Vocational) curriculum for colleges. Besides removing the divisions of the apartheid system, the key features of the new curriculum were the outcomes based education approach (OBE), learner centredness, and integration. This new curriculum was heavily criticised from the outset, largely for its OBE components, and two subsequent revisions have gradually revised many of the main assumptions underpinning the curriculum as well as progressively specifying the curriculum.

It must be noted at the outset that the province has very little control over curriculum policy. The national curriculum statements are gazetted by the national department of education and provinces are simply the implementing agent. In this respect there is little point in dwelling extensively on the details of the policy and its strengths and weaknesses. However, the province does deal with the delivery of the curriculum and this is the key focus of this section.

There are numerous factors that affect the delivery and effectiveness of a curriculum. Many of these issues are much wider than the curriculum itself and will not be covered in detail in this section of the report. The general effectiveness of the schooling system is shaped by factors such as poverty, HIV and AIDS, lack of economic opportunity and so forth. It is seen as essential that the programmes which are in place to deal with these factors continue to grow and receive support in order to achieve successful and inclusive education for all. These include programmes and initiatives such as Schools as Centres for Care and Support, the National School Nutrition Plan, the development of Education Centres to Support Rural Development, QIDS-UP, ABET, the Dinaledi Project, and many others.

Another major factor in efficient curriculum implementation and usage are issues of basic access such as building an adequate number of classrooms for students and assuring students can get to and from school each day safely. Access can also include the provision of water, electricity, phone, and proper roadways for all schools. These issues are covered in other parts of this report.

5.1 Existing national and provincial priorities that relate to curriculum

5.1.1 The KZN DoE strategic plan 2005-2010

The KZN DoE had a five year strategic plan in place for the period 2005-2010. The plan addressed a number of matters related to curriculum. The relevant priorities can be summarised as follows:

- addressing the infrastructure backlog
- providing equitable access to resources
- introducing outcomes based education at all levels
- improving the quality of teaching and learning in mathematics, science and technology
- reviving the importance of technical/vocational skills
- offering isiZulu as a subject in all public schools
- expanding provision of ECD
- distributing qualified and competent educators throughout the system
- expanding the use of ICT for curriculum delivery.

The strategic plan is developed around eight programmes dealing with (1) Administration, (2) Public ordinary school education, (3) Independent school subsidies, (4) Public special school education, (5) Further education and training, (6) Adult basic education and training, (7) Early childhood development, and (8) Auxiliary services.

5.1.2 National strategy for mathematics, science and technology education

There is widespread concern at the low output of science and mathematics learners passing the National Senior Certificate. A cabinet-approved national strategy for mathematics, science and technology education commits the provincial departments to meeting a range of targets and performance indicators that range from infrastructure development to teacher qualifications, and from participation rates to reading levels.

5.1.3 Accelerated and Shared Growth Initiatives of South Africa (ASGISA)

The national concern with the skills shortage and its impact on economic growth is reflected in the ASGISA programme, and specifically the Joint Initiatives on Priority Skills Acquisition (JIPSA). The priorities reflected in the JIPSA shape not only the development of curriculum strategies specifically within the FET College sector, but also the province's approach to technical schools and vocational and technology related subjects.

5.1.4 The White Paper on e-Education

The White Paper on e-Education spells out a vision of a system where all educators are competent users of ICTs as flexible tools for teaching and learning. Amongst other things, the White Paper proposes that:

- each school will have a dedicated teacher outside the normal staffing ratio to manage ICT facilities and champion the use of ICT in an outcomes based paradigm;
- every teacher should have access to ICT infrastructure and access to the internet;
- every school and college will have access to ICT infrastructure to enable (amongst other things) access to electronic learning material, connection to information sources outside the classroom, and collaboration and communication with others beyond the school.

5.1.5 White Paper 6 on Inclusive Education and the HIV and AIDS Strategy for the KZN DoE

These two documents highlight the need to build caring and supportive environments that ensure that no child is excluded, be it due to disability, the consequences of HIV and AIDS, or any other factor that may exclude a learner. Ensuring that all learners have access to the curriculum is a key priority.

5.2 Key curriculum challenges

Early Childhood Development – Education White Paper 5 on Early Childhood Education requires that all children entering grade 1 in 2010 must have participated in an accredited reception year programme (grade R). The major challenges for the ECD curriculum will be issues of basic access and provision of trained educators and learning resources.

General Education and Training (grades 1-9) – This band has already undergone significant curriculum transformation. Curriculum 2005 and its revised version have been rolled out. A new revision is about to be promulgated which will see the reduction of learning areas in the intermediate phase. Learner enrolment is high by international standards. All learners cover the same curriculum. The key challenges therefore relate not so much to provision of choice or access, but rather to quality, resources, language of learning and teaching, teacher development, and curriculum development. Developing capacity around new or merged learning areas and strengthening the foundation phase in terms of literacy and numeracy teaching are key challenges.

Further Education and Training (Schools) – This is a high stakes component of the system in that it is the key exit point from the schooling system: the life chances of learners are strongly influenced by what occurs in grades 10-12. Unlike at GET level, learners are supposed to have choice of subjects, depending on their interests and the needs of the local economy. Curriculum transformation cannot be said to be complete when the majority of schools are only able to offer

a restricted curriculum, and key technical, arts, and vocational subjects are not available at any schools within a reasonable distance of the learners' homes. Expanding curriculum choice thus becomes crucial as part of a long term plan to enable all learners access to the subjects of their choice. Ongoing support for teachers needs to be coupled with KZN specific enrichment of the curriculum through development of Learning Programme Guides and other LTSM.

The above provides a broad overview of the key challenges in each of the curriculum bands. These will be examined in greater detail and in the context of existing initiatives in the sections below. To summarise, the challenges (at all levels) can be separated into the following priority areas: (1) infrastructure and equipment to deliver the curriculum (including the provision of classrooms, specialised facilities, libraries, computers); (2) the provision of educators (in sufficient numbers, with adequate skills levels for specific subject or learning areas); (3) the roll out and development of the curriculum (including finalisation of policies, linking to local needs, ongoing evaluation).

5.2.1 Infrastructure backlog and resourcing initiatives

The KZN DoE must continue to prioritise the building of new classrooms and replacement of derelict classrooms until such time as overcrowding in schools is significantly reduced. However, the focus on classrooms has meant that few new schools, libraries, laboratories, and computer rooms have been built.

While few schools have buildings for libraries, the department recognises that the new curriculum is designed with library resources in mind. The KZN DoE has already begun implementing the KwaZulu-Natal School Library Policy which proposes a menu of school library models such as box or corner libraries, central libraries, clusters or mobile libraries.

A major initiative that can play a key role in enriching the curriculum is the establishment of the Education Centres, particularly in rural areas. The programme, funded in partnership with the Royal Netherlands Embassy, proposed the establishment of 120 centres throughout the province. The centres consist of computer laboratories, libraries, science laboratories, internet and email facilities, and venues for formal and non-formal teacher development activities. These centres will enable access to specialised facilities that are not yet provided for at the school level.

There is already national and provincial policy in place to address the lack of ICT infrastructure in schools. The lack of computers and other ICTs in the majority of schools is a significant blockage to curriculum innovation and the implementation of the e-learning strategy. However, there are a number of departmental and private sector initiatives to expand the number of computers in schools and already 50% of KZN schools have at least one computer (although connectivity and usage of these computers for curriculum purposes is limited in most cases).

The supply of LTSM (mainly textbooks and stationery) to schools is a significant part of the KZN DoE budget. This is crucial as textbooks provide teachers with resources to work with that are

geared to the new curriculum. However, using the textbooks effectively is not guaranteed and thus this significant investment must be linked to teacher support.

5.2.2 Human resource development strategies

In preparation for the implementation of the NCS for FET, and as ongoing support for the NCS for GET, the KZN DoE has provided orientation to 22,000 grade 10 teachers in 29 subjects, and provided ongoing support to the 35,000 grades R-7 teachers.

It has provided training to educators in aspects such as computer literacy and integrating HIV and AIDS into the curriculum.

The KZN DoE has funded (or facilitated funding through the SETA and donors) large numbers of existing teachers for specific studies to upgrade their qualifications or to retrain. Specifically, there are still significant numbers of teachers completing their National Professional Diploma in Education (NPDE) and thousands of teachers have been enrolled in ACE programmes in Mathematical Literacy, Life Orientation, Physical Science, Technology, Mathematics and School Librarianship.

The national Funza Lushaka bursary scheme has seen the reintroduction of a service linked bursary for students studying to be teachers. This provides an incentive mechanism for the profession and should enable the department to influence the locations where graduates go to teach.

The KwaZulu-Natal provincial government has taken a decision that all schools in the province should offer isiZulu as a subject. This initiative has seen the introduction of the subject in 270 schools that did not offer it before and only very few schools do not have the dominant language of the province as part of their curriculum. Additional posts were provided where schools were not able to meet this requirement from within the normal post provision.

5.2.3 Conclusion

The above reflects examples of a wide array of activity already under way. There are many more large-scale and smaller scale initiatives.

In addition to the initiatives actually taking place there is a plethora of (often draft) strategy documents for specific sectors, including technical and vocational schools, inclusive education, ECD, and rural education. Not all of these documents have been approved as policy and many constitute wish-lists which cannot be realistically resourced. It will be necessary to reassess priorities, streamline policy development at provincial level and integrate strategies, particularly in the crucial area of human resources, teacher development and support. Some recommendations are offered below.

5.3 Human resources, teacher development and support

Curriculum development is premised on the centrality of skilled teachers as paramount to any effective curriculum delivery. The development of the human resources of the department through initial and continuing professional development as well as support (particularly at school level) is critical. It is also an area where the KZN DoE is dependent on strong relationships with other role players such as HEIs, NGOs, unions and SACE. This need for partnerships adds complexity but also broadens the resource base that can be brought to bear.

Internationally, curriculum change is often most successful when there is a rapid infusion of new teachers who have been trained in the context of the new curriculum. In South Africa curriculum change has been accompanied by a contraction of the teacher education system. Provincial strategies must give priority to supporting national efforts at increasing enrolments in teacher education. Specifically, bursaries need to be offered for teachers of scarce subject areas. While the national Funza Lushaka scheme has made a significant difference, KZN must make its own initial teacher education bursaries available, particularly in those fields not covered by Funza Lushaka.

The KZN DoE will need to work with HEIs and NGOs to explore alternative models of training new teachers and possibly introduce teacher assistants where this is necessary to ensure that the curriculum is not undermined by a shortage of educators. Specific attention will have to be paid to supplying appropriately trained educators for the expansion of grade R.

Existing teachers will need to continue to upgrade their qualifications and be retrained in new subject areas through programmes such as the ACE (Mathematical Literacy). Continued financial support in the form of bursaries is required to make this possible for large numbers of teachers. In light of the priorities, ACEs in Foundation Phase (including ECD), Agricultural Science, ICT in Education, Science, Mathematics, Mathematical Literacy and Technology, Arts and Culture, Life Orientation, Economics and Management Sciences and other scarce subjects will need to be expanded or developed by HEIs. Utilising the significant funds within the 1% skills levy needs to be aligned more tightly with curriculum priorities.

The KZN DoE needs to see the expansion of the advisor corps as the major intervention in terms of curriculum support. It is critical that the filling of the posts and the expansion of the advisory services is prioritised. Indeed, posts at this level are more critical than minor reductions in the learner-educator ratio. The new advisors will need training in how to provide classroom and school based support as mentors rather than inspectors.

The advisors need training in the use of ICTs in the curriculum, and need access to the internet and other research tools. Currently, advisors do not have easy access to the internet and are not

able to make use of curriculum tools such as the Thuthong Portal. This needs to be changed immediately and advisors need to show teachers how they in turn can make use of these resources.

The Post Provisioning Norm (PPN) needs to be adjusted to take account of the curriculum requirements of schools and the requirements of specific mandates. For example, the teaching of isiZulu as a requirement has already led to an adjustment. Similarly, the creation of an 'ICT champion' post (as proposed in the White Paper on e-Learning) needs to be phased in as schools develop ICT infrastructure. In the FET schools the PPN needs to take account of the requirements of the curriculum in terms of specialised teachers and cannot be worked out purely on the basis of learner enrolment.

5.4 Infrastructure and recapitalisation

As the demographics of the province shift and urbanisation continues, new schools will need to be built. As new schools are built, curriculum choice should be a key factor in determining the nature of the facilities that are built, since integrating specialist facilities at the outset is much more cost effective than adding buildings to existing schools. At least one new specialised Focus high School, with boarding facilities, should be built in each year from 2010 to 2020 and these schools should be distributed throughout the districts. Examples of Focus Schools include Arts Schools (with sprung dance floors, theatre, music facilities, and art studios), Agricultural Schools, Hospitality and Tourism Schools (with kitchens, mini-hotel etc) and Technology Schools. These are discussed in more detail in relation to the FET band below.

The ongoing development of the Education Centres needs to be aligned with this strategy. The provision of necessary curriculum software (Pastel, CAD and GIS for accountancy, geography and computer graphics and design for example) and support needs to be linked to the ICT infrastructure. Centres in rural areas where tourism is a key economic development strategy could have linked facilities for hospitality studies and tourism that are shared by schools. The use of facilities by learners will require timetabling and transport budgets if these facilities are not only available to teachers and learners in the immediate surrounds.

Meeting the e-Learning vision spelled out in the White Paper requires infrastructure and equipment expenditure, as well as recurring costs that need to be managed. Supplying schools with one or two computers is not very helpful in terms of curriculum support, since these computers are usually used primarily for administration purposes. It is thus proposed that ICT roll-out is concentrated in Education Resource Centres and clustered facilities, with a sufficient concentration of machines to make teaching whole classes a possibility.

Sport, recreation and exercise are a very important part of a learner's development and should be included not only in the curriculum but also as extracurricular activities. In order to do this, schools require access to facilities such as fields or halls. It is recommended that each school

have at least a multi-purpose field within walking distance. Ideally each school would have sport facilities, but since the initial cost, as well as maintenance costs, is very high, it is suggested that specialty fields or other expensive and exclusive facilities such as swimming pools could be developed in cooperation with other provincial departments. In addition, costs could be shared between schools, community organizations and government departments.

Included in the category of basic structures and amenities is the security of all schools. There are many cases across the province of schools receiving equipment such as computers but not being able to use them properly or losing them due to lack of security. Schools should all be capable of keeping all areas secure, including classrooms, so that equipment, furniture and materials are not threatened by criminals and learners are able to study in safety.

5.5 Curriculum development, enrichment and assessment

The initiative to introduce isiZulu as a subject in all schools is largely achieved. However, research is required to assess the level of uptake and to promote this subject. In part, the province needs to play a leading role in the national curriculum and assessment processes that ensure that equivalence between language subjects is achieved so that certain languages are not perceived to be easier at Home Language, First Additional and Second Additional level in the grade 12 exit examinations.

While offering isiZulu as a subject is an important step, of far greater developmental importance is the active promotion of home language instruction in the foundation phase. This is a complex matter, in that parents often prefer to have their children taught through the medium of English in the belief that this is advantageous. However, the educational, developmental and social consequences are undoubtedly negative. Promoting home language instruction requires a public campaign, coupled with the intensive development of the foundation phase teachers, to improve their skills in the teaching of reading, writing and numeracy through the medium of isiZulu. This requires the development of specific LTSM such as graded readers in isiZulu which are not available in many primary schools.

The status and uptake of agricultural subjects requires urgent attention. The historical association of agricultural education with gardening, servitude and containment in rural areas needs to be addressed actively through an education and promotion campaign. Agriculture (commercial, small scale and subsistence) is the major economic activity in rural areas and is critical to health and food security. This requires a specific strategy of promotion and development.

5.6 Prioritising within sectors

The following proposals within each of the bands and sectors are tentative formulations that that are being proposed for consultation. They do not represent a hierarchy of priorities and are not exclusive.

5.6.1 ECD and grade R

Education White Paper 5 on Early Childhood Education requires that all children entering grade 1 in 2010 must have participated in an accredited reception year programme (grade 0 or grade R). This has not been achieved but there is progress.
The major challenges for the ECD curriculum will therefore obviously focus on issues of basic access including the creation of more physical space for grade R and the provision of trained educators to teach the newly created classes. However the issues of development and distribution of learning resources as well as the language of teaching and learning are also crucial in providing students with the foundations they need to succeed.

5.6.2 GET foundation phase

The key challenge related to the foundation phase (FP) is how to change a widely held perception that teaching at this level is not a specialised activity. This is based on a notion that FP is basically a form of childcare that can be done by anyone. The KZN DoE has unfortunately reinforced this perception in part by placing non-specialists in advisory positions. This is clearly a misapprehension that has damaged generations of children. If the curriculum at this level is not implemented by teachers who understand the principles of teaching reading, writing and conceptual development, then the foundations for the rest of the learners' education will be weak. Consequently, the most effective 'Matric intervention' is in fact to ensure that children develop strong foundations in reading and writing, language development, number sense and concept development. The alarming throughput statistics suggest that many learners are not being adequately taught at FP. It is also widely recognised that this foundation is best laid in the home language.

5.6.3 Securing a quality supply of foundation phase specialist teachers

Data from the national Deans of Education Forum reveals an alarming picture in terms of foundation phase teacher supply. The national picture reveals that there are very few black Africans enrolled in programmes preparing for the foundation phase. The numbers of students training specifically for ECD is negligible. At the end of 2006 less than 280 new black African teachers qualified nationally, of which 40 were studying in KZN institutions. While it is possible that the KZN DoE will recruit some students studying at other universities, the global availability does not begin to address demand.

Recognising that any intake of new students will take four to five years before they enter the classroom, and that children are being taught by unqualified teachers, the KZN DoE will need to continue to support the training of existing unqualified and under-qualified teachers through the NPDE and ACE.

5.6.4 Retraining of existing teachers in literacy and numeracy

Foundation phase teachers have had some access to retraining as part of the roll-out of the Foundations for Learning campaign, but ongoing and specialised training is required to support the development of teachers in the FP. In addition, international and national studies in teacher development report that school-based support and training is most effective in realising changes in practices.

The significant expansion of the Curriculum Services Directorate to provide First Education Specialists on a ratio of one FES per 50 schools has been reported on above. This is a major investment in the school-based support teachers can expect to receive from the department. However the foundation phase support which includes grade R is integrated across learning areas, whilst in the intermediate and senior phases this is provided per learning area. Consequently, there is no provision for specialist support for reading and writing, numeracy, or early childhood development programmes. It is thus proposed that the KZN DoE ultimately provide three additional posts per district that would enable district level specialist support in teaching reading and writing, numeracy and grade R work, in addition to the integrated support that the current provisioning proposal will deliver.

Ongoing district level training in the form of workshops that focus specifically on teaching reading and writing should be run for teachers throughout the next three years.

5.6.5 GET intermediate and senior phase

The intermediate and senior phases build on the foundations laid in the first four years (grades R-3). Learners are required to begin to work more independently and teachers need to lay the disciplinary foundations of the various subjects within the learning areas. Teachers in these phases have had insufficient training in the methods and content required to ensure appropriate conceptual development, and many still do not follow the curriculum guidelines. The priority in this phase is teacher development, coupled with careful development of appropriate resources.

Specific attention needs to be paid to the learning areas that are new: the integration of Technology into the sciences, Life Orientation, Economics and Management Studies, and Arts and Culture. Many teachers teaching in these LAs have had no prior training or have been trained only in part of the LA. Formal courses such as ACEs, as well as ongoing training and school-based support, are required.

5.6.6 FET (schools)

Given the high stakes nature of the National Senior Certificate (NSC), the focus needs to be on new and compulsory subjects. Specifically Mathematical Literacy and Mathematics need ongoing support, and these subjects should be prioritised in relation to filling advisory posts and making bursaries available. There should be a corps of advisors for Mathematical Literacy separate from those dealing with Mathematics.

Unlike at the GET level, learners have some choice of subjects, depending on their interests and the needs of the local economy. Curriculum transformation cannot be said to be complete when the majority of schools are only able to offer a restricted curriculum, and key technical, arts, and vocational subjects are not available at any schools within a reasonable distance of the learners' homes. The long term plan for the FET band lies in the establishment of 'Focus Schools' for different areas of the curriculum such as agriculture, maths, arts, etc and that these schools have boarding facilities to assure access. Aside from these Focus Schools there should also be FET Public Ordinary Schools which offer the fundamental courses as well as a variety of electives which are affordable and offer a variety more general than the electives at Focus Schools.

Furthermore, the new curriculum will require development as it is implemented. Major challenges at the FET level involve educator training for the new subject areas and classes that have been introduced, especially those that are fundamental subjects such as Math Literacy and ICT. Scarce subject areas such as agriculture or engineering classes are also lacking properly trained educators. This will only improve through proper recruitment with incentives and bursaries.

5.6.7 Special Schools

Schools which cater to students with special needs such as blind or deaf learners or learners with severe mental disabilities are referred to as Special Schools. These Special Schools require curricula that cater to all the different challenges faced by their students.

This should not mean however that Public Ordinary Schools (POS) would not cater to learners with some disabilities. POS should all be wheelchair accessible and students with less severe mental disabilities or learning disabilities should be able to attend POS while receiving additional support from the school system. Each school should have access to specialist units, or funding to hire these, when a student who requires extra attention is attending that school. Specialist units should include personal monitors, one on one tutoring, classes and equipment that will benefit the student. All schools should have regular access to reading and learning disability specialists who assess and assist students who are struggling for reasons beyond their control. This will only be possible if there are programmes established in conjunction with HEIs to develop these specialists. The department should collaborate with HEIs in the province to offer a certificate for inclusive education if it truly wishes to offer inclusive education to all.

5.6.8 Focus Schools

While Special Schools will exist across the system from grade R-12, Focus Schools are recommended for students who have shown marked talent or have an intense interest in a specific curriculum learning area up until the end of grade 9. These students should have the opportunity to attend a Focus School at the Further Education and Training level if desired. Focus Schools will offer all of the fundamental subjects but will have specialized electives that cannot be offered at every school in the system due to the high cost of equipment and facilities and the limited demand. These Focus Schools should have boarding facilities so students who live outside the area are able to attend and it is recommended that there be one Focus School for each identified subject area in each district of KwaZulu-Natal by 2020.

This would allow students who are interested in specialist areas to take classes that may not be offered at the FET school closest to their home. Boarding facilities at the Focus Schools are crucial in achieving their purpose. Focus Schools should be developed across the province and can be located in areas that have employment opportunities in the subject areas, for example agriculture focus schools in farming areas or service Focus Schools in the tourist-popular north of KZN. This would also facilitate the students proceeding to work in their area of study and the local industries forming partnerships with the schools.

A comprehensive analysis of the subject packages available in different schools needs to be undertaken, to map the availability of subjects throughout the province. This will be needed to inform decisions on critical aspects such as: where to locate specialised schools; which subjects are not available due to lack of physical infrastructure; and which subjects are not available due to lack of teachers.

In addition to these Focus Schools, a major priority must be the training of new teachers in the new subjects and the reskilling of existing teachers who may be teaching subjects they are not trained to teach. This needs to be done in collaboration with HEIs, as not all subjects are currently available at teacher education institutions.

5.7 Conclusion

The process of curriculum reform in South Africa has reached a point where the shape and focus of the curriculum process is now clear. Implementation is happening at all levels of the system.

While implementation is progressing, the challenge is to ensure that this implementation does not benefit those who already have access to resources while leaving those citizens with limited access doubly disadvantaged. The aim must be that all KZN citizens have access to as much of the curriculum as possible, and at the highest quality level possible, within the constraints of the available resources.

This chapter foregrounds quality educators as the key to curriculum development, in line with the focus of the report as a whole. In particular, the curriculum cannot be realised without quality teaching of foundational literacy and numeracy. Appointments and strategies that enable this must therefore take priority. However, it is also recognised that there are certain infrastructural developments that will be required in order to widen access. This needs to be understood both in terms of widening the areas of learning and addressing barriers to learning other than those posed by poor foundational literacy and numeracy. Access for all learners, and to a wider range of learning areas, not only brings educational rights and benefits to learners with particular needs or abilities. It also, crucially, makes the curriculum and the education sector more responsive to needs and opportunities in society and in the economy at large and therefore ensures sustainability of the entire educational project.

It is hard to see how teachers can realise the curriculum in the classroom if school management does not facilitate this, particularly amidst the imperatives that have been identified in this report: that is, the pressing need for more rigorous time on task, appropriate textbooks and carefully monitored planning and assessment. School management will be crucial in ensuring that support and advisory services are fully and properly utilised. The next chapter focuses on this aspect.

6. Principals:
school management systems and support

The literature review that preceded this report points to evidence from studies world-wide that excellent leadership is second only to classroom instruction among school related factors that contribute to quality learning. This chapter looks at some of the dimensions of such leadership in the context of local KwaZulu-Natal school experiences and needs. It draws on four particular sources: a brief literature review on quality educational practices; a questionnaire completed by 100 principals in KZN; a study of a particularly successful short course that directly intervened in the management practices of 50 schools with clear and simple procedures that improve school management; and an interview with a principal in a rural KZN school who has improved Matric results from 0% to 94% over five years. Taken together, these offer a snap-shot picture of how principals are working in KZN and what can be done to improve their results.

It is known from empirical studies of South African schools that four management variables show strong correlations with learner performance. These are: the regulation of time; overseeing curriculum coverage; ensuring that books and stationery are regularly available; and quality assuring assessment practices. It is clear why these particular variables impact on learner performance in a tangible way – each one impinges on teaching and learning in a direct manner.

Research on educational leadership and management point to a number of other variables that also play a role in school effectiveness. Principals who are still engaged in the process of teaching and understand what learning is can make decisions based on current educational realities that have direct relevance to the practices of their school. Such participation must be combined with practices of distributed leadership where other individuals (deputy heads, HODs, and expert teachers) have key roles to play that are clearly specified and recognized. However, effective school management resides not only in how principals engage their management structures within the school but also, crucially, in how they work with their surrounding context and community, including parents, community structures, and local educational organizations such as the district office and educational centres. Finally, there is a key personal variable: 'proactive resilience'. Most effective principals are able to take the initiative with a positive attitude that still respects educators and learners but does not balk at making tough decisions.

6.1 Findings from research on principals

6.1.1 Literature review

There is limited but growing research and publication on the leadership and management of learning in South African schools (Bush et al., 2005; Hoadley et al., 2009; Bush et al., 2010). This has combined with the increasing recognition across the system that instructional leadership is a key variable in the educational performance of a school and has become the nucleus of principalship. The South African Standard for School Leadership, for example, states that the core purpose of principals is to enable the creation of conditions that support quality teaching and learning. This is not what principals currently do, however. In a 2006 study, Gauteng principles ranked the management of teaching and learning only seventh out of 10 activities

they do, with financial management, human resources and policy dominating their time (Bush and Glover 2006). Administration in particular dominates their time, especially with the high demands of outcomes based education and the need to co-ordinate an ever changing policy, curriculum and assessment framework. Recently there has been an attempt to specify what it would mean for a principal to focus energies on the management of teaching and learning. Hoadley et al (2009) and Bush et.al (2010) provide the most comprehensive and research led lists. To some extent the list is obvious. If a principal were to take the management of teaching and learning seriously s/he would:

- ensure that teaching and learning took place in lessons;
- ensure the curriculum was being completed according to some plan;
- plan the timetable effectively and ensure it is adhered to;
- keep an eye on learner performance through exam and test results and respond to issues arising;
- use HODs effectively to manage the details of teachers completing the curriculum within their learning areas and subjects;
- arrange systematic class visits and feedback;
- ensure that learning and teaching support materials are available and looked after.

These kinds of lists can be found in Hoadley et al (2009) and Bush et al (2010). It is not surprising that these management activities would result in an improvement in the quality of teaching and learning in a school as they are the closest to the actual chalkboard. What are not listed above but have proved to be key variables are two less measureable traits. The first is the ability of the principal to work with both the parents and the local community. A tangible result of this is a healthy and participative SGB. The second is a personal trait that can best be called 'proactive resilience' where the principal is not only energetic and persistent in what s/he does, but also carries the interests of the school forward to all concerned parties[1].

6.1.2 Principal questionnaire

The questionnaire in this study was adapted from the Hoadley study (2009) conducted in the Western and Eastern Cape, and focussed on the key variables of managing teaching and learning. Like Bush et al (2010) we used principals participating in the pilot phase of the new national principals' qualification, the Advanced Certificate in Education: School Leadership. The 103 principals answering the questionnaire came from across the province and were drawn from different centres across KZN. There was a mix of male (43%) and female (57%). 59% of them had been principals for six years or more and 35% between two and five years. Notably, at principal level there was limited movement between schools: once a principal is appointed, s/he tends to stay at the school until promotion or retirement. Fifty-four per cent of the respondents had been principals at their school for more than five years.

1 Ediger, Marlow. 1996. "Comparing the attributes of proactive and reactive school principals". Education, Vol. 117, 1996.

When asked what tasks principals spend the most time on, there were two dominant responses: administration and departmental reporting (35%) and overseeing teaching and curriculum (33%). We know from research that management of teaching and learning is the key variable to improving quality of education in schools, yet only one third of the principals were able to do this as their major focus. Over 80% of the principals reported that they still taught, but only 15% of them reported that teaching was their major task. This is a healthy indication that principals are getting the balance right: keeping involved in the daily teaching and learning activities but not being overwhelmed by them.

Table 45: Tasks principals spend the most time on

Q13.1 As a principal in this school, what would you say is the task on which you spend the most time	Total	%
No Response	6	6%
1) Disciplining learners	2	2%
10) Other	2	2%
2) Liaising with parents	1	1%
4) Overseeing teaching and curriculum	34	33%
5) Teaching	15	15%
6) Dealing with issues in the community	1	1%
7) Administration and departmental reporting	36	35%
8) Supervising teachers	6	6%
Total	103	100%

Management of teaching and learning materials seemed to be fairly well done, with only 19% of principals feeling textbook maintenance, distribution and retrieval to be an issue.

Teacher absenteeism has been a strong theme in recent accounts of why South Africa is performing poorly. Although 53% reported it as a problem, they indicated that it involved only a few of the teachers; and 43% of principals reported that it was not a problem in their schools. Given the current critical public discourse on absenteeism of teachers, it is crucial to point out that although it is a prevalent issue, it probably only applies to a small minority of our teachers. This was borne out by the teacher questionnaire that gave a similar account.

The issue is not so much whether teachers come to school or not but whether they manage to complete the required curriculum. Half the principals reported that their teachers do not complete the curriculum. This points to a strong need to simplify teacher responsibilities so that their core function can be achieved. Only 13% of the principals reported that classrooms do not

get interrupted. Major reasons given for interruption were: extra mural activities (29%); learner absenteeism or lateness (17%); teacher lateness or absenteeism (12%) and staff meetings (10%). Similar trends were noted in the teacher questionnaire

Principals felt that the major factors affecting performance negatively in the classroom were over-large classes and insufficient textbooks. Key factors outside the classroom that impacted on school performance were: parents not investing in their children's schooling; learner lateness; and learner absenteeism. Only 7% of the principals strongly agreed with the statement that parents try their best to support their children coming to school, doing homework and preparing for tests; and 45% felt that parents actually do not try and help at all.

There was quite strong reporting of distributed leadership. 39% of the principals devolved academic leadership to their heads of department, another 17% to their deputy principal, while 32% of the principals saw this as their own function. This was confirmed when asking a question about who was responsible for ensuring teachers covered the curriculum – 56% of the principals said it was the deputy head or the head of department's responsibility. However professional development was more firmly placed in the ambit of the principals' control, with 60% placing this activity under their own responsibility
Most principals (68%) reported that although the SGBs were keen to help they lacked the skills and resources to do so. Only 17% of the SGBs were felt to have sufficient skills and resources to be of value.

When asked what the central focus of their school was for the new term there were a variety of responses but most of them centred around a focus on improving the quality of teaching and learning, completing the curriculum, improving assessment results, encouraging reading, writing and speaking skills. This was encouraging to see, especially the strong focus on reading. Most of the formulations of the mission of the school were internally driven rather than rule bound, with only occasional formulation of mission around completing work schedules, plans, or improving marks. This focus was borne out by 79% of principals feeling their school days were directed towards maximizing school learning.

Principals reported that there were no real financial incentives or rewards for excellent teachers, but most reported non-financial rewards ranging from certificates and awards handed out to their best teachers to praise in staffrooms and assemblies to a simple thank you.

Only 40% of the principals reported that they had a fully qualified staff complement.

6.1.3 Principals' management development programme (PMDP)

The principals' management development programme (PMDP) was piloted in 50 schools in the Illembe, Othukela and Vryheid districts. The schools were predominantly peri and deep rural, from quintiles 1 and 2 with a mixture of primary and high schools. The secondary schools showed an immediate and dramatic improvement in Matric results, with a 12.3% improvement

from 2008 to 2009. A number of key characteristics of the programme point to why success was so dramatic.

Firstly, the programme ensured that the interventions worked with both the participation of the ward manager and the school management team (SMT). This ensured that the interventions were embedded within the management systems of the school and ward.

Secondly, the programme identified key practical tasks that principals must do to ensure the effective running of the school, rather than working with complex theories or sophisticated techniques. The programme focused on basic tasks that principals have to do when managing learning. The six key modules focussed on financial management, resources and planning, academic planning and timetabling, stakeholder management, educator and learner conduct, leadership and HR management. Each was focused on clear outputs like asset registers, school development and maintenance plans, the school year plan, the curriculum delivery plan, the SGB plan, and codes of conduct for educators and learners. These were correlated to the actual policies, circulars, forms and manuals of the KZN DoE to ensure that the principals actively familiarized themselves with departmental requirements and procedures.

Thirdly, the programme was enacted in the specific schools of the principals rather than holding long workshops away from school. This ensured that the interventions were direct, contextualized and experienced first hand. This was done by ensuring that principals from the same ward met once a month with their ward manager to discuss exactly what they needed to implement in their schools and what their experience had been of the previous task. The ward manager would then visit each of the schools to support them. This resulted in the formation of key learning networks that consolidated the key interventions amongst a set of peers.

It is clear that the extensive programmes of upgrading the practices of principals in KZN can learn from the PMDP programme. It is also clear that this model should be considered for all the ACE level programmes.

6.1.4 Qualitative account of a principal turning his school around

Mr Xulu is the principal of Joko Secondary. He provided us with an account of how Joko Secondary jumped from a 0% Matric pass rate in 2005 to a 94% pass rate in 2009. Although it is dangerous to extrapolate from one case, Mr Xulu's account resonates strongly with the existing research on school improvement.

The first point to note is that after the 0% result, both the circuit manager and ward manager focused attention on the school in a sympathetic manner, meeting with Mr Xulu and encouraging him to turn the school around. This was combined with quality assurance officials visiting the school and providing advice on how to improve results. The Vryheid district office also intervened with a Matric intervention programme and discussed improvement strategies with the Matric learners.

Near the beginning of 2006, there was a joint meeting of grade 12 learners, educators and the SGB where a turn around strategy was drafted. Emphasis was placed on educators teaching every Matric learner in a way that ensured learners responded to questions and did the required work on a systematic basis. Clear timetables were drawn up with educators and learners committed to following them. Saturdays were used to increase the amount of teaching and learning time. Accountability of both teachers and learners was emphasized.

Active networking with nearby schools that were more successful was negotiated, resulting in principals and teachers from surrounding schools coming to the assistance of Joko Secondary. This entailed both motivational talks and the sharing of teacher expertise.

The pedagogic practice of the teachers emphasized moving from the known to the unknown, checking whether learners actually understood what was being taught, and the use of past question papers to check understanding. Both teachers and learners were recommended and praised for their good work.

Reporting and monitoring practices were implemented consisting of quarterly meetings with all stakeholders (Matrics, educators, SGB, parents) combined with quarterly results of grade 12 tests. These were actively monitored by the principal.

Late coming and absenteeism was actively combated. Grade 12 learners gave a pledge about not coming late to school, educators committed themselves to coming on time and absences were chased up, with parents having to report on why their child was not at school.

Difficulties with staff employment were quickly and effectively dealt with. When three teachers left the school in 2006, five new appointments were made by the end of the first term

Interestingly, there was strong encouragement to speak English both in class and within the school premises as a whole.

6.2 Concluding comments

The questionnaire for principals showed the beginnings of a shift in principals' perceptions towards the importance of managing teaching and learning. This could partly be as a result of the ACE course, and there is no track on whether the principals have actually implemented these practices in their schools. Nevertheless some conscientization has happened. In addition, KZN now has exemplary programmes that are beginning to comprehend what it takes to implement course content in school practice. And finally, we must never forget that across the province there are genuine cases of hard working and intelligent principals working on the ground to ensure that their schools do well. These practices need to be supported, publicised,

and spread to the surrounding communities so that they recognize and begin to expect this kind of performance.

The PMDP programme clearly demonstrates the value of a close, highly participative engagement between school principals, SMTs and DoE structures, through which the maximum value is extracted in terms of development at every level. There is no doubt that classroom learning will benefit from development programmes in which school management, appropriately mentored by DoE personnel, attend immediately and on site to the practical details of their core functions. The DoE can achieve highly cost-effective development through such programmes. However their effectiveness depends on careful coordination and planning. Chapter 7, focused on the structures and functions of the KZNDoE, will further explore these issues of focused and coordinated delivery.

7. Description and evaluation of the KZN DoE

7.1 Introduction

The findings set out in the previous chapters of this report have built a picture of many and often severe challenges facing the DoE as it addresses its mandate to deliver quality education to all learners in KwaZulu-Natal. This picture will be expanded as the report covers infrastructure issues (Chapter 8) and children's barriers to basic education (Chapter 9). The present chapter, focused on the organizational structure of the KZNDoE and its many operational activities, will evaluate its capacity to meet such challenges and deliver on this core mandate.

This report is based mainly on data from document analysis, school visits, interviews and interactions with teachers, principals, senior officials of the KwaZulu-Natal Department of Education, and other organizations that provided critical additional information. Some online published research findings provided additional insights and perspectives.

7.2 Provincial context

7.2.1 Re-alignment of the organizational structure

The many challenges that the provincial Department of Education is experiencing stem at least partly from the present organizational structure of the Department, which was implemented with effect from 1 April 2006. This structure has proved to be an inadequate vehicle for delivering on certain areas envisaged in the strategic objectives of the Department, and has been characterized by a very serious lack of co-ordination, harmony, congruency and synergy between its various layers. Since 2006, the Department has tried to compensate for organizational pitfalls, obstacles and silences, but this effort has itself greatly compromised service delivery, causing major implementation difficulties.

The major culprit has been the functional alignment of service centres in relation to service delivery clusters. This has raised criticism that the Department lacks functional cohesion due to distorted demarcation of the professional core functions and corporate support services. The review of the current organizational structure has also been triggered by the split of the National Department of Education into a Department of Basic Education and a Department of Higher Education and Training. Within the new setup, the Department of Basic Education is responsible for the provision of education from grade R-12, and the Department of Higher Education and Training is responsible for FET colleges and higher education. It is reported that FET colleges will be part of the Department of Higher Education from 01 April 2010. Carrying this rationalization through requires relevant design adaptations at provincial levels.

Thus the KwaZulu-Natal Department of Education has been compelled yet again to reconsider its current organizational design in order to feasibly deliver on its mandate. The aims of this

redesign process would be to reconfigure the organizational structure, build its institutional capacity, enhance service delivery and accelerate the attainment of strategic goals and objectives. The current thinking on the proposed organizational structure is that Head Office would retain the present four branches but the Office of the Superintendent-General would be strengthened, with key strategic drivers established firmly there.

It is envisaged that the re-aligned organizational structure will provide the necessary momentum for broad-based implementation at district level. However, this process faces some major challenges, particularly considering the history of the 2006 restructuring. There are some within the Department who feel that the way in which previous restructuring processes were conducted created perceptions that the culminating structure was designed to protect the interests of some whilst neglecting those of others. There are also those who believe that there are problems hidden behind the organizational design. This indicates the need for a process that ensures wide and democratic consultation and eventual buy-in from all.

7.2.2 Current service delivery levels

Currently, service delivery happens at three levels: Head Office, district offices and schools. Circuit offices and wards function as part of district offices. Circuit and ward managers, called Superintendents of Education Management (SEMs) are part of district level management, and their posts are provided for in the district offices. However, some of the SEMs are placed in or near their wards with the approval of the Superintendent-General (SG) of the Provincial Department of Education.

The former regional offices, currently called service centres, whose functions range from human resources to finance and procurement, operate as part of Head Office.

7.2.2.1 Head Office

At present, Head Office is composed of four branches: Service Delivery Management, Planning and Support, Chief Financial Officer, and Human Resource and Administrative Services. Each branch is composed of Chief Directorates:

7.2.2.2 Branch: Service Delivery Management

- Chief Directorate: Service Delivery Management: Cluster A
  Ilembe, Pinetown, Port Shepstone, Umlazi
- Chief Directorate: Service Delivery management: Cluster B
  Kokstad, Othukela, Pietermaritzburg, Umzinyathi
- Chief Directorate: Service Delivery Management: Cluster C
  Amajuba, Empangeni, Obonjeni, Vryheid
- Chief Directorate: FET Colleges
- Chief Directorate: Specialised Education Services

7.2.2.3 Branch: Planning and Support

- Chief Directorate: Planning
- Chief Directorate: Curriculum
- Chief Directorate: Quality Assurance and Assessment
- Chief Directorate: Infrastructure Management

7.2.2.4 Branch: Chief Financial Officer

- Chief Directorate: Financial Services
- Chief Directorate: Supply Chain Management
- Chief Directorate: Financial Support Services
- Directorate: Internal Control

7.2.2.5 Branch: Human Resource and Administrative Services

- Chief Directorate: Human Resource Services
- Chief Directorate: Human Resource Support Services
- Chief Directorate: Administrative Services
- Chief Directorate: Office of the Superintendent-General and MEC

Head Office provides services and support to political institutions and political office bearers. These institutions include the Legislature and its committees, Parliament and its committees and the Executive Council. The central political office bearer in charge of Head Office is the Member of the Executive Council (MEC) for Education.

The strategic mandate of Head Office is to provide leadership and management to determine and realize the vision and mission of the Department of Education, which is "to provide opportunities for all the people in the province to access quality education and training that will improve their position and life and contribute to the advancement of a democratic culture in the province." Head Office, therefore, performs functions ranging from leadership to strategic management, planning, resourcing, policy making, determining procedures and processes, setting up control and monitoring mechanisms, etc. to ensure effective co-ordination of services and processes to realize the vision and mission of the Department of Education.

The Superintendent-General (SG) serves, by law, as a member of the Heads of Education Departments Committee (HEDCOM). Some mandated officials of the Head Office participate in sub-committee activities of HEDCOM. Certain functions can only be performed at the Head Office. These include, but are not limited to, the exercise of functions that cannot be delegated, negotiations in respect of labour relations, compiling estimates, setting of examination papers for grade 12 and the overall management of budgetary processes and functions.

Head Office is also responsible for human resource development and management activities, such as setting up and performing support and mentoring activities for their counterparts based in district offices. In terms of protocol arrangements, Head Office officials should only in exceptional cases be involved in direct engagement with schools.

7.2.3 District Offices

The KwaZulu-Natal Department of Education has twelve districts: Amajuba, Empangeni, Ilembe, Kokstad, Obonjeni, Othukela, Pinetown, Port Shepstone, Umlazi, Umzinyathi, Vryheid and Vulindlela.

District Offices make contributions to strategic planning and management, giving input to policy making processes, and alerting Head Offices to local level resource needs. The primary mission of district offices is policy implementation and other service delivery measures for the Department. District offices manage, monitor and report on implementation of policy and programmes at school level. In fulfilling this mandate, district offices must ensure that all schools are functional and continually improving their rate of performance. This means that district offices must induct, mentor, support and monitor the operation of schools. The timely provision of information, including survey information (e.g. SNAP surveys), to Head Office is part of the package of work that each district office has to fulfil.

If the idea of the district office as a hub for education policy implementation is to be taken forward, the work involved is likely to be disproportionate to the capacity of the staff complement at district level, and to significantly increase the workload of district managers. There needs to be a thorough review of the district staff complement and the status of the district manager if districts are to be equal to the task at hand. Another critical issue that requires serious consideration is the fact that districts are functioning at different levels. There are districts that are struggling with the current functions, so that additional functions might place them at a particular disadvantage and compromise their performance levels. Hence there is a need to avoid indiscriminate implementation, and to implement any proposals with district capacity in mind.

7.2.3.1 Lines of authority and communication

The current organogram of the KZN DoE represents the formal lines of authority and communication. These work almost completely in vertical silos, making horizontal communication and co-operation difficult. Senior management do work against this trend (for instance, the idea of an integrated committee on teacher development), but vertical lines seem to be stronger than horizontal lines. A powerfully territorial attitude prevails, causing difficulties around collaborating towards improving the quality of learning and teaching. The envisaged abundant space for ordinary interaction and co-ordination between colleagues who are pursuing the vision and mission of the Department still needs to be realized. Although a functioning bureaucracy needs clear lines of accountability and simple authority structures, an

appreciation needs to build that all KZN DoE officials are engaged in a broader task of improving the quality of education in KZN. When we approached some sections of the Department for interviews, there were instances where we were asked the following question: “But how does that have anything to do with what we do?” Maybe the most appropriate answer to this question should have been the following question: “But what is the core business of the Department of Education?”

7.2.4 A closer look at organizational dilemmas and opportunities

7.2.4.1 Culture of co-operative functioning

As can be seen above, Head Office comprises four branches, each under the supervision of the senior general manager. Looking at this design, one gets a sense that these branches might serve to organize the Department of Education around a commonality and harmony of activities. However, it has been noted above that this arrangement carries with it very strong vertical authority lines, which restricts officials from working across and between these branches. This means that in working on a new design, there is generally a need to consider how to make it easier for the four branches to work across - by creating a conscious mechanism rather than relying on officials taking responsibility for this. Similarly, some officials have to strategize around how to work directly with district offices. Interview data showed that some directorates experienced obstacles in carrying out their mandates with districts, as they had to work through other directorates to gain access to districts and schools. The Department needs to set up a programme designed to develop a more collaborative mindset. Officials will frequently need to work collectively in order to meet departmental mandates.

7.2.4.2 Chief Directorate: Education Service Delivery

The name of the branch: Education Service Delivery does not really capture the core responsibility of the branch. Its name should articulate its essential business - learning and teaching in schools – more closely. The current title has the sense of a food delivery service about it.

Secondly, the level of Chief Directorate: Service Delivery Management seems to divert the focus of services towards the branch when it should be focused on the district. Furthermore, it increases the line of protocol without bringing in any sound benefits for the betterment of learning and teaching. Some officials see it as an “unnecessary part which delays implementation”. Therefore it might be useful to consider scrapping this mediator level between Branch and district. This could mean the elevation of districts to Chief Directorate level. In practical terms, this might involve having twelve chief directorates but would take seriously the attempt to work more rigorously at district level. These are implications that would need to be considered in a careful and consultative way.

7.2.4.3 Service centres

The existence of the four service centres has been cause for concern since 2006. When these were created their purpose seems to have been to provide finance and human resource support functions. However, these have been a source of frustration for many districts and schools. Although they are part of Head Office, they have frequently been seen as incapable of providing services congruent with that Office. There have been instances of schools mobilizing against their existence. They are perceived as a thorn in the flesh of many districts and schools. Like clusters, they have not been very useful. Some of their functions need to be decentralised to districts, and their critical, high- risk functions should go to Head Office. The belief is that, with the allocation of section 21 functions to all public schools, these service centres will not have much to do anyway, as the bulk of their role has been that of procurement related to those schools with section 20 status. Their abolition will also add momentum to the Department's vision of districts elevated to hubs delivering quality learning and teaching services.

7.2.4.4 Circuit Management Centres (CMCs)

There is some overlap between what CMCs and service centres do and there is some confusion about what they are currently supposed to do, given that most of what they used to do has been taken over by service centres. The contention of this report is that the Department needs to clarify the role of these as service delivery units. The idea is that they should play a role of supporting schools rather than serving as conveyor belts for districts and Head Office. It is envisaged that this, coupled with clear roles of circuit and ward managers, would render them able to play a critical role in the provision of quality learning and teaching.

7.2.4.5 Quality assurance

The question of how quality is assured at different levels of the system was difficult to pinpoint in the system. Whilst the Directorate: Quality Assurance seems to be fulfilling this function very well in schools, they have not been able to quality assure activities happening throughout the different levels of the system. There are many reasons behind this including the fact that this directorate is experiencing severe human resource constraints, and that as a result they have focused all their energies and resources to the national priority of improving levels of learner performance by 2011. There are two issues here. The first one is that of clarifying how quality assurance happens at all levels of the system. The second issue is to boost the capacity of the Directorate: Quality Assurance, particularly its possible extension to district level and the expansion of its administrative capacity. These would possibly entail the establishment of different sub-directorates at district level according to the different spheres of work the Directorate is responsible for: whole school evaluation (WSE), quality improvement (which the Directorate seems to do in terms of materials development), systemic evaluation research, and quality assurance (which should include evaluation of programmes).

Still on the issue of quality assurance, concerns were raised by some directorates that they do not receive quality assurance reports to inform their programmes. Upon investigation it was found that the cause for this might relate to strong vertical lines within the Department.

Furthermore, it is not clear how the Directorate: Quality Assurance and the district-based Teaching and Learning Services negotiate the thin boundary that exists between what they each do. For instance, Quality Assurance develops materials that seek to address areas of concern regarding learner achievement levels, and distributes these to schools and districts. There is a need here: to support these initiatives; to evaluate the effectiveness of materials in improving literacy and numeracy levels; and to get a broad sense of how they are being experienced by teachers. The production of learner and teacher support materials is a highly specialized activity that has long term resonances in the system. It needs to be carefully done and then trialed and improved. The organization of the system supposedly puts TLS, as a section that deals directly with schools, at the coalface of this activity. However, this seemed not to be happening due a conceptual vacuum around co-operation. Often, silences like this one result in strained relations that are counterproductive.

7.2.5 Teacher development

Teacher development seems to be "scattered" across the spectrum of the Department; it belongs in many houses in many different hands resulting in many overlaps. In short, there is a need to house teacher development under one roof and develop a coherent, coordinated, consolidated approach. It is a good initiative that an Integrated Committee on Teacher Development has been set up as an interim measure to work towards such co-ordination. However, this initiative is likely to be severely challenged by the existence of the strong vertical lines in which different directorates function. So, this excellent idea needs to be supported structurally as well as culturally; otherwise it remains strong on paper and weak in implementation. The Department needs to heed the call that was made at the recent Teacher Development Summit: namely, a call for more school-based, localized, focused and self-driven development programmes for teachers. The Department needs to strengthen and capacitate the district level to assume more of this role.

7.2.6 Early childhood development and adult basic education and training

The idea of the Directorate for Early Childhood Development (ECD) seems to have worked very well at Head Office level. That is, bringing all ECD issues under one roof seems to have facilitated an opportunity to provide quality service. To this end, the Department may need to consider a similar model with a few adaptations. This could be in the form of: Directorate for Foundation Phase (grade R-3), Directorate for Intermediate Phase and Directorate for Senior Phase. At the moment, FET would be left as it is with the focus on the earlier phases in line with the national priority.

Although the current model for ECD provision has worked, there have been weaknesses at district level. The major weakness has been that the sub-directorate responsible for the function of delivering early childhood development (ECD) was combined with that responsible for providing adult basic education and training (ABET). These are two sub-directorates that work

very differently, and that reside in two different directorates at Head Office level. This seems to weaken the focus that apparently works well at Head Office level. Moreover, the chief education specialist (CES) in charge of this sub-directorate has to report to two provincial managers. This raises serious questions about how the CES reconciles the different mandates of these directorates. To this end, the Department needs to consider separating these two functions.

7.2.7 Education management information systems (EMIS)

A huge organization such as the Department of Education requires a vibrant information management system adequately resourced with sufficiently qualified data capturers. Interactions with some officials indicated that data capture and information management was presenting a huge challenge in the operations of the Department. At the time, the Department was reported to have a very constrained number of data capturers, and the database was consequently found unable to serve the requirements of an institution the size of the Department of Education. This posed serious implications for service delivery. For instance, a subject advisor at district level needs to have immediate access to biographical information of schools and teachers, in order to assist in the planning of interventions. Such a subject advisor should also have easy access to statistical information with regard to school and educator performance. This will obviously raise issues around security, but lessons could be learnt from what other big organizations, like universities, do.

7.2.8 Dealing with dysfunctional schools

Department officials reported that during school functionality visits it was found that schools were poorly attended by teachers, learners and management. In some cases, teachers were present at school but were not in class and teaching. This has been borne out by the teacher and principal surveys done by the research team, as well as many other sources. There were also confusions about conditions of service, including, for instance, leave policy: teachers did not understand how the leave policy works. Frequently, proper records were not kept for teachers on leave. These tendencies were chronic in some poorly performing schools. There is a general failure to take responsibility and to exercise control over the work environment.

The Department of Education does not have a directorate that provides strategic direction on addressing this matter of dysfunctional schools. Although it runs numerous programmes aimed at dealing with dysfunctional schools, the issue seems to disappear or weaken along the long chain of the system. The DoE therefore needs to elevate capacity development for dysfunctional schools and establish a dedicated directorate that would give all its energies to this aspect. Such a directorate would be responsible for the development, implementation and monitoring of intervention strategies aimed at developing the capacity of poorly performing schools. It could assist schools in adopting some of the elements of a strongly regulated framework of school management in order to foster a conscientious and industrious culture, and set the tone for quality learning and teaching. This will also assist to bring about a moral order within schools conducive to an appropriate learning and teaching environment. In this way the DoE could

establish a clear mechanism to assist schools to develop a sense of responsibility and shared enterprise, where principals are focused, teachers are committed to education, and learners are motivated to learn and participate actively.

Another issue that emerged from interviews and interactions was the issue of a heavy reliance on unqualified temporary educators (UTEs). Anecdotal evidence reveals that most schools staffed with UTEs performed dismally in the 2009 Matric examinations. It is understood that the shortage of suitable qualified educators is a nationwide issue. However, this should be juxtaposed with the understanding that schools are not in a position to provide teacher education; they are in a position to provide opportunities for teaching and learning. The Department of Education needs to develop ways to deal with this issue. The relevant strategy should take heed of the fact that most of these UTEs do not qualify to be enrolled in the NPDE programme and if they do make it into the system it is likely to mean poor education for a generation of learners in contact with them. The long term costs of this for the educational system are enormous.

7.2.9 Rural education

Rural development is a national priority, and anecdotal evidence reveals major challenges in the area of rural schooling. The KZNDoE is already facing major challenges with the delivery of education in that deep rural areas still experience major infrastructure backlogs coupled with severe lack of access to basic facilities, high levels of unemployment, deprivation and chronic poverty. For instance, the issue of farm communities still presents as a major challenge in terms of education provision. Therefore, the Department of Education needs to establish a direct focus on the provision of rural education in line with the national imperatives. Some recommendation in the Report of the Ministerial Committee on Rural Education: A new vision for rural schooling (Department of Education, 2005) need to be considered.

7.3 School leadership and management

7.3.1 Handbook for school management teams

The internal monitoring and evaluation processes of the Department have revealed a major problem with the implementation of policy at school level. The KZN DoE has developed a handbook for school management teams (SMTs). The SMT handbook provides school management teams with a quick, easy reference on policy imperatives, and equips school principals with the necessary knowledge of how to utilise systems, procedures and processes for almost every aspect of school management. The purpose of this handbook is to provide guidelines to school-based educator managers, which are aimed at enabling them to execute their mandate and fulfil their overarching roles and responsibilities as education leaders (Department of Education, 2010). The handbook contains guidelines for action and outlines systems, processes and procedures for quality education. The SMT handbook covers the following areas of the task of school management: legislative mandates, planning, education management information

system, infrastructure management and development, human resource management and development, curriculum development and management, developing and sustaining a school library, administrative systems and tools, governance and leadership, managing school finances, *Batho Pele* principles, co-curricular support services programmes, and management of care and support programmes.

The handbook has yet to be implemented in the province's schools, so its effectiveness and usefulness has not yet been established.

7.3.2 Integrated quality management system

IQMS has faced severe implementation challenges in KZN. The decision to link IQMS to pay is cited as the primary culprit, as this is seen as having diverted the focus away from professional development and towards scores and percentage salaries. IQMS was reported to be non-existent in some schools, whilst it was a seasonal exercise for many others, happening only when the submission of scores became due. In some of these cases, scores are submitted without the subject having undergone all the relevant stages, which means that scores were "cooked" and thumb-sucked with no relevant supporting evidence. In some cases, it was alleged, problems were evident at senior management levels where the implementation of performance management systems revealed a tendency to "thumb-suck" training development needs (with respect to EPDMS and PDMS). This leads to a distorted picture of the workplace skills plan (WSP) and leads the Department to funding and addressing false needs.

This is a challenge that the Department needs to confront head-on and ensure that these systems are implemented effectively and correctly because they inform what goes into the WSP, which is funded accordingly to address identified needs that fall within the priority areas for a specific period. This will also serve at least to ensure the realisation of the good intentions and benefits packaged in the CPTD system.

7.3.3 Appointment of subject advisors

The Department of Education has also appointed 582 subject advisors, a move that will strengthen support for the National Curriculum Statement in all phases. These subject advisors are based in districts - the DoE's implementation level. A major concern about subject advisors has been their capacity to provide specialized subject support to schools. It should be remembered that the majority of these subject advisors are products of the very system that trained teachers to deliver inferior education to the African child. As subject advisors, they now (for example) have to help teachers to implement a curriculum that some of them struggling with whilst they were still teachers. To this end, the appointment of subject advisors presents a bittersweet taste, and can only signify the beginning of the very long walk our province has to take towards the provision of quality education.

The national directive that stipulates that educators may not be taken out of school for training during school hours or before twelve o'clock seems incompatible with the diverse provincial contextual realities. The province of KwaZulu-Natal is a largely rural province. Transport difficulties affect both teachers and learners. For example, subject advisors reported that in some areas of KwaZulu-Natal transport is available at particular times, usually in the mornings and afternoons. This makes it impossible for teachers to go to school and then attend a workshop during the day. Moreover, if teachers do attend these workshops, they do not have any transport back to their homes. So, they choose not to attend set workshops. Usually, it is teachers from the most disadvantaged areas that are unable to attend these workshops. Therefore, we may have subject advisors, but how do we use them under these circumstances? In addition, it was reported that in some districts and for some subjects, one subject advisor was responsible for 450 schools. This should therefore be read as saying that we need to recognize that one size does not fit all, and try to diversify our strategies by empowering schools according to their diverse contextual realities.

7.3.4 Support for grade 12 teaching and learning

The major part of this work was undertaken by the National Department of Basic Education, which put in place numerous support activities to support the implementation of the National Curriculum Statement in Grade 12. One of these programmes was the Dinaledi Schools project. In 2001, the South African Department of Education launched the National Strategy for Mathematics, Science and Technology in General and Further Education and Training (Department of Education, 2001). The primary goal of the strategy was to promote and improve participation and performance in mathematics and physical science by equipping schools with certain inputs, from science kits to in-service training in historically disadvantaged areas. As part of this strategy, the Department of Education selected 102 dedicated Mathematics and Physical science schools to participate in the Dinaledi (meaning "star") project - a joint venture with South Africa's business sector - which has pledged support to schools designated for improving mathematics and science education in South Africa.

This number has since increased to 500 schools in 2008 and 2009. This programme saw each of the 500 Dinaledi schools being supported with the necessary learning and teaching materials and, in particular, textbooks to the value of R12 million, for every learner. An additional 100 000 copies of these textbooks were distributed to schools in all nine South African provinces. Supervision and support were provided to teachers in the Dinaledi Schools Project by subject advisors in Mathematics and Science. These schools also received special support which included a teacher survey to identify areas for development.

In order to further support these schools, the Department of Basic Education trained 658 Mathematics and 658 Physical Science teachers from these schools. In September 2009 an additional 585 Mathematics and 585 Physical Science teachers were trained. This brought the number of teachers trained to 2486 teachers teaching Mathematics and Physical Science.

The results for 2008 do not paint an attractive picture of the performance of the Dinaledi schools in the province of KwaZulu-Natal. The table below shows the number of schools which performed below 60% in each province in 2008.

Table 46: Number of schools performing below 60% in 2008

Performance in different categories					
Province	**0**	**1-19.9**	**20-40**	**41-59.9**	**Total**
EC	5	156	238	170	569
FS	0	0	20	60	80
GP	0	3	39	102	144
KZN	5	148	410	390	953
LP	9	113	329	329	780
MP	4	45	128	129	306
NW	1	6	38	88	133
NC	0	3	10	19	32
WC	0	1	15	57	73
Total	24	475	12227	1344	3070

Source: Department of Education, 2009

The table shows that there were 3070 schools that performed below 60%. The province of KwaZulu-Natal had the highest number of schools performing below 60%. This constitutes about 30% of the total number of underperforming schools. This indicates the extent of the challenge that faces the DoE in the province of KwaZulu-Natal. It stands to reason that the province was one of those that were subjected to robust monitoring and support in 2009. In light of this, the Department of Basic Education embarked on training for all 29 subjects of the National Curriculum Statement in 2009. The training took place over five days and a total of 2137 subject advisors were trained (Department of Education, 2009). The table overleaf shows the number of subject advisors trained per province.

Although training was specific in each subject, training focused generally on the following:

- strengthening the problematic subject content knowledge, skills and assessment in all the National Senior Certificate subjects;
- enabling subject advisors to assist teachers to teach all the National Senior Certificate subjects in grades 10-12 with confidence;
- enabling provinces to share good practice in assessment and moderation practices to avoid curriculum overload caused by assessment practices;
- assisting subject advisors in assessing Practical Assessment Tasks.

Table 47: Number of subject advisors trained per province

Province	Number of participants
EC	452
FS	127
GP	164
KZN	189
LP	510
MP	181
NC	82
NW	257
WC	175
Total	2137

Source: Department of Education, 2009

Other support for Matric was in the form of packages of support materials, in both electronic and print media. These included (for all provinces: it was not clear how much materials was for KwaZulu-Natal):

- More than 500 000 *Study Mate and Studiepêl* distributed to schools;
- Distribution of 2000 free copies of Tourism book and DVD;
- Examination papers and memoranda in the *Sunday Times* on the 13th September 2009 and in the *Sowetan* on the 18th September 2009;
- 125 000 copies of *Maths 911* for Grades 11 and 12 developed and distributed by Liberty Life and Independent Newspapers;
- *Study Mate TV,* a revision programme, for Grades 11 and 12 learners launched by the Department of Education in partnership with SABC Education;
- Support on the Thutong and DOBE websites;
- *Accounting Study Guides* supplied to all nine provinces by Nasou Via Afrika;
- *Sowetan Power Your Future* supplement for Grades 10-12 learners;
- Sunday Times *Read Right Edition* for Grades 10-12;
- *Matric Matters – Independent Newspapers* for Grades 10-12;
- *Mindset:* tuition daily on DSTV.

7.3.5 Provision of learning and teaching support material

KZN DoE has improved tremendously in this area. Schools that were visited reported that they had not experienced major problems since the Department of Education allocated section 20 schools the function of purchasing stationery. With regard to textbook delivery, very few cases of non-delivery were reported. With the awarding of the section 21 status to all schools, things promise to go much better in this area.

7.3.6 National strategy on learner achievement: Foundations for Learning

It is common understanding that nearly all learning has its basis on the ability to read with understanding. To this end, the KZN Department of Education has also embarked on a national campaign called the Foundations for Learning Campaign (Department of Education, 2008) and described as "a four-year campaign to create a national focus to improve reading, writing and numeracy abilities for all South African children" (Department of Education, 2008: 4). The initial focus of this campaign has been on primary schooling, that is, the foundation (grades 1-3) and intermediate (grades 4-6) phases. The campaign provides clear, detailed directives regarding time allocations and basic essential classroom resources for teaching. Basic expectations have also been clearly set: that all teachers in grades 1 to 3 actually teach reading and numeracy skills every day; that all teachers in grades 4 to 6 spend at least 30 minutes daily on additional reading for enjoyment and at least one hour on extended writing every week; and that all teachers in grades 1 to 6 will also teach numeracy for at least 30 minutes every day, including 20 minutes of written exercises and 10 minutes of mental arithmetic exercises, as appropriate to the grade level. All public primary schools will be expected to improve their average learner performance in literacy/languages and numeracy/mathematics to no less than 50%, an improvement of 15-20% in the four years of the campaign. During this four-year period, South Africa will not participate in any external evaluation study. The campaign will, in 2011, culminate with a national evaluation to assess the literacy and numeracy achievement levels of grade 3 and 6 learners in South Africa in order to determine the impact of the campaign (Department of Education, 2008).

However, the implementation of the initiative seems not to have fully appreciated the contextual diversity of South African schools. For instance, to highlight a tip of the iceberg of implementation difficulties experienced by schools: some school principals reported having been sent only one copy of a question paper per grade, and, as a result, having had to run copies for all learners in that grade. For a variety of reasons, in many rural schools, learners end up not writing these tests. However, some teachers and principals reported improvement in the implementation of the campaign in 2009 (both in distribution and quality of tasks) as compared to 2008. Department officials concurred with this, reporting that almost all schools wrote the national assessment in 2009.

In line with the President's announcement in the State of the Nation Address: 2010, Department officials reported that the campaign would be implemented to Grade 9 as well from 2010, and that they had started preparing themselves and schools for this.

7.4 National School Nutrition Programme

One of the key priorities of the new administration is to fight poverty. In KwaZulu-Natal the war on poverty is one of the flagship programmes of integrated service delivery. Research findings reveal that the National School Nutrition Programme (NSNP) is one the most powerful vehicles of fighting the war against poverty, especially among vulnerable children and women.

7.4.1 Scope of reach

The primary aim of the National School Nutrition Programme is to provide poverty relief to school-going children from indigent family backgrounds. Presently, the scheme covers 1,541,268 children in 3,924 schools, who receive a meal every day of the school calendar, which translates to 55% percent of learners being fed daily. Initially, the programme targeted learners from primary schools in quintiles 1-3. However, since 2009, the programme has been extended to previously excluded quintile 1 secondary schools.

7.4.2 Utilization of cooperatives

The department has embraced the cooperatives programme initiated by the Department of Economic Development to stimulate economic activity particularly among historically disadvantaged rural women in the province.
This programme has also provided an excellent opportunity for local economic empowerment, where 407 women comprising 31 cooperatives have been trained to be service providers to participating schools. A further 432 women who were previously food handlers have been trained to form 72 ward-based cooperatives from all districts of the province. In addition there are 1,163 small, medium and micro enterprises that also provide meals to selected schools. The training has been provided by the Department's further education and training colleges.

7.4.3 Spin-offs from the programme

Since 2006 the department has established 2,190 food gardens to promote sustainable food production in schools. The purpose of establishing food gardens is to augment the food supplies being received by schools. The produce of participating schools will be sold to the service providers supplying raw food items to schools. The department is also piloting the establishment of six veggie tunnels in six districts and six nurseries in the other six districts. 6 veggie tunnels have already been erected in Uthukela, Umzinyathi, Obonjeni, Umlazi, Ugu and Sisonke districts. Six nurseries have also been constructed in Umgungundlovu, Amajuba, Vryheid, Empangeni, Pinetown and Ilembe districts.

To bolster food security in rural areas the department is also implementing the Empowerment for Food Security project targeting Vryheid, Ugu, and Umgungundlovu Districts. This project is funded by the government of Belgium. To this end, 90 schools have been targeted, 30 per district for this project. This is a joint project with the Department of Defence Education Activity (DoDEA), which is the custodian, and the funds are in the process of being transferred from DoDEA to the DoE, to be administered by the Education Trust.

The monies will be spent on fencing, gardening implements, provision of water tanks, seeds, seedlings and fertiliser. The groundsmen at schools will be trained to maintain/sustain the nurseries. Twenty-seven have already been trained in May 2009. Forty-five groundsmen are employed and paid by the Education Trust. The rest of the training will reassume in August 2009. The schools will be provided with seedlings at the beginning of the third school term.

It is important to note that the delivery of the NSNP programme has not been without challenges. However, most of these challenges are challenges linked to backlogs inherited from the past, mainly related to the widening of access to the programme. These include the following:

- The extension of the National School Nutrition Programme to quintile 3 primary schools and quintile 1 secondary schools calls for additional human and capital resource capacity to ensure quality service delivery. The Department needs to consider providing additional capacity from the Directorate to allow for the expansion and so implement the programme more efficiently and effectively. This may take the form of creating more posts, particularly at district level.
- The aim of the programme is to improve the condition of the poor by creating sustainable access to nutritious food for all household members. The challenge for the department is to provide meals to indigent learners attending schools located in higher income brackets, namely, schools in quintiles 4 to 5. The Department needs to begin to plan for the expansion of the programme to the higher income schools.
- Some schools lack infrastructure and facilities (e.g. kitchens, refrigerators, cooking facilities, etc.) for the efficient running of the programme. The basic infrastructure and facilities needs to be budgeted for and provided at the schools. The Department should consider developing a plan that would lead to the incremental provisioning of such infrastructure and facilities.
- Some schools participating in the programme have dysfunctional vegetable gardens. This stems mainly from the lack of culture of gardening in most schools. The Department of Education may need to link up with the Department of Agriculture in order to encourage schools and develop capacity to establish and sustain vegetable gardens. This may be linked with existing community development programmes.

7.5 Conclusion

The KZN DoE is a functioning organization that is making tangible and informed progress in dealing with improving the quality of education in the province. Its interventions are already making an impact on Matric performance levels. It is, however, hamstrung by its own organizational structure.

Two key areas need focused attention. Firstly, the tendency of the department to work in silos without a bigger understanding of the provincial mandate to improve the quality of education in the province needs to be addressed. All members of the KZN DoE need a detailed understanding of what it actually means to attempt the massive project of improving education in a developing context, so that all the different participants in the process work together rather than at odds with each other.

Secondly, the way the department organizes its districts needs careful attention as it is currently very difficult for district officials to deliver on their mandates, given the varying sizes of the districts, circuits and wards. This is a very complex and expensive process and would need detailed investigation and possible scenarios sketched out. The beginnings of some such scenarios will be suggested in the final report of this project.

Perhaps the most exacting challenge for any large organization with multiple concerns and responsibilities, most of which are important, is that of setting priorities and pursuing them vigorously, especially where this requires significant changes of assumption and operational style. For KZNDoE, responding to very different (although often related) imperatives requires a careful reassessment of assumptions about needs of schools and learners and very focused deployment of human and material resources. The following two chapters illustrate these challenges as each presents findings on areas of pressing concern faced by the KZNDoE: the infrastructure backlog in schools in the province, and children's barriers to basic education.

8. Infrastructure

Infrastructure is commonly cited as a reason for poor quality of education in South Africa. This is due to apartheid resource allocations that left many rural and township schools without sufficient classrooms and toilets. Many of these schools also lack science labs and libraries. There are new pressures on schools to ensure computer literacy among their learners, and this clearly requires large amounts of resources. As part of this research, an investigation was made into infrastructure achievements, and the extent and cost of backlogs in KZN.

The main source of data for this section of the report is a national survey of physical infrastructure that took place in schools in 2006/7. The National Education Infrastructure Management Systems (NEIMS) survey involved a team of specialists visiting each school in the country and conducting a comprehensive infrastructure audit. This included: compiling a list of each school's physical facilities; taking measurements of classroom sizes; recording whether the school had water, electricity, fences and sports facilities; noting the building material used; and also taking photographs.

The Annual Survey of Schools conducted by the Education Department used to have a series of questions on physical infrastructure, but the form was simplified and shortened and the infrastructure-related questions were removed. The NEIMS data therefore remains the definitive data source for this type of information.

8.1 National overview

Nationally, the NEIMS survey showed that several aspects of infrastructure provision to schools had improved significantly since 1996:

- The number of overcrowded schools had fallen from 51% in 1996 to 24% in 2006;
- The number of schools with electricity had increased from 11,174 in 1996 to 20,713 in 2006;
- The number of schools without water had fallen from 8,823 in 1996 to 3,152 in 2006;
- The number of schools without on-site toilets had fallen from 3,265 in 1996 to 1,532 in 2006.

On a less positive note, only seven percent of schools had adequate libraries and only 10% of secondary schools had properly functioning laboratories. Over two thirds of schools had no computers, a significant challenge for the rollout of ICTs as teaching aids. Finally, only two percent of schools were equipped for disabled learners[1].

1 NEIMS. (September 2007). *National Assessment Report*. Department of Education: Pretoria. p. 6.

8.2 KZN infrastructure

The assessment of school buildings in each province is summarised in Table 48 below:

Table 48: Interprovincial infrastructure comparisons

Province	Total school sites assessed	Condition of school buildings			
		Excellent	Good	Poor	Very Poor
Eastern Cape	6 272	41%	18%	22%	19%
Free State	2 260	59%	17%	15%	9%
Gauteng	2 141	81%	10%	5%	4%
KwaZulu-Natal	5 905	54%	17%	14%	15%
Limpopo	4 751	52%	20%	18%	10%
Mpumalanga	2 524	58%	19%	14%	9%
Northern Cape	845	70%	13%	11%	6%
North West	2 275	70%	13%	10%	7%
Western Cape	1 813	93%	4%	2%	1%
National %		58%	16%	15%	11%

Table 48 shows that over half (54%) of the schools in KwaZulu-Natal were considered to be in excellent condition, which is four percent below the national average. This is a significant improvement from 1996, where nationally only 7% of schools were found to be in excellent condition. At the other end of the spectrum, 15% of schools (886) in the province were found to be in a very poor condition – implying that there was a backlog in the maintenance of these schools in excess of four years.

In KwaZulu-Natal, 648 schools (11%) had no source of water on or near the site, 2,231 (38%) depended on boreholes or rainwater harvesting systems and 2,943 (51%) were served by the municipality. However, of the 2,943 served by the municipality, 1,163 apparently suffered from an unreliable municipal water source[2].

In the 5,822 ordinary schools that were assessed in the province, 209 did not have toilets on-site, 1,284 had more than 50 learners per toilet and 4,329 had less than 50 learners per toilet. Of the schools with toilets on-site, only 28% had flush toilets, which is far below the national average of 42%[3].

2 *Ibid.*: p. 18ff.

3 *Ibid.*: p. 26.

In terms of electricity provision, 1,612 schools (28%) did not have a source of electricity on or near site, above the national average of 16%. Two thirds of schools in the province were however connected to the national Eskom grid. In terms of security, 1,715 schools (29%) had no fence or a fence in poor condition but 3,633 had a gate and fence in functional condition. In addition, 1,217 schools suffered from vandalism, 1,839 had no burglar bars, 2,863 had no security gates on any of their buildings and 5,264 had no alarm system[4].

The NEIMS survey also included information on the number of learners per school and per classroom, which enabled the extent of over-crowding to be assessed. In terms of learner:classroom ratios, 1,877 schools in the province had less than 30 learners per classroom, 2,215 had between 30 and 45 learners per classroom, and 1,730 had more than 45 learners per classroom. KwaZulu-Natal had fewer schools with less than 30 learners per classroom and more schools with more than 45 learners per classroom than the national averages as indicated in the table below[5]:

Table 49: Learner to classroom ratios

	Percentage schools with more than 30 learners per class-room	Percentage schools with between 30 and 45 learners per classroom	Percentage schools with more than 45 learners per class-room
KwaZulu-Natal	32%	38%	30%
National average	40%	35%	25%

The backlogs in terms of libraries and laboratories are perhaps most extreme, with 4,633 schools (78%) in the province having no dedicated library space and 69% of secondary schools with no laboratory space. The provision of computers at schools was better, with 46% of schools in KwaZulu-Natal having access to them for teaching and learning. This is considerably better than the national average of 32%, suggesting that the province has made headway in this regard, although the ratio of learners per computer is often very high.

Finally, nearly all schools (99%) in the province were found not to have ramps suitable for disabled people, slightly higher than the national average of 98%[6]. This implies that much work still needs to be done in terms of making schools accessible to learners with physical disabilities, as proposed by White Paper 6 on Inclusive Education.

4 *Ibid.*: p. 30ff

5 *Ibid.*

6 *Ibid.*

8.3 The cost of infrastructure backlogs in KwaZulu-Natal

Information from the NEIMS survey has been compiled into a database and provided to each provincial Department of Education. In the case of KwaZulu-Natal, a spreadsheet-based costing model has been developed to assess the cost of addressing infrastructure backlogs.

The NEIMS backlog costing model developed by the Department provides a means for estimating the total cost of eliminating physical infrastructure backlogs in the province. Each component of the backlog has been estimated to include the cost of its construction, VAT (14%) and professional fees (20%). A total of 17 items has been included, which are listed below along with their estimated construction costs for 2008[7]:

Table 50: Infrastructure backlog components and their estimated construction costs, NEIMS infrastructure backlogs costing model

Infrastructure backlog component	Estimated construction cost 2008
Boys' toilet seats and urinal spaces	R 35 000
Computer room	R 690 000
Disabled toilet	R 45 000
Electricity	R 200 000
Fence	R 200 000
Girls' toilet seats	R 40 000
Grade R classroom	R 430 000
Media centre	R 790 000
Multi-purpose classrooms (e.g. boratories & specialist rooms)	R 650 000
Office	R 100 000
School nutrition programme kitchen/tuckshop	R 140 000
Staff toilet seats	R 40 000
Standard classroom	R 280 000
Storeroom	R 70 000
Strongroom	R 100 000
Team teaching room	R 600 000
Water	R 50 000

These costs are subject to increase over time due to inflation and will also vary depending on where in the province the construction is taking place and the building specification used. In

7 Mchunu, Senzo, MEC for Education . (23rd September 2008). Speech for Infrastructure Business Day.

this instance they are a guideline to the estimated cost as at 2008. More recently some of these construction cost estimates have been adjusted downwards[8].

The estimated provincial backlog for each component is based on key assumptions and ratios, which can be modified to suit alternative scenarios. In the case of classrooms for example, a ratio of 40 learners per classroom has been used[9] with an initial threshold of 20 learners. A school with less than 60 learners would therefore not qualify for a classroom whereas a school with 62 learners would qualify for (62 - 20)/40 = 1 classroom. In the same way a school with 260 learners would qualify for (260 – 20)/40 = 6 classrooms. If this school already had four classrooms then the model would indicate the need for an additional two classrooms to be built and cost them accordingly (i.e. 2 x R280 000 = R560 000 + VAT & professional fees).

Table 51: Infrastructure survey backlog components, cost per item, estimated backlog and total cost: infrastructure backlogs costing model 2008/09

Infrastructure backlog component	Total backlog in 2008	Total cost (R millions)
Boys' toilet seats and urinal spaces	6 651	R 233
Computer rooms	3 438	R 2 372
Disabled toilet	7 305	R 329
Electricity	1 739	R 348
Fence	805	R 161
Girls' toilet seats	10 430	R 417
Grade R classrooms	4 000	R 1 720
Media centres	3 315	R 2 619
Multi-purpose classrooms (e.g. laboratories & specialist rooms)	11 525	R 7 491
Offices	14 590	R 1 459
School nutrition programme kitchen/tuckshops	5 542	R 776
Staff toilet seats	5 642	R 226
Standard classroom	10 898	R 3 051
Storerooms	15 721	R 1 100
Strongrooms	4 883	R 488
Team teaching rooms	400	R 240
Water	790	R 40
Sub-total		**R 23 070**
VAT		**R 3 230**
Professional fees		**R 4 614**
Estimated total infrastructure backlog (R millions)		**R 30 914**

8 In the most recent backlogs model supplied by the Department in February 2010, the estimated cost of constructing a standard classroom was reduced from R280 000 to R250 000, a multi-purpose classroom from R650 000 to R600 000, a media centre from R790 000 to R750 000 and an office from R100 000 to R70 000. All other items remained the same except computer rooms which increased from R690 000 to R700 000 and SNP kitchen/tuckshops from R140 000 to R150 000.

9 Model supplied by the Department of Education in February 2010.

In the case of media centres and computer rooms, the model currently indicates that only schools with more than 260 learners would qualify for a full media centre or computer room to be built on their premises. Water, electricity and fencing backlogs are not determined by learner numbers - if a school lacks any of these, irrespective of its size, then this is indicated as a backlog and costed accordingly.

Table 51 lists the backlog associated with each infrastructure component as well as the capital cost associated with eliminating the backlog. Note that these figures are based on 2008 construction costs as indicated in the table above and as presented in a speech on "Infrastructure Business Day" by the MEC for Education at the time, Mrs Ina Cronje.

According to the estimate, the total cost of eliminating all infrastructure backlogs in KwaZulu-Natal in 2008, including VAT and professional fees, was R30.9 billion. To put this in perspective, the entire provincial Education Department budget for 2009/10 (including teacher salaries, recurrent expenditure, infrastructure and administration) was R24.6 billion.

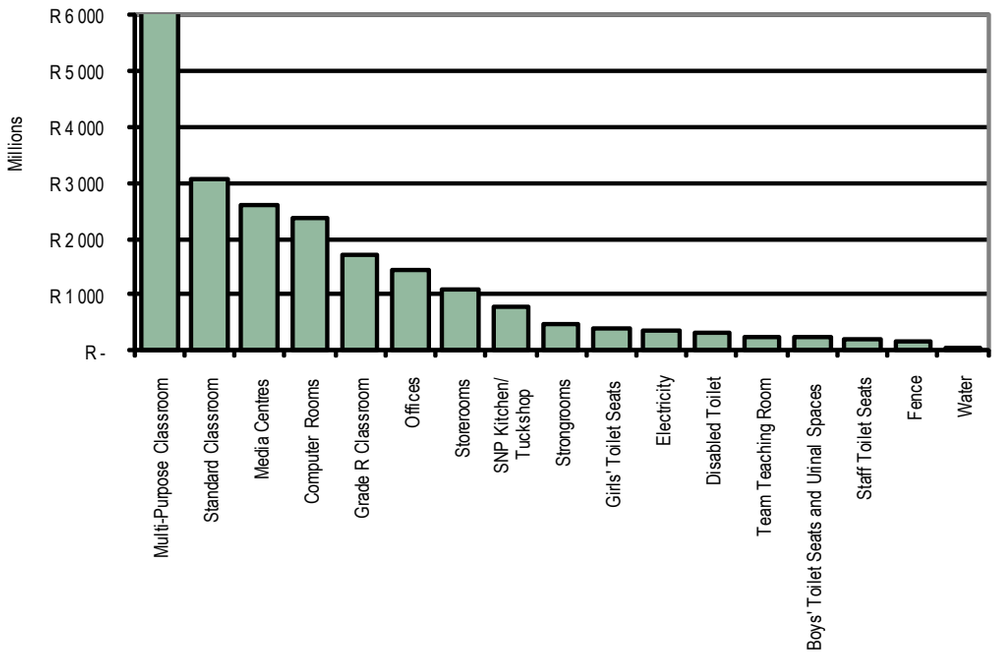
The largest cost component of the backlog was multi-purpose classrooms (specialist rooms including laboratories), which accounted for a massive R7.4 billion of the overall cost, based on a huge backlog of 11,525. The next largest item was standard classrooms, of which 10,898 need to be built, at a cost of R3 billion. Other costly components include media centres at R2.6 billion, computer rooms at R2.3 billion, and grade R classrooms at R1.7 billion. A graphical comparison of these costs per item is also shown in Figure 29.

These figures are daunting to say the least, particularly given that the budget for infrastructure in 2008/09 was only R1.2 billion, rising to R1.4 billion in 2009/10. On that basis, assuming current expenditure levels, it would take nearly 20 years to eliminate the estimated infrastructure backlogs in the province.

The data and assumptions in the model are of course subject to review and re-prioritisation. The NEIMS data relating to the actual infrastructure at schools is likely to be accurate given that it was gathered as part of a comprehensive audit by independent investigators. The various norms that determine what each school qualifies for could however be adjusted and the costs could be revisited. It is likely, given the declining enrolment observed in the province, and the fact that backlogs are almost entirely driven by these learner numbers, that the estimated size of the backlog will decrease over the next few years.

The high cost items like multi-purpose (specialised) classrooms will clearly take a lot longer to eliminate than the smaller items such as providing water or fences to schools and will therefore have to be tackled over a much longer time span.

Figure 29: Cost of addressing infrastructure backlogs in KwaZulu-Natal according to NEIMS infrastructure backlogs costing model 2008/09



The tables overleaf provide a comprehensive summary of the size and cost of addressing infrastructure backlogs per component in each district. The second table, which estimates the costs per district, excludes grade R classrooms and team teaching rooms since these shortages were not disaggregated by district in the model. It also does not include VAT and professional fees which would add approximately 34% to the total costs.

According to the model, the district with the greatest estimated backlogs in 2008 was Empangeni with a projected backlog cost of R2.52 billion, followed closely by Vryheid with R2.51 billion. The lowest backlog was in Amajuba where it was estimated as R931 million. The largest single district-based cost item was the backlog of multi-purpose classrooms in Vryheid, which the model indicates would cost R923 million to address. There were four districts with backlogs in excess of R2 billion namely Empangeni, Vryheid, Obonjeni and Pinetown. The infrastructure backlog cost per district is illustrated graphically in Figure 30 on page 188.

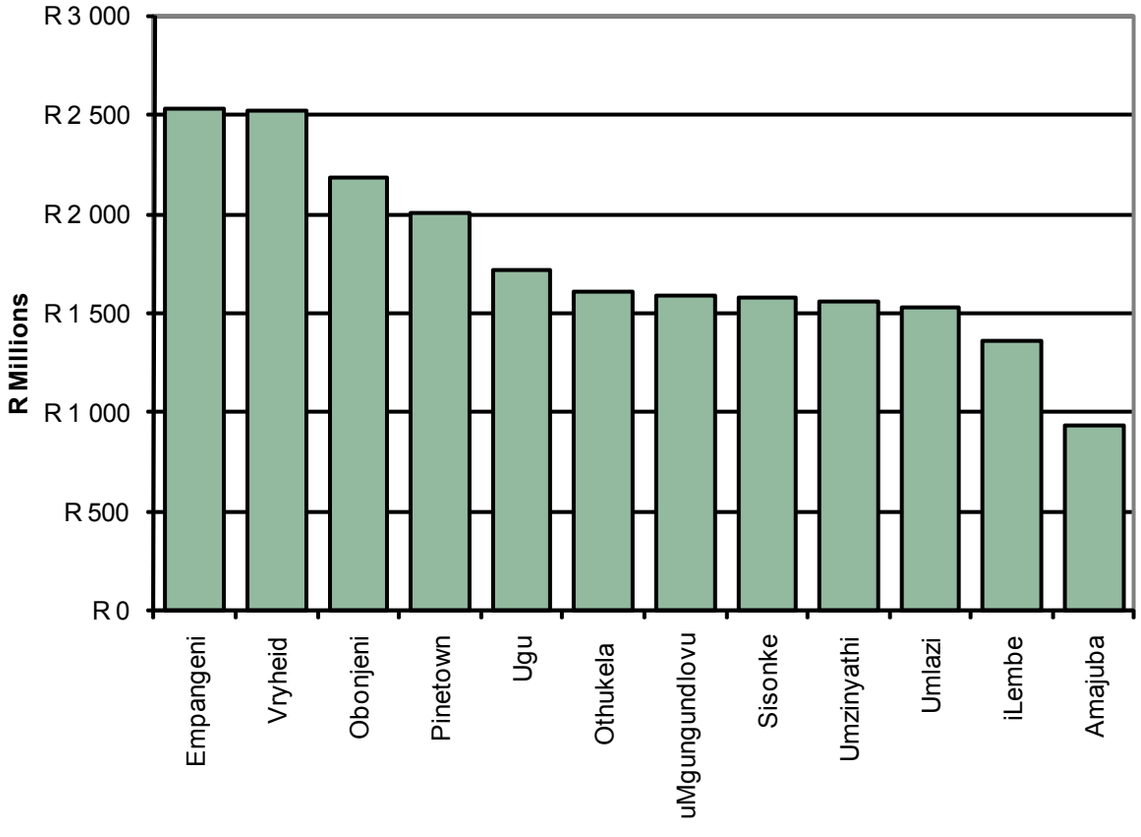
Table 52: Total infrastructure backlogs in KwaZulu-Natal by district and component according to NEIMS infrastructure backlogs costing model 2008/09

Infrastructure backlog component	Amajuba	Empangeni	iLembe	Obonjeni	Othukela	Pinetown	Sisonke	Ugu	Umgungundlovu	Umlazi	Umzinyathi	Vryheid	Total backlog
Boys' toilets & urinals	294	940	343	827	549	674	573	544	448	312	435	712	**6 651**
Computer rooms	117	430	242	361	288	295	242	284	260	226	260	437	**3 438**
Disabled toilets	333	770	487	636	553	724	490	600	626	680	547	859	**7 305**
Electricity	71	206	134	265	130	35	177	141	109	25	224	222	**1 739**
Fences	25	51	53	50	56	114	58	77	67	120	77	57	**805**
Girls' toilet seats	367	1 501	577	1 337	883	969	891	947	621	557	641	1 139	**10 430**
Media centres	118	430	238	358	260	261	252	278	223	185	268	446	**3 315**
Multi-purpose classrooms	555	1 331	778	1 123	889	1 070	786	983	934	831	824	1 421	**11 525**
Offices	629	1 688	982	1 373	1 153	1 408	1 163	1 188	1 101	1 110	1 042	1 753	**14 590**
SNP kitchen/ tuckshops	213	630	400	516	405	488	396	456	450	454	431	706	**5 542**
Staff toilet seats	228	643	375	529	413	591	346	461	439	570	389	662	**5 642**
Standard classrooms	578	1 345	440	1 278	725	1 447	934	721	739	1 021	727	943	**10 898**
Storerooms	720	1 878	1 053	1 538	1 108	1 527	1 127	1 283	1 190	1 163	1 169	1 965	**15 721**
Strongrooms	216	527	350	474	338	352	423	416	414	295	402	676	**4 883**
Water	32	53	39	92	72	17	140	91	56	14	97	87	**790**

Table 53: Total infrastructure backlog costs in KwaZulu-Natal by district and component according to NEIMS infrastructure backlogs costing model 2008/09

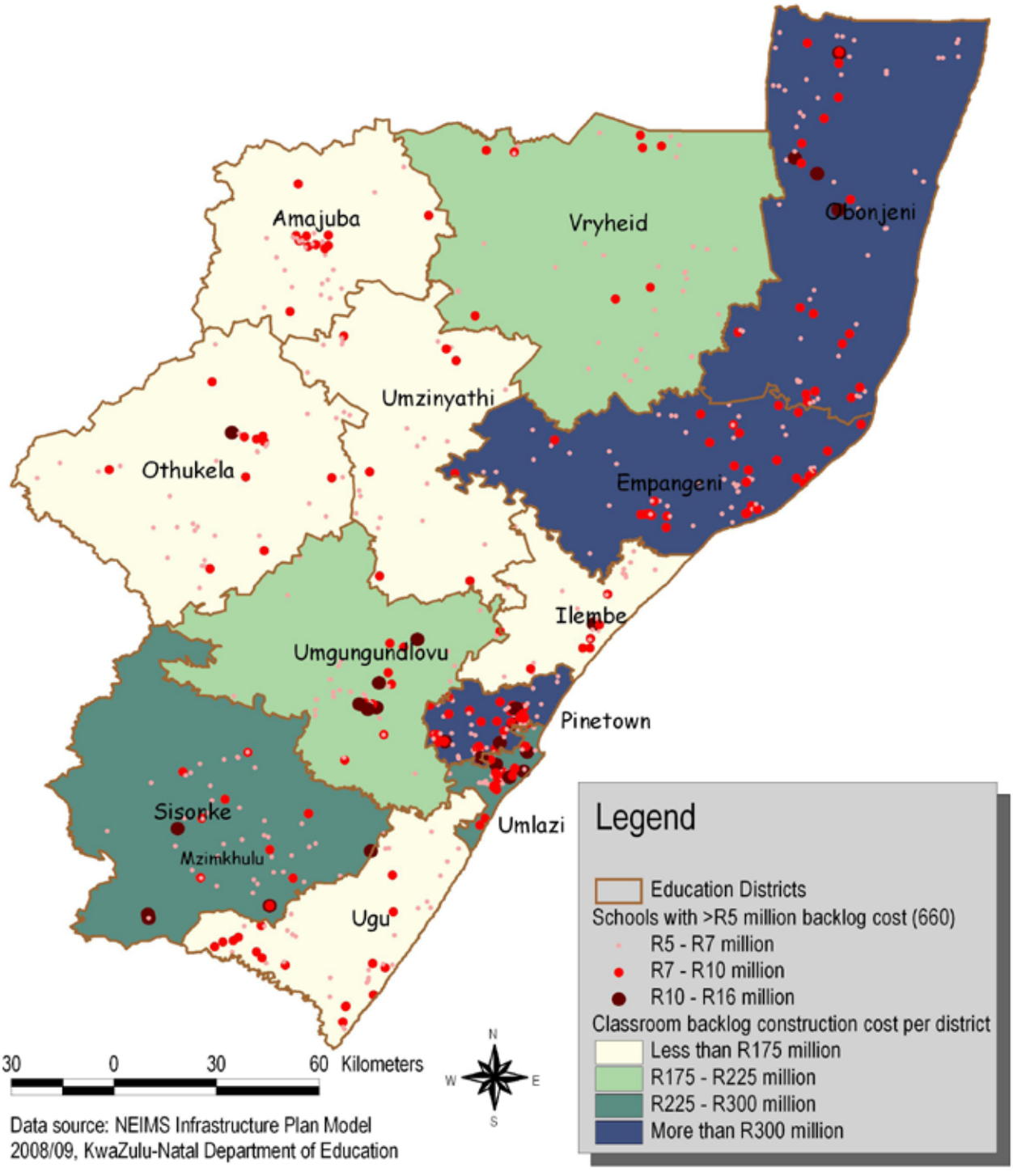
Infrastructure backlog component	Amajuba	Empangeni	iLembe	Obonjeni	Othukela	Pinetown	Sisonke	Ugu	Umgungundlovu	Umlazi	Umzinyathi	Vryheid	Total cost (R Millions)
Boys' toilets & urinals	R 10	R 33	R 12	R 29	R 19	R 24	R 20	R 19	R 16	R 11	R 15	R 25	**R 233**
Computer rooms	R 80	R 297	R 167	R 249	R 198	R 203	R 167	R 196	R 179	R 156	R 179	R 302	**R 2 372**
Disabled toilets	R 15	R 35	R 22	R 29	R 25	R 33	R 22	R 27	R 28	R 31	R 25	R 39	**R 329**
Electricity	R 14	R 41	R 27	R 53	R 26	R 7	R 35	R 28	R 22	R 5	R 45	R 44	**R 348**
Fences	R 5	R 10	R 11	R 10	R 11	R 23	R 12	R 15	R 13	R 24	R 15	R 11	**R 161**
Girls' toilet seats	R 15	R 60	R 23	R 53	R 35	R 39	R 36	R 38	R 25	R 22	R 26	R 46	**R 417**
Media centres	R 93	R 340	R 188	R 283	R 205	R 206	R 199	R 219	R 176	R 146	R 212	R 352	**R 2 619**
Multi-purpose classrooms	R 361	R 865	R 506	R 730	R 578	R 696	R 511	R 639	R 607	R 540	R 536	R 924	**R 7 491**
Offices	R 63	R 169	R 98	R 137	R 115	R 141	R 116	R 119	R 110	R 111	R 104	R 175	**R 1 459**
SNP kitchen/ tuckshops	R 30	R 88	R 56	R 72	R 57	R 68	R 55	R 64	R 63	R 63	R 60	R 99	**R 776**
Staff toilet seats	R 9	R 26	R 15	R 21	R 17	R 24	R 14	R 18	R 18	R 23	R 16	R 26	**R 226**
Standard classrooms	R 162	R 377	R 123	R 358	R 203	R 405	R 262	R 202	R 207	R 286	R 204	R 264	**R 3 051**
Storerooms	R 50	R 131	R 74	R 108	R 78	R 107	R 79	R 90	R 83	R 81	R 82	R 138	**R 1 100**
Strongrooms	R 22	R 53	R 35	R 47	R 34	R 35	R 42	R 42	R 41	R 30	R 40	R 68	**R 488**
Water	R 2	R 3	R 2	R 5	R 4	R 1	R 7	R 5	R 3	R 1	R 5	R 4	**R 40**
District total (R millions)	**R 931**	**R 2 527**	**R 1 358**	**R 2 184**	**R 1 605**	**R 2 010**	**R 1 577**	**R 1 720**	**R 1 591**	**R 1 529**	**R 1 563**	**R 2 517**	**R 21 110**

Figure 30: Total cost of infrastructure backlogs by district, NEIMS infrastructure backlogs costing model 2008/09



The map overleaf compares districts in terms of the estimated total cost of meeting classroom backlogs. The districts of Pinetown, Obonjeni and Empangeni have the highest classroom backlogs and hence the highest costs. The map also shows the distribution of schools where the total cost per school of meeting infrastructure backlogs (all components) exceeds R5 million. There are 1,023 such schools, the greatest percentage of which fall in Pinetown district (14%), followed by Obonjeni and Empangeni (12% each).

Map 6: Estimated standard classroom construction backlog cost per district and distribution of schools with a total backlog cost (all components) of greater than R5 million (1,023 schools)



Data source: NEIMS Infrastructure Plan Model 2008/09, KwaZulu-Natal Department of Education

8.3.1 Other backlog components and maintenance

A total of 17 components are included in the backlogs costing model discussed above. It was however noted in the MEC's speech on Infrastructure Business Day in 2008 that there are some additional backlogs to consider. These are associated with bulk earth works, storm water management and other civil works which could well add another R6 billion to the total cost. The provision of adequate sports facilities to all schools in the province (football pitches etc.) could also add an additional R5 billion[10]. Finally, when the cost of new school construction is factored in – the Department is considering the construction of 80 new schools in identified population growth areas at a cost of R2.2 billion – then the total cost of all infrastructure backlogs rises to R44.1 billion[11].

The 2009/2010 infrastructure budget was R1.398 billion[12]. Around a third of this was set aside for repairs and renovations of existing schools, emergency repairs as well as maintenance and other non-school capital projects. What remains is therefore only a fraction of what is required to eliminate the backlogs that exist.

8.4 Service delivery achievements

Despite the sheer scale of the infrastructure backlogs, the Department has made considerable progress over the past few years, particularly since 2004 when it started receiving a more substantial infrastructure budget. The table below shows the delivery achievements over the past five years in terms of certain key components[13]:

Note that the data for 2008/09 is incomplete since it only reflected the first few months of that year. It can be seen that substantial progress has been made in terms of classroom construction and the provision of sanitation, but that there has been relatively little activity with regards to construction of specialist classrooms such as computer rooms and science laboratories.

10 Senzo Mchunu, MEC for Education. (23rd September 2008). *Speech for Infrastructure Business Day*.

11 *Ibid*.

12 Senzo Mchunu, MEC for Education. (No date). *KwaZulu-Natal Department of Education Budget Speech 2009/10*.

13 Senzo Mchunu, MEC for Education (23rd September 2008). *Speech for Infrastructure Business Day*.

Table 54: Infrastructure delivery achievements in KZN, 2004-2009

Infrastructure item	Financial year					
	2004/05	2005/06	2006/07	2007/08	2008/09	Totals
New schools	9	2	3	5	3	**22**
Classrooms	1153	1571	1090	1471	469	**5754**
Toilets	2728	3001	3771	3186	311	**12997**
Media centres			5	40	4	**49**
Computer rooms			15	42	3	**60**
Science laboratories			10	36	4	**50**
Schools fenced				237	361	**598**
Kitchen/nutrition rooms				18	1	**19**
Administration blocks				160	2	**162**
Water tanks	552	561	537	1200	45	**2895**
Schools supplied with piped water				50		**50**
Schools supplied with electricity	50	50	50	100		**250**
Schools supplied with boreholes	25			25	38	**88**

8.5 Concluding comments

The department has recognised the huge challenge it faces in terms of provision of infrastructure to schools in the province. Whereas some schools in the past had been constructed out of materials such as mud, new standards require materials such as brick and tiles as well as access facilities for disabled learners. The resulting cost per school has escalated considerably along with rising maintenance commitments to ensure that existing school infrastructure does not become dilapidated. The Department also recognises that its capacity to run the multitude of ongoing school construction projects is limited. Hence they have established partnerships with the Department of Public Works, Ithala Development Corporation and the Independent Development Trust.

The current modus operandi in terms of prioritising infrastructure programmes is that each district produces an annual priority list which is scrutinised and further prioritised by Head Office. The list for construction is therefore consolidated over time. Emergencies such as storm damage are dealt with as a matter of priority. New commitments such as upgrading proposed Full Service Schools and providing additional classrooms for the rapidly growing numbers of learners in grade R present additional budgetary challenges for the future.

Until recently, poor infrastructure may have been the primary reason for poor education, in the minds of many people. Pictures are easily conjured up of children sitting under trees instead of in classrooms, children sharing seats and desks as there aren't enough, two classes sharing a classroom. The infrastructure backlog is indeed formidable, as this chapter shows.

However, priorities must be set, and this study argues that while children do need classes, toilets, gates and fences, other expenses also need to be carefully considered. If teachers are not in classes, engaging with the curriculum and with children's learning, all the computer laboratories, multi-purpose classrooms, e-learning facilities and sports fields planned will make no difference to the quality of education. In this sense, the infrastructure backlog is a red herring: much has been done since 1994 and the number of schools still requiring classes and toilets is going down. To assume that education quality will suddenly shoot up once the infrastructure is in place is naive in the extreme. However, this has not stopped ideas of quality from hinging on infrastructure dreams. Increasingly, this is seen as a means of avoiding the real issues outlined elsewhere in this paper: teachers are under-qualified and battle to complete the curriculum to an appropriate standard due to their poor content knowledge; principals do not focus enough on management and support; and children are hungry, poor and dealing with trauma and loss. Without addressing these key issues, beautiful buildings will make not a jot of difference.

Chapter 9 of this report will look at the situation of children who are struggling with all the disadvantages just mentioned and will also consider issues of infrastructure in that context. This could assist the KZNDoE in considering and setting useful priorities with regard to infrastructure.

9. Children's barriers to basic education

When looking at quality in education, this report has relied on a literature review, EMIS, NIEMS, teacher and principal surveys, the department itself, and a range of websites. However, the main and indeed key clients of the education system are the learners. Lest we forget, the point of improving quality in education is to ensure that children who emerge from our schools are able to contribute to the workforce with skills and knowledge to enhance development of the country. It was therefore deemed important to investigate some of the barriers to basic education that children face.

In this chapter, a voice is given to children via carefully designed research that asks children about their perceived barriers, particularly in the context of HIV and AIDS. Over a long period of time, children in one educational community were asked to express their opinions and tell their stories. Communities and teachers were invited to corroborate or disagree with the children's voices. The research aimed at obtaining a situated understanding of barriers to basic education in an HIV and AIDS context. At the outset, the research team committed that the research project would have emancipatory goals, and that it should give 'voice' to members of a marginalised and vulnerable community so that their experiences and their lives could be better understood. Silences are potentially disempowering, and can be manipulated and contrived in social contexts by other players and stakeholders.

The extent of the HIV and AIDS pandemic is investigated after that, relying on national prevalence statistics. The ramifications of HIV and AIDS on the education of children affected and infected are offered, as are some factors that promote learning and resilience.

9.1 Research that gives children a voice

A large-scale study that aimed to map the perspectives of learners, teachers, members of school management and community members on barriers to basic education in the small town of Richmond in KwaZulu-Natal was conducted between 2004 and2005. The study was an in-depth qualitative case study of formal and non-formal centres of learning and their communities in four contexts: rural, deep rural, urban, peri-urban. It was intended to be micro-level research into how participants experience and make meaning of barriers to basic education in the context of HIV and AIDS.

The key research questions were: What are barriers to basic education for learners in non-formal and formal educational settings in an HIV and AIDS context, and what is the interrelationship between and among HIV and AIDS and other socio-economic factors? In other words, the study aimed at examining intersecting barriers such as poverty, HIV and AIDS, gender, violence, crime, and to highlight the multiple ways in which these are experienced in centres of learning and in the communities the centres serve.

9.1.1 Context and methodology

The study was undertaken in the Richmond Municipality. The municipality is located in the uMgungundlovu District in the Midlands area of KwaZulu-Natal, about 38 km south-west of the city of Pietermaritzburg. Census statistics place the population figures for Richmond Municipality at 63,222 people, of whom 53% are female[1].

The area has been hard hit by the HIV and AIDS pandemic, being situated in a province with the highest HIV-positivity rate which, despite predictions to the contrary, appears to be increasing. Van der Riet, Hough and Killian (2005[2]) point out that the high population mobility, high unemployment, and the sustained social fragmentation have contributed to the extremely high rates of HIV and AIDS in the town. Richmond came to prominence during the 1980s and 1990s as a flashpoint of political violence. The violence has had far reaching effects, including displacement, fractured families, increased levels of substance abuse, and a high level of sex work - all of which obviously impact on levels of HIV and AIDS.

Most of the centres of learning included in the study were situated in areas characterised by high levels of poverty and an unemployment rate of approximately 40%. Where people were employed, it was mainly on farms and timber estates, or as migrant labourers. Most households earned less than R1,500 per month. The crime rate was high, ranging from petty pilfering to rape. An important socio-economic factor was the relative youth of Richmond's population, the majority of the population is between the ages 15-34 (37%). This is followed by the school going age group of 5-14 years (24%). Females account for 53% of the population and males 47%[3].

There were 14 centres of learning: one combined school (primary and secondary), five primary schools, three high schools, one special school and one preschool. The project was undertaken in six communities located in rural, deep-rural, peri-urban and urban contexts.

Included in the study were members of organizations or community structures working in the communities of the schools ranging from members of non-governmental organizations (NGOs) and non-profit organizations (NPOs), provincial and municipal government officials, traditional leaders, the mayor of Richmond, local councillors, a member of Parliament, elected representatives in local government, volunteers working in an NGO, and community health workers.

The research captured the voices of learners, parents/caregivers, teachers, school management teams, members of the SGB, children affected by HIV and AIDS whose families are supported

1 Statistics SA. (2001). *Census in brief*. Pretoria: Statistics SA.

2 Van der Riet, M., Hough, A. & Killian, B. (2005). Mapping HIV/AIDS as a barrier to education: a reflection on the methodological and ethical challenges to child participation. *Journal of Education*, 35, 75-98.

3 Statistics SA. (2001). *Census in brief*. Pretoria: Statistics SA.

by a local HIV and AIDS NGO, political representatives, and members of an HIV and AIDS support group.

Data collection methods were mainly focus group interviews and semi-structured individual interviews. Data was also gathered at community meetings. Various participatory data collection techniques were used, including time lines, social mapping, body mapping, ranking exercises, matrices, photo voice, children's drawings, teacher reflective journals. Data collection was done either in isiZulu or English to ensure full and complete access to all participants. Semi-structured interviews, focus groups and sessions that used participatory techniques were audio- and/or video- recorded. These were later transcribed and translated from isiZulu into English where necessary. With respect to Deaf learners, sign language was used, and the data collection was done by a researcher proficient in sign language.

9.2 Voices: barriers to basic education

The research will be reported using four categories of difficulty experienced by learners: (i) barriers within the broader community context in which learners live; (ii) barriers related to school functioning including infrastructural and process obstacles created by individuals, peers, educators, facilities and policy within the school environment; (iii) barriers related particularly to educators, involving their attitudes, qualifications/knowledge and practices; and (iv) barriers related to family and home circumstances. In addition, there is a focussed discussion (v) on illness and HIV and AIDS as barriers to basic education; and a discussion on factors that, from the learners' perspective, facilitate or enable learning and promote resilience.

9.2.1 Barriers experienced within the broader community context

The participants reported that general living contexts were creating barriers to education in a variety of ways.

9.2.1.1 Poverty

Poverty was experienced as a profound source of hardship that impacted on all spheres of functioning. At a community level, learners felt that their neighbourhoods lacked basic infrastructure, and access to social services. Many rural learners were aware of the lack of resources and were angry about perceived inequalities across urban and rural contexts. Many personal testimonies of hunger were given by participants at the community meetings.

The effects of the high levels of poverty reported are multiple and inevitable and result in hunger and inadequate nutrition; crime; risky behaviour; sickness and death. Many of the volunteers working for NGOs in the area gave examples of families living with hunger.

At all of the meetings, from rural to urban settings, dagga as a source of income was mentioned as a problem or a growing problem. Prostitution was mentioned in the urban setting as a means

for children to get money for themselves. Volunteers suggested that children who complete school and cannot get a job will turn to crime to make a living.

Social grants are a means of poverty reduction for many poor households but the research uncovered large numbers of eligible households that were not accessing them: For example, only six of the 20 households portrayed in the photographs taken by volunteers working for an NGO received government grants, although 16 were eligible so to do. The issue of grants was raised by many of those who attended the community meetings. Participants felt that the grants were too small, particularly the child support grant. Once food had been bought, no money remained for clothing or school fees. Participants also complained about the difficulties in accessing grants (which requires first accessing the birth certificate, death certificate of parents and then an ID book, all of which take a long time to obtain, and some money), and long delays in getting them. The following are the comments of a volunteer working for an NGO:

> Yes, their mother died. She died of TB - they are currently supported by granny. They don't have birth certificates because their mother didn't have her ID when she died - it got lost. They are not getting any assistance because whenever her granny goes for help they ask for the death certificate and the ID of the children's mother and their birth certificates. The other child's mother died of TB. They all stay together with the granny - she supports them. This child has the birth certificate, her uncle said that he has applied for the grant but has not had a response yet.

9.2.1.2 Safety and security within communities

Security and safety seemed to be major issues in learners' community context, at school and within their home environments. The violence that characterised the area in the early 1990s has left a large number of orphans and survivors who are psychologically scarred from what they saw and experienced at that time:

> We found it very important to have stress and trauma workshops, more especially because even 10 years down the line you can still see the aftermath of the violence. We also noticed that up until today these workshops still trigger in them the effects of the violence - when these people reflect back (NPO, interview).

Many learners spoke of vandalism and violence in the community and how it affects their schooling:

> I want to change the place where I am staying because there are gangsters and they assault you and kill you (Learner, peri-urban primary school).

The migrant labour system has contributed to the absence of adults in the home, and the HIV and AIDS pandemic, in combination with the profound levels of poverty, have led to multiple losses, food insecurity and daily survival strategies which include crime and violence.
According to teachers, abuse may go unreported and therefore unpunished.

> Speaking of abuse, their parents don't have the knowledge of reporting different cases like violence, domestic violence and rape. They don't have relevant organizations to report those cases. And you find that even our learners when they come here to school you find that the child has been raped and because there is lack of knowledge of child rape, the parents are not reporting such cases. That's maybe the point of learners' rights (Educator: peri-urban primary school).

Participants at community meetings reported rape (including rape of children) as a problem in their communities. Participants at a peri-urban community meeting felt that the incidence of rape was increasing. The volunteers working for an NGO mentioned rape of children as a major concern to them personally. A mother of a child attending the peri-urban preschool in the study voiced her fears:

> Children get raped. We heard there is a car that took children and raped them. So far nothing has happened. We have not seen anything. But we try to protect our children. We are forced to accompany them to school and fetch them after school. We have to watch our children. They have to play in front of us – cannot be out of sight.

9.2.1.3 HIV and AIDS pandemic

Many learners acknowledged the prevalence of HIV and AIDS within their own communities and were able to describe the symptoms of people with AIDS-related diseases. They readily described how an infected person was mocked and treated with disrespect. This experience of discriminatory behaviour at community level has affected the individual's willingness to know their own status through testing.

A number of participants highlighted that social and cultural restraints, silence and ignorance about HIV and AIDS exacerbate the HIV/AIDS pandemic.

> We have a problem here. They don't identify parents who are ill, for example, HIV and AIDS. People around here they say AIDS is not here. AIDS is around Pietermaritzburg and Durban. It's not here (Educator, urban primary school).

These silences prevent victims from seeking help and result in traumas remaining hidden. Social and cultural restraints, silence and ignorance serve as major barriers to teaching and learning.

The generally high levels of sickness, often associated with HIV and AIDS, in Richmond were worsened by the fact that health facilities were inadequate. Many community members who attended the community meetings complained of a lack of clinics, specialist health services, and ambulances.

The perception among participants is that HIV is spread by people aged 15 to 35. Participants suggested that this is worsened by girls getting pregnant in order to get the child support grant. A community participant stated, "they do not do not worry about disease as they are only worried about the money."

9.2.2 Barriers experienced in the school context

To avoid merely assuming that learners experience only barriers to education, learners were specifically asked about conditions that impacted on their motivation to attend, and perform well at school. Learners commented that they attended school for educationally based reasons (e.g., to learn to read and write, to do mathematics, to enable them to get a job one day, etc); social factors (e.g., to see friends and play sport); family/parental motivators (e.g., wanting to do well to please parents or family), and physical reasons (e.g., to get food).

However, it was evident that the learners in these research sites experienced various barriers to obtaining an education. Barriers can be categorised into those related to: (i) lack of educational resources; ii) poor school infrastructure; (iii) poor infrastructure within the broader community; (iv) educational policy being incorrectly applied within the sampled schools; (v) safety and security within the school environment; (vi) factors related to the educators; and (vii) learner misconduct.

9.2.2.1 Inadequate educational and human resources

Learners experienced various deficiencies in terms of lack of educational resources such as desks, textbooks, exercise books, stationery and library facilities, etc. Boys from the urban combined school described the library as "like a picture" (for looking at but not for use). Schools having insufficient cleaning and maintenance staff meant that children were commonly required to sweep and clean their classrooms during times that may have been used for educational activities. In addition, for community members, this extended to not having computers or teachers that could teach accounting, biology, mathematics and English.

There were school principals who raised the issue of lack of teaching and learning resources and human resource capacity in schools:

> Yes, I enjoy teaching. It is only that most of the time I am disturbed. Sometimes I cannot go to the classroom because of some things I have to do because I don't have a clerk in my school. So I am a clerk. I am a teacher. I am an organizer. Even the financial books are done by me. Everything, everything.
>
> Ordering, everything because once you try to delegate, teachers just tell you, please you have a car, you know we don't have a car (Principal).

Principals mentioned the dire need for support in the area of pastoral care to capacitate teachers to deal with social risk factors such as sexuality issues, HIV and AIDS, death and grief. The preschool principal was concerned that community nurses visited his school at the most once a year and doctors not at all. A mobile clinic used to come to his area but that has stopped. One principal spoke of the once-off visit of a psychologist from the Department of Education:

> The year before last the psychologist, hired by the Department, by the name of Mrs X. visited the school once. Actually she didn't do much, she wanted us to fill the form in

> connection with the learners and they left hoping to come back, they never did. Maybe their hands are full, I hope (Principal, deep rural high school).

9.2.2.2 Poor school infrastructure

The different schools within the sample reported varying levels of lack of infrastructural resources which included a lack of municipal services such as water and electricity, which in turn contributed to unhygienic and unsanitary toilets.

Community members raised the issue that the peri-urban high school had to be closed for two weeks because the toilets became a public health hazard. The ANC MP for the area expressed considerable frustration about the bureaucracy involved in dealing with such issues, which meant that it simply took far too long for issues to be resolved and problems to be fixed. Principals expressed the problem of inadequate support from the Department of Education.

One principal spoke of inadequate support in respect of re-furbishing schools:

> They don't help. Truly speaking they don't help you see we have tried to talk to them so many times. I remember at one stage I went to the Department talking about grade 5 classroom. Grade 5 classroom is not in good condition. The flooring, it needs flooring. They haven't responded yet. I think I have written four or five letters to them asking for assistance they don't respond. They say that at the moment they don't have money to assist us. They will see next year (Principal).

Learners discussed the dusty environment and lack of grass in the grounds, which limited recreation areas in the school. Learners in rural schools commented on difficulties in access to school. Learners in a combined school in the centre of the town commented that the position of the school gives the learners access to other attractions that compete with the basic activities of schooling. The arcade games available in a local shop distracted children from learning, contributed to late-coming, truancy and exposure to negative peer and gang influences.

9.2.2.3 Poor infrastructure in the broader community

Many children in rural and deep rural schools live far away from school and walk dusty or muddy roads to school, arriving tired and looking dirty. This makes children feel they "look like the people that didn't take a bath" (Learner, peri-urban, primary school).

Many community members mentioned the fact that children often have to travel considerable distances to get to school. This has a number of implications, including cost (if transport must be paid for); safety on the route (where rivers without bridges need to be crossed, and also where there is possible abuse); physical fatigue in children who walk; possible lateness to school (and possibly missing some or all of school on that day, at those school which close the gates).

9.2.2.4 Inconsistently implemented education policy

The major policy difficulties relate to school fees, uniforms and discipline procedures especially with respect to the use of corporal punishment.

The South African School's Act (1996) mandates that children may not be discriminated against on financial grounds. Nevertheless, learners frequently spoke about the difficulties experienced in relation to the payment of school fees and uniform. In this study, children's reports might be withheld or they might be expelled or punished in other ways, if they are unable to pay school fees, do not have the correct school uniforms, or do not have the appropriate stationery. "She does not go to school because she does not have a uniform or school books." (Learner, peri-urban high school).

> We are doing what we are not supposed to do. We hold their results at the end of the year and they come in numbers, then they will pay and we release the reports. Even the parent pays in the following year. Now we are in 2005 the parent will pay in 2006 January. You know, in order to see the position of the child. Then you see if he's going backwards or forward (Educator, deep rural primary school).

The main school factors mentioned by community members were those relating to cost - school fees, uniforms, books. Indeed, the issue of school fees was raised at every single community meeting, not simply as a cost that parents had to pay, but also in relation to the consequence of *not* paying: children being chased out of school, or not getting their reports.

While some parents do not know they can apply for fee exemption, many do but prefer not to. To some extent, this could be the result of the apparently growing phenomenon of the stigmatisation of poverty, in which poor people are derided for their own poverty. This was the reason given by parents at the deep rural community meeting for why they do not apply for exemptions - they would rather keep their child out of school than have everyone know they are too poor to pay school fees. In addition, even in no-fee paying schools, lack of a uniform will remain a physical mark of poverty.

Many educators were reported to use corporal punishment as a major means of disciplining learners. Learners expressed their fear of corporal punishment and highlighted it as a significant barrier to learning, and one of the most frequent responses to the question "what don't you like about school?"

There is a range of behaviours that resulted in corporal punishment: not covering one's books, absence without a note, not having a uniform, performing poorly, not listening in class, arriving late, being pregnant, smoking, threatening a teacher with a knife, bullying and embarrassing other learners. There did not appear to be any discipline protocols or hierarchies of actions in schools to guide educators in terms of appropriate discipline for a wrongdoing. Learners in rural and deep rural schools were more likely to comment on the abuse of corporal punishment.

9.2.2.5 Safety and security

Safety and security within the school environment appears to be a source of major concern. Learners reported community members coming to the school to steal food, learners carrying knives or scissors or toy guns. Girls' vulnerability and defencelessness was apparent, in a projective exercise of possible reasons why Thandi was absent from school.

> Maybe she was afraid to come to school because the boy wanted to rape her (Learner, rural primary school).

9.2.3 Educators and barriers to learning

The study examined the complex ways in which teacher constructions of their experiences of teaching in the school contexts in Richmond shape their taken-for-granted understandings of barriers to basic education. In addition, the perspectives of learners and other participants in the study on the teaching and learning in schools were explored. However, the study concedes that stories people tell are shaped by and reflect the perspective of the teller, which in turn is structured within a wider socio-political context. All stories are interpretive accounts of lived experience.

Many learners raised questions about the quality of teaching and learning in their schools. Learners commented that educators do not explain sufficiently, and are often critical or personally derogatory when learners give incorrect answers or ask questions. Learners complained that educators were often not approachable or were absent. Grade 9 learners complain about teachers who "propose love" to learners, and other unacceptable behaviour:

> Firstly the teacher as they have said, the teacher maybe he is coming from his cottage (and he) is drunk and he will be rude in class. As a learner you come from home and you find that you are abused at school by the teacher. You have to pay your school fees here (and) it is difficult. Teachers do not lose anything if they abuse you, but as a student you lose because you pay for your studies (High School, grade 9, boys).

In an urban Combined School, during an exercise which enabled learners to suggest and rank areas of difficulty in school, corporal punishment was rated the highest, followed by educators shouting at them, and being insulted by educators.

The challenge of educator commitment, accountability and making learning accessible was particularly debilitating to learners.

> F: Tango, your schoolwork. Is it easy or difficult?
> P1: English and maths are difficult. Sometimes I don't understand the questions. When I ask teacher, she explains to me sometimes. Sometimes she cannot explain. She goes away. When she comes back, I ask her again. But she still does not explain. She tells me to keep quiet and she goes away. (Learner, deep rural primary school).

Deaf learners lamented the fact that educators were unable to communicate in South African Sign Language, which therefore caused their learning to be impeded:

> Sometimes when the principal is talking, we don't understand him and when we are signing he does not understand us. He must learn better Sign Language.
>
> It is good when teacher uses good Sign Language, then we understand. Sometimes the teachers don't know Sign Language and they can't teach us well. The other problem is that there is no interpreter.

Many of these factors seem to point to a lack of educator training and development, a lack of confidence in facilitating learning, and lack of effective monitoring of teachers by their line managers.

Children in racially mixed schools reported that teachers respond differently to children of different race, gender or ability.

> Some teachers treat children according to their colour … maybe when you do something wrong they shout at you, but other children do something wrong and they don't shout at them. (Learner, urban combined school)

It is not surprising that learners see teachers as derogatory or unapproachable, since the findings of the study suggest that many teachers relied on a deficiency framework as a basis for understanding the situation they were experiencing and what should be done in relation to intersecting barriers to basic education. The study showed that teachers see themselves as the dominant group, and parents, learners and communities and social groups are the "other":

> It's a result of illiteracy from parents because they see no importance of their children to be educated. It's some of the things. So, they don't see a need of educating their children.

Income, position, language and level of education position teachers as middle class and they are viewed in a position of privilege by themselves and the communities in which they work.

This is part of the impact of the fact that so few teachers directly belong to the communities where they teach, particularly in non-urban areas. Distances travelled by teachers range from 30 km to 150 km. At one school, of the 10 teachers, three live in the area and the rest commute daily. At another school, of the 36 teachers, 29 commute daily. In a third school, 18 of the 22 teachers commute daily. A councillor in the deep rural project area raised concerns about teachers, particularly teacher absenteeism and lateness. This was echoed by a few other sources, particularly in relation to teachers not living in the area and therefore arriving late or not working on Fridays.

The study also explored how teachers positioned themselves in relations to ethics and values. The aim was to tease out teachers' experiences of pastoral care work, decisions around morality

issues, and action involving value decisions. A finding was that teachers often framed learner behaviour in powerful blaming discourses – blaming the victim.

> To them (learners) there is nothing wrong with falling pregnant – having a kid and come back to school. Fail the next two years. Like, they don't know whether it's sunrise or sunset (Educator, rural high school).
>
> At 11 o'clock, when they go out for break, they don't come back. And you cannot even control them because they just move out from the premises. They are unruly, I can say (Educator, peri-urban high school).
>
> Failing is just another thing to some of our learners. Doesn't make any difference to them whether they pass or fail (Educator, peri-urban high school).

The study highlights the pervasive role of dominant discourses within educational institutions, and how difficult it is for teachers to challenge dominant discourses, to participate in the construction of alternate ones, and to see the connections between the lived experiences of learners and their families and wider social contexts. It may be that teachers have internalised these discourses as a coping mechanism, without ill intent.

However, there were a few teachers whose narratives reflected alternate constructions of parents and caregivers,

> I wouldn't say that they don't care… because you will find that there are parents who really care for their own kids. But the problem is they are unemployed. They don't have their source of income themselves. It's only the grandmother who is providing for them….feeding about six or seven kids in the family (Educator, rural primary school).

Teachers as a social group working in marginalised communities are in powerful positions of voice, authority and status relative to learners and/ the community. However, the data in the study revealed that some teachers chose not to act when faced with significant ethical issues, and in so doing position themselves outside the community in which they work:

Teacher:	Like I got these two girls in my grade 2 class. They are being raped by their relatives. One is the mother's boyfriend and the other is the uncle.
Researcher:	Does the school have a support system for children? Who do they talk to? What is being done?
Teacher:	Not yet. Nothing is happening (Educator, primary school, deep rural).

The narratives of teachers reflected their deep dissatisfaction with various policy changes in the education sector, in particular curriculum policy change, and inadequate support from the Department of Education. It is not surprising that OBE has been acknowledged by educators in all schools as a significant barrier to learning. Educators voiced feelings of abandonment, alienation and lack of clarity of what is expected of them:

> You know, just another barrier.. …. to learning… is going to be the implementation of FET and it's… I say this because with OBE came a lot of a…a…a…what you call it?

> When... when things are disturbed, the disturbance in education... Ok one minute teachers or educators or schools are teaching certain thing and next minute they just drop this bomb on you.... "Listen here, you got this amount of time to complete this". This is what the children are gonna go through (Educator, high school, rural).

Teachers voiced the need for sustainable professional development in particular in respect of curriculum policy and implementation, and pastoral care. Particular mention was made of the need for assistance in mediating sexuality education. Pastoral care for teachers and learners to help them deal with poverty, sexuality issues, HIV and AIDS, death, grief and sickness emerged in the study as a major area for development.

> If the Department can send us the subject advisors maybe now we should be in a state of trying to come to know exactly what the Department wants us to do with this OBE and whatever (Educator, deep rural high school).

> Well, the thing is that teachers haven't been well educated about sexual education. We don't know the difference between sexual education and sex education. Thus we teach them about HIV, we just teach them with those basics. The causes, the consequences – the results. What else? With the basic knowledge that we ourselves have we can't go deep into details (Educator, peri-urban primary school).

Teachers confirmed that there existed 'curriculum *silence*' around issues of HIV and AIDS. Teachers admitted teaching knowledge about HIV and AIDS and sexuality selectively: entire lessons on HIV and AIDS and sexuality not being taught from the syllabus; no direct reference to sex in HIV and AIDS lessons; and messages on abstinence as the sole means of communicating about HIV and sexual relations. The teachers in the study suggested the following reasons for selective teaching: societal and religious pressures led to HIV and AIDS lessons emphasising abstinence without introducing issues on safe sex; parents disapprove of their children being taught about sex; difficulties in discussing sex (a taboo subject) resulting in discussions of HIV without talking about sex, for example:

> You know it's very difficult to tell a learner who does not have the basics at home. You are only coming with this subject in the classroom whereby the learner is expecting to you to teach subject matter not other matters in as far as life is concerned. It's just ABC, abstain, be faithful, use condoms. And we tell them to abstain. That's how we just end there. We don't go as far as being faithful and using condoms because they are not yet that age.

There was evidence of agency on the part of educators, despite a lack of professional development in the area of pastoral care. One teacher explained her attempts at creating spaces for dealing with grief in her class:

> Like in my case, I asked them to draw a sad face and I asked them, why are you sad? One of the girls said, "I'm sad because my mother left me... I don't whether she is alive or what." I do sometimes try to make them talk (Educator, deep rural primary school).

Many stories of teachers revealed how teacher emotions are shaped by the changing conditions of their work, and how their emotions are manifested in their interactions with students, parents, administrators and each other. One teacher in her frustration referred to the revised curriculum as "that OBE thing". The responses below reflect contradictions and tensions teachers experienced in implementing OBE.

> I think if you ask any teacher, whether they are fully in favour of OBE or not, they will tell you that no matter how much they implement OBE they still go down to the basics of how teaching used to be otherwise (Educator, combined school, urban).
>
> You find a learner in grade 3 unable to write, cannot read what he or she has written. Coming from primary school. They were told you cut and paste, cut and paste, all those things. OBE, you cut and paste only. They don't even do the spelling (Educator, high school, deep rural).

There were teachers (albeit a small number) who contested constructions based on a pervasive deficiency framework and showed authentic instances of care, particularly when care was immediate and non-demanding. Various demands were made on teachers from learners, parents and the community at large around issues of violence, abuse, poverty, orphanhood, teenage pregnancy, child abuse etc for which they had no formal training or had no access to capacitating themselves. This work is often unrecognized, not credited, invisible and taken for granted.

> I can make one example, we have a problem that sometimes during break time or when we are having chips, this and that, they have this habit of asking for money. And to us we are not used to that they ask for money because they are hungry, and we give it to them because we feel guilty (Educator, deep rural primary school).
>
> There is a high rate of unemployment…yesterday I made calculations and noticed that 8% of my salary is going to the learners that come everyday asking for money. It has become strained…Mrs Cronje and the department must do something about this (Educator, rural high school).

9.2.3.1 Learner behaviour problems

Apart from issues raised above, bullying, either within the school or by out-of-school youth, is a common feature of these learners' lives.

In summary, in the opinion of the learners, non-attendance at school was predicated on a number of family and social variables, as well as fear of the educators when the learners did not have school uniforms, could not pay fees, or did not possess other things perceived by the educators or themselves as prerequisites for their attendance. Peer influence played a role in demotivating older learners, and romantic relationships and gangster membership seemed to distract children from prioritising their education. It also seemed that once a child had missed a period of schooling, it was considered to be extremely difficult to resume their education,

although the large age range of learners in grade 9 suggest that there are high failure/repeat rates and/or that some learners had been out of school for a couple of years and then returned into the education system.

Teenage pregnancy was identified as a potential barrier to basic education in the peri-urban, urban, rural, and deep rural community meetings. It was reported that young girls get pregnannt to access the child support grant, and that they are apparently not worried about STDs. However, it is girls' schooling that is disrupted by pregnancy, not boys'. Schools seem to take different approaches to dealing with a pregnant learner, including expulsion. In this way, gender discrimination forms a barrier to learning. Teenage pregnancy obviously has a direct effect on the ability of girls to continue attending school, for at least the period immediately prior to and after the birth of their child. If there is no-one else to care for the child, it is often physically difficult for these girls to continue with their education.

9.2.4 Barriers experienced in the home and family context

The barriers to education experienced by learners within the home and family contexts varied across the different geographical regions, but again there were dominant themes that emerged across the entire sample, with (i) poverty being the most pervasive and destructive barrier. Other dominant barriers included (ii) having to perform duties at home; (iii) the impact of illness and multiple family deaths; and (iv) family structure, parenting styles and discipline procedures.

9.2.4.1 Poverty and the home environment

Poverty was cited by almost all community sources as a major reason for children not attending school and not learning.

> Places like ... (reference made to one of the peri-urban, and rural project areas), I can just think of one problem [that children face regarding schooling] – poverty (Municipal manager, interview).
>
> One of the major barriers would be poverty, in the sense that many of the people in Richmond cannot afford the basics (SEM, interview).

This is apparently due to unemployment, and there are no major industries in Richmond. Indeed, the mayor confirmed that the council only receives rates from one ward.

In the individual interview, 8% of the total learner sample said that they had experienced a period of two days where they had been without food. This was particularly severe in one rural primary school (19%) and one deep rural secondary school, (18%). Some even acknowledged that the main reason they enjoyed school was because of the food provided by the feeding scheme.

Children also reportedly stay out of school in order to try to find food, or earn money to buy food:

> In the farm areas, teachers complain about the harvesting season. During the harvesting of oranges, children are not in school. They rather earn a little pocket money - I don't know how much - than attend school. That little money means a lot to those children (NPO, interview).

9.2.4.2 Impact of multiple family deaths and illness

In the focus groups, many children spoke of illness amongst members of their close and extended families, and many had experienced multiple deaths in their close and extended families. They reported missing school due to illness and death:

> In 2000 it was hard again when my mother was sick. I had to stay at home for the whole year and I came back to school in the following year (Learner, rural primary school).

In addition, children were absent from school whilst they attended funerals and adhered to mourning rituals. In community meetings it was stated that sickness deeply affects children:

> Some are due to the emotional situation where the parents or relatives are dying in bed because of these diseases. The children then are psychologically traumatized (Councillor, rural project area, interview).

> This boy took on great responsibility like taking his mother to the toilet when she needed to go, to take a bath...He would often bunk school and run home to look after his mother or go to the clinic with her (NPO, interview).

9.2.4.3 Family structure, parenting styles and discipline procedures

From the children's accounts, it would appear that most families rely on authoritarian parenting styles, and disciplinary methods in the home appear to be harsh with a strong reliance on corporal punishment. This could result in lowered self-esteem, and could explain some of the tendencies towards aggression and violence in relation to problem solving.

From teachers' point of view, lack of parental involvement in schooling was a barrier that featured as most (or highly) significant in all schools at which data was collected. Lack of parental involvement shows itself in many aspects of the organization of the school for example, participation in SGB meetings, supervision, and support for sex education in the curriculum.

Poverty, sickness, violence and death have taken their toll on family structure, leaving many families fractured or disjointed: grandmothers looking after grandchildren, with or without their own children; children being cared for by relatives or neighbours; children living in child-headed households. Of the 20 households portrayed in photographs of volunteers working for a day care and support centre, 13 were female-headed households, three were headed by children under the age of 18 and five by women over the age of 60. Half of the households had six or more members. In 14 of the households one or both parents were dead, and in seven households one

or more parents had disappeared or members were not sure where they were. The fathers in two households were in prison (both for offences related to the political violence). In one household the mother had left the father. Thus 18 of the 20 households could be seen as disjointed or fractured, with one or both parents dead or missing.

Many of the stories told by the volunteers and health workers suggest high levels of child mobility - children being moved from one home to another depending on current circumstances and who is prepared to take them in. Participants at both a deep rural and peri-urban community meeting asserted that abandonment was a common problem.

Obviously, being orphaned or abandoned or moved about is a highly traumatic experience, and where this has been accompanied by violence or sickness, it is highly likely that children bear deep emotional scars. Having to live with someone else, especially where this is someone previously unknown or not well known, is an added difficulty these children often have to face.

Some sources felt that children who were being cared for by others were less likely to attend school, because their schooling was not taken as seriously, nor monitored as closely, as their own parents would have done.

9.2.5 HIV, AIDS and sickness as barriers

HIV is intricately interwoven with loss of income and poverty. As breadwinners fall ill or die, there is decreased income to meet children's basic needs, with a simultaneous increased expenditure on accessing health care and treatment. Children who do not have sufficient food lack the ability to concentrate and perform adequately at school. In certain instances they may need to look for food, money or work.

Children may be absent from school while caring for sick relatives, accompanying ill relatives to medical treatment facilities, or attending funerals and other mourning rituals. It is also likely that in households where there are individuals suffering with HIV or AIDS-related conditions, children experience greater emotional distress, may be ill or infected themselves, and also have less stability and security in their primary attachment relationships. Where families are directly affected by HIV and AIDS, the children are at greater risk of experiencing depression and anxiety related to anticipated or actual bereavement and loss of financial, social and emotional support.

> F: Tell me what problems Sipho will have in school and with his learning because there is another person in his family who is sick.
> P4: Maybe he cannot do his homework because the sick person is coughing and disturbing him. Also all the time he will be thinking about the person who is sick and he won't be able to concentrate and his learning will be slow.
> F: What are other problems that he will have?
> P3: Because there is a sick person at home Sipho will have to help the person all the time. Then maybe he will be absent from school and he will miss a lot of schoolwork.
> P5: Maybe, sometimes Sipho has to take the sick person to the doctor or the hospital.

Then he will not have enough time for schoolwork and he will also be absent.
P4: Sometimes when Sipho goes to school, he will be thinking all the time about the person at home who is sick (Learners, rural primary school).

Stigma and discrimination is a major component of the experience of HIV and AIDS. In all of the focus groups, there were many references to stigma related to HIV:

F: Why do you think people use these other words for HIV?
P: It is because they don't want to show that they know they are infected.
P: I fear being infected because people will talk about you (Learner, urban, combined school).

Learners of both genders tended to blame girls for the transmission of HIV. Grade 3 learners from all of the primary schools in this sample expressed a belief that simply being with girls, falling in love with girls, or being sexually active with girls would lead to the transmission of the virus.

He said we should not love girls because then we'll both get thin. (Learner, rural primary school).

When you love a girl, that girl will infect you because you get HIV from girls (Learner, rural primary school).

Learners commented that discrimination related to perception of their own, or family members' HIV status could lead to exclusion and harassment in the learning context. In all grade 9 groups, learners talked about the infected person being treated well or badly. The difference was often due to the moral distinction between infection through sexual activity (morally reprehensible) and contact with blood, etc. (morally blameless).

A common theme in the voices of young learners was fear of death and sickness. The responses to each question (placed right, in brackets) are telling:

I am happy that both my parents are still alive. (What do you like about your life?)
I wish no one would die at home. (What would you change about your life?)
I am still alive (What do you like about yourself?)

9.3 Extent of HIV and AIDS

HIV and AIDS is said to be pandemic in South Africa and KZN has one of the highest rates of infection in the country. According to the report of the Department of Health "National HIV and Syphilis Sero-prevalence Survey in South Africa 2007" published in 2008, which looks at HIV

prevalence among pregnant women, the national prevalence rate was 28.0% in 2007[4]. Table 55 overleaf shows how this has changed over time and per province. It will be noted that KZN has the highest prevalence.

Further statistics are based on the report of the "South African National HIV Prevalence, HIV Incidence, Behaviour and Communication Survey, 2005"[5]. In this survey, a sample of people were chosen to represent the general population, 55% of whom agreed to give a blood sample to be anonymously tested for HIV. The report contains estimates of HIV prevalence in various groups of people, derived from this general population sample. This is a household survey and some sample sizes are small. A different picture emerges from this report; as is seen in Table 56.

These differences in statistics are acknowledged and short-comings of both studies are outlined. The website offers the following national estimate:

Based on a wide range of data, including the household and antenatal studies, UNAIDS/WHO in July 2008 published an estimate of 18.1% prevalence in those aged 15-49 years old at the end of 2007. Their low and high estimates are 15.4% and 20.9% respectively. According to their own estimate of total population (which is another contentious issue), this implies that around 5.7 million South Africans were living with HIV at the end of 2007, including 280,000 children under 15 years old[6].

Table 55: Estimate HIV prevalence among antenatal clinic attendees, by province, 2007

Province	2001 prev %	2002 prev %	2003 prev %	2004 prev %	2005 prev %	2006 prev %	2007 prev %
KwaZulu-Natal	33.5	36.5	37.5	40.7	39.1	39.1	37.4
Mpumalanga	29.2	28.6	32.6	30.8	34.8	32.1	32
Free State	30.1	28.8	30.1	29.5	30.3	31.1	33.5
Gauteng	29.8	31.6	29.6	33.1	32.4	30.8	30.3
North West	25.2	26.2	29.9	26.7	31.8	29	29
Eastern Cape	21.7	23.6	27.1	28	29.5	28.6	26
Limpopo	14.5	15.6	17.5	19.3	21.5	20.6	18.5
Northern Cape	15.9	15.1	16.7	17.6	18.5	15.6	16.1
Western Cape	8.6	12.4	13.1	15.4	15.7	15.1	12.6
National	24.8	26.5	27.9	29.5	30.2	29.1	28

4 http://www.avert.org/safricastats.htm

5 *Ibid*.

6 *Ibid*. Their reference is UNAIDS/WHO 2008 Report on the global AIDS epidemic.

Table 56: Estimate HIV prevalence from household survey, by province, 2005

Province	Number surveyed	Prevalence %
KwaZulu-Natal	2 729	16.5
Mpumalanga	1 224	15.2
Free State	1 066	12.6
North West	1 056	10.9
Gauteng	2 430	10.8
Eastern Cape	2 428	8.9
Limpopo	1 570	8
Northern Cape	1 144	5.4
Western Cape	2 204	1.9
Total	1 5851	10.8

It was estimated that in 2005, South Africa had 3.36 million orphaned children, as shown in the Table 57 below. In 2006, KZN has the joint highest percentage of children who are orphans and the highest number of orphans[7].

Table 57: The number and proportion of all orphans living in South Africa by age[8]

Age Group	2004		2005	
	Number	%	Number	%
0-5 years	571,319	10	570,418	9
6-12 years	1,398,034	20	1,372,169	20
13-17 years	1,316,985	27	1,417,918	28
SA	3,286,337	18	3,360,505	19

7 Statistics South Africa (2003 to 2007) *General Household Survey 2002*; *General Household Survey 2003; General Household Survey 2004; General Household Survey 2005; General Household Survey 2006.* Pretoria, Cape Town: Statistics South Africa. Analysis by Marera. D.S., Children's Institute, UCT. Found in Proudlock, P. *et al* (Eds). (2008) *South African Child Gauge 2007/2008*. Cape Town: Children's Institute, University of Cape Town. p. 67.

8 Statistics South Africa (2005; 2006) General Household Survey 2004; General Household Survey 2005. Pretoria, Cape Town: Statistics South Africa. Analysis by Debbie Budlender, Centre for Actuarial Research, UCT. Accessed at: www.childrencount.ci.org.za. © 2006. Children's Institute, University of Cape Town. http://www.childrencount.ci.org.za/pdf/orphan_all_age_table.pdf

Table 58: The number and proportion+ of all orphans living in South Africa by province

Province	2002		2006	
	Number*	%	Number	%
Eastern Cape	555,000	20	816,000	26
Free State	189,000	19	284,000	25
Gauteng	403,000	15	392,000	14
KZN	750,000	20	987,000	26
Limpopo	433,000	17	481,000	18
Mpumalanga	199,000	15	286,000	20
Northern Cape	44,000	15	52,000	15
North West	268,000	19	281,000	20
Western Cape	164,000	10	198,000	13
South Africa	3,006,000	17	3,768,000	21

Notes on Table 58:
*Numbers have been rounded off to the nearest thousand.
+ These numbers indicate all orphans, that is maternal orphans (whose mother has died but whose father is alive), paternal orphans (whose father has died but whose mother is alive) and double orphans (whose mother and father have both died).

By these figures, one in four children attending school in KZN is an orphan. This excludes children vulnerable due to taking other children into their household, and children infected with HIV. As the following table shows, there are relatively few children who live in their own homes and are looked after by a non-adult, after their parents have passed away[9].

Table 59: The number and proportion of children living in child-headed households in South Africa by province

Province	2004		2005	
	Number	%	Number	%
Eastern Cape	28,718	0.9	27,280	0.9
Free State	3,733	0.4	7,877	0.7
Gauteng	1,850	0.1	5,306	0.2
KZN	11,044	0.3	15,152	0.4
Limpopo	36,438	1.4	45,795	1.8
Mpumalanga	7,197	0.6	5,945	0.4
North West	14,680	1.0	9,156	0.6
Northern Cape	98.179001 (sic)	0.0	474	0.1
Western Cape	626.32721 (sic)	0.0	1,580	0.1

9 Statistics South Africa (2005; 2006) General Household Survey 2004; General Household Survey 2005. Pretoria, Cape Town: Statistics South Africa. Analysis by Debbie Budlender, Centre for Actuarial Research, UCT. Accessed at: www.childrencount.ci.org.za. © 2006 Children's Institute, University of Cape Town. http://www.childrencount.ci.org.za/pdf/childheaded_province_table.pdf

9.4 Effects of HIV and AIDS on learning

In KZN, HIV prevalence figures range between 37.4% (Department of Health 2007), 16.5% (household survey 2005) and 20.9% (UNAIDS/WHO). Whichever way it is looked at, KZN has the highest number and proportion of South Africans living with HIV. Statistics on death caused by an AIDS-related disease are highly unreliable since people do not die of AIDS but of another disease and thus we cannot be sure how many people have died due to this disease. However, if 20.9% of people in KZN are HIV+, it is accurate to assume that a number of children are living in households that have sick people in them and a number have lost one or both parents.

A number of issues emerge when dealing with children that are affected by HIV and AIDS. This is an enormous topic and only a few scenarios are outlined below. The first is the obvious loss of one or more parents which means children's sense of security and source of love is removed. This has severe psychosocial impacts on the child who may loose all concentration at school, turn to bullying or bed wetting, or feel that they do not belong and this may have ramifications for life. Children who are orphaned are most often taken into another household. Here, love and care may be abundant, in which case most children adapt and recover from orphanhood. However, there are cases where children are abused in the new households either physically, verbally or sexually. Or in other cases, the orphans are not loved and cared for like at home and they again feel a loss of love and belonging. Orphans can be stigmatized by their peers and excluded from activities. Although children who are looked after by people other than their parents are liable for a foster care grant of R680 per month (from April 2009[10]) there is anecdotal evidence that this is not always spent on the welfare of the orphans, which is quite likely, given the poverty status of many rural households in KZN. Increasingly, we are seeing a new definition of a "double orphan": orphans who are absorbed into a new household, only for that household to lose its adults so that the child has to be moved into a second household.

Children who have one or more sick parents are also adversely affected. They may be ostracized by their peers and evidently some of them feel guilt or responsibility. Their household resources might dwindle if one parent was working and is now unemployed, causing hunger or lack of school fees or school uniform. They may attend school erratically if they stay home to look after a sick person or do household or agricultural chores that the sick person normally does. Feelings of dread and fear may be worse if one parent has already passed away and the remaining one begins to get sick. Such anxiety can clearly have very adverse effects on learning.

There is another category of vulnerable children that is often overlooked and those are children in healthy households that take in new children. The resources of the household are stretched by the absorption of the new kids and it can take up to 18 months to receive the foster care grant, in some areas. The original children in the household suffer from fewer resources, including perhaps less food and less money for school fees and uniforms, and may also live in more cramped situations, since few houses are extended to allow for the new children.

10 http://www.blacksash.org.za/index.php?option=com_content&view=article&id=894&Itemid=175

And finally there are the children who are infected by HIV. These children may get sick often, thus holding a high absentee rate. They may be on anti-retroviral therapy (ARVs) but these have massive side effects and need to be taken in a strict regimen with food.

All of these factors affect children's ability to attend school and to concentrate and perform well there.

9.5 Factors that motivate and facilitate learning and promote resilience

The study revealed that learners do participate in learning processes, and have demonstrated resilience in the face of many obstacles. Several factors were identified by learners as facilitating learning. These included facilitation by the teacher (the teacher explaining content), and the learner playing an active role in the education process (for example, the learner actively asking the teacher for help). Following instructions and rules (i.e., being obedient) was identified by learners as being important for helping one to learn, particularly so in more rural contexts where obedience, rather than questioning or inquisitiveness, was encouraged. Engaging in discussion with the teacher and participating in class were seen as means to enhance school performance, leading to an increase in marks and generally assisting with learning. Doing homework, reading, revising and reviewing work were also identified as facilitating learning. The school feeding scheme was an important factor in facilitating school attendance.

The participants commented that learning was necessary to gain skills so that one may get a job, have a high earning potential and help the community. However, learners seemed to see only a limited range of job opportunities available to them. For example, most learners at a peri-urban primary school wished to be security guards, policemen, nurses or teachers.

A significant source of resilience was having an attachment figure, preferably parents, or in the absence of parents, at least one reliable adult from whom a child could gain security, food, a stable home and a predictable routine. This underscores the emotional strain children feel when they lose their attachment figure.

In one school, attending school was identified as the most important thing that the children like about their lives. This finding is supported by recent literature about the importance of attending school as a means of promoting resilience (Killian, 2004; Richter, 2003). Another factor, which was identified as promoting resilience and coping, was having friends who could help one to forget, or be distracted from, negative experiences.

9.6 Concluding comments

The study revealed that the all-pervasive, over-riding barrier to basic education was extreme poverty and social marginalization. It emerges as an all-encompassing social, economic, and health phenomenon. There is no doubt that poverty impedes access to education for children, and limits the range of positive experiences they can have in the educational system. Furthermore, the study indicates that poverty seems to be part of a web of human rights violation that children and their families experience in this context. There is stark evidence of unfulfilled basic needs, widespread hunger amongst school children and their families, and extreme neglect of the wellbeing of children. People struggle without the political influence to change the situation. In addition, poverty seems to be chronic and intergenerational. The questions that this study raises are: What role do political leaders need to play to ensure that these communities are empowered to access their constitutional rights? How can social and cultural capital in this community be consolidated so as to break down the exclusionary cycle of poverty?

The study also revealed that with an HIV and AIDS affected family comes a downward spiral of exclusions: economic problems; poverty; the trauma of discrimination and stigmatization; fractured families; inability to meet costs of schooling; food insecurity; difficulties meeting other basic needs; poor health; and vulnerability to abuse. For example, the HIV and AIDS pandemic has exacerbated the effects of violence and poverty. The findings suggest an urgent need to intervene in the lives of these children and their families. A system that will enable *systematic monitoring* of the impact of the pandemic is fundamental to any kind of intervention. For example, although the child support grant is available to families affected by HIV and AIDS, there are barriers to accessing this support. While this is not something an education system can ensure, it is something that a department of education can raise with the social development cluster.

Themes related to powerlessness emerged across the data sets from various participants. Even teachers, parents/caregivers, and community members seem powerless to question pressures on learners such as payment of school fees; school uniforms; lack of learning resources such as books and pens; the practice of corporal punishment; poor infrastructure in schools; poor commitment and accountability on the part of teachers; and corruption in schools. This is clearly within the ambit of the department of education.

The findings in the study point to an urgent need to address exclusionary pressures within schools and other centres of learning that hinder access to education. There were clear signs of an intricate web of education-related barriers which play out in centres of learning in this context. A major concern is that principles and imperatives in educational policy are often violated. The South African School's Act of 1996 mandates that children may not be discriminated against on financial grounds. Nevertheless, learners frequently spoke of difficulties experienced in relation to the payment of school fees and the school uniforms.

In the analysis of the data, it seems that 'vulnerability' is a cross cutting face of oppression in this context. Through the voices of participants in this study, it emerges that children and families who are vulnerable are subjected to a wide range of social and economic pressures: psycho-social distress; fragile families; stigma; discrimination; social isolation; lack of social support; a social welfare system that is almost impossible to access; fear of violence and HIV and AIDS; fear of death and sickness; economic deprivation; loss of educational opportunity; exclusionary pressures within centres of learning; social risk factors such as sexual and physical abuse; substance abuse risk; burdensome domestic responsibilities; and fear for their own future.

However, it must be mentioned that there are examples of caring schooling environments where attempts are made to facilitate children's learning and wellbeing. Our data does indicate that there were teachers who showed authentic instances of care. Some learners spoke positively about their school environment. In fact, it would be misleading to represent the research site as a context in which only barriers to learning existed. Learners do participate in learning processes, and have demonstrated resilience in the face of many obstacles. Education was perceived to be strongly related to increased opportunities for employment, one's earning potential, and being able to help one's community.

10. The budget and education finance

It is essential to examine changes in the budget over a period of time. This section details the national education budget and then the provincial allocation. This is broken down to programme level, personnel expenditure, learner allocations and expenditure by district. The latter information was very hard to come by and analyses at this level seem to reside only with the department and are not available publicly. A short case study is offered comparing a quintile 1 and 5 school. The quintile 5 is able to charge substantial school fees and allocates this money to employing more teachers, and it is assumed that this increases the quality of education given to learners. Certainly, data reviewed in this report suggests that quintile 5 schools offer a higher standard of education than quintile 1 schools.

10.1 National and provincial education budgets

In the 1994/05 financial year, the national government allocated R30 billion for education expenditure in South Africa. By the 2009/10 financial year, this had grown to R124 billion[1], representing an increase over 16 years of 316%, or roughly 10% per annum. It is noteworthy that annual budget increases for education during the period 1994/05 to 2003/04 did not keep pace with inflation, so in real terms there was a decline in expenditure during this time. After 2003/04 there was a recovery and by 2007/08 expenditure was 20% higher in real terms than in 1996/97[2].

Table 60: Provincial education expenditure 2005/06 to 2011/12

(R Millions)	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
	Outcome			Pre-audited	Medium term estimates		
EasternCape	11 523	12 873	14 475	17 869	19 448	21 887	23 771
FreeState	4 916	5 346	5 797	6 713	7 383	8 124	8 734
Gauteng	10 406	11 623	13 829	16 709	18 987	20 945	23 147
KwaZulu-Natal	15 030	16 219	18 407	22 983	24 810	27 878	30 372
Limpopo	10 362	11 367	11 815	14 692	16 362	18 095	19 594
Mpumalanga	5 780	6 273	7 823	9 361	10 073	11 208	12 157
Northern Cape	1 563	1 643	2 288	2 852	2 979	3 309	3 621
NorthWest	5 951	6 686	6 206	7 179	8 145	9 223	10 078
Western Cape	6 449	6 920	7 738	9 192	10 346	11 333	12 303
Total	71 980	78 950	88 378	107 550	118 533	132 002	143 777

1 National Treasury. *Provincial Budgets: 2009/2010 Financial Year Third Quarter Year-to-Date Provincial Budgets and Expenditure Report.*

2 *Ibid.*

Allied to the real decline in education expenditure during the early years of the new government was a decline in education's share of government expenditure, which went from 22% in 1994 to 16% in 2005[3]. Thereafter it increased to an average of 17.7% between 2005/06 and 2008/09. By 2011/12, spending on education is projected to be 18.2% of total government expenditure, the largest slice of government spending[4].

Total education spending in South Africa was 5.5% of GDP in 2008/09, which is comparable to similar middle income countries, but still below the 'optimal growth and development' level of 6% recommended by the Organization for Economic Cooperation and Development (OECD)[5].

Table 60 above compares provincial education expenditure during the period 2005/06 to 2011/12. It shows that total provincial education expenditure is projected to grow from R107.5 billion in 2008/09 to R143.7 billion in 2011/12, an annual growth rate of 10.2%. This is lower than the annual growth rate between 2005/06 and 2009/09 of 14.3%, which was largely due to larger personnel budgets, the introduction of no-fee schools and an expanding infrastructure programme. This latter point is borne out by the experience of the infrastructure planning section in KwaZulu-Natal, who indicated that until 2005/06 they had 'no budget' for infrastructure, but thereafter were in a position to make real inroads in addressing the backlogs in the province.

Figure 31: Percentage annual growth in provincial education expenditure

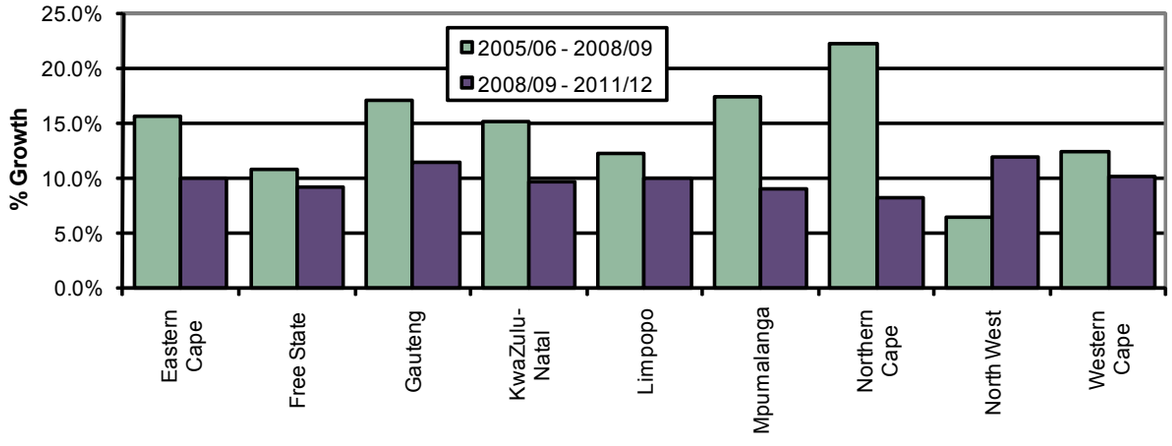


Figure 31 shows the percentage annual growth in provincial education expenditure, comparing the periods 2005/06 to 2011/12. The graph shows that KwaZulu-Natal's expenditure grew by

3 *Ibid.*

4 National Treasury and Provincial Budgets and Expenditure Review 2005/06 – 2011/12.

5 *Ibid.*

15.2% per annum in the first period, which placed it in fifth position. It is expected to decline to an average annual growth of less than 10% between 2009/10 and 2011/12, placing the province in sixth position overall.

The proportion of the provincial budget dedicated to education in KwaZulu-Natal has fallen steadily from 45.1% in 2005/06 to 41% in 2008/09, although it is projected to improve slightly to 42.4% by 2011/12[6]. This trend, driven largely by competing spending priorities such as health and social development, is also observed in the other provinces. Education expenditure is by no means the lowest in proportional terms in KwaZulu-Natal. Overall, the province was ranked sixth in 2005/06 in terms of the percentage of the provincial budget allocated to education, but will climb to fourth in 2010/11 if projected expenditure materialises. This may herald a long term improvement in the performance of the province in educational terms, depending how the funds are used, and how it translates in per learner expenditure terms.

10.2 The provincial education budget by programme

Table 61 below shows the funding allocation per programme as announced in the 2009/10 Education Budget Speech by the MEC for Education, Mr Senzo Mchunu[7]. It is no surprise that Programme 2: Public ordinary schools, consisting of public and secondary schools as well as programmes such as the National Schools Nutrition Programme (NSNP), dominates budgeted expenditure. Infrastructure delivery and resource targeting, which in 2009/2010 provided for no-fee schools in quintiles 1 and 2 were also part of this programme.

As a point of interest, the allocation within Programme 2 of R11.7 billion for public primary schools represents an average of R6,800 for each primary school learner in the province in 2009[8]. The allocation of R8.6 billion for public secondary schools represents an average expenditure of R8,906 per learner[9]. These are not insubstantial sums of money, and fixed at current prices, would represent an investment of close to R100,000 for a theoretical learner to complete all grades (R6,800 x grade R to 7) + (R8,906 x grade 8 to 12). It also provides an indication of the huge financial wastage involved when learners fail to reach and pass grade 12.

After Programme 2, the next largest programme item in expenditure terms was Administration, which was allocated R1.2 billion (5% of expenditure) in 2009/2010. This includes R775 million for 'education management' and just R39 million for EMIS, despite the fact that these two are clearly interlinked, and that without quality education statistics, the management of education

6 *Ibid.*

7 Senzo Mchunu, MEC for Education. KwaZulu-Natal Department of Education Budget Speech 2009/10.

8 KwaZulu-Natal Department of Education. (2009). *Annual Survey 2009.*

9 Includes grade R.

Table 61: Provincial education budget by programme

Programme	Allocation (R Millions)	Percentage
Programme 1 : Administration	R 1 226	5%
Programme 2 : Public ordinary schools	R 21 277	86%
- Public primary	R11 700	
- Public secondary	R8 600	
Programme 3 : Independent schools	R 56	0.2%
Programme 4: Public special schools	R 539	2%
Programme 5 : FET	R 561	2%
Programme 6 : ABET	R 129	1%
Programme 7 : ECD	R 336	1%
Programme 8 : Auxilliary and associated services	R 460	2%
Special functions	R 25	0.1%
Total	R 24 609	100%

is likely to be ineffective. The MEC did however acknowledge that data management and information systems "present the Department with challenges" and indicated a renewed focus on improving the quality of EMIS to improve decision-making and policy choices. Within the R39 million allocated to EMIS was an additional R29 million to bolster the rollout of SA-SAMS and LURITS:

> The main thrust of the education management information and administration systems plan is to provide schools with the South African Schools Administration System so that the quality and integrity of data collected from schools are enhanced. The other is to implement a system called Learner Unit Record and Information Tracking System (LURITS) which envisages tracking the progress of learners from the time they enter the education system to the time they exit. This will enable the department to plan better and to make appropriate policy choices based on reliable and accurate data[10].

Special schools, FET (Further Education and Training), and auxiliary services (exams etc) accounted for approximately R½ billion each or around 2% of the total budget. This was followed by ABET (adult basic education and training), ECD (early childhood development), and independent schools.

10 Senzo Mchunu, MEC for Education. KwaZulu-Natal Department of Education Budget Speech 2009/10.

There are two key programmes that are expected to receive greater slices of the provincial education budget in the next two years[11]. These are Programme 4: Public special schools, which will see its slice of the budget increase from 2% to 3% (over R1 billion in 2011/2012) and Programme 7: Early childhood development, expected to increase from 1% to 2% (to R700 million). Both of these programmes will be expanded considerably over the next few years, and the budget allowances anticipate this.

In the case of Programme 4, there are many learners in the province with special needs who are either not in school or are not able to access an appropriate education for their needs. White Paper 6 anticipates an inclusive education system including the expansion of LSEN schools and 'mainstreaming' of learners with mild learning disabilities, hence the need for additional funding.

For Programme 7, a decision was taken by the National Department of Education to integrate grade R into mainstream schooling - the target being that by 2010 all public primary schools offer grade R and are funded accordingly. In 2009, 86% of primary schools in KwaZulu-Natal offered grade R. The demand for educators, classrooms and teaching materials in this grade is likely to be strong for the foreseeable future as schools formalise their provision of grade R and enrolment increases.

10.2.1 Personnel expenditure

Figure 32 below compares provinces in terms of the percentage share of education expenditure that is accounted for by education personnel (i.e. salaries). This data is from a 2009/10 third quarter review of provincial budgets and expenditure by the national treasury[12]. What it shows is that personnel costs accounted for between 75% and 78.5% of total provincial education expenditure. Furthermore, at 78%, KwaZulu-Natal spends the second highest proportion of all provinces on salaries, second only to Limpopo at 79%.

If the province were (theoretically) able to reduce its personnel costs down from 78% to the level of Gauteng, which was 75%, it could have freed up an estimated R ¾ billion in 2009/2010. This is enough to increase the current infrastructure budget by 50%, or more than double the current allocation for the provincial segment of the NSNP.

Although there is pressure on all provinces to reduce their personnel costs, this is easier said than done. In 2008, the provincial LER for state-paid educators was 33.7, which was about the same as the national average for 2008[13]. Given that some schools have got into the practice of supplying inflated enrolment figures to the Department, the 'true' LER for the province may

11 Provincial Treasury (28th February 2008). 2008-09 *Budget Statements: Vote 5: Education. Pietermaritzburg*.

12 National Treasury. (2010) *Provincial Budgets: 2009/2010 Financial Year Third Quarter Year-to-Date Provincial Budgets and Expenditure Report*. http://www.treasury.gov.za/comm_media/press/2010/2010031001.pdf

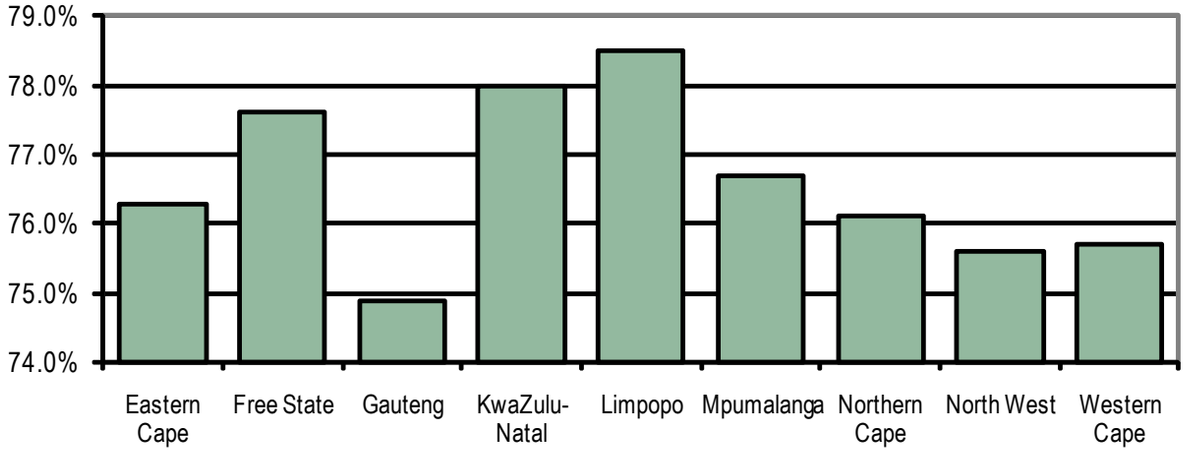
13 National Department of Education EMIS. (September 2008). *School Realities 2008*. http://www.education.gov.za

be lower than this. In other words, with better controls on data (i.e. learner numbers) through the implementation of school administration systems like SA-SAMS and the LURITS learner tracking system mentioned earlier, it may be possible for the department to reduce personnel costs in the long term. This is a key benefit of improving EMIS in the province and of making districts really accountable for the data that schools provide.

The national treasury also makes the following point:

> It is particularly through expenditure on goods and services and capital payments that expenditure can be redistributed to schools that have been historically disadvantaged in terms of resources and infrastructure backlogs. Personnel expenditure, on the other hand, follows the post-provisioning norms, which are merely determined by enrolment patterns, and are thus less redistributive.[14]

Figure 32: Percentage share of education personnel of provincial education budget 2009/10



10.2.2 Expenditure by economic classification

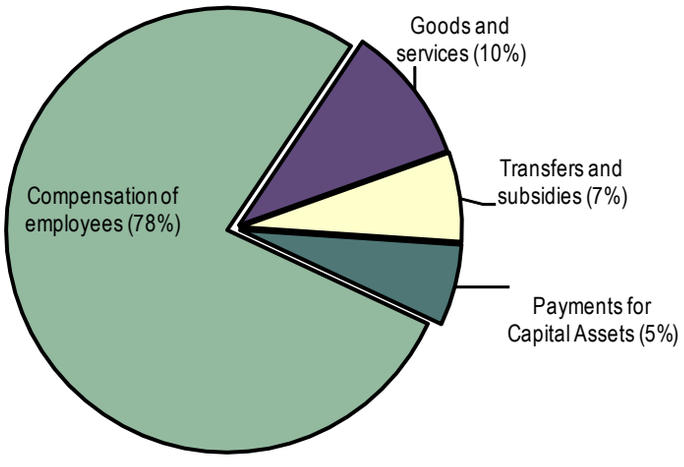
Figure 33 shows the proportion of education expenditure by each economic classification, according to the 2008/09 main budget[15]. The figure illustrates the extent to which personnel dominates education expenditure. This is not surprising, given the nature of the sector. Goods and services, which account for 10% of total expenditure, includes the Norms and Standards for School Funding allocation, which was R1.5 billion in 2009/2010. This represents a direct attempt to redistribute resources in favour of schools serving poorer communities, although the department continues to experience procurement problems associated with teaching and learning materials, with some schools complaining that they do not receive the books and stationery they

14 National Treasury and Provincial Budgets and Expenditure Review 2005/06 – 2011/12.

15 Provincial Treasury (28th February 2008). *2008-09 Budget Statements: Vote 5: Education*. Pietermaritzburg.

ordered on time at the start of the school year. Hopefully these problems will be resolved over time since they generate quite a lot of bad publicity for the department.

Figure 33: Expenditure by economic classification, estimated actual 2008/09



Payments for capital assets account for 5% of education expenditure and include expenditure on infrastructure. The projected amount R2.2 billion for the 2010/2011 financial year[16] is a great improvement on previous year's allocations (particularly pre 2004) but will need to continue to grow to make an impact on the projected total backlog of R30 billion discussed elsewhere in this report.

Transfers and subsidies reflect payments made to section 21 schools, discussed in a separate section of this report, as well as funds made available for no-fee schools. The proportion of schools with section 21 status in the province was 46% in 2009, but within this there were major variations ranging from just 23% in Sisonke to 68% in Vryheid. This discrepancy warrants further investigation since it clearly has an impact on the procurement load of the districts concerned.

The number of no-fee schools in KwaZulu-Natal was 3,513 in 2009, representing all schools in quintiles 1 and 2. It was announced in November 2009 that schools in quintile 3 would also be declared no-fee schools as from January 2010[17]. This will add another 1,262 schools in the province, bringing the total to 4,775, or 80% of all schools. This will certainly provide some relief for poor families and hopefully improve access for those learners who struggled to pay

16 *Ibid.*

17 Quintile 3 No Fee Schools Notice 20091106 - National Gazette No 32683 of 06-Nov-2009, Volume 533 and Provincial Resource Targeting Table – based on assumed 2009 learner numbers.

fees. It places a greater financial responsibility on the department though, both in terms of meeting the recommended per-learner targets for school quintiles and in having to make sure that schools which previously would have relied on school fees for day-to-day expenses are given a cash transfer to compensate. The table of national per-learner targets for quintiles for 2010 through to 2012 were also announced in November 2009 (see table below). The figures for 2010 imply that the department will need around R1.6 billion to meet its school funding norms commitments.

Table 62: National table of targets for the school quintiles (2010 - 2012)

Quintile	Rands per learner		
	2010	2011*	2012*
Quintile 1	R 855	R 901	R 943
Quintile 2	R 784	R 826	R 865
Quintile 3	R 641	R 675	R 707
Quintile 4	R 428	R 451	R 472
Quintile 5	R 147	R 155	R 162
Overall	R 571	R 602	R 630
No fee threshold	R 784	R 826	R 865

*Indicative - CPIX inflation rate adjusted

10.2.3 Per learner allocations

Earlier it was noted that the per learner allocation in the 2009/2010 education budget approximated to R6,800 for primary school learners and R8,906 for secondary school learners. This represents an average of R7,587 per learner in the public ordinary school system, derived by dividing budgeted total expenditure on public primary and secondary schools by total learners in grades R to 12[18].

The figures shown overleaf compare per learner allocations across provinces for several years. They differ from the above estimates since they were determined differently, but they clearly demonstrate that KwaZulu-Natal's per learner allocation has been amongst the lowest in 2005/06 and 2006/07 (7th and 8th) and from 2007/08 onwards was the lowest of all provinces. As the graph, which compares the per learner spend for 2009/10 shows, the gap between KwaZulu-Natal (R8,952) and the highest per capita spending province (the Northern Cape at R11,206) was R2,254, a difference of 25%. Although much has been made of the equalisation of education spending between provinces, this per capita spending gap remains problematic

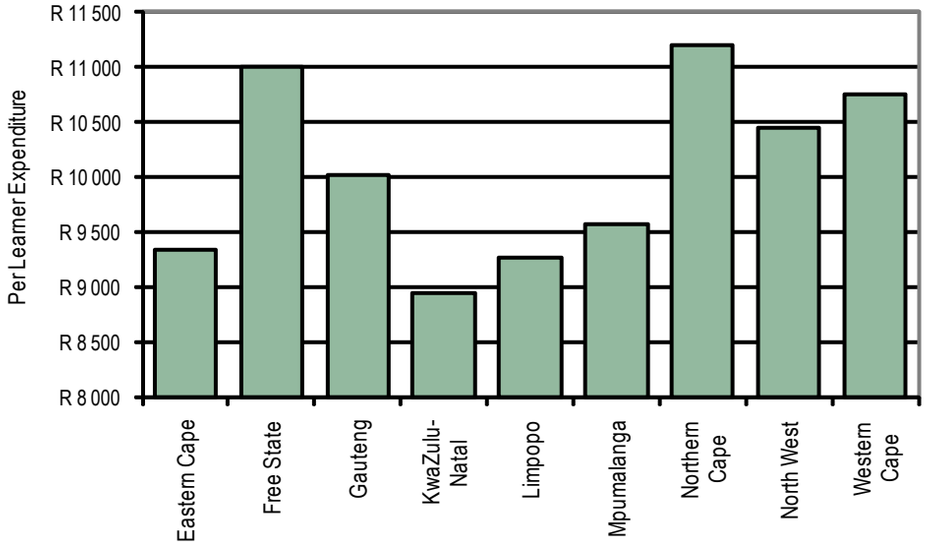
18 This is only a crude estimate of per-learner expenditure due to the exclusion of programmes such as the NSNP, professional services to schools etc. The national treasury estimates may exclude grade R learners.

and surely limits the flexibility of the department to embark on new initiatives to improve the quality of education.

Table 63: Per learner allocations across provinces for several years

R million	Outcome			Pre-audited	Medium-term estimates		
	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Eastern Cape	R 5 222	R 6 129	R 6 765	R 8 591	R 9 350	R 10 523	R 11 428
Free State	R 7 133	R 7 793	R 8 516	R 10 011	R 11 010	R 12 115	R 13 025
Gauteng	R 5 963	R 6 237	R 7 342	R 8 822	R 10 025	R 11 058	R 12 221
KwaZulu-Natal	R 5 526	R 5 859	R 6 461	R 8 293	R 8 952	R 10 059	R 10 959
Limpopo	R 5 435	R 6 417	R 6 626	R 8 326	R 9 272	R 10 254	R 11 104
Mpumalanga	R 6 322	R 5 742	R 7 192	R 8 902	R 9 580	R 10 659	R 11 561
Northern Cape	R 7 440	R 6 276	R 8 648	R 10 727	R 11 206	R 12 445	R 13 618
North West	R 7 034	R 8 660	R 8 238	R 9 212	R 10 453	R 11 836	R 12 932
Western Cape	R 6 580	R 7 072	R 7 985	R 9 555	R 10 755	R 11 780	R 12 789
National average	R 6 295	R 6 687	R 7 530	R 9 160	R 10 067	R 11 192	R 12 182

Figure 34: Per learner allocations across provinces 2009/10



The national treasury concludes its review of provincial budgets and expenditure by making a comment that is pertinent to KwaZulu-Natal:

Provinces where per learner expenditure tapers off in the outer years of the MTEF period will need to provide more funds for non-personnel non-capital resources to narrow the gap more

quickly. Considering the ongoing need for non-personnel non-capital resources, a key question is whether resources within the education sector are allocated appropriately[19].

10.2.4 Expenditure by district

Table 64 below shows the estimated per district budget allocation in 2008/09[20]. The data is reported by Municipal Districts and hence eThekwini, which comprises the districts of Umlazi and Pinetown, is treated as one. It was hoped that this data would provide some clues as to the real district-based allocation of resources, including personnel, capital expenditure, resource targeting and so forth. A brief glance at the budget allocation for Umgungundlovu (yielding a massive apparent per learner expenditure of R24,666) shows that the data is not disaggregated in such a way that supports this kind of analysis.

Table 64: Estimated per district budget allocation 2008/09

District	Estimated per district budget allocation 2008/2009	Enrolment 2009	Indicative allocation per learner*
Amajuba	986 569	130 000	R 7 589
Empangeni	1 863 514	292 767	R 6 365
Ilembe	1 071 099	162 040	R 6 610
Obonjeni	1 677 668	228 164	R 7 353
Othukela	1 315 692	184 469	R 7 132
Ethekwini (Pinetown & Umlazi)	5 022 127	621 526	R 8 080
Sisonke	897 780	158 651	R 5 659
Ugu	1 493 545	215 284	R 6 938
Umgungundlovu	5 421 663	219 807	R 24 666
Umzinyathi	923 413	176 686	R 5 226
Vryheid	2 044 181	298 096	R 6 857
Total	22 717 251	2 687 490	R 8 453

*Derived for indicative purposes by dividing expenditure by learner numbers in the district – by no means a 'real' learner per capita expenditure estimate

Longer term it would be helpful to compare districts directly in terms of the actual resources they consume (adjusting for the head office effect in Umgungundlovu) so that one could see the extent to which financial resources are reaching the poorer districts and the relationship between school performance and district expenditure.

19 National Treasury and Provincial Budgets and Expenditure Review 2005/06 – 2011/12. Chapter 3 - Education.

20 From Provincial Treasury. *2008-09 Budget Statements: Vote 5: Education*. Pietermaritzburg.

10.3 Differing expenditure – a case of two schools

Much has been made of the equalization of inter-provincial education expenditure since 1994, and indeed great strides have been made in this direction. Initiatives such as the Norms and Standards for School Funding and no-fee schools have actively channelled funds in favour of poorer communities. Infrastructure programmes have targeted areas where education backlogs are greatest, and teacher upgrade programmes aim to improve the qualifications of educators, particularly in quintile 1 and 2 schools.

Despite the best efforts of the state, there is little it can do to offset the huge effect that levying school fees has on the resources available to schools in better-off communities. Poor communities in (mainly) rural areas, now have the advantage of not having to pay school fees, but these schools have to make do solely with what they get from the state. Schools in better off communities, such as many of those in quintile 5, can levy fees and mobilize considerable resources to benefit the children attending them.

Table 65: Differing expenditure and learner-educator ratios of a quintile 1 and quintile 5 school

Key Information	Gordon Road Girls	Siphiwesamangwe Primary
District	Umlazi	Othukela
School type	Primary	Primary
Enrolment Annual Survey 2009	585	585
Quintile	5	1
Fee status	Fee Paying	No Fee
Funding norms per Learner 2009/10	R 160	R 795
Total recurrent allocation per funding norms	R 84 800	R 370 423
School fees (estimate)	R 12 300	R 0
Fees collected in 2009 (estimate)	R 7 500 000	R 0
State paid educator posts	15	15
Governing body remunerated posts	24	0
Learner:educator ratio	15	39

Table 65 compares two schools at opposite ends of the funding spectrum. One is a quintile 5 school which receives the equivalent of R160 per learner for recurrent expenditure from the state. The other is a quintile 1 school, which receives R795. This represents a major difference in their recurrent allocations from the state, with the quintile 1 school receiving R285,000 more than the quintile 5 school. Thereafter the situation changes since the quintile 5 school was able to charge an annual school fee of R12,300 in 2009, yielding a total of R7,500,000 per annum.

One of the things it was able to do with this extra funding was pay for an additional 24 governing body posts, thus bring down its learner-educator ratio to 15. The quintile 1 school's learner-educator ratio by contrast was 39. Needless to say, these additional financial resources were also able to purchase extra learning materials, as well as pay for sports and other extra-mural facilities.

10.4 Concluding comments

The budget catches key tensions of education in KZN in monetary terms. The social justice project of a development state means that it directs most of its attention and spending to those most in need. This can be clearly seen at both national and provincial level through the quintile system, no-fee schools and the nutrition programmes. Nevertheless, 78% of the budget goes to salaries, leaving a small percentage over for interventions. Most of the money on these interventions goes to schools in rural areas that are difficult to monitor, resulting in a poor accounting of what is actually happening with the investment. Those schools most able to use the money in an effective manner are often schools in the upper quintiles, meaning that they actually get less of what is already a small proportion of the budget. It is a deep problematic that is hard to work around – those that most need the money spend it the least effectively, those that can use the money most effectively don't get much of it in the first place. This tension must be tempered by the realization that school fees play a massive role in sustaining quality education within quintile 4 and 5 schools, allowing for the State to spend its limited resources on the poorest communities.

11. Conclusion

Education in KwaZulu-Natal is at a key changing point in its history. Many of the grounding conditions for starting a campaign to improve quality in the province have been set in place: the different bureaucratic structures inherited from apartheid have been amalgamated; minimal educational infrastructure has been established; ambitious upgrading of existing teacher qualifications has been started up; redistribution of resource allocations towards schools serving the poorest communities is entrenched; a working compact between the unions and the department has been negotiated; systematic evaluation at grades 3, 6, 9 has begun.

Much of this has been done against a landscape of enormous suffering, poverty and sickness, with large parts of the educational system dysfunctional or underperforming. Nevertheless, the province is entering a new period in its educational trajectory where a shift happens from a focus on addressing past injustices to a concern over minimum standards of quality throughout the system. It is vital that this long term trajectory is understood, so that the reform process does not get caught up in negativity and pessimism. We are caught up in an educational process that is bigger than the individuals and institutions working within it; a process that unfolds with participants having only a partial and limited picture. Often, relevant events have happened before those involved have even half grasped their significance.

This Treasury Project has helped those of us who work in education in KZN to begin grappling with what is happening in the province, not only so that we can better understand what has happened and is happening, but also that we can begin to look ahead more intelligently and with slightly more focused vision. With a bigger vision of what is happening across the developing world and in South Africa in terms of improving quality in education we are better able to place current educational issues, controversies and struggles within a context that shows longer term and deeper developments not seen by those fighting daily battles on the ground. It also helps us set reasonable expectations and targets that recognize what can be done given current conditions, rather than falling in love with impossibility and setting ideals too high for us to achieve in the foreseeable future.

Changing the quality of education in a province is a long term process, beyond the working lifetime of individuals. We are fortunate in this country to have been a part of two phases in this process. The first has been to address the historical detritus left after apartheid in the most tangible ways possible, through curriculum change, pedagogic change, legal change, financial change, bureaucratic, infrastructural and administrative change. Although this does not address the very real social and economic poverty levels of the province as a whole, what it does do is put in place an increased ability to begin to respond to it. We are now entering a second phase where the struggle is to articulate and implement minimum standards and practices.

This does not mean that we should not be critically engaged with the current difficulties faced by education in the province. There are always different possible trajectories within a general trend, high roads and low roads, slower roads and faster roads, and these are determined by the choices and actions we take now, some of which this project has articulated. Hopefully this project will assist us in seeing both where we currently are and what good roads we can take towards improving the quality of education in our province.

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PROVINCIAL TREASURY
KWAZULU-NATAL

In February 2009, the Provincial Treasury KwaZulu-Natal awarded a contract to a group of researchers under the auspices of the School of Education and Development, University of KwaZulu Natal, to conduct a study on improving the quality of education in KwaZulu-Natal.

The outputs delivered included:

- A literature review on “What makes education work”
- A synthesis of statistical data and qualitative research on education in the province entitled “The state of education in KwaZulu-Natal”
- A map of schools in the province, detailing key variables related to teachers, learners, schools and districts; and
- A set of recommendations and costing based on the study, entitiled “Policy recommendations: Improving the quality of education in KwaZulu-Natal.”

This document is the report entitled “The state of education in KwaZulu-Natal.”