

# GENERAL EDUCATION SYSTEM QUALITY ASSESSMENT: COUNTRY REPORT SOUTH AFRICA

October 2013

This report is a result of a system-wide assessment of the quality of the education system in the country using the UNESCO General Education System Quality Analysis/Diagnosis Framework (GEQAF)



**basic education**

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

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## 1. Introduction

This report is a sector review of basic education in South Africa. It follows a workshop held at the Department of Basic Education (DBE) in Pretoria, South Africa, in November 2012. At this workshop various stakeholders from throughout the DBE participated in strategic discussions around how to improve the delivery of basic education using a new framework developed by UNESCO called the General Education Quality Analysis/Diagnosis Framework (GEQAF).

This report draws together analysis and priorities regarding the improvement of schooling in South Africa that emerged at this workshop and subsequently as the GEQAF has been used to systematically review the education sector.

The report starts with an overview of South Africa's unique history, making clear how this has influenced the current stage of country development in general and the current dynamics in the education system in particular. With this backdrop, the country's aspirations for overall development and the envisaged role of the education system in that is described. Whilst many remarkable achievements have been marked since the transition to democracy in 1994, there remain substantial and persistent challenges facing South Africa. All the major policy documents demonstrate that the education system has been tasked with a large role in addressing these challenges.

The South African education system is then introduced in Section 4, describing its overall structure as well as its achievements to date and remaining shortcomings. The point is made that the South African education system has made considerable progress towards so-called quantitative objectives around access to schooling but is severely underperforming on indicators of quality.

Section 5 interrogates the functioning of the education system in more detail, focussing in on defining intended learning competencies, equity in educational outcomes, the diversity of learners and their needs, the role of teachers and difficulties in supporting teachers, current assessment practices, the effectiveness of the curriculum on guiding learning, the governance institutions and processes, the financing of education and means to improve the efficiency of such spending.

A final section consolidates the analysis and the recommendations that are made throughout the report.

## 2. The country's development context

### a. The historical context shaping the development path

South Africa's unique and complex history has produced the country it is today, with its proud achievements and enormous challenges. South Africa has been ruled by two colonial powers (first Holland and then Britain), had a large settler population from various parts of the world and a larger native population with great linguistic and ethnic diversity. Although the country experienced relatively early *de facto* independence from colonial rule (in 1910) compared with the rest of Africa, it was considerably later (1994) that a transition to democracy with majority rule took place. Prior to 1994, non-white South Africans had always had restricted political rights, economic opportunities, geographical mobility and educational opportunities.

Since the negotiated transition to democracy in 1994, the African National Congress, who had led the resistance to the former regime, has been the ruling party. The enormous task of reform and transformation has not been easy and despite considerable progress large inequalities with respect to income, land ownership and education that reflect historical patterns persist nearly 20 years later.

### b. The socio-economic context

#### i. Demography

The South African population was estimated to be just under 52 million according to the 2011 census. It is a young population with a median age of 25 (Statistics SA, 2012: 20). The population grew rapidly during the past century. For instance, in 1961 the population was roughly 18 million. Over this same period of population growth access to schooling in South Africa has been massively expanded. The average years of education attained by black South Africans born in the 1940s was about four years. For black South Africans born since 1980 the average educational attainment is just above ten years (Taylor, 2010: 26). This massive expansion of education to a growing population, while a notable achievement, was arguably done without sufficient regard for quality (Crouch and Vinjevol, 2006). This is important historical context for understanding the current school system.

More recently, fertility rates have been declining – for whites this started in the 1950s and for blacks in the 1980s. Currently, the population is growing at about 1% annually and is predicted to be growing at about 0.5% by 2030. Declining fertility means that the school enrolments have already stabilised, and if anything have been shrinking in recent years. This affords some space to address issues of quality throughout the school system in the forthcoming years.

Another important demographic trend that has been taking place for many decades, despite some ultimately futile resistance under apartheid policy, is urbanisation. Currently, approximately 60% of South Africa's population reside in towns and cities. This is expected to increase to 70% by 2030 (NPC, 2012: 29). Although the population of children is somewhat less urbanised than the overall population, this trend may have important planning implications for school infrastructure planning, teacher deployment and language in education policy (classrooms in urban settings are typically diverse with respect to home language).

ii. The income distribution in the South African economy

Household data demonstrate that most measures of socio-economic status have been improving in recent years. Access to water and electricity, for example, has been steadily improving. Given South Africa's history of institutionalised inequality on the basis of race, it is pleasing that between-race income inequality is on a declining trend. According to estimates provided by Van der Berg (2010: 9), per capita income amongst the black population increased by 132% in real terms between 1970 and 2000, while for whites the increase was only 59%. This trend has continued since then – according to Stats SA (2012: 39) the nominal household income of white-headed households roughly doubled between 2001 and 2011, while that for black-headed households roughly tripled over the period. However, within-race inequality has been increasing in recent years with the result that overall inequality, as measured by the Gini coefficient or similar methods, remains unacceptably high.

Van der Berg (2010) argues that overall inequality in South Africa is mainly driven by wage inequality rather than historical access to wealth or by access to the fiscus. Labour market outcomes, in turn, are largely determined by differences in educational outcomes – amount of education as well as the quality of that education.

iii. The skills premium in the labour market

A vast international literature and growing South African literature use so-called earnings functions to estimate the impact of education on the probability of employment and on earnings. These techniques usually model earnings (or the probability of employment) on years of education, work experience and a selection of other characteristics hypothesised to affect earnings, such as race, gender and unionisation. The theoretical underpinnings of this approach lie in the human capital model, which suggests that education improves an individual's productivity which is rewarded in the labour market by higher earnings.

The traditional human capital model predicts diminishing marginal returns to education, i.e. each additional year of education yields a smaller return in the form of higher earnings. The South African labour market, however, does not conform to this pattern. Both Lam (1999) and Keswell and Poswell (2002) have shown that returns to education prior to grade 12 are very low and that strongly increasing returns accrue with the completion of matric and for each year thereafter. A major reason for this structure of returns is that there is no widely recognised qualification prior to grade 12 and that school-based grade progression policies are often fairly random and do not provide a consistent signal to the labour market. Therefore, the matric examination is an important hurdle for labour market success.

Household survey data show that more than 50% of South African youths do not hold a matric certificate. For this large group, low quality education in the early grades leading to drop-out before matric constitutes a poverty trap. One can therefore regard the low quality of education provided to the majority of poor children as a key obstacle to reducing income inequality.

The convex structure of returns to education also reflects the type of skills that are rewarded in the labour market. South Africa's mineral wealth and large agricultural sector have meant that natural resources have played an important role in the country's economic development. However, increased capital-intensiveness and a growing services sector now require higher-end skills in the labour market.

### **c. The cultural, ethnic, and linguistic context**

South Africa has enormous cultural, ethnic and linguistic diversity. The historical policy of separate development for different ethnic groups contributed to the divisions and tensions between groups. The new constitution and national policy documents, in contrast, pursues a process of transformation towards a non-racial and non-sexist society. Although there is now an active embrace of diversity, there are also practical challenges. This is particularly evident in the school system, which remains racially and socio-economically divided: While there has been considerable racial integration within the historically white part of the system, the historically black system is almost exclusively attended by poor black children. South Africa's linguistic diversity also presents practical challenges with respect to language in education policy. The current policy allows School Governing Bodies to decide on the language of instruction but encourages the use of home language instruction during the first three years of schooling and then a transition to English as the language of learning and teaching (LOLT) in the fourth grade. First language instruction in the first grades is supported by pedagogical theory (Cummins, 2000) but does not always operate seamlessly in South Africa: Many classrooms contain children with

various first languages, teachers are not always fluent in the pupils' first language, material development in all the languages is difficult, etc.

#### **d. The political context**

##### i. Governance and accountability

The recent establishment of the Department of Performance Monitoring and Evaluation (DPME) in the Presidency is an encouraging step taken by government towards greater accountability. Together with this, the DPME has signed performance agreements with cabinet ministers in order to hold them accountable for measurable targets. For example, the Minister of Basic Education has signed a delivery agreement to undertake the following eight outputs:

*Sub-output 1.1: Improve teacher capacity and practices*

*Sub-output 1.2: Increase access to high quality learning materials*

*Sub-output 2.1: Establish a world class system of standardised national assessments*

*Sub-output 2.2: Extract key lessons from ongoing participation in international assessments*

*Sub-output 3.1: Universalise access to Grade R*

*Sub-output 3.2: Improve the quality of early childhood development*

*Sub-output 4.1: Strengthen school management and promote functional schools*

*Sub-output 4.2: Strengthen the capacity of district offices*

While this is one positive development and the media are playing an increasing role in holding government to account for service delivery, a lack of transparency and accountability throughout the civil service remains a problem. On the one hand this stems fundamentally from the situation where the ruling party has such a strong base of support that votes along loyalty and identity lines rather than on policies and performance, which weakens the link between service delivery and political support. But accountability at local levels is also generally weak, as is seen for example in the education sector where poor school performance does not necessarily lead to pressure on schools from parents.

##### ii. Participation and voice

This links to the need to improve grassroots participation in governance structures and in exercising accountability. School Governing Bodies (SGBs) represent a key organisational structure with significance over and above educational reasons as an opportunity for communities to exercise democratic participation. However, even when structures such as this exist by legislation, there are typically profound weaknesses in their operation due to power

imbalances between professional school managers and less educated members of the parent community.

In the broader political sphere, labour unions continue to exercise strong bargaining power through their organisation and ability to influence political support. This is very much the case in the education sector and thus teachers have a strong voice. More recently, several activist NPOs have begun to clamour for the interests of children through demanding better school infrastructure, delivery of textbooks and other resources. Groups such as Equal Education and Section 27 have also begun taking the DBE to court over such issues. There is therefore an increasing voice through legal channels. What has arguably been lacking in this activism, however, is a stronger focus on encouraging local levels of accountability for learning performance.

### **e. The international context**

#### **i. The regional context**

After decades of low growth relative to the rest of the world, many of the world's fastest growing economies are in Africa. Several factors are contributing to the new opportunities in Africa. These factors include improved political stability in many countries after previously experiencing prolonged periods of civil war and disrupting coups, appropriate macroeconomic reforms, mineral resources, urbanisation and demographic trends. Africa's working age population as a proportion of total population is rising in contrast with Europe and most developed countries. In other words, the productive component of the population is a growing share of the total.

The growth in other African countries presents economic opportunities for South Africa. Although it is often lamented that the South African economy is not creating jobs fast enough, the growth of markets in neighbouring countries will create a demand for skilled labour, which South Africans could meet. Therefore, South Africa should pursue increased educational outputs without fear that the labour market demand will not be forthcoming to meet the increased supply.

#### **ii. The global context**

Globalisation continues to be a major influence shaping the options available to South Africa, providing tremendous opportunities and benefits but also posing threats. The increasing economic interdependence of countries has implications for the type of economic system that South Africa should use. It makes sense to build a mixed economy premised on the operation of

the market but tempered by state involvement to correct particular market failures, to provide regulation, to establish a stable macroeconomic environment and to provide a safety net for those excluded from meaningful participation in the economy. Such an economy integrated into the world economy increasingly requires high level skills suitable for the communications, ICT and services sectors. A further implication of globalisation applies to language. There is a high premium on English language proficiency in the global labour market and locally within the South African labour market (Posel and Casale, 2011).

The dependence of the South African economy on the global economy also means vulnerability. This has been evident in the global recession since 2008. Economic growth has slowed and unemployment increased in South Africa as a consequence of the global recession. This has also resulted in less fiscal space for the South African treasury. State departments are under pressure to reduce costs and have not been receiving substantial increases in funding in the last few years. This is especially true for the education sector which already receives the largest envelope from the fiscus and is under pressure to improve efficiency in the face of low school performance.

### **3. The country's development aspirations**

#### **a. Visions, policies and development strategies**

At the time of the transition to democracy the first major development plan was the Reconstruction and Development Programme (RDP). This was intended to promote access to housing, electricity, clean water, land reform, health care and employment opportunities. Although, household survey and census data indicate that access to most of these welfare indicators has improved since 1994, critics have pointed out that the quality of provision has often been lacking, especially in education and health care.

Macroeconomic policy from 1996 was guided by the Growth, Employment And Redistribution policy (GEAR). The underlying principle (at least rhetorically) of GEAR was that growth without redistribution would not address the fundamental developmental needs of South Africa and would leave the poor unchanged, while the resources for substantial redistribution would not be possible without economic growth. The GEAR policy has often been criticised as being a product of neo-liberal thinking referred to as the "Washington Consensus".

Ultimately, the success of government policies for economic development is a matter for endless debate given the absence of a counterfactual, with ideology consequently playing a dominant role. The next sections, however, describe some of the development achievements as well as challenges that remain without intending to adopt an ideological position.

The most significant current planning document is the National Development Plan (NDP). This plan was released at the end of 2011 by the National Planning Commission in the Presidency and is the outcome of an extensive process undertaken by 26 Commissioners and drawing on inputs from numerous experts, research institutions and public comments. The NDP was preceded by a “Diagnostic Report” released in June 2011, in which the following nine challenges facing South Africa were identified:

1. Too few people work
2. The standard of education for most black learners is of poor quality
3. Infrastructure is poorly located, under-maintained and insufficient to foster higher growth
4. Spatial patterns exclude the poor from the fruits of development
5. The economy is overly and unsustainably resource intensive
6. A widespread disease burden is compounded by a failing public health system
7. Public services are uneven and often of poor quality
8. Corruption is widespread
9. South Africa remains a divided society

In response to these challenges the NDP sets out to “write a new story” for South Africa, which is organised into the following themes:

1. Creating jobs and livelihoods
2. Expanding infrastructure
3. Transitioning to a low-carbon economy
4. Transforming urban and rural spaces
5. Improving education and training
6. Providing quality health care
7. Building a capable state
8. Fighting corruption and enhancing accountability
9. Transforming society and uniting the nation

At least one chapter is devoted to each of these themes, including one entitled “Improving education, training and innovation.” Each chapter begins with an exposition of a Vision for South Africa in 2030, an account of progress since 1994 and an assessment of the key challenges facing the sector. A number of targets (often quantifiable) are then specified followed by specific proposals and recommended actions.

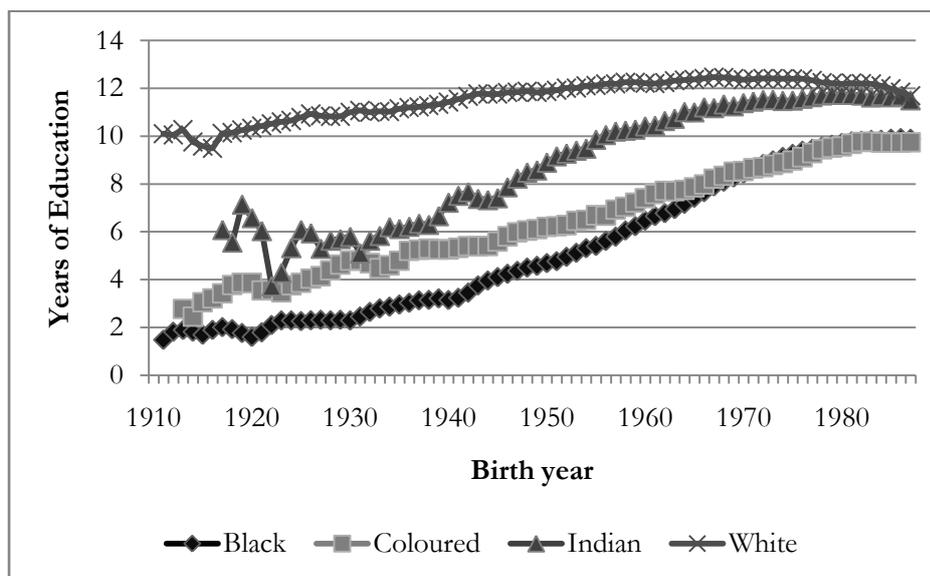
## b. Achievements of set development goals

Despite erratic economic growth in the late 1990s, the period from 1998 to the onset of the 2008 financial crisis saw the longest upswing phase in the country's recorded business cycle history (Du Plessis and Smit, 2006: 7). One of the benefits to strong economic growth has been poverty reduction. Leibbrandt, Wegner and Finn (2011: 4), for example, show that the poverty headcount ratio (whether using a poverty line of \$1.25 per day or \$2 per day) declined consistently between 1993 and 2008. The chief drivers of this poverty reduction have been the increasingly progressive system of social grants, most notably the Child Support Grant, old-age pensions and disability grants, all of which are well targeted to the poor. The increase in the number of recipients of these three grants has been impressive, from 2 837 635 in 1997 to 12 521 563 in 2009 (Leibbrandt *et al*, 2011: 7).

Access to basic services has also been on an improving trend. The proportion of households without access to running water decreased from 19.7% in 1996 to 8.8% in 2011 (Stats SA, 2012: 56). Over the same period the proportion of households with electricity as the main source of lighting increased from 58.2% to 84.7% (Stats SA, 2012: 59).

A final developmental accomplishment worth describing in this section is the long-term increase in educational attainment, particularly amongst previously disadvantaged population groups. Figure 1 shows the mean years of education attained for each birth cohort of South Africans by race. It is clear that average attainment is substantially higher amongst younger cohorts of black, coloured and Indian South Africans.

**Figure 1: Educational attainment by race group (3 year moving averages)**

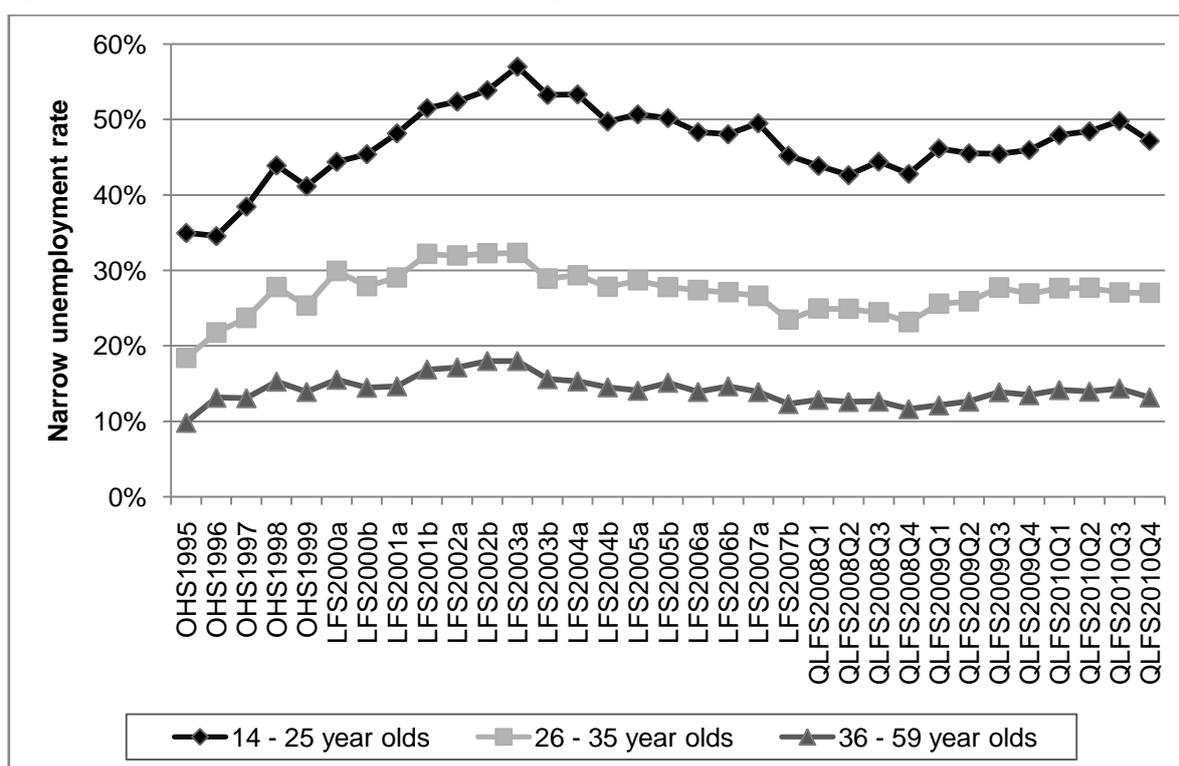


Source: Own calculations based on Community Survey (2007)

### c. Challenges and constraints

Economic growth mainly benefited South Africa's poor through redistributive policies as discussed above, but not as much as one would have hoped through new job opportunities. Figure 2 presents unemployment rates since 1995 for three age categories of South Africans. The figure shows that youth unemployment is a particular problem facing the South African economy. The unemployment rates for the three groups have tended to move in parallel with no group experiencing noticeable unique trends, but all categories responding to fundamental economic shifts. The rise in unemployment between 1995 and 2002 can to a large extent be attributed to a strong increase in labour force participation which slowly rising employment numbers were unable to match. Declining unemployment between 2002 and 2008 was a benefit to the strong upswing in the country's economy. Finally, the recent global recession has affected South Africa with the result of rising unemployment again since 2008.

**Figure 2: Narrow unemployment rates by age, 1995 - 2010**



Sources: Author's calculations based on October Household Surveys 1995 – 1999; Labour Force Surveys 2000 – 2007; Quarterly Labour Force Surveys 2008 – 2010

It is well known that over and above the absolute levels of poverty and unemployment extremely high inequality is a chronic problem in South Africa. Van der Berg (2010) argues that overall inequality in South Africa is not so much caused by inherited wealth patterns but by wage inequality. Furthermore, given the strong relationship between wages and educational outcomes, Van der Berg contends that the only way to reduce overall inequality is through a substantial

increase in human capital production. However, improvements in educational attainment interact with the changing characteristics of the labour market, as Branson *et al's* (2012) sobering analysis of the returns to education in South Africa demonstrates. They find that returns to matric and post-secondary education have increased while returns to lower levels of education have stagnated. Consequently, the gains through improved educational attainment have been offset by diverging returns to education, thus leading to a consistent level of wage inequality.

#### **d. Expectations on the education sector to support the country's aspirations**

Nevertheless, education is at the heart of the government's plans for development. "Improved quality of basic education" is Outcome 1 of twelve central outcomes declared by President Zuma. This is clear in every other relevant government planning document, such as the NDP, to be discussed in the next sub-section. Moreover, as media coverage of education issues demonstrates, education is increasingly seen in the public consciousness to have an important role to play in the country's social and economic development.

##### *i. The development of human resources (skills and competencies)*

There is considerable theoretical and empirical literature demonstrating the benefits of education for economic growth. The theoretical underpinnings for this lie in the human capital model (Schultz, 1961; Becker, 1962), according to which investments in human capital should improve the productivity of the labour force, increase the innovative capacity of the economy and facilitate the transmission of new knowledge and technologies. This has been tested empirically in the literature on economic growth modelling (most notably Mankiw, Romer and Weil, 1992). More recently Hanushek and Woessman (2007) have shown that not only the amount of education, but also the quality of that education, influences the economic growth of nations.

This received wisdom regarding the role of education in economic development is reflected in the National Development Plan's expectation of the role of education in bringing about its vision for South Africa in 2030. This is evident in the five themes around which the education chapter of the plan is organised:

- Lay a solid foundation for a long and healthy life and higher educational and scientific achievement
- Build a properly qualified, professional, competent and committed teaching, academic, research and public service core

- Build a strong and coherent set of institutions for delivering quality education, science and technology innovation, training and skills development
- Expand the production of highly skilled professionals and enhance the innovative capacity of the nation
- Create an educational and national science system that serves the needs of society

ii. Nurturing good citizens (values and attitudes)

The South African Schools Act of 1996 demonstrates that schools in this country are expected to foster individual and social economic benefits as well as several other freedoms associated with a thriving democracy:

*“[T]his country requires a new national system for schools which will redress past injustices in educational provision, provide an education of progressively high quality for all learners and in so doing lay a strong foundation for the development of all our people's talents and capabilities, advance the democratic transformation of society, combat racism and sexism and all other forms of unfair discrimination and intolerance, contribute to the eradication of poverty and the economic well-being of society...”*

- Preamble to the South African Schools Act (South Africa, 1996)

## 4. The country's education system

### a. Structure, management and administration, financing and provision

While 1994 marks the conspicuous political watershed in the modern history of South Africa, governance in education reveals features of both strong continuity and radical reconstruction.

Following the pattern established at unification in 1910, the basic distribution of responsibility for education remained the same. The national constitution determined that tertiary education remained under the control of the central government; control over primary and secondary education, reflecting the separate regional origins and longer institutional history of schooling, continued to be administered with a degree of decentralization. After 1994, as in the previous dispensation, broad policy regarding schooling, along with the education budget, was determined at national level, but implementation remained decentralized to provincial level, with the direct responsibility for the provision and operation of schools falling under nine provincial education departments (restructured from the previous four provinces).

Within this broad structure, the challenge to the post-1994 dispensation was to overhaul the perceived inequities in the governance, funding, structure, content and purpose of education experienced under apartheid.

From 1990 there had been a rapid shift from the ideological polarisation and upheavals that reached crisis proportions in the education system, especially from 1976 and through the 1980s. A new interim constitution, the South African Constitution (Act 200 of 1993), had been framed by the Convention for a Democratic South Africa (CODESA), meeting in Kempton Park from 1991 to 1993, and implemented from 24 April 1994.

This constitution legitimized the holding of a general election leading to a Government of National Unity. It also provided the basis for initial restructuring in key areas and authorized parliament to function also as a constituent assembly towards framing the constitution that would be adopted by the first democratically elected parliament, namely the South African Constitution (Act 108 of 1996), implemented on 4 February 1997.

As a strongly centralized state system, the SA Constitution determines the overall parameters for all other legislation, national or provincial. For education, the first challenge was to align the governance of a fragmented and uncoordinated plethora of racially defined separate subsystems into a uniform national system, especially as regards primary and secondary schooling. Consequently the first decade after 1994 saw the roll-out of new legislation to standardize and redefine the education system: among more than thirty Acts and Amendments over this initial period, key legislation included:

- For certification and quality assurance, the South African Qualifications Authority Act (Act 58 of 1995). This established a National Qualifications Framework (NQF), in operation from May 1996. This SAQA law was replaced by the NQF Act (Act 67 of 2008), retaining the SAQA.
- The National Education Policy Act (Act 27 of 1996). This laid out broad features of policy for democratic transformation, while other legislation introduced changes to the content and methodology of curriculum, introducing Curriculum 2005 and Outcomes Based Education (OBE).
- The South African Schools Act (Act 84 of 1996). SASA aimed at a uniform system for the organisation, funding and governance of schools. A significant innovation was that this Act made provision for participative governance by stakeholders at school level

through the establishment of an elected School Governing Body (SGB) and Representative Council of Learners (RCL) in each school.

- The Higher Education Act (Act 101 of 1997), amended in 2000 and 2001. This redirected and consolidated government policy for all tertiary education, administered under the central Ministry.

In 2009, because of differences as regards both governance and function, as well as the large scope of responsibility, the national Department of Education was split into two departments, (1) the Department of Basic Education (DBE) responsible for primary and secondary education in SA, i.e. the school system and (2) the Department of Higher Education and Training, each with its own minister.

The main innovation in education after 1994 was that public schooling for all children was centralized within a uniform system, in which nationally determined policy was implemented at provincial level. The nine provincial parliaments had to enact policies to give effect to national policy and through a provincial department of education provide, ensure access to and manage schools for the children in their province, funded by budgetary allocations determined at national level.

### **b. Policies and strategies**

In the heyday of *apartheid* public education spending was notoriously skewed in favour of white children. By 1994, a trend toward more equitable spending on education was already well under way, yet the amount spent per student in white schools was still over two and a half times greater than that spent in black schools (Fiske and Ladd, 2004: 44). Since the unification of formerly separate education administrations for the various race groups into a single Department of Education, government spending on education has become equitable and even progressive. At first, greater equity in spending did not translate directly into real resource shifts as the increase in spending went mainly to raising teacher salaries in the historically disadvantaged part of the school system (Van der Berg, 2007: 871). By 2002, greater shifts in real resources had been accomplished. The number of state-funded teachers had increased from 24 to 31 per 1000 students in historically black schools, and conversely decreased from 59 to 31 per 1000 students in historically white schools (Van der Berg, 2007: 872).

One of the most fundamental and controversial components of education policy since 1994 has been curriculum reform. Seeking a radical ideological break from the past, *Curriculum 2005* was

drawn up with the explicit purposes of nation-building, promoting the constitution and fostering inclusive education. The product was a “new, innovative, rights-based national curriculum, based on the principles of Outcomes Based Education (OBE)” that was generally well received by the public (South Africa, 2009: 12). This new curriculum was introduced into schools in 1998, but was soon met by criticism on theoretical grounds and based on worrying feedback about student learning in key areas such as reading, writing and counting (e.g. Jansen, 1999). Some of the fundamental problems with *Curriculum 2005* included a lack of clarity in its design, language, terminology and assessment requirements, a lack of specified content or use of textbooks, and a lack of support and training for teachers in implementing the curriculum (South Africa, 2009). These factors led to a revision of *Curriculum 2005* during 2001. The resulting *Revised National Curriculum Statement*, however, still suffered from a lack of clarity and many of the same problems as before.

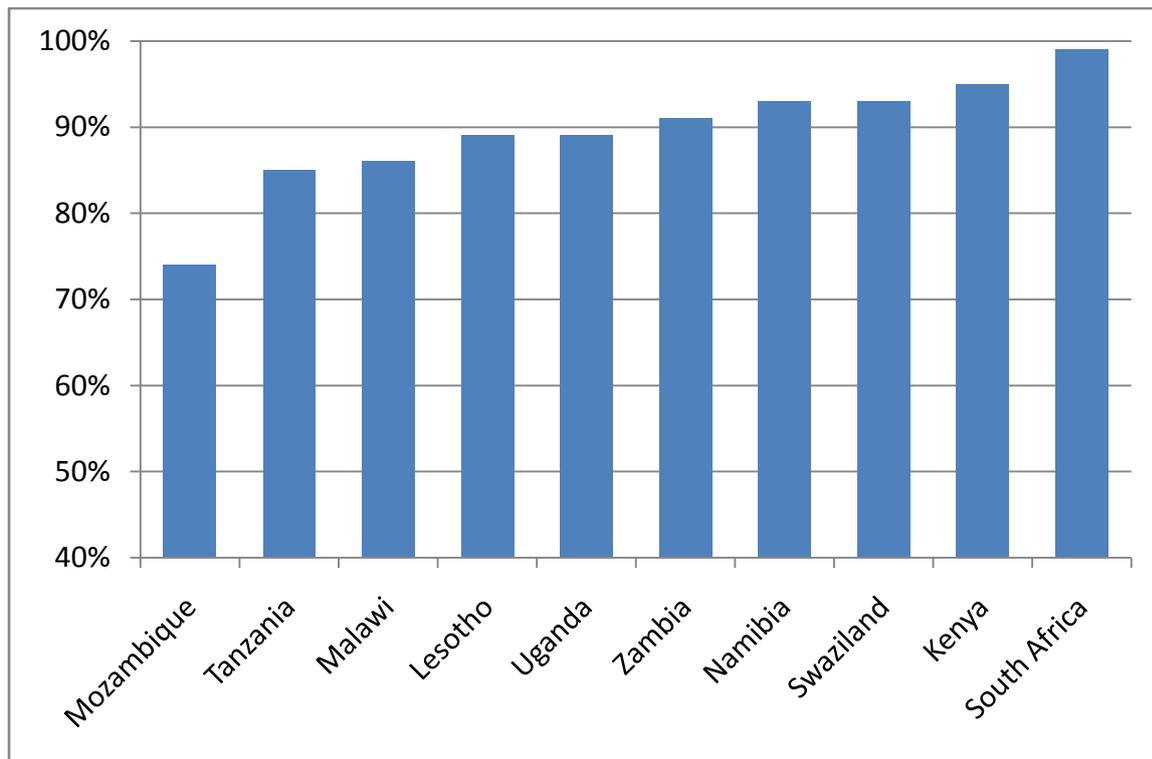
In 2011 new guides for implementing the curriculum, in the form of the Curriculum and Assessment Policy Statements (CAPS), were finalised and are being phased in (at various grades between 2012 and 2014). These guides, and the accompanying training, resolve longstanding problems and gaps in the curriculum delivery process. Specifically, teachers, and in particular teachers with the greatest capacity problems, should now receive clearer guidance on what to teach and how. The CAPS can be viewed as part of an overall thrust to “go back to basics” that has characterised the term of the current Minister of Basic Education (Angie Motshekga), and to some extent her predecessor (Naledi Pandor). Other components of this “back to basics” approach include a focus on basic literacy and numeracy in the early grades, the provision of new workbooks (containing lessons for every week of the year with space for learners to complete exercises) and the introduction of the Annual National Assessments (ANA).

### **c. Achievements to date (largely access)**

Most of the noteworthy achievements relating to education in South Africa pertain to aspects of access – school attendance rates as well as access to specific services provided at schools such as meals. The rapid expansion of the school system occurred mainly in the 1960s and 1970s under the Bantu Education policy. Education policy under *apartheid* was notorious for the role that it played in preparing black South Africans for a labour market in which highly skilled jobs were mostly reserved for whites. But access to education vastly improved during the apartheid years. Giliomee (2012: 72), referring to work done by Jan Sadie, notes that the school attendance rate for black children increased from 24.5% in 1948 to 84.5% in 1994.

Figure 3 illustrates how access to schooling in South Africa compares favourably with other countries in the region. The figure shows age-specific enrolment rates taken from a data bank provided by Filmer (2010) containing the World Bank's Demographic and Health Surveys (DHS) and strictly comparable household survey data. Countries were selected for this graph based on their participation in SACMEQ and on there being enrolment data available for the year 2007 or a close enough year. Approximately 99% of South African 14 year-olds attend school, a clearly superior access statistic compared to other countries in the region.

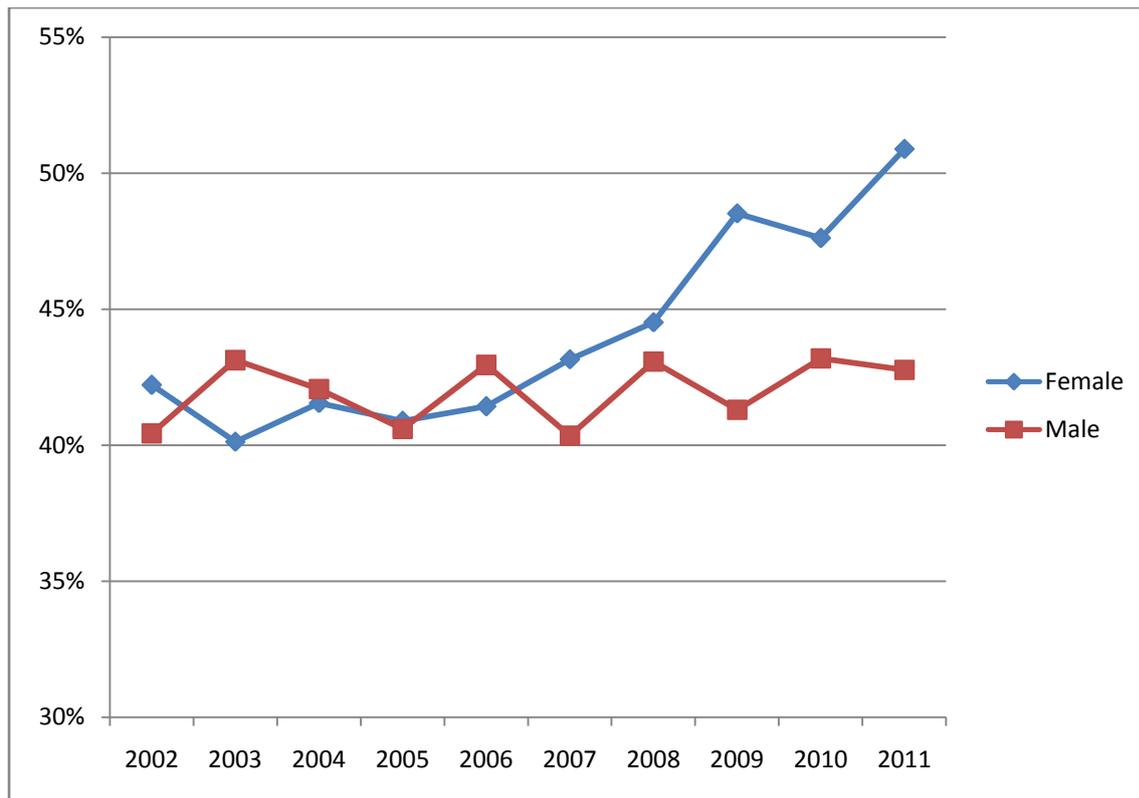
**Figure 3: The proportion of 14 year-olds attending school**



Source: Compiled using raw data from Filmer (2010)

Incremental improvements in access have continued in recent years. For example, the secondary school completion rate has been increasingly slowly but steadily and this has been mainly enjoyed by females, as the next figure demonstrates. In fact, females are now more likely to complete secondary school than males.

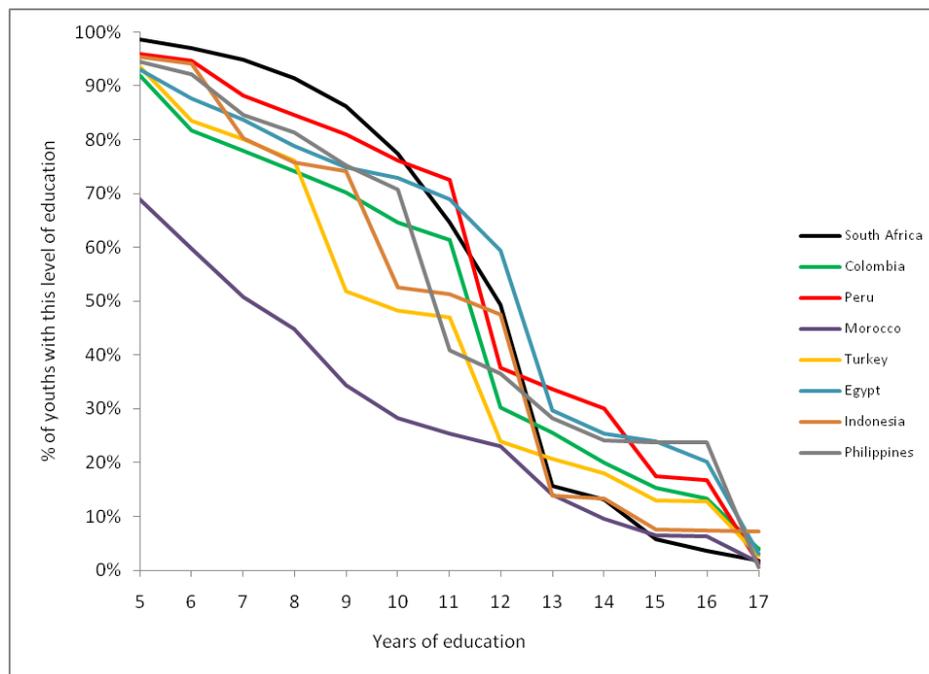
**Figure 4: Proportion of males and females (aged 22 -25) completed secondary school**



Source: Own calculations based on General Household Surveys (2002 - 2011)

Figure 5, which is taken from Gustafsson (2011), depicts the attainment profile for South Africa compared to various developing countries. The sharp drop off between 10 and 13 years of education is clearly peculiar to South Africa. Up until 10 years of education, South Africans enjoy the highest attainment rates of these countries. Beyond 13 years of education, however, the attainment rate for South Africa is amongst the lowest of these countries. It would be wrong, though, to conclude from this pattern that the problems in South African education apply mainly at higher levels of education. A better explanation is that poor quality schooling combined with high enrolment up until about grade 10 means that when the high-stakes secondary school-leaving examination approaches a large proportion of weak pupils are filtered out of the education system. The next section presents evidence of this weak performance at earlier stages of schooling.

**Figure 5: Cross-country comparison of educational attainment (15 – 35 year-olds)**



Source: Gustafsson (2011: 14) using Labour Force Survey 2009Q3 and Demographic Household Surveys since 2000

#### d. The education quality challenge

##### i. The extent and nature of the challenge

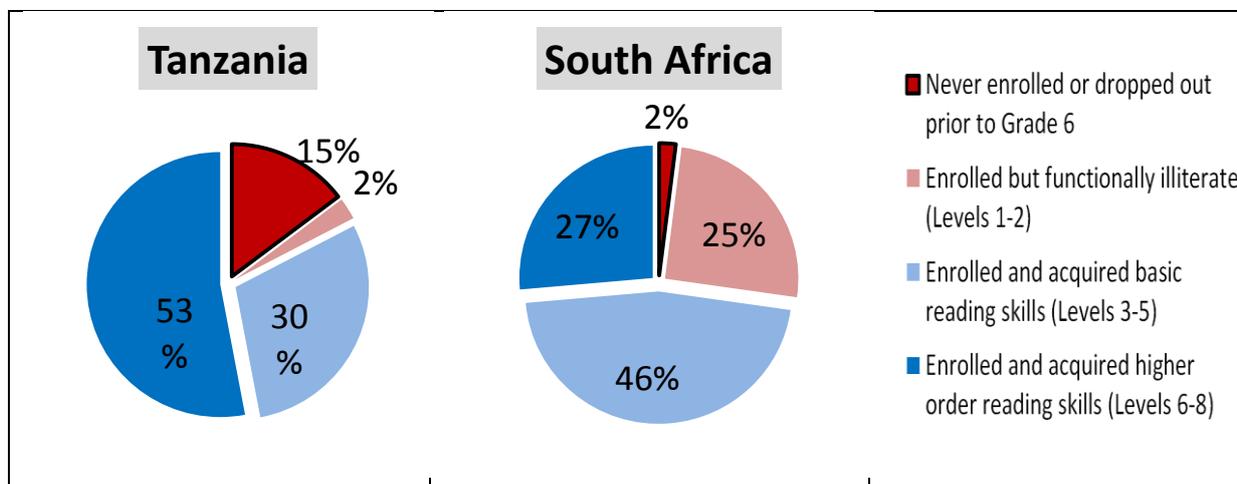
All over the world, we have witnessed in recent years a shifting focus from issues of education quantity to education quality. This shift has perhaps been particularly relevant for African countries. But it is arguably most acutely relevant in the case of South Africa.

Internationally, research has emphasized that the *quality* of education is more important for country economic development and individual life chances than merely the amount of schooling attained (e.g. Hanushek and Woessman, 2007, Murnane *et al*, 2001). In Africa, many countries have substantially expanded access to schooling in recent years. However, the low performance on standardized international assessments of these countries has sparked a debate about whether these expansions of *quantity* have led to deteriorations in *quality*. The South African case is particularly relevant because we have made great strides in providing access to schooling, but are underperforming when it comes to quality.

A comparison of the education quantity-quality profile between South Africa and Tanzania, one of the best-performing education systems in the 2007 SACMEQ evaluation of grade 6 reading

and mathematics, provides a useful illustration of how countries can differ on access and quality. Consider Figure 6.

**Figure 6: Education quantity-quality profiles for South Africa and Tanzania**



Source: Spaul and Taylor (2012)

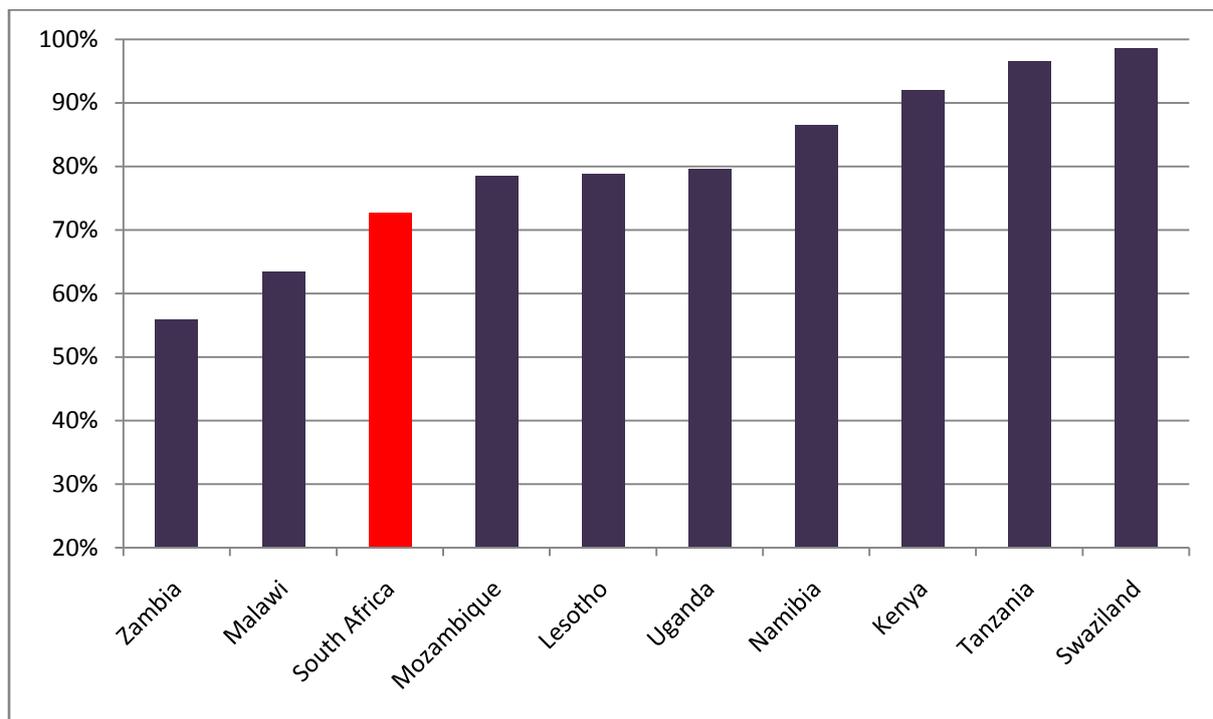
The figure shows that in South Africa only about 2% of 14 year-olds are not enrolled in school. In contrast, about 15% of 14 year-olds in Tanzania are not enrolled. However, about 53% of this age group in Tanzania reach higher order reading skills in contrast with only about 27% of South African grade 6 children. Thus, while South Africa provides better access to schooling, Tanzania appears to convert access into quality more efficiently.

While access to school is clearly a necessary condition for learning it is not sufficient. In South Africa, virtually all children of a primary school-going age are now enrolled in school. But numerous local and international surveys conducted over the last decade or so have shown that the majority of these children are seriously underperforming in basic literacy and numeracy.

In the Trends in International Maths and Science Study (TIMSS) of 2003 the average score for South African students was the lowest out of the 46 participating countries in both mathematics and science at the grade 8 level. Similarly, grade 5 South African children came last in the Progress in International Reading Literacy Study (PIRLS) of 2006. Approximately 78% of South African children scored below what educational experts designated as a low benchmark score in PIRLS. According to Kathleen Trong (2009: 104), children scoring below this benchmark score can be considered to be “at serious risk of not becoming literate.” The 2011 TIMSS results indicate that, despite some improvement since 2002, South Africa is still at the bottom end of the performance distribution with only Honduras performing at a lower level.

The participants in TIMSS and PIRLS were predominantly developed countries. The performance of South African children in a regional context has also not been impressive either. Figure 7 presents, for the same countries as shown earlier in Figure 3, the proportion of school-going children that reached functional literacy according to the SACMEQ 2007 survey. This suggests that South Africa's performance is slightly below average in the region. When looking at mean scores South Africa's relative position is somewhat better but this is a reflection of the skewed distribution created by a small high-performing section of schools that exists in South Africa.

**Figure 7: Proportion of grade 6 students that are functionally literate**



Source: Own calculations based on SACMEQ (2007)

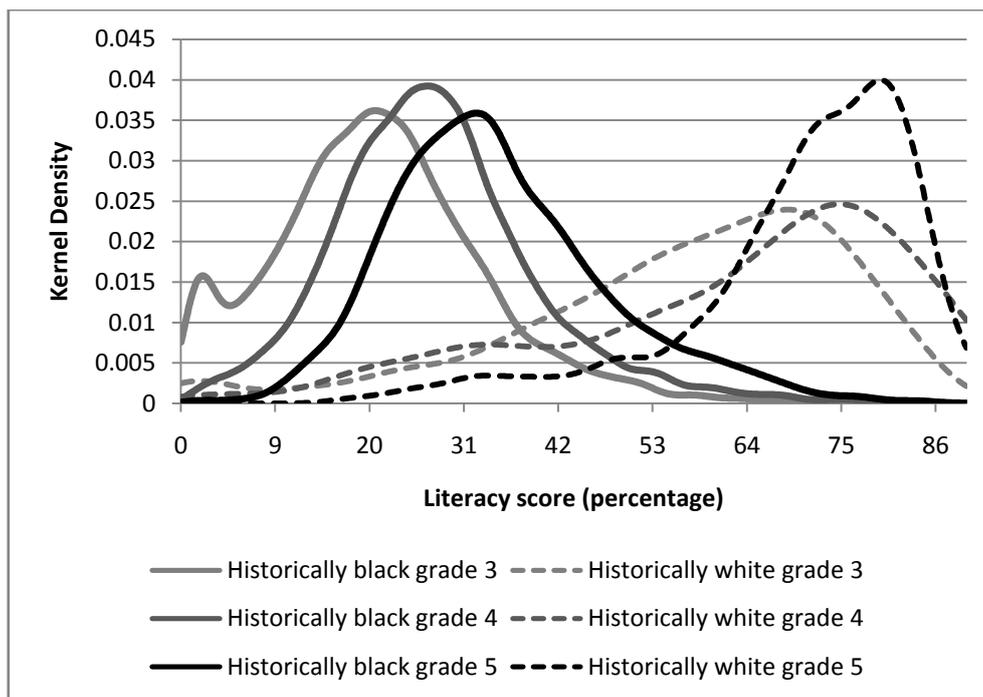
The National School Effectiveness Study (NSES) provides a unique opportunity to observe educational performance amongst a panel of South African children as they progress from grade 3 to grades 4 and 5. Data for the National School Effectiveness Study (NSES) were collected between 2007 and 2009 on a nationally representative sample of schools in South Africa. Students in 266 schools in eight of the nine provinces of South Africa were tested in literacy and numeracy in 2007 (grade 3), 2008 (grade 4) and 2009 (grade 5).<sup>1</sup> Both the literacy and numeracy tests were administered in English to all students in all three years. This was done to ensure

<sup>1</sup> Unfortunately the project was blocked from surveying Gauteng due to other testing that was being administered in that province at the same time.

comparability across the years, although it should be kept in mind that this places a handicap on non-English speakers, especially in grade 3 as most schools switch from mother-tongue instruction to English at the fourth grade. Scores presented here are percentage scores.

Using kernel density curves, Figure 8 depicts the distributions of literacy scores for grades 3, 4 and 5 for historically black schools and for historically white schools.<sup>2</sup> Importantly, the exact same tests were written by the same learners in all three years allowing for meaningful comparisons across years. Although within both categories of schools there appears to have been improvement from one year to the next, it is striking that the distribution of achievement for those in historically white schools in grade 3 is substantially better than the distribution for those in historically black schools in grade 5. One can therefore say that by the fifth grade those attending historically black schools are already carrying learning deficits that amount to well over two years of education. The picture for numeracy (not shown here) is essentially the same.

**Figure 8: Kernel Density curves of grades 3, 4 and 5 literacy by ex-department (NSES data)**



Source: Own calculations based on NSES data

To synthesise, the first nine or ten grades of the South African schooling system can be characterized as good on access or “quantity” but poor on quality. Furthermore, this low *quality* in the early parts of the system is a root cause of the *quantity* problems experienced higher up in

<sup>2</sup> Information about the institutional history of schools was imputed from the National Master List of schools available on the DBE website.

the system. An inadequate learning foundation is a major contributing factor to the high levels of drop-out that we observe towards the end of secondary school.

In other words, the only legitimate way to increase the numbers of South Africans completing secondary school and achieving university degrees is to improve learning quality in the early years of schooling. This demonstrates that the relationship between quantity and quality is more complex than a simple trade-off: Early quality improves access (quantity) in later parts of the system. Conversely, there may be some aspects of access that feed into better quality. And this is probably most true of access to early educational opportunities. This is one area where South Africa has made great strides in the last decade.

Since 2001 there has been a massive roll-out of a formal pre-school programme known as Grade R. The numbers enrolled in this programme increased from just over 200 000 in 2001 to over 700 000 in 2011. Table 1 shows what effect this had on the enrolment of 5 year-olds.

**Table 1: The change in enrolment rates amongst 5 year-olds since 2002 by province**

	2002 Enrolment rate	2011 enrolment rate	Percentage increase
WC	42.9%	73.3%	70.9%
EC	48.9%	89.2%	82.5%
GT	42.9%	82.8%	93.1%
KN	35.2%	74.8%	112.3%
LP	42.3%	91.1%	115.2%
FS	35.2%	80.5%	128.9%
MP	35.3%	84.2%	138.2%
NW	33.5%	84.9%	153.3%
NC	20.9%	75.9%	263.1%
Total	39.8%	84.7%	112.9%

Source: Own calculations based on General Household Surveys (2002 & 2011)

This shows that in 2002 about 40% of 5 year-olds were enrolled in some form of educational institution. By 2011 more than 80% of 5 year-olds had access to either pre-school or primary school, and it seems reasonable to conclude that this is mainly as a result of the grade R programme. Furthermore, this expansion has been largely targeted to children from poorer communities, something which is partly demonstrated in Table 1 by the substantial expansions in most of the poorer provinces. Research indicates that insufficient early educational stimulation is one factor that contributes to the wide achievement gaps that we observe in South Africa on the basis of socio-economic status very early on in the school programme. Therefore, the expansion of Grade R is an aspect of *access* that is likely to contribute to improved *quality* later on in school through providing a better learning foundation.

A recent study conducted by the University of Stellenbosch (Van der Berg *et al*, forthcoming) actually demonstrates that attending grade R causes better cognitive achievement in the later grades of primary school. Although the effect size is moderate, the econometric strategy employed allows for a causal interpretation of the effect of grade R, something which no other previous study had been able to achieve. The study found that having attended grade R caused improved achievement in the Annual National Assessments in later grades, and that the effect size did not appear to diminish for later grades. A more sobering finding in the study, however, is that the effect was negligible amongst poor schools in some of the weakly performing provinces. The authors speculate that this may reflect a low quality of Grade R that is provided in those parts of the system. A major priority going forward should therefore be to improve the quality of the Grade R programme throughout the country.

ii. Previous efforts to improve school quality

Nick Taylor (2007) argues that prior to 1994 school improvement programmes mainly consisted of small-scale initiatives undertaken by NGOs and usually focussing on training teachers in subject knowledge. The Imbewu project (1998-2001) was the first project of this nature conducted on a large scale. Principals and teachers in the Eastern Cape were trained in the pedagogical methods of Curriculum 2005 (or Outcomes Based Education). Despite an enthusiastic response to this programme, pupil testing showed no improvement in learning outcomes (Taylor, 2007: 3).

The District Development and Support Project (2000-2002) aimed to improve district and school functionality in 453 primary schools in four of the poorest provinces. The focus was on classroom teaching of mathematics and language. Although test scores in project schools improved over the period of the intervention, there was no control group thus prohibiting a robust evaluation of the success of the project.

The Quality Learning Project (2000 – 2004) was another systemic intervention aimed at improving district and school functionality. 524 high schools in 17 districts were targeted by this intervention. Kanjee and Prinsloo (2005) argue that the programme was effective in influencing school leadership and learner outcomes at the matric level.

The Dinaledi programme has been ongoing since 2001 and provides resources and other forms of support to schools identified as having promise in the area of mathematics and science. A World Bank (Blum, Krishnan and Legovini, 2010) evaluation of the project found that it had had a significant impact on the number of enrolling in and passing mathematics and science in Dinaledi schools, relative to matched comparison schools. However, a weakness of this study

was that it did not consider the possibility that the improved resources given to Dinaledi schools may have led to migration of strong mathematics and science candidates out of surrounding schools into Dinaledi schools.

These examples of school improvement initiatives illustrate several weaknesses of previous attempts at school improvement. First, impact evaluation of programmes has typically been non-existent or lacked a rigorous design allowing for identification of the causal impact. Second, given the size of the South African school system, even these “systemic” interventions often did not affect the majority of schools. Third, such interventions tend to last for a limited period of time, often reflective of political cycles. Fourth, they have typically been broad-based in focussing on many different sub-interventions in project schools, thus providing little information to future policy-makers on which aspects were effective and which were not. Fifth, effective intervention implementation was typically obstructed by institutional problems at the district level. For example, 13 of the 17 district offices targeted by the QLP were restructured over the duration of the project. Taylor (2007) contends that each time this occurs a new set of appointments are made along new lines of patronage and that this greatly disrupts the functionality of schooling in the district.

### iii. Effectiveness of the efforts in improving education quality

There is now near consensus amongst academics and policy-makers that despite increased and more equitable education spending, there has been very little conversion into improved outcomes. (e.g. Van der Berg, 2007). South Africa’s experience in this regard is not unique. Hanushek (2002) laments the failure of input-based policies around the world to deliver improved educational outcomes over the latter part of the twentieth century.

Nevertheless, there is now some evidence that a trend of improving quality may be emerging in the last few years. There are really only two reliable estimates of education quality trends in South Africa, and these come from the SACMEQ surveys (1995, 2000 and 2007) and the TIMSS surveys (1995, 1999, 2002 and 2011). Thanks to the consistent methodologies applied in these surveys and the equating of scores, these surveys provide comparable information across time. The SACMEQ surveys, which measured mathematics and reading at the grade 6 level, indicated that there was no significant improvement or deterioration between 1995, 2000 and 2007. South Africa’s participation in TIMSS suggested an extremely low level of achievement and no improvement between 1995, 1999 and 2002. However, between 2002 and 2011 the performance of grade 9 children improved considerably. The improvement of 67 TIMSS points in mathematics, or around 7 points a year, is large by TIMSS standards, although this was from an exceptionally low base.

While TIMSS suggests some overall improvement, this result needs to be confirmed by other data sources, such as the next SACMEQ survey. Another major gap in evaluating the effectiveness of education policies is that specific programmes have typically not been subjected to rigorous impact evaluation. Therefore, it is not possible to identify which policies have driven improvement and which have not.

## 5. Assessing the quality of the country's education system

### a. Relevance of the education provided

#### i. Country level relevance

The former president of South Africa, Thabo Mbeki, espoused the notion that South Africa essentially consists of “two nations” or “two economies”. The “First Economy” is well integrated into the global economy and looks similar to a developed country economy. The “second Economy” is excluded from meaningful economic activity and is characterised by high levels of poverty and unemployment.

Following the logic of the “two nations” metaphor, Fleisch (2008: 1-2) describes the South African education system as essentially two “systems”. The well-functioning system consists of mainly historically white and Indian schools, is well resourced, serves middle class children of all race groups and performs at a level similar to that of middle class children around the world. The vast majority of university entrants are produced by this well-functioning system. The much larger second system includes poorer children who are further disadvantaged through attending schools with dysfunctional management and classroom practices. Children in this system have low functioning in reading and writing and can perform only simple numerical operations (Fleisch, 2008: 2).

This dualistic pattern is in one sense a failure of the education system to meet the country's development needs. The majority of South Africa's poor, who desperately need the school system to provide a pathway out of poverty, typically receive a low quality of education. This ensures that existing patterns of poverty and inequality are reproduced in the subsequent generation.

The dualistic school system also presents a challenge to policy makers in that differentiated responses to the different parts of the system may be needed but are often politically unpalatable. For example, strong top-down monitoring and highly prescriptive interventions may be suitable for the poorly functioning system but inappropriate for well-performing schools. Similarly, a

more basic curriculum may be appropriate in schools where children lack a strong foundation in literacy but this is at odds with the aspirations held by those developing the curriculum and the general public. In this vein, Banerjee and Duflo (2011) argue that unrealistic expectations are typically contained in developing country curriculums. A similar tension exists between the desire to follow a curriculum that is relevant to local cultures, languages and systems of knowledge but which also prepares the population for the labour market and for the global economy.

#### ii. Labour market and world of work responsiveness

One particular aspect of the labour market, both locally and internationally, that has implications for the education system is its language of operation. Amongst the various languages that might be considered global languages, English is the only one that is widely spoken (albeit mainly as a second language) in South Africa. It is also the chief language that is used in public affairs and in the labour market. Using a traditional earnings function methodology, Posel and Casale (2011) estimate the labour market returns to being proficient in English. They find that amongst Africans there is a strong premium associated with being able to read and write English fluently. Interestingly though, Posel and Casale go on to build an argument for establishing a strong foundation in mother tongue as their analysis indicates that being fluent in mother tongue improves the probability of becoming fluent in English.

Prior to the Curriculum and Assessment Policy Statements (CAPS) introduced in 2011, there was no obligation on schools to teach a First Additional Language (which is typically English) in the Foundation Phase. This meant inadequate preparation for the transition to English as language of instruction, which usually occurs at the fourth grade. Clearly, the increased focus on English early on in school is a key marker of improved responsiveness to the labour market needs.

#### iii. Global level relevance

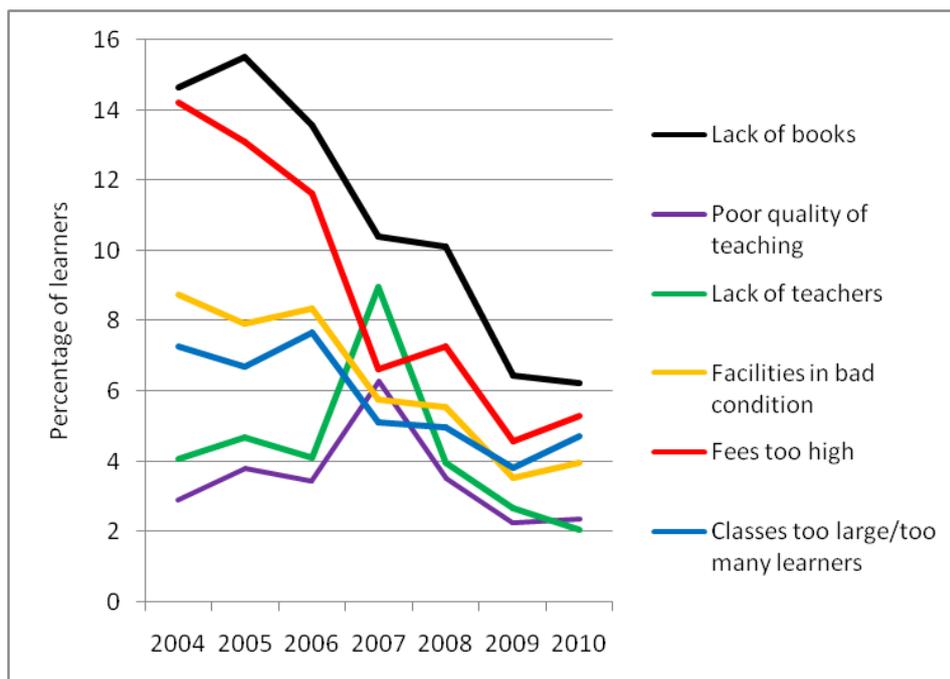
Today many countries place a strong policy emphasis on improving mathematics, science and technology (MST) skills. South Africa is not alone in experiencing a skills shortfall in this area. Society and the economy are evolving in ways that make having adequate MST skills especially important. Information and communication technologies (ICTs) increase the need for MST skills, both with respect to the development and use of these technologies. Greater complexity in the world's financial systems call for advanced MST skills not just to run these systems, but also to monitor and regulate them. This became clear in the 2008 financial crisis. More generally, greater complexity in business, trade and government systems create new MST skills needs. To take just one of many examples, in order for South Africa's social grant system to provide its intended poverty alleviation, a range of accounting, information systems, and logistics experts are

needed, all of whom need a solid MST foundation. Increased competition in the international trade of goods and services, coupled with the global mobility of individuals with skills, create new risks for any country that falls behind in the area of MST education.

#### iv. Individual level responsiveness

In addition to meeting national developmental needs, it is important that the education system responds to the aspirations of learners and their families throughout the country. An interesting source of information on this is provided in the General Household Surveys conducted annually by Statistics South Africa. Households are asked about six aspects of schooling and whether these are problematic for them. Figure 9 indicates an overall declining trend in the proportion of households complaining about these aspects of the school system. In particular, strong downward trends are evident in complaints about a lack of books and about fees being too high. This may reflect the success of the no-fee school policy and the various efforts to improve access to text (to be discussed in a forthcoming section).

**Figure 9: Household complaints about aspects of schooling**



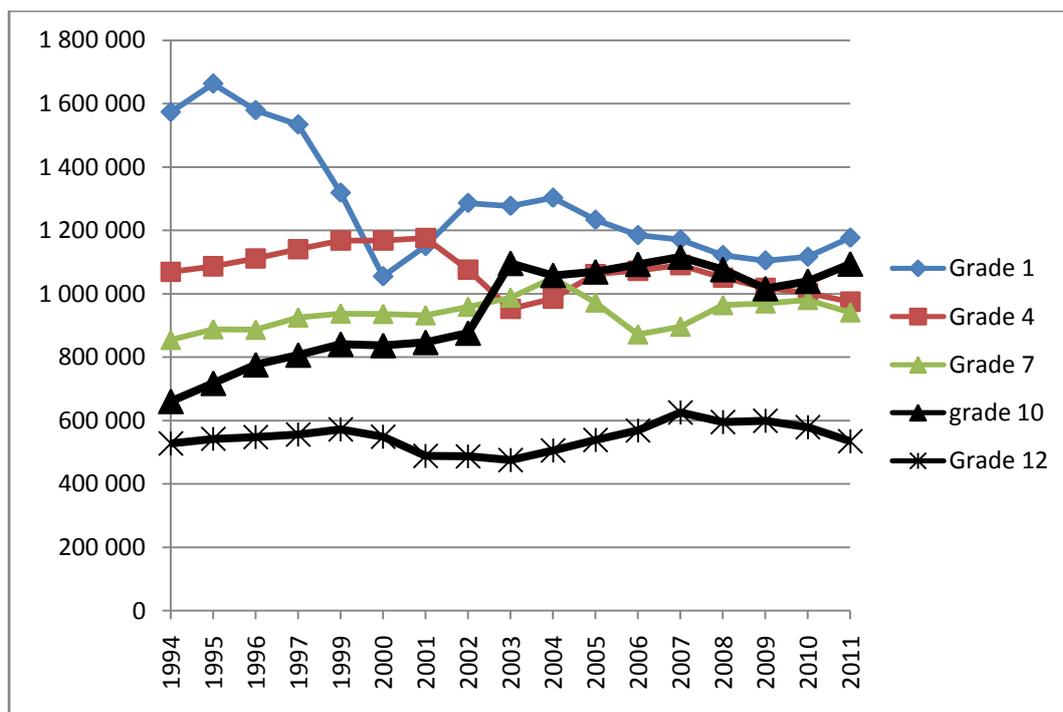
Source: General Household Surveys (2004 – 2010)

#### v. Internal system coherence

It may well be argued that the South African education system is characterised by several points at which transition from one phase into the next is by no means seamless. For example, children enter the school system with wide inequalities in cognitive development already existing on the

basis of socio-economic status. A second problematic transition already alluded to in this report is the change from mother-tongue instruction to English as the Language of Learning and Teaching which most children must go through. Thereafter, retention in school is near universal until about grade 9, but after that a strange and inefficient phenomenon can be observed in the last years of secondary schooling. Figure 10 illustrates this.

**Figure 10: Enrolments in selected grades since 1994**



Note: Data for 1998 is not available.

The figure shows that there is a lot of attrition between grade 10 and grade 12. For example, there were 1 115 961 grade 10 enrolments in 2009 but only 534 498 grade 12 enrolments two years later in 2011 – roughly half. To some extent this is an artefact of high grade repetition in Grade 10 (so that some pupils are “counted twice”) combined with low repetition of grade 12, but this mostly reflects attrition. The gap between grade 10 enrolments and grade 12 enrolments has been widening substantially since 1994. This trend is largely due to decreasing grade repetition in earlier grades combined with high grade repetition in Grade 10 which causes a bulging of grade 10 enrolments.

The same inefficiency is confirmed by household data: more youths are attaining grade 10 and to a lesser extent grade 11. But this cannot be said of grade 12 attainment. This points to a key internal incoherency and policy contradiction: youths are encouraged to stay in school until grade

12 but they do not receive the kind of qualitative improvement that will prepare them for the matric examination.

Furthermore, amongst those reaching grade 12 a small proportion proceed to university. According to the 2012 Matric technical report available on the DBE website, 26,6% of matric candidates (the number was 136 047) qualified for the bachelor's pass (which is needed for university entrance). However, it is well known that not all who receive the bachelor's pass indeed enrol in university. This analysis thus illustrates a bottleneck of sclerotic proportion that occurs at the point of transition from secondary school to higher education.

Part of the solution is of course to ensure that more children pass matric. The National Development Plan, for example, aims for 80% of each cohort to pass matric by 2030. However, it is crucial that this should not be driven by anything other than improved quality throughout the school system. It is also worth noting that a secondary school completion rate of 80% would be high even by developed country standards. In the USA, for example, it is about 77%. It may therefore be more realistic to create – and raise the profile of existing – alternative routes to the labour market through vocational and technically oriented qualifications. Umalusi's<sup>3</sup> proposals on two new FET certificates, the National Independent Certificate (NIC) and the National Senior Certificate for Adults (NASCA), are therefore important developments as part of government's efforts to ensure that more youths receive a formal qualification.

#### vi. Priority actions to improve relevance and responsiveness

Four priorities emerge from the foregoing discussion:

- There needs to be a strong focus on Early Childhood Development to reduce the deficits in cognitive development that many children carry upon entering school.
- Actions to smooth the transition from mother tongue to English as language of instruction are needed. In particular, there needs to be better access to materials supporting the acquisition of reading in mother tongue. Educational theory (notably, Cummins, 2000) shows that a solid foundation in mother tongue reading provides an effective bridge for the transition to a second language.
- Improved quality throughout the school system is necessary to allow a meaningful amelioration of the bottleneck that occurs towards the end of secondary school.

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<sup>3</sup> Umalusi is the Council for Quality Assurance in General and Further Education and Training in South Africa.

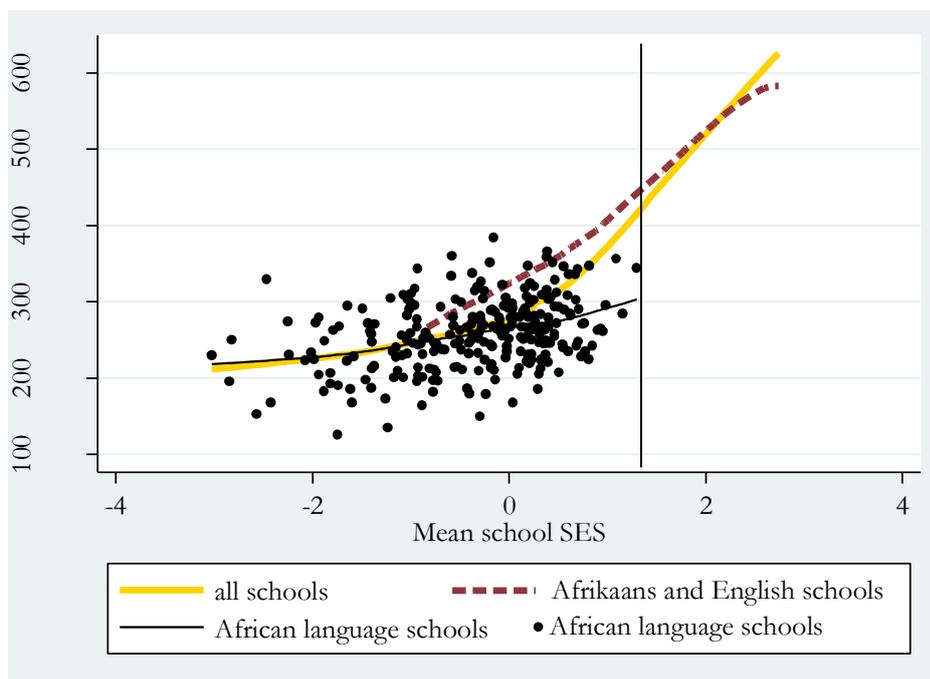
- An alternative non-academic route to the labour market needs to be made attractive to youths who are unlikely to reach and pass matric.

## b. Equity and inclusiveness in the provision of education

### i. Manifestation of inequity and exclusion in the education system

Earlier sections of the report have already demonstrated that not all educational outcomes in South Africa are disturbingly low but they are inequitably distributed. The following figure illustrates this in another way. The figure shows socio-economic gradients (simply the graphical depiction of the regression relationship between socio-economic status and a social outcome, in this case educational achievement) for three categories of schools that participated in the 2006 PIRLS survey of reading achievement in grade 5: 1) Schools that took the test in an African language (hence covering the historically black section of the system); 2) Afrikaans and English language schools (mainly historically white and affluent schools); and 3) the total combining all schools. A scatterplot is also superimposed for the African language schools.

**Figure 11: Socio-economic gradients by language of the test in PIRLS 2006**



Source: Taylor (2010: 93)

It is striking that there are no African language schools at the high end of the socio-economic distribution. However, even more alarming is the fact that not a single African language school in this nationally representative sample achieved an average score of above 400. If a child fails to achieve this low international benchmark of 400 this means that he has not yet learned to read

for meaning. It can therefore be said that children who attend this part of the school system (which is the majority) are in a highly vulnerable position where they will probably not learn to read effectively by the fifth grade. Although this historically disadvantaged section of the school system was previously differentiated from the other sections on the basis of race, it is now differentiated on the basis of socio-economic status. Children from affluent black families are increasingly attending formerly white and Indian schools.

ii. Policies, strategies and actions to address inequity and exclusion

A strongly pro-poor set of Norms and Standards govern the financing of non-personnel items for schools. This is discussed in more detail in a forthcoming section on financing. In 2006 this was fine-tuned by the Education Law Amendment Act, which categorised schools into nationally divided poverty quintiles and gave the poorest 40% of schools the option of becoming “no-fee schools”. These schools receive greater allocations of non-personnel funding in compensation for not charging fees. The generally positive reception to the no-fee policy has led to this recently being expanded to include the poorest 60% of schools.

The National School Nutrition Programme, which is funded through the DBE by means of a conditional grant, was initiated in 1994 and has since expanded to the point where about 85% of schools report having a daily feeding scheme, according to the School Monitoring Survey (2011). During the first ten years of its implementation the programme was coordinated by the Department of Health. However, in 2004 the programme was relocated to the Department of Education. Household data confirm that the increased spending on this programme is reaching the intended recipients. Specifically, according to the GHS, the percentage of secondary level learners receiving a school lunch every day increased from 27% to 41% between 2009 and 2010.

Three major initiatives aimed at improving quality in the poorly performing part of the education system were introduced in 2011: The Annual National Assessments (discussed in detail elsewhere in this report), the Curriculum and Assessment Policy Statements (also discussed elsewhere) and the national workbooks initiative.

This initiative saw workbooks for key subjects being distributed to all Grades R to 6 learners in order to tackle the legacy of a serious under-availability of texts for learners. The seriousness of the pre-2011 situation is illustrated by SACMEQ data which indicate that in 2007 only 36% of Grade 6 learners had unshared access to a mathematics textbook and the ratio of mathematics textbooks to Grade 6 learners, once sharing had been taken into account, was around 1 is to 2.

Other data sources suggest that the situation was similarly serious for other subjects and other primary level grades<sup>4</sup>.

The workbooks are a type of hybrid between textbooks and exercise books but do not replace textbooks. There are workbooks for language, mathematics and Life Orientation. Each workbook is explicitly designed to assist pacing within the classroom. Exercises are allocated to weeks in the school year. Initial reactions to the workbooks themselves from, for instance, teacher unions and education experts have been very positive. A formal evaluation of the workbooks was begun late in 2011 by the DBE, in collaboration with UNICEF. This evaluation will focus on both the quality of the books themselves and how they were actually utilised within schools. With regard to workbooks utilisation, current reports indicate a wide range of experiences. In some schools, workbooks have become a central feature of learning and teaching, whilst in others the workbooks have been more peripherally used, for a number of reasons. Some schools may have other materials which they prefer to use. However, what is a problem is that there are also schools where no good texts are used and teachers are not using the workbooks because they do not feel confident in doing so.

### iii. Effectiveness of the measures to make the education system inclusive

As described in the previous section, pro-poor education policies have been largely successful as far as access to services and resources is concerned. More children now receive daily meals; access to materials has improved; private contributions in the form of school fees are no longer a constraint to education access. Yet the most important outcome – the quality of education – has remained unsatisfactorily low for South Africa's poor.

Recent evidence, however, suggests some cause for cautious optimism about the direction of change in learning achievement amongst the poor. As referred to earlier, the 2011 TIMSS study indicates that the mathematics and science performance of South African grade 9 children improved considerably since 2002. A further benefit was that this overall increase in scores was chiefly driven by improvement in the poorer parts of the school system (HSRC, 2012).

### iv. Priority actions to improve equity and inclusion

Again it must be reiterated that educational exclusion and inequality is formed in the early grades and even before children enter the school system. This points to the need for a considerable emphasis on early remedial interventions to reduce the inequalities that are observed at later

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<sup>4</sup> The other prominent data source is the 2007 to 2009 National School Effectiveness (NSES) datasets.

stages in the school system. Such interventions include improving the quality of the Grade R programme, investigating the roll-out of a pre-Grade R year (something that has partly begun), encouraging teachers to identify children who are falling behind and offer them specific remedial attention, and increased time devoted to basic numeracy and literacy activities in the Foundation Phase both within the school day and outside of it. Afternoon classes and holiday clubs are amongst the options for increasing the time spent on basic literacy and numeracy activities outside of school. There is a growing literature documenting Randomised Control Trials in developing country contexts that show the effectiveness of remedial programmes such as afternoon classes run by community volunteers (e.g. Banerjee *et al*, 2010) and the use of tracking to optimise pacing (e.g. Duflo, Dupas and Kremer, 2008).

### **c. Competencies required for the country's development needs**

#### **i. Conceptualizing learning outcomes**

This report has hitherto emphasized the importance of basic literacy and numeracy skills, and placed high value on the tests that are typically used to measure such skills. However, it is worth taking a step back to consider whether these measurable skills are in line with the competencies that society (in particular South African society) should value. In so doing, the focus on basic literacy and numeracy will be seen to be justified on instrumental grounds.

Motala (2001) discusses the various ways in which education quality has been conceptualised in South Africa. She argues that “quality” must be conceptualised relative to the changing context within which it is being defined. In South Africa, therefore, it is necessary for it to reflect the notion of empowerment. The same logic applies to the conception of competencies or learning outcomes. These should serve to empower individuals for meaningful participation in South African society. This reasoning can be enriched by relating it to Amartya Sen’s capabilities view of development and how education fits into his thinking.

Sen proposes a particular view of development, that it is a “process of expanding substantive freedoms that people have” (Sen, 1999: 297). In Sen’s philosophy freedom consists in the “capabilities” people have to choose to live the sort of life they have reason to value. These capabilities range from the ability to survive to the ability to function socially. These capabilities and freedoms become the building blocks of development. Sen emphasises that many connections exist between capabilities. For example, illiteracy and under-nourishment are often results of low income. And yet conversely, education and good health are important determinants of income (Sen, 1999: 19). This interdependency underlies Sen’s bold claim that freedoms are both the End and the Principal Means of development.

Thus, education has both intrinsic value as an end in itself and instrumental value in providing them the skills needed to gain other freedoms, such as material ones. The pursuit of high-order and diverse competencies is of course important but is premised on a foundation of basic skills. The work of Heckman (e.g. 2006) has convincingly shown how all learning builds on earlier foundations. Therefore, in the South African context where the acquisition of basic skills appears to be lacking, it is appropriate to focus on ensuring improved basic literacy and numeracy in the early grades. This focus is therefore not at odds with a deep and diverse conception of the kind of competencies that are ultimately desired.

ii. Ensuring learning outcomes: policies and interventions

The most significant demonstration of government's commitment to ensuring learning outcomes is the new focus on learning outcomes *throughout* the education system, rather than exclusively on the matric examination. This is evident in the Presidency's push for the DBE to "Establish a world class system of standardised national assessments" (sub-output 2.1 of the delivery agreement between the Presidency and the Minister of Basic education). Consequently, the attention of actors across the education system and the public consciousness is being shifted towards the quality of education in primary school.

iii. Opportunities for life-long learning

The Adult Basic Education and Training Act of 2000 established public and private centres for adult learning and made provision for the funding and quality assurance thereof. After the largely ineffective *Tirisano* (2002) adult literacy campaign, a more promising programme is under way in the form of *Kha ri gude*. The programme's aim has been to make 4.7 million adults literate between 2008 and 2012, with the idea being that this would be roughly sufficient to achieve the Dakar goal of halving illiteracy. There has been strong demand for the programme with 360 000 enrolling in 2008 and 620 000 in 2009 (Gustafsson *et al*, 2010: 10) and administrative records suggesting that by 2011 the number reached by the programme was 2 493 255.

iv. Priority actions to better match the education sector's outcome to the country's needs

The Kha Ri Gude programme seems an appropriate vehicle to drive the main efforts of the DBE towards ensuring lifelong learning and in a sense providing a second chance to those who left the school system without achieving the desired outcomes. It is now due time for this programme be rigorously evaluated to assess whether and who it is benefiting and how it might be improved.

It is also worth noting in this section that a heutagogical approach to education was emphasized under the previous curriculum. However, this focus on self-directed learning was perhaps premature given the dearth of basic literacy and numeracy skills. It is now being realised that it is only once children acquire a solid numerical and literacy foundation that they will have the skills to empower them as lifelong and self-learners.

#### **d. The country's systems of learning, teaching and assessment to achieve desired learning outcomes**

##### i. Learning

##### 1. Understanding and positioning learning

The recent rapid expansions of access to primary education in much of Africa have been met with the sobering realisation that large proportions of children now enrolled are hardly learning anything at all. Numerous analysts are now emphasizing that learning must be the central outcome in education and that international targets such as the MDG for universal access to education are incomplete. For example, Pritchett (forthcoming) argues that we need to shift our ambitions from “universal schooling” to “universal learning”. Spaul and Taylor (2012) propose a combined measure of access to school and quality called “effective enrolment” – the proportion of children in the population (both enrolled and non-enrolled) that reach particular literacy and numeracy benchmarks.

##### 2. Using evidence to support effective learning and to innovate

Despite recently released evidence from TIMSS of some degree of progress since 2002, educational outcomes have remained unsatisfactorily low. This despite extensive well-intentioned policy reform and intervention programmes since the transition to democracy in 1994. Clearly then, one cannot *assume* that an intervention that is well-designed in principle *will ultimately impact on learning* in the classroom. Given the complex chain of policy design to implementation to outcomes, with contextual factors such as poverty affecting things at each stage, there is a need to be more rigorous when evaluating the ultimate impact of policy on learning outcomes.

Proper impact evaluation is a technically challenging task. Careful research designs are needed in order to actually demonstrate the causal impact of a policy or programme. Currently, the DBE is working together with the Department of Monitoring and Evaluation in the Presidency and with external consultants to evaluate the impact of two significant programmes – the National School Nutrition Programme and the Grade R programme. The aim of such evaluations is to establish whether they are currently improving learner health and educational outcomes and how these programmes might be adjusted in order to increase their impact. An additional aim of such

evaluations is to establish whether these programmes are impacting on the entire population of children, and especially on those children attending schools in poor communities.

The Department's sector plan, known as the "Action Plan to 2014", contains 27 clear goals of education policy. While this plan recognizes the varying objectives of the schooling system, it places learning outcomes at the centre. The first 13 goals deal with measurable indicators of system performance to provide a solid indication of whether policy interventions are impacting on learning.

### 3. Making effective learning equitable

The structure of education spending is one obvious area where pro-poor design can enhance equity. However, all the major policy initiatives in the last few years address problems that constrain learning in the poorer parts of the school system. These have been referred to elsewhere already but are reviewed here again.

Firstly, the new CAPS were designed to address curriculum coverage and pacing problems that were prevalent in the low performing schools. Teachers most in need of support will receive much clearer guidance on what to teach and how.

The second large change implemented in schools since 2011 has been the distribution of national workbooks. This was a major undertaking to tackle a serious problem of inadequate access to quality texts amongst learners, and a further measure to improve curriculum pacing and curriculum coverage.

A third large intervention has been the introduction of Annual National Assessments in grades 1 to 6 and 9. One objective of this low-stakes standardized assessment is to improve the quality of assessment practices in schools by providing a tool for teachers to diagnose learning gaps based on the requirements of the curriculum.

### 4. Priority actions to improve learning

Despite these efforts more work is required in the early phases of the school system to ensure that learning gaps are prevented. These include improving the provision of reading materials in all the 11 home languages for the Foundation Phase, additional practice in basic literacy and numeracy activities, both within existing time allocations and outside of normal school hours, extending Early Childhood Development coverage and especially the quality thereof.

## ii. Teaching

### 1. Understanding an effective teaching process

Hanushek (2010) describes the literature on teacher effectiveness as consistently pointing to the central importance of teachers for student achievement but not consistently pointing to any specific characteristic of teachers being important. Most of the easily observed characteristics such as teacher experience and teacher qualifications are generally not strongly associated with student achievement.

One possible reason for the lack of consistent evidence around teacher characteristics that improve learning is that effective teaching practice may be context-dependent and involve an inter-related set of characteristics. The following quote from a seminal study using TIMSS video classroom observation in Germany, Japan and the US expresses this view:

Teaching is not just a collection of individual features, it is a system of tightly connected elements. And the system is rooted in deep-seated beliefs about the nature of the subject, the way students learn, and the role of the teacher. Attempts to change individual features are likely to have little effect on the overall system (Stigler and Hiebert, 1997, quoted in Hoadley, 2010: 4).

There is a vast literature on defining effective teaching. Typically lists of characteristics describing effective teaching practices have been put forward in the literature. Such characteristics include organised planning, intellectually challenging interaction with children, appropriate and fairly extensive use of homework, etc. More recently, literature has not only emphasized what good teachers do but also what they believe – about themselves and about their pupils (Muijs and Reynolds, 2011).

A thorough analysis of what constitutes effective teaching is beyond the scope of this report. Therefore a pragmatic conception is used: For effective teaching to occur teachers need to be present at school, use the available time for academic purposes and convey enthusiasm about learning to their children (i.e. they must be motivated) and they must have sufficient subject knowledge and pedagogical knowledge (i.e. they must be capable).

### 2. Equity and effectiveness of teaching

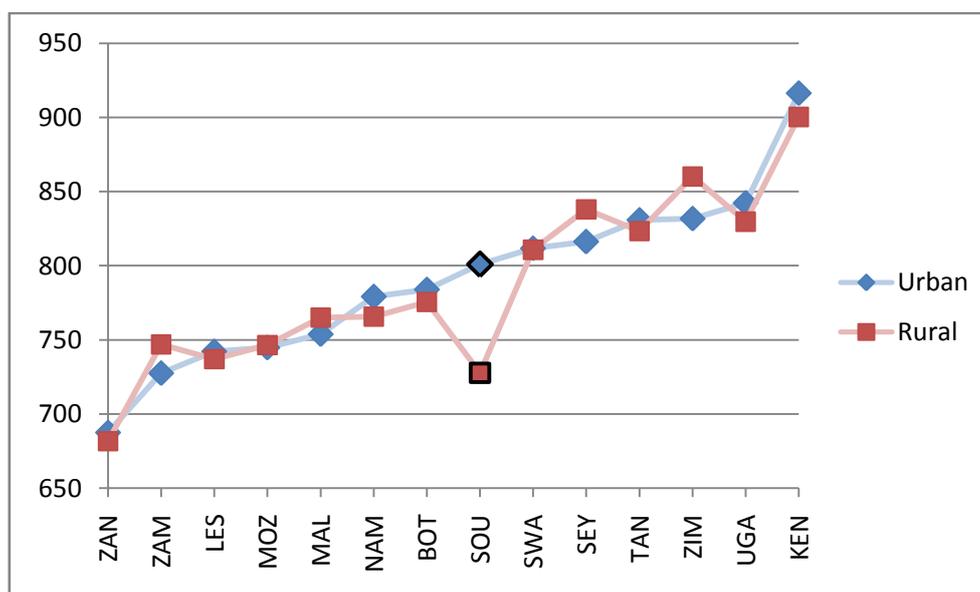
Fleish (2013) argues that in the teaching of reading there is a clear divide in pedagogical practice that is aligned to historically different sections of the school system. In historically black schools there is a remarkable uniformity in their use of choring methods where reading is always centred around the teacher reading and around familiar texts. What is lacking is independent reading where learners themselves engage with unfamiliar texts and are taught to extract meaning

from – and interpret such texts. To some extent this is a reflection of a lack of graded reading materials in these schools, but it is also a reflection of an ongoing belief in an ineffective pedagogy. In contrast, historically white schools systematically take their learners through graded reading materials that follow the appropriate phases of reading development.

Another example of how inequity in effective teaching practices mirrors the inequity in socio-economic status and overall learning outcomes is the issue of teacher content knowledge. Until fairly recently, there has been virtually no information available regarding the content knowledge of South African teachers. The National School Effectiveness Study (NSES) included very short tests for mathematics and language teachers, which pointed to inadequate content knowledge amongst Intermediate Phase teachers (Taylor, 2011). However, the main source of information regarding the content knowledge of South African teachers is the SACMEQ survey of 2007. This included an extensive mathematics test for Grade 6 mathematics teachers and an extensive reading test for Grade 6 language teachers.

Figure 12 depicts teacher scores in the mathematics teacher test for all countries that participated. The scores for teachers in rural schools and in urban schools are reported. This demonstrates that South African teachers located in urban schools have a content knowledge that is fairly average in regional comparison. However, there appears to be a particular problem regarding the content knowledge of rural teachers. Whereas in most countries there is little difference between the content knowledge of urban and rural teachers, in South Africa there is a marked difference. The content knowledge of South African mathematics teachers in rural areas is just about the worst in the region.

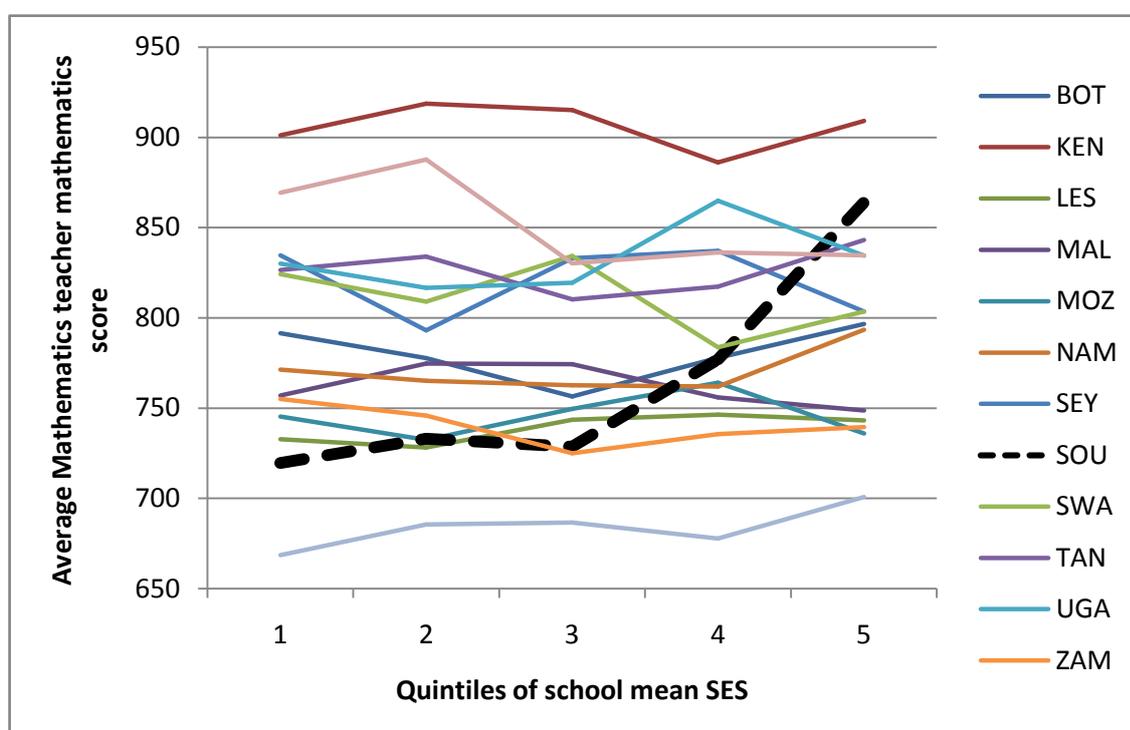
**Figure 12: Grade 6 mathematics teacher content knowledge in urban and rural areas**



The next figure tells a similar story, except now the distinction is on the basis of socio-economic status (SES). Mathematics teacher content knowledge is relatively good in the most affluent 20% of South African schools, but amongst the worst in the region for the poorest 60% of schools.

The poor content knowledge of many of South Africa's teachers comes despite having received more years of teacher training on average than their counterparts elsewhere Southern and East Africa, as the SACMEQ survey also reveals. This situation would suggest that either pre-service teacher training or in-service training programmes are not succeeding in developing the content knowledge of teachers.

**Figure 13: Grade 6 mathematics teacher content knowledge by school SES**



Considerable further research is required in order to understand how teacher content knowledge impacts on student learning. Spaul (2011), for example, found using the SACMEQ data that the association between teacher content knowledge and learner achievement was fairly small. Additional data on teacher knowledge needs to be collected and analysed with respect to learner achievement, particularly at the secondary school level, where one might expect teacher knowledge in subjects like mathematics and science to have considerable impacts on learning.

### 3. Monitoring and supporting teaching

Clearly there is a need to support teachers to enhance their capability but also to monitor them so as to affect their motivation. It may be, for instance, that teachers would take initiative and use existing materials and opportunities to improve their subject knowledge if greater monitoring

and accountability was in place. Section 5.e.iii.2 will discuss the role of in-service training and of alternative models of teacher development. However, the DBE's development of a new instrument for teacher evaluation is worth noting here.

The new Teacher Performance Appraisal instrument, or TPA, is intended to determine whether the performance of individual teachers warrants a salary progression in line with the official salary structure. The new instrument responds to a need, identified by amongst others teacher unions, to draw a clearer separation between the determination of professional growth needs and appraisals linked to salary increments. The intended result is a more effective system of accountability within schools and the raising of the professional status of teachers.

#### 4. Conditions for teaching

Two of the most important conditions of teaching are dealt with in other sections of this report: the physical environment of the school and teacher remuneration. This section therefore focuses on another, fairly controversial condition of teaching, namely class size.

It is important to distinguish at the outset between the pupil-teacher ratio within a school and the actual size of classes. The pupil-teacher ratio is a resource variable. Class size is of course to some extent a function of pupil-teacher ratio but it is to a large extent also a function of timetabling and organisational practices within schools. Class size can therefore be considered to reflect school management practice.

South African schools do have rather large classes by international standards. According to Lockheed and Verspoor (1991), estimates of average class size in developing countries between 1965 and 1985 were constantly in the range of 39 to 42, while in industrialised countries this figure decreased from 28 to 20 over this period. In South Africa, Gustafsson and Patel (2009: 26) estimate that about 16% of grade 8 students are in classes larger than 55. According to the PIRLS 2006 data, roughly a quarter of South African grade 5 pupils were in classes larger than 52.

Internationally, the evidence regarding the impact of class size on learning outcomes is mixed. The same applies to the South African literature. However, two recent studies looking at class size using the PIRLS data suggest that some improvements could be expected if excessively large classes were somewhat reduced (Taylor, 2010, Shepherd, 2011). Reducing excessively large classes to say 50 is probably not a matter of simply employing more teachers. With the possible exception of certain rural areas where teacher shortages are experienced, the phenomenon of very large classes in South Africa is often a matter of school management. Large classes

combined with too many “free” periods for teachers often occurs when school principals do not understand how to deploy teachers effectively within the timetable. Gustafsson and Patel (2009: 27) estimate that if schools ensured that classes were of equal size and the available time for teaching was put to maximum use, the mean class size could be reduced from 47.2 to 37.8.

#### 5. Priority actions to improve teaching

While spending on non-personnel items is strongly pro-poor (as will be described in a subsequent section), spending on teacher salaries is the largest component of overall spending and cannot be pro-poor. In fact, due to the inequitable distribution of teacher quality through the system this aspect of real resourcing is regressive and contributes to low educational outcomes in poor communities. Therefore, actions are required to improve the effectiveness of this most important resource (teachers). While incentives to reward effort and professionalism no doubt constitute one aspect of this, teacher development programmes that can be proven to impact on teacher behaviour and learning outcomes are urgently needed. A forthcoming section on teachers discusses emerging alternative models of teacher development for consideration.

#### iii. Assessment

##### 1. Assessment policies, frameworks and methods

Prior to the introduction of Annual National Assessments (ANA) in 2011, assessment in South Africa consisted of school-based assessments and the matric examination (National Senior Certificate). Several sources of research pointed to the problem that school-based assessment practices were extremely weak, especially in the historically disadvantaged section of the system (Lam, Ardington and Leibbrandt, 2010; Van der Berg and Shepherd, 2010; Taylor *et al*, 2011) leading to random grade repetition and inefficient subject choices. A further problem associated with weak assessment practices was that parents were largely unaware of the learning deficits that children develop until it is too late and they drop out of school just prior to the matric examination.

It was largely in response to these problems that the ANA were introduced. The Action Plan clearly states that ANA is a two tiered system of assessments. There is Universal ANA in which all children in grades 1 to 6 and 9 participate. These are administered and marked locally by teachers at each school. Universal ANA is expected to have four key effects on schools:

- expose teachers to better assessment practices,
- make it easier for districts to identify schools in most need of assistance,
- encourage schools to celebrate outstanding performance;

- empower parents with important information about their children's performance

Then there is Verification ANA, in which a sample of schools is tested under monitored conditions and the tests are marked centrally. In addition background information on pupils, teachers (including teacher testing) and schools is collected through questionnaires. The purpose of V-ANA is to provide accurate national and provincial estimates of performance and to allow analysis of what factors explain performance.

## 2. Implementation of assessment

Up until now there have been two years of ANA. In the first round of ANA (2011) a solid verification ANA exercise was conducted, but serious problems were experienced with capturing marks for universal ANA. Capturing was substantially improved in 2012 with more than 80% of marks captured into the national database. While this needs to be further improved it does already represent an improved aspect of ANA implementation. On the other hand, no verification ANA took place in 2012 due to the difficulty of finding a service provider capable of such a large logistical exercise (fieldworkers would have been needed simultaneously in almost 2000 schools throughout the country). The need to conduct a sound verification ANA is therefore an important implementation challenge for improving assessment in South Africa.

Another aspect of the ANA programme requiring improved implementation is in the setting of appropriate test items. A DBE internal Rasch analysis of items used in the ANA tests suggests that the item difficulties are typically at a far higher level than the abilities of most pupils. This means that the test design will not be able to meaningfully differentiate amongst children at the low end of the performance distribution. A solution is to include more lower order items in the tests but this would be controversial as it would then mean that the tests are set at a level below what is required in the curriculum. This problem facing test developers is a symptom of the combination of an ambitious curriculum and an under-performing system.

## 3. Priority actions to improve learning assessment

There are several key aspects of the ANA that need to be strengthened:

- Make school and pupil performance information available to parents in an accessible format. However, there is a knowledge gap regarding how best to do this and what impact it will have. Experimental research is therefore recommended.

- Assist teachers, principals and district officials to use the ANA to inform remedial practices.
- Include several anchor items in the tests administered to schools participating in Verification ANA to allow comparability of results across grades and across years.

### **e. The country's provision of key resources for the provision of education**

#### i. Curricula guiding learning, teaching and assessment

##### 1. Development relevance of curricula

Historically, most South African pupils were under a curriculum that was designed to prepare them for a restricted participation in the labour market. Since 1994, the curriculum has had far more ambitious goals for contributing to the development of the country where all children should have the opportunity to participate in highly skilled work.

However, the post-transition curriculum, known as Curriculum 2005 or “Outcomes Based Education” was clearly unrealistic given the realities in South African classrooms and homes. The focus on self-learning and group work in particular relied on a level of home educational resources that does not yet exist in South African society. Moreover, these progressive ideals led to several unintended consequences such as a neglect of text in classrooms, confusion about what should be taught and ultimately low curriculum coverage, as will be demonstrated below.

Subsequent revisions of the curriculum have attempted to simplify the guidance given to teachers. However, the difficulties of setting a curriculum that is appropriate for all learners in a system that is so diverse and so unequal in terms of cognitive achievement are still evident. For example, in each of the grades it is assumed that the learners have completed all the issues in the previous grade or phase. However, this is not true of the majority of South African classrooms and this creates a conundrum for teachers at later grades – does one focus on remedial work or attempt to cover all the items in the curriculum for the current grade?

A further problem that persists, albeit to a lesser extent than previously, is that the interpretation of the national curriculum by provinces, districts, schools, publishers, training providers and service providers causes confusion and impacts on the implementation of the curriculum.

## 2. Curriculum planning, design and content

It must be recognised that South Africa is currently still phasing in a new set of curriculum statements (the CAPS). Therefore, it would be premature to draw strong conclusions about the design and content of the current curriculum. Indeed there is a real need to avoid further curriculum change. Table 2 shows to what extent curriculum change has disrupted learning in South African schools since 1997. The table reflects what curriculum rules applied in particular grades in particular years. For example, by 2014 all grades should be covered by CAPS (C). What is striking from the table is how frequently the curriculum has been changed and consequently that the majority of learners passing through the education system in recent years would have been subjected to curriculum changes with the mismatches across phases that are implied by that.

**Table 2: Curriculum changes over the years**

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gr R	O	5	5	5	5	5	5	R	R	R	R	R	R	R	R	C	C	C
Gr 1	O	5	5	5	5	5	5	R	R	R	R	R	R	R	R	C	C	C
Gr 2	O	O	5	5	5	5	5	R	R	R	R	R	R	R	R	C	C	C
Gr 3	O	O	O	5	5	5	5	R	R	R	R	R	R	R	R	C	C	C
Gr 4	O	O	O	O	5	5	5	5	R	R	R	R	R	R	R	R	C	C
Gr 5	O	O	O	O	O	5	5	5	R	R	R	R	R	R	R	R	C	C
Gr 6	O	O	O	O	O	O	5	5	R	R	R	R	R	R	R	R	C	C
Gr 7	O	O	O	5	5	5	5	5	5	R	R	R	R	R	R	R	R	C
Gr 8	O	O	O	O	5	5	5	5	5	R	R	R	R	R	R	R	R	C
Gr 9	O	O	O	O	O	5	5	5	5	R	R	R	R	R	R	R	R	C
Gr 10	O	O	O	O	O	O	O	O	O	R	R	R	R	R	R	C	C	C
Gr 11	O	O	O	O	O	O	O	O	O	O	R	R	R	R	R	R	C	C
Gr 12	O	O	O	O	O	O	O	O	O	O	R	R	R	R	R	R	R	C

Note: The following abbreviations are used:

O – Old curriculum inherited in 1994

5 – Curriculum 2005

R – Revised National Curriculum Statement (RNCS)

C – Curriculum and Assessment Policy Statement (CAPS)

The table reflects official switchovers. In practice, there would be modifications within particular grades even if officially the curriculum was the same. Often these modifications were introduced to prepare the system for the next official switch. For instance, there were a number of rule changes in the old curriculum in Grades 10 to 12 before the official switchover to the RNCS in 2006 to 2008. There were similar modifications to Curriculum 2005 in the years preceding the switches to the RNCS in Grades 4 to 9.

## 3. Curriculum implementation, monitoring and evaluation

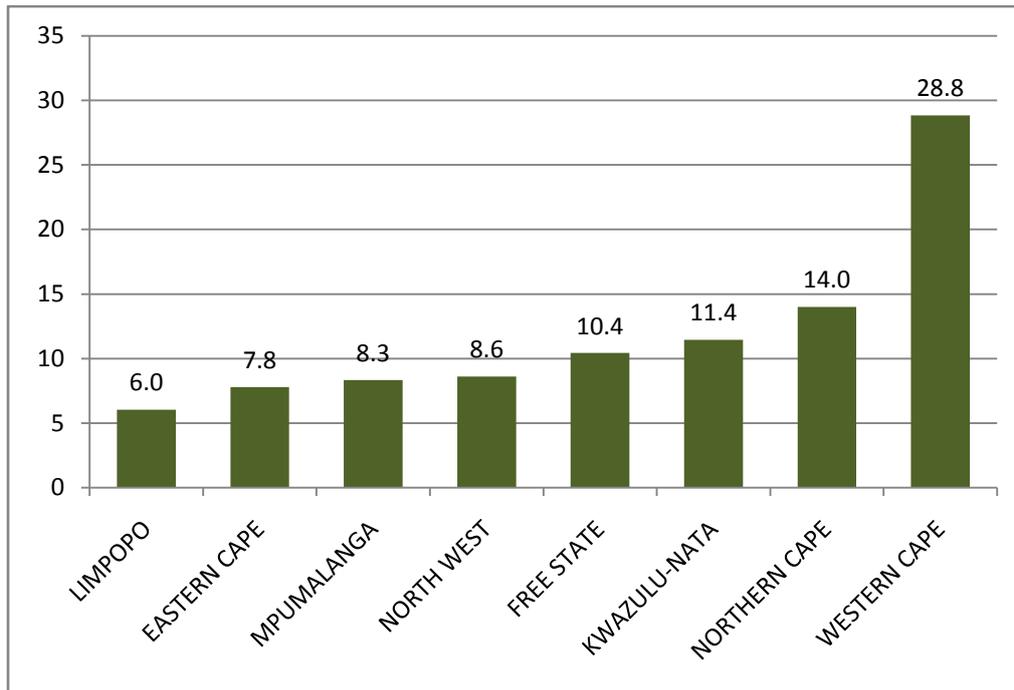
A fairly substantial body of evidence jointly demonstrates that coverage of the curriculum is far from complete, with the result of accumulating learning deficits. One aspect of classroom practice that contributes to this problem is the low level of cognitive demand required by lessons. Low cognitive demand in the Foundation Phase means, amongst other things, that reading is not sufficiently taught. An HSRC study of grades 1 – 4 classrooms in 20 Limpopo

schools found that very little reading activity occurred, that the use of texts was limited and that when reading was taught the predominant activity was the teacher reading to the class (Prinsloo, 2008). This evidence from classroom observation provides important context to the results of large scale sample surveys, such as PIRLS (2006) which indicates that more than 80% of South African children had not learned to read effectively by the fifth grade.

The nature of low cognitive demand in classroom practices is also demonstrated by Ensor *et al* (2009). They found an overuse of physical classroom apparatus at the expense of text, with the consequence that children favoured concrete approaches to problem-solving rather than abstract and algorithmic approaches. Hoadley (2007), comparing four working class classrooms with four middle class classrooms, found that mathematics classes in the working class context tended to focus on everyday knowledge rather than principles and procedures. There was also very little feedback to children in response to mistakes. This is confirmed by the learner workbook analysis done as part of the National School Effectiveness Study (NSES), which found very little evidence of paragraph length writing and of complex mathematics exercises.

Figure 14 shows the average number of complex exercises (defined as requiring more than one step or involving a word problem) that were found in the mathematics workbook of the “best learner” (according to the teacher’s judgement). Note that fieldwork was undertaken roughly three-quarters into the school year so enough time had passed in which to do a fair amount of work. As the figure shows, the undertaking of complex exercises varied considerably across the provinces. Due to the presence of some schools with fairly high numbers of complex exercises the averages perhaps understate the severity of the problem. It is telling that just over 50% of grade 5 students were in classes where fewer than 5 complex exercises could be found in the “best” learner’s mathematics workbook.

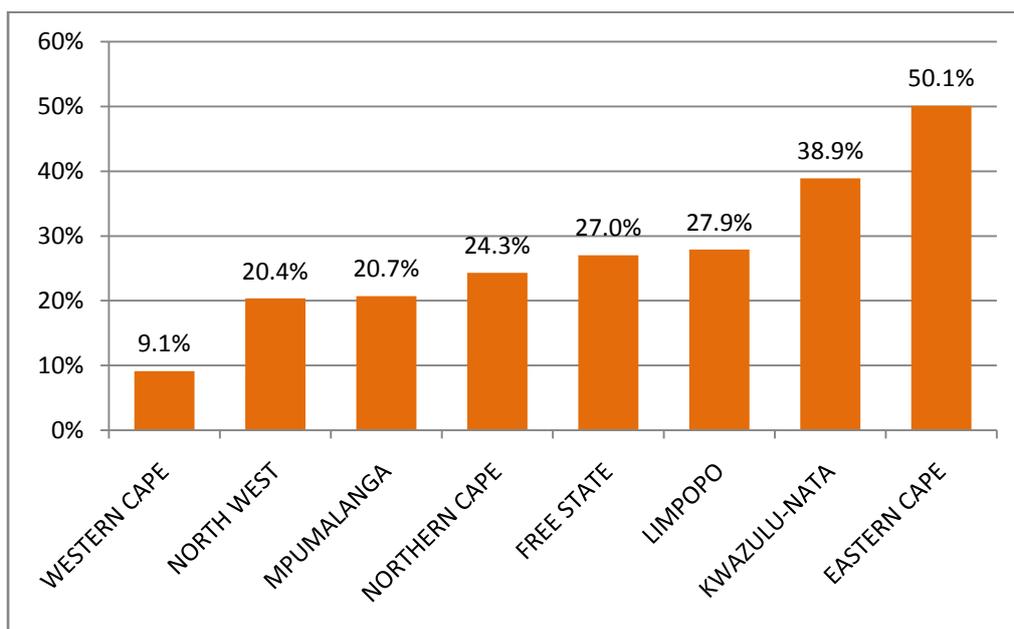
**Figure 14: Average number of Complex Maths Exercises observed in the best learner's workbook (Grade 5, 2009)**



Source: Own calculations based on NSES

The next figure shows the percentage of grade 5 children that were in classes where no paragraph writing appears to have taken place. Again, considerable differences exist by province. More than half of children in the Eastern Cape were in classes where paragraph writing seems not to have occurred.

**Figure 15: Percentage of grade 5 children in classes in which the best learner's workbook revealed no evidence of paragraph length writing (data from 2009)**



Source: Own calculations based on NSES

#### 4. Priority actions to improve the guiding function of curricula

Avoid confusion and disruption that could be caused by unnecessarily adapting the curriculum.

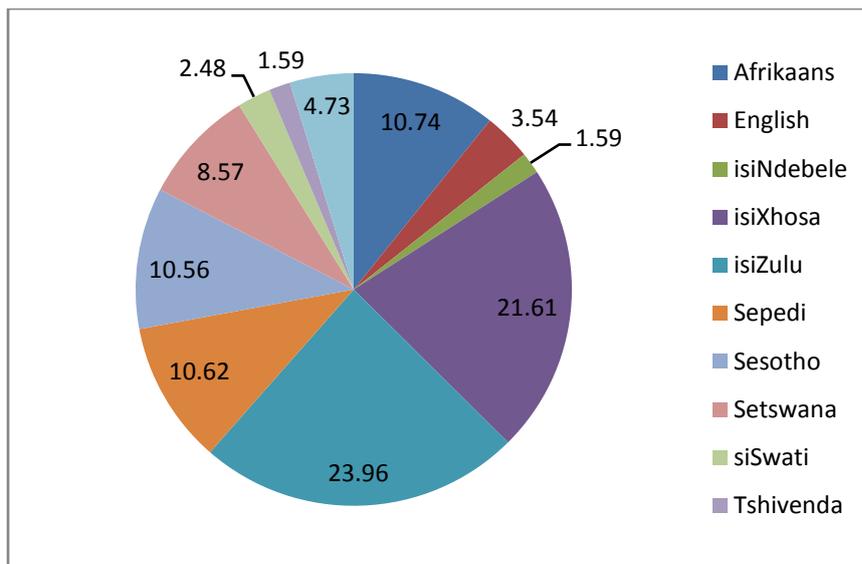
Provide guidance to teachers whose children are clearly suffering from learning deficits accrued in earlier grades. This guidance could deal with how to prioritise the more crucial components in the curriculum and how to deal with children of varying ability within the same class.

##### ii. Learners' as key actors

##### 1. Learners diversity

South Africa has been coined the “Rainbow Nation” to describe its diversity. The children attending schools are thus diverse in multiple dimensions – culture, language, socio-economic status to mention three of the most obvious aspects of diversity. Figure 16 shows the spread of home languages that are spoken by children in Grade 5.

**Figure 16: Home languages spoken by South African children (grade 5)**



Source: Own calculations based on NSES data (2009). Note that Gauteng is omitted from this dataset. Apart from that it is nationally representative.

This language diversity presents several challenges to education. Given the dominance of English in the global and South African economy, and given that most of South Africa's languages do not have sufficiently developed academic literatures in a range of scientific fields, it is necessary for a transition in the language of instruction to occur at some point. In most schools this occurs in Grade 4. A further problem is that even in the Foundation Phase where instruction is encouraged to take place in the mother tongue there are often children with many different

home languages all within the same classroom. This is more of a problem in language heterogeneous provinces such as the Western Cape and Gauteng.

## 2. Learners' varying needs, expectations and aspirations

One particular need that is often neglected in a country where there is such overwhelming challenges facing the majority of schools is the education priorities for children with special needs due to various disabilities. The number of non-enrolled 7-15 year olds in South Africa is low by regional standards, but many of these non-enrolled children have special education needs. The country has around 415 so-called "special needs schools". However, it is often reported that these schools offer only a basic level of care rather than the very specialized care that their pupils require, and that this is particularly severe in poor communities.

The policy framework governing special needs in education is outlined in the Education White Paper number 6 of 2001. The philosophy adopted in this framework is known as inclusive education. One of the key requirements for improving inclusive education is to capacitate the teachers working in special needs schools as well as at least one teacher per ordinary school. In this respect, the Action Plan has established an important indicator that will be tracked: "The percentage of learners in schools where at least one educator has received specialised training in the identification and support of special needs."

## 3. Priority actions to address learners' needs

Investigate what works to support children who undergo a transition from mother tongue instruction to English.

Investigate what the most appropriate forms of support and guidance are for classrooms with multiple home languages present.

Develop and pilot a tool for teachers to use to diagnose special needs and direct the type of support that is needed.

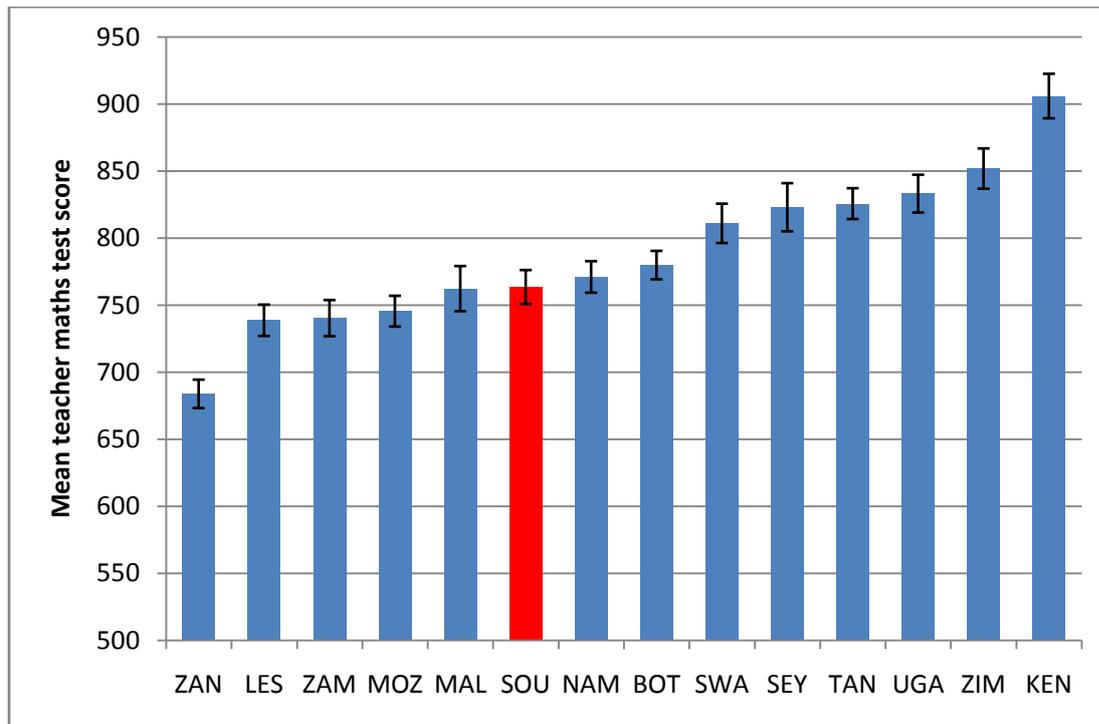
Ensure that each district has at least one special needs school and that each school has at least one teacher who has been trained to work with special needs children.

### iii. Providing adequate and quality teachers

Better quality teaching requires both *competent* and *motivated* teachers, though it is not clear which of these is the more binding constraint in South Africa. Teacher knowledge in South Africa is

weak: Carnoy *et al* (2012) found that grade 6 teachers recorded an average score of around 40% on a test designed to assess their mathematics knowledge for that grade. Similarly, the teacher testing conducted in SACMEQ 2007 revealed that the content knowledge of South African teachers is unimpressive compared with other countries in the region. Figure 17 shows that South Africa's mean score amongst reading teachers was slightly below average for the region.

**Figure 17: Mean reading teacher test scores by country in SACMEQ 3**



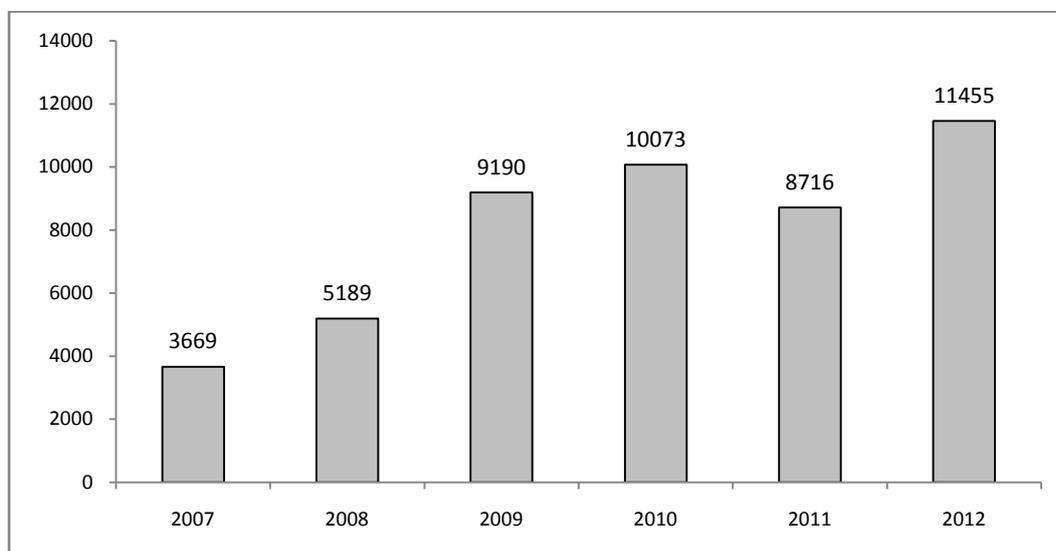
Furthermore, studies (e.g. Hoadley, 2010) suggest low teacher motivation in poor schools, manifested in high absentee rates and low teaching activity. Judging by previous studies, most notably the HSRC's review of teacher leave (Reddy *et al*, 2010), and analysis of three survey datasets, it seems safe to conclude that teacher absence in South Africa is probably somewhere between 6% and 12%. This is not abnormally poor, especially by developing country standards. However, the influence of strike activity has meant that more time has been lost than was needed. Also, the pattern of higher discretionary leave on Mondays and Fridays (as identified by Reddy *et al*, 2010) suggests that a degree of shirking behaviour exists and therefore that there is scope for absenteeism to be reduced. An article in the Human Capital Review (Johnson, 2009) suggested that the employee absenteeism rate in most South African companies was between 3.5 and 6%. This also contributes to the view that teacher absenteeism is higher than can be accounted for by typical health reasons. Teacher absenteeism is particularly common in certain provinces (Eastern Cape, KwaZulu-Natal, Mpumalanga and Limpopo).

### 1. Selection of teacher trainees

The McKinsey Report (2007) on “How the world’s best-performing school systems come out on top” placed enormous emphasis on attracting the best people into teaching. Some of the best education systems are characterised by stiff competition to make it into the teaching profession. In contrast, there are concerns in South Africa that teachers are no longer coming from the top proportion of the performance distribution. This is especially so amongst black school-leavers for whom highly skilled jobs are now unrestricted. In the past teaching was one of the few professions that were open to educated black South Africans.

One can distinguish between two methods for attracting the best candidates into the teaching profession: Short term incentives such as bursary schemes, and long term incentives such as a steep age-wage profile and salaries that are linked to measures of teacher quality. Government’s main response has been the Funza Lushaka bursary scheme for studying teaching that has been rolled out since 2007. The numbers of recipients has steadily increased up until 2012, when 11455 bursaries were awarded, as Figure 18 shows. However, a review of whether Funza Lushaka is indeed attracting high quality individuals and how many indeed enter the profession could be recommended.

**Figure 18: Number of Funza Lushaka bursaries awarded**

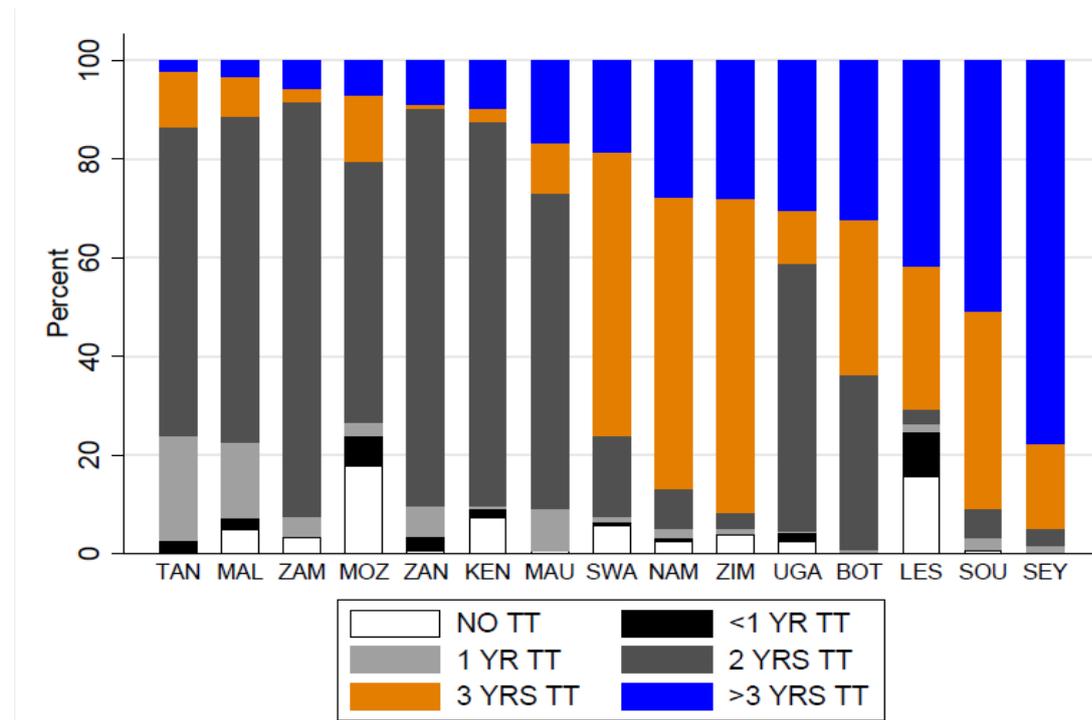


### 2. Pre- and in-service training of teachers

Persal data indicate that over 90% of South African teachers are sufficiently qualified, as defined by three years of post-school training. The SACMEQ data show that this is a lot of pre-service training compared with teachers in most other African countries. The following figure shows the

proportions of teachers in each SACMEQ country with various amounts of teacher training. While over 90% of South African teachers have at least 3 years of training, the vast majority of Kenyan teachers, for instance, receive two years of training. Yet Kenyan teachers substantially outperformed South African teachers in the content knowledge tests. This must raise questions about a) the content of pre-service training in South Africa, b) the quality of in-service training, and c) the motivation of teachers to keep themselves updated once in the profession.

**Figure 19: Self-reported years of teacher training for countries in SACMEQ 3 (Mathematics teachers)**



Note: The percentages in the graph correspond to the proportions of children taught by teachers with those levels of teacher training.

While training workshops are the most common model of in-service teacher development in South Africa, the impact of these on learning has not been evaluated. To be fair, there is growing scepticism about whether this is an effective model of teacher development. A recent Ministerial Audit of provincial reading strategies suggested that in two provinces a new model of teacher support involving on-school coaching was producing favourable anecdotal reports. As competing models of teacher development are now being debated there is a need for rigorous cost-effectiveness evidence to inform the broad direction that South Africa should follow.

Following good practice in countries such as Canada, the DBE has negotiated with teacher unions agreements whereby the unions would use public funding in order to provide in-service

training to teachers. The advantage of this model, which will supplement but not replace existing models of training, is that unions will become more active stakeholders in the quality improvement process in schools. Experiences in other countries suggest that this type of collaboration can greatly assist in cementing a social pact for better schooling.

### 3. Recruitment, deployment and retention of teachers

Undoubtedly the main factor in determining who is attracted to the teaching profession, who remains in teaching, and the levels of effort that teachers exert is the level and, perhaps more importantly, the structure of teacher pay.

Several analyses of teacher pay using household survey data have been conducted. Crouch (2001), Gustafsson and Patel (2009), Armstrong (2009) and Van der Berg and Burger (2010) all found that average teacher pay was below that for most other professions, even after taking into account gender, age and qualifications. However, average pay increased substantially from 2007 to 2009, by around 15% in real terms, (the studies referred to previously all used data prior to 2008, so their conclusions all pre-date the 15% improvement). Given that personnel spending accounts for about 80% of overall government spending on education, it is hard to argue that the average level of teacher pay should be higher.

Rather than focussing on the level of average pay, the key issue in the face of weak learning outcomes should be on how to adjust the salary structure in order to, firstly, attract the best individuals into the teaching profession, secondly, incentivise good teaching and, thirdly, improve salary increments linked to years of experience so as to reduce the attrition of good teachers. Van der Berg and Burger (2010: 19) describe how much less the teaching profession rewards improved qualifications than the rest of the labour market. The teacher pay system clearly lacks sufficient responsiveness to effort and quality amongst teachers.

A forthcoming section will discuss several ideas for how teacher effort and teacher quality can be incentivised.

### 4. Management, support and encouragement of teachers

The DBE undertakes several initiatives to encourage and support teachers. The National Teaching Awards is one high-profile event that rewards specific teachers for outstanding contributions and serve to raise awareness of the role that teachers play in the country. Another recently launched initiative is a magazine called “Whatsup Teach”. The purpose of the magazine is to communicate critical pedagogical and support information to teachers in a creative and

interactive manner, to enhance teaching and learning through a user friendly medium and to open lines of communication between the DBE and teachers.

However, while such initiatives are perhaps good in and of themselves they are perhaps too piecemeal. Systematic forms of teacher support are needed. Again, the idea of on-school support from specialist coaches as has been experimented with in some provinces may be a model that could be expanded.

#### 5. Priority actions to improve the quality of teachers and their optimal utilisation

There is a need to experiment to determine what are the binding constraints to improved teacher utilisation and what interventions have the most impact on teacher outputs. In this regard, one can see that alternative models of teacher development are emerging in South Africa (e.g. teacher training workshops versus on-school coaching from specialists) and these should be rigorously piloted to ensure an evidence based approach in future.

The content of pre-service training in the relevant institutions needs to be reviewed. Anecdotally, these programmes may be too heavily focussed on theoretical and philosophical matters rather than on subject content knowledge and knowledge of how best to teach particular subject matter.

Finally, the thorny issue of incentives needs to be piloted. At the moment the need to introduce incentives to reward good teaching is obvious to labour economists, is met with scepticism by educationists and is strongly opposed by teacher unions. Moving beyond ideological debates toward a considered analysis of what might be feasible will help to bring clarity, dismiss unrealistic plans and relieve fears. For example, linking teacher pay directly to the performance of children in their class is unrealistic as this would require a watertight cheat-proof standardised testing system in which every child was tested in every subject. Capacity does not currently exist for this, nor is it necessarily desirable. On the other hand, offering teachers in certain subjects the opportunity to take a voluntary content knowledge test and stand to gain a bonus for achieving at a certain level might be realistic. A similar system has already been introduced in Chile. A pilot experiment to evaluate whether teachers would opt in to such a programme, whether it would incentivize them to improve their own content knowledge and whether this leads to improved learner outcomes, would be most informative for teacher development policy.

## iv. Providing conducive learning environment

1. Policies, instruments and processes for good learning environment

The year of 2012 was one in which a lot of media attention was focussed on the textbook delivery problems experienced in the Limpopo province. This has highlighted one aspect of the enabling environment that is crucial and which has not always been successfully provided in South African schools. An important development in this saga has been the increased use of the courts by NGOs and schools to force government to deliver textbooks and to meet other obligations. The courts have also been approached to force the DBE to commit to certain minimum Norms and Standards pertaining to school infrastructure.

2. The physical learning environment

The following table provides a sense of the backlogs relating to school physical environment that exist in some of the poorer South African provinces. The table shows the proportion of learners in schools with access to a selection of key resources and facilities about which information was collected in SACMEQ 2007. For each resource, the province with the worst access is highlighted in red. It is evident that the Eastern Cape, Limpopo and Mpumalanga stand out as having considerably inferior physical learning environments. Although studies of the determinants of educational achievement typically do not find strong effects of additional resources on learning, there is surely a rights-based argument to be made for improving the physical environments in these provinces.

**Table 3: Access to various school facilities by province**

	Electricity	Library	Sports Area	Fence	Sick Room	Water	Computer Room	Computer corner	Computer Projector
EC	65.6%	21.3%	56.0%	76.2%	13.8%	86.1%	17.5%	20.4%	5.8%
FS	100.0%	61.0%	62.2%	100.0%	47.2%	88.9%	47.7%	27.5%	32.3%
GAU	97.8%	70.4%	81.3%	92.9%	71.1%	84.0%	75.9%	27.8%	41.9%
KZN	84.8%	33.3%	57.3%	87.0%	32.3%	85.9%	25.8%	23.8%	4.6%
LIM	88.8%	12.2%	58.8%	85.2%	5.1%	90.5%	43.1%	7.7%	2.5%
MPU	93.2%	40.9%	63.4%	79.8%	23.9%	83.3%	16.6%	29.2%	7.6%
NC	97.5%	47.8%	74.4%	92.0%	54.8%	98.0%	92.6%	16.3%	35.2%
NW	95.4%	44.1%	69.8%	91.6%	49.0%	100.0%	41.3%	21.5%	19.1%
WC	100.0%	73.3%	86.2%	100.0%	75.6%	92.1%	90.1%	28.2%	34.1%

Source: Own calculations based on SACMEQ 2007

### 3. The psychosocial learning environment

One of the negative findings to come out of both TIMSS 2011 and PIRLS 2011 is the high frequency of bullying that occurs in South African schools. Teachers and pupils were asked to report on the incidence of bullying and on how safe they feel at school. As few as 21% of South African pupils in TIMSS were taught by teachers who felt safe at school in comparison with a figure of 45% internationally. Similarly, 75% of South African children in grade 9 reported that they had been bullied in one form or another compared to 41% internationally (HSRC, 2012: 6). The same basic picture emerges at the grade 4 level according to PIRLS 2011. While 20% of children in other countries report being bullied at least once a week, 55% of South African children experienced weekly bullying (Howie *et al*, 2012: 83).

### 4. Priority actions to improve the learning environment

The delivery of materials and in particular the building of new schools is an area where the problem is more complex than simply insufficient funding. For a start information systems need to be improved so as to obtain an accurate picture of the need in specific schools. There may also be a need to reduce unnecessarily cumbersome regulations which slow down building projects.

Nevertheless, several actions are already under way. The Accelerated Schools Infrastructure Delivery Initiative (ASIDI) that was launched in 2009 had identified various infrastructural needs in specific schools and set about to meet them systematically. Table 4 indicates that substantial progress has been made to date through this project.

**Table 4: Progress of the ASIDI project**

Period	Replacement of inappropriate schools	Electricity connection	Provision of sanitation facilities	Access to water
As at December 2012	10/49	107/190	144/237	102/173
As at March 2013	17/49	134/190	190/237	116/173

Source: ASIDI Newsletter, DBE, April 2013.

## **f. The country's support systems for the delivery of education**

### i. Governance

#### 1. Institutional level

The legislative framework for the governance of education in South Africa, from the national level to the provincial, district and school level is described in Section 4a. This section thus focuses on School Governing Bodies (SGBs) which are the seat of governance at the school level. However, the point is made that the effective functioning of SGBs relies on there being meaningful support from district officials.

Prominent areas of recurring conflict and potential break-down in the operation of SGBs include the nomination of teachers for appointment (especially for promotion posts); lack of competence, malpractice or even corruption in the exercise of financial management; and power struggles such as the inability of principals to be transparent and allow legitimate participation by stakeholders in governance matters or, in contrast, parental pressure groups bent on using the SGB to advance sectional interests.

In a country where communities display extremes of socio-economic difference, the intended model for school governance does not yield uniform results: in poorer communities or rural areas where many parents are illiterate and lack the confidence to participate as legitimate stakeholders, they literally do not have a voice; there is a danger that the educator component disregards parental or even learner rights and overrules in the exercise of power within SGBs. In contrast, in advantaged middle class communities, SGBs often benefit from the participation of highly skilled parents leading not only to SGB decisions that ensure resources and staffing to achieve education of extremely high quality but also to the pursuit of financially-driven school goals that contribute to elitism and exclusivity.

These disparities, and the fact that social class and race continue to coincide in shaping school quality, expose the operation of SGBs to government scrutiny if levels of autonomy granted to schools appear to work in opposition to goals of equity and social cohesion. The fact that the balance of power between the state and local school community remains an area of contestation is illustrated by the frequency of litigation between State and specific school SGBs (often about learner admissions or staff appointments), as also by periodic amendments of laws or regulations such as Section 38A of SASA that sought to make certain financial matters, especially remuneration, more accountable.

Nevertheless, with suitable training and support, SGBs and RCLs offer possibly the best context for learning democracy and civic responsibility at community level, as well as understanding the operation of power through responsible governance and the rule of law. In this regard the DBE has made significant progress in recent years in standardizing and supporting the 3-yearly process for the election of SGBs throughout the country as well as in expanding training programmes to build the capacity of SGBs.

School governance is pivotal to ensuring school quality. The state provides clear policies, guidelines and resources available to develop effective school governance. Yet building the capacity of SGBs relies ultimately on the effective functioning of the school system as a whole, especially of the structures most directly intended to support the local school. The local school depends for its effectiveness firstly on the support of designated departmental officials in the local school circuit, led by a Circuit Team Leader (CTL) and operating within a larger district under a Director, falling in turn under the provincial department's Superintendent-General. The medium and long-term progress of education in South Africa rests ultimately on the partnership and capacity of all these components.

## 2. Priority actions to improve governance

Priorities for the development of governance in education include:

- District development that foregrounds capacity building of departmental officials: The goal of this would be to improve their understanding of schools development, especially the role of SGBs in school improvement, and equip district officials with strategies to support the more effective application of available policies and resources.
- Capacity building of SGBs: The primary goal would be to aid SGBs to understand the strategic role that effective school governance can play in ensuring school quality, to demonstrate how to achieve long-term progress by responsible planning and utilizing the available policy frameworks for developing a School Improvement Plan (SIP). Alongside this, the potential should be systematically demonstrated for modeling democratic citizenship through learning the practice of consensual decision-making that respects and advances the rights and interests of all stakeholders.

## ii. Financing

### 1. Adequacy of funding

Spending per learner has been increasing in real terms since 1994. Government spending on education as a proportion of GDP, which is about 6%, is relatively high by international norms, which typically range between 2% and 8%. Between 2000 and 2008, real spending as a proportion of GDP was on a declining trend but has since risen sharply again to its 2010/2011 level of 6% of GDP. This recent increase was driven by specific increases in teacher unit costs due to the occupational specific dispensation (OSD) and by above inflation “cost of living” increases. Non-personnel spending has nevertheless kept pace with the increases in remuneration and this can be regarded as evidence of greater recent priority being given to education. The dominant view amongst academics and within the National Treasury appears to be that spending on education is sufficiently high, but has not produced the intended outcomes.

### 2. Allocation of expenditures

One of the factors that complicate analysis of the composition of spending across different programmes is the different treatment in some cases of spending on the same items between provinces. However, a key pattern to note is that teacher salaries comprise about 80% of government spending on education. Teacher salaries increased substantially in the mid-1990’s and have continued to rise moderately in real terms since then. A recent Public Expenditure Tracking Survey conducted for the DBE found that the acceleration of real spending on teacher salaries between 2008 and 2011 was matched by growth in real spending on other categories, such that there appears to have been no crowding out effect. The next section considers non-personnel spending in more detail, as this is the area of education spending where the opportunity to be pro-poor is greatest.

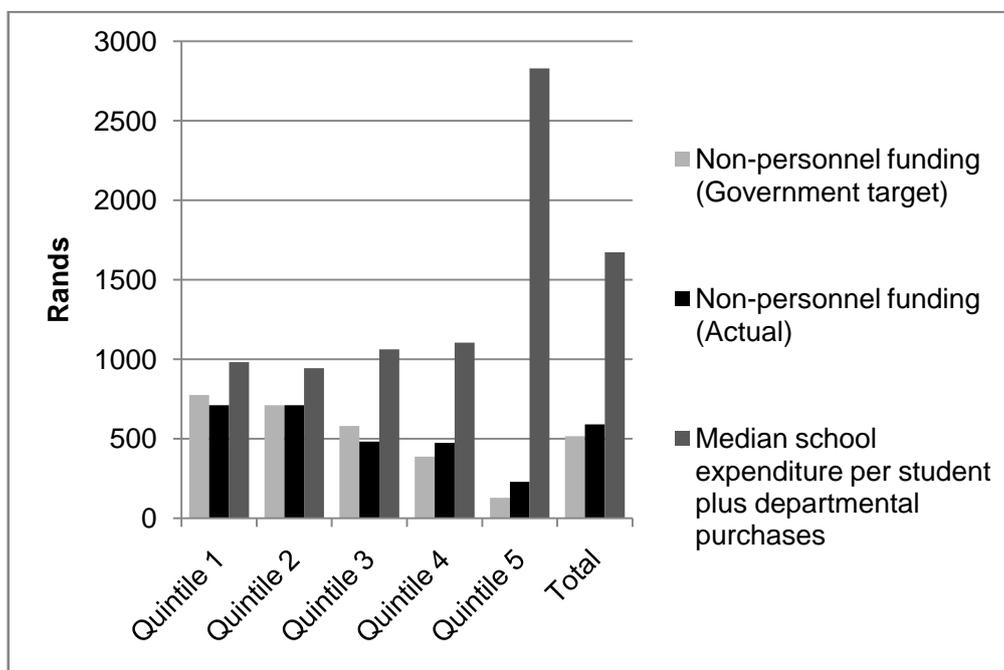
### 3. Distribution of education finance

Education spending reforms have effectively repealed the funding inequalities of *apartheid* and have been pro-poor as far as feasible. The extent to which government spending on education can be pro-poor is limited by the fact that such a large proportion goes to teacher salaries and by the reality that better qualified teachers, who receive moderate pay benefits, tend to work in more affluent schools. Nevertheless, fiscal incidence studies have found that education spending has become well targeted to the poor, thanks largely to the effect of non-personnel spending (Van der Berg, 2009, Gustafsson and Patel, 2006). The Norms and Standards introduced in 2000 stipulated that within each province poorer schools should receive greater allocations of non-personnel spending. This was fine-tuned in 2006 by the Education Law Amendment Act,

which categorised schools into nationally divided poverty quintiles and made the poorest 40% of schools “no-fee schools”.

Figure 20 shows the targeted level of per student non-personnel funding as stipulated in Government Notice 869 of 2006, the amounts actually reaching schools and the median total school expenditure on non-personnel items per student (funded by government allocations as well as private spending through fees), for each quintile. The government targets are clearly pro-poor with about five times as much allocated for the poorest quintile as for the richest quintile.<sup>5</sup> The amounts actually received by schools appear to be slightly less pro-poor than intended. Potential reasons for this include funds intended for non-personnel spending being used by schools to supplement personnel spending, financial transfers coming through late, and schools receiving departmentally purchased goods and services too late (Department of Education, 2009: 87). Private spending through fees dramatically increases the total expenditure for the richest quintile and results in fairly similar levels of overall non-personnel spending across the other four quintiles. The resource base of quintile 5 schools is therefore considerably better than that of poorer schools but this is due to private spending, with public spending serving to counteract this somewhat.

**Figure 20: Per learner non-personnel funding**



Source: Author's calculations based on Department of Education (2009b)<sup>6</sup>

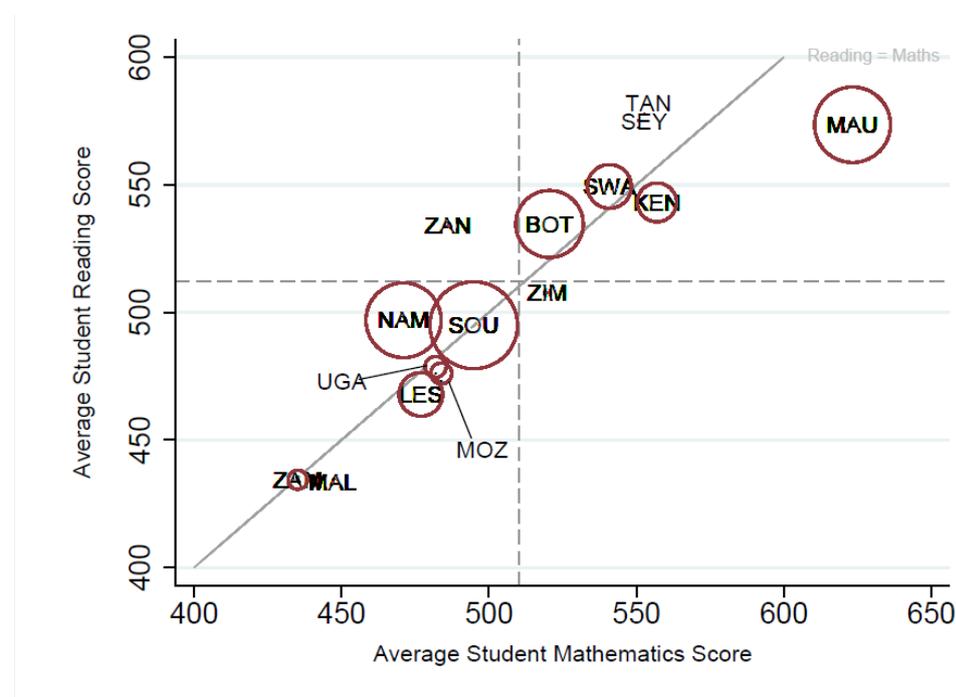
<sup>5</sup> More recent per learner allocations are even more strongly pro-poor: for 2011 it was R960 for quintile 1, R880 for quintiles 2 and 3, R480 for quintile 4 and R165 for quintile 5.

<sup>6</sup> Based on a UNICEF and USAID funded study conducted for the Department of Education in 2009, which collected detailed information on funding in 525 public schools.

#### 4. Utilization of financial resources

The following figure shows country average reading achievement in SACMEQ 2007 (vertical axis) against country average mathematics achievement (horizontal axis). The size of the bubbles is proportional to the per student expenditure of these countries. This demonstrates that per student spending in South Africa is high compared to other countries in the region, yet our educational achievement is fairly average. Countries such as Swaziland and Kenya perform better despite lower per student spending. This raises questions about the utilisation of financial resources in South African education.

**Figure 21: Average reading and mathematics performance weighted by per student expenditure**



The recent Public Expenditure Tracking Study conducted for the DBE investigated the efficiency of spending in four key areas: ICT, textbooks, infrastructure and teachers. In all areas key inefficiencies were highlighted.

Regarding ICTs, it was observed that even when computers are available in schools there are often other barriers to their effective use, including a lack teachers who are trained to use them, a lack of anti-virus software or a lack of internet connectivity. Regarding textbooks, the study pointed to a lack of transparency in textbook requisitioning, delivery, payment and spending, and to weak inventory and retrieval systems. A key observation pertaining to infrastructure was that too much attention is typically given to short term targets to the neglect of creating systems and

institutions for sustained and effective delivery. Evidence of wastage in teacher spending was also found, such as the 2% of the teacher bill that is spent on temporary teachers because permanent teachers who have been appointed to new posts are often delayed in assuming their new duties due to inflexible labour regulations.

An overall point is that if 80% of education spending is allocated to teacher salaries and their salaries are in no way linked to either effort or learner outcomes it cannot be surprising that educational outcomes are under-responsive to spending. Again, this is not a problem peculiar to South Africa – all around the world input-based policies have largely failed to deliver educational improvements (Hanushek, 2002).

#### 5. Priority actions to improve financing of education

In addition to short-term solutions, such as fixing a particular textbook delivery issue or building a certain number of new schools, there needs to be a concerted effort to improve systems and process relating to procurement.

The bulk of education spending goes to teacher salaries. A solution must therefore be found to incentivise greater effort amongst teachers in the poorly performing part of the school system. If teachers in this section of the school system only are offered rewards for measurable inputs (such as sound content knowledge) then such a policy can improve the overall pro-poor design of education spending.

#### iii. Overall system efficiency

##### 1. Management for results: Policies, strategies, tools

The previous section showed how key inefficiencies persist in the way resources are utilized throughout the system and how this leads to a breakdown between education inputs and outcomes. This points to the importance of implementation: good policies without implementation are useless. The problems in implementation require both improved accountability and capacity throughout the civil service.

How might accountability be strengthened? The ANA is already contributing to an awareness at school, district and provincial levels that academic performance is the core business in the school system and that accountability is linked to this outcome. There may be some scope for top-down accountability through the use of incentives, as discussed earlier. On the other hand, what Bruns, Filmer and Patrinos (2011) call the “short route of accountability” or local accountability needs

to be allowed to grow, where school communities hold teachers and principals to account. A key tool here is the power of providing school performance information to parents.

## 2. Measuring results

### *a. Internal efficiency of the education system*

An earlier section presented an analysis of the phenomenon of high enrolments in grade 10 and 11 caused by a situation where virtually everyone is retained in school until that point but are then sifted out of formal education as the matric examination approaches. This represents the major internal inefficiency within the schooling system.

Table 5 provides another perspective on this by showing the age at which youths leave school by highest level of education attained, for each race group. Note that those with education above the level of matric are not shown. It is clear that Black youth spend longer in school than youths of other race groups to attain the same (low) levels of education. Many black youth exit school at age 18 or 19 without attaining a matric, which is the point at which labour market returns to education begin to accrue. These youth are therefore left with no educational qualification to show for the time they have spent in education.

**Table 5: Age at school completion by race and highest level of education (14 -35 year olds)**

	<b>Black</b>	<b>Coloured</b>	<b>Indian</b>	<b>White</b>
<b>Primary</b>	15.68 (414)	15.07 (68)	15.46 (4)	13.87 (2)
<b>Lower Secondary (grade 8 - 9)</b>	17.10 (805)	15.61 (144)	14.59 (17)	15.63 (16)
<b>Upper Secondary (grade 10 - 11)</b>	18.98 (1293)	16.95 (130)	16.66 (21)	16.40 (36)
<b>Matric (grade 12)</b>	19.69 (740)	18.22 (117)	17.55 (30)	17.97 (65)

Source: Author's calculations based on NIDS 2008

Note: Number of observations in parentheses

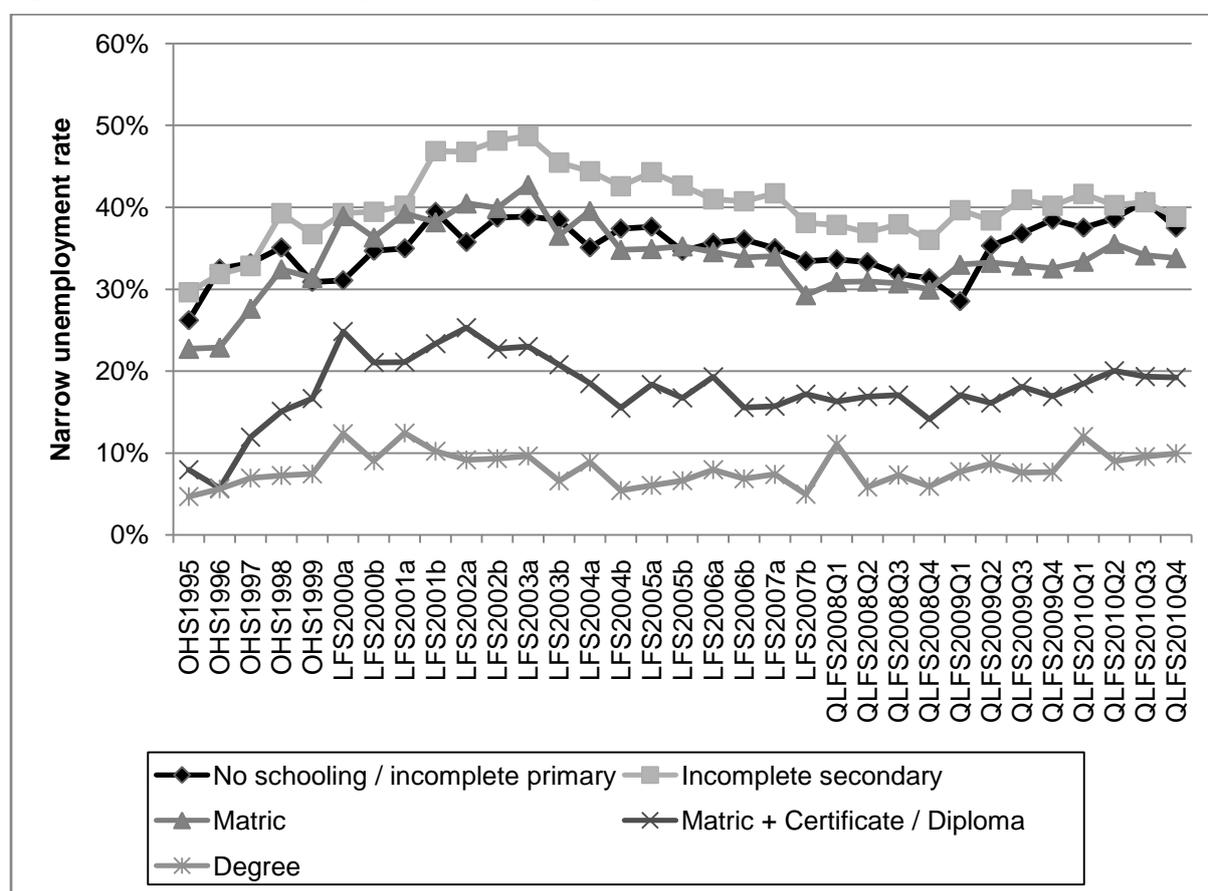
### *b. External efficiency of the education system*

As discussed earlier, analyses of the returns to schooling in the labour market point to the strong convex structure of returns: within primary school and lower secondary school each additional year of schooling brings little extra return in the labour market, whereas attaining a matric and subsequent education brings substantial marginal returns. This points to one clear external inefficiency: For those who exit the school system prior to matric there is no signal of ability nor actual technical skill set acquired with which to approach the labour market. The system is

geared towards academic outcomes but fails to produce sufficient graduates with the intended academic skills.

There does seem to be a moderate graduate unemployment problem, though this is not as bad as is sometimes suggested in the media. Figure 22 shows narrow unemployment over time for five categories of educational attainment. As one might expect, those holding a tertiary degree have the lowest rate of unemployment, although even among this group unemployment is at about 10%. This paradoxical phenomenon of graduate unemployment despite skills shortages in the economy has been studied by Pauw, Oosthuizen and van der Westhuizen (2008). They hold that improved alignment of educational courses with the scarce skills in the economy is required for this phenomenon to be resolved.

**Figure 22: Narrow unemployment rates amongst 14 – 35 year-olds by education, 1995 - 2010**



Sources: Author's calculations based on October Household Surveys 1995 – 1999; Labour Force Surveys 2000 – 2007; Quarterly Labour Force Surveys 2008 – 2010

### 3. Priority actions to improve overall system efficiency

The need for a sorting of youths into academic and non-academic but attractive technical pathways to the labour market is once again evident.

The continued and expanded use of national assessments in primary school should raise local accountability so as to improve quality in the early years and hence ensure that problems of dropping out in secondary school are mitigated.

## 6. Road map for improving education system quality

### a. Critical bottle necks to focus on

This report has demonstrated that there are numerous bottlenecks or barriers to improved education system performance. Conversely, there are a number of fronts on which interventions, policy reform and policy implementation need to progress. In an attempt to synthesize how all these factors relate to each other to in producing educational outcomes, Figure 23 was constructed.

At the centre of the schematic diagram is the classroom. The interaction between the learner and the teacher in the classroom is the critical space in which learning happens. This interaction occurs in a particular language or mix of languages. Given the language dynamics in South Africa, the language of instruction provides a medium that is more conducive to learning for some than for others.

Learners and teachers are the actors within the classroom, and each brings a “subsidy of educational capital” to the classroom. Learners from differing socio-economic backgrounds enter school with widely varying cognitive ability due to differences in the quality of early stimulation they have received. Once in school the disadvantage is compounded through a lack of educational support in the home, resource differences, nutrition, etc. Quantitative analyses of education outcomes in South Africa consistently show that socio-economic status explains more of the variation in learner achievement than any other factor. The teacher also brings her own education, content knowledge and pedagogical skill to the classroom.

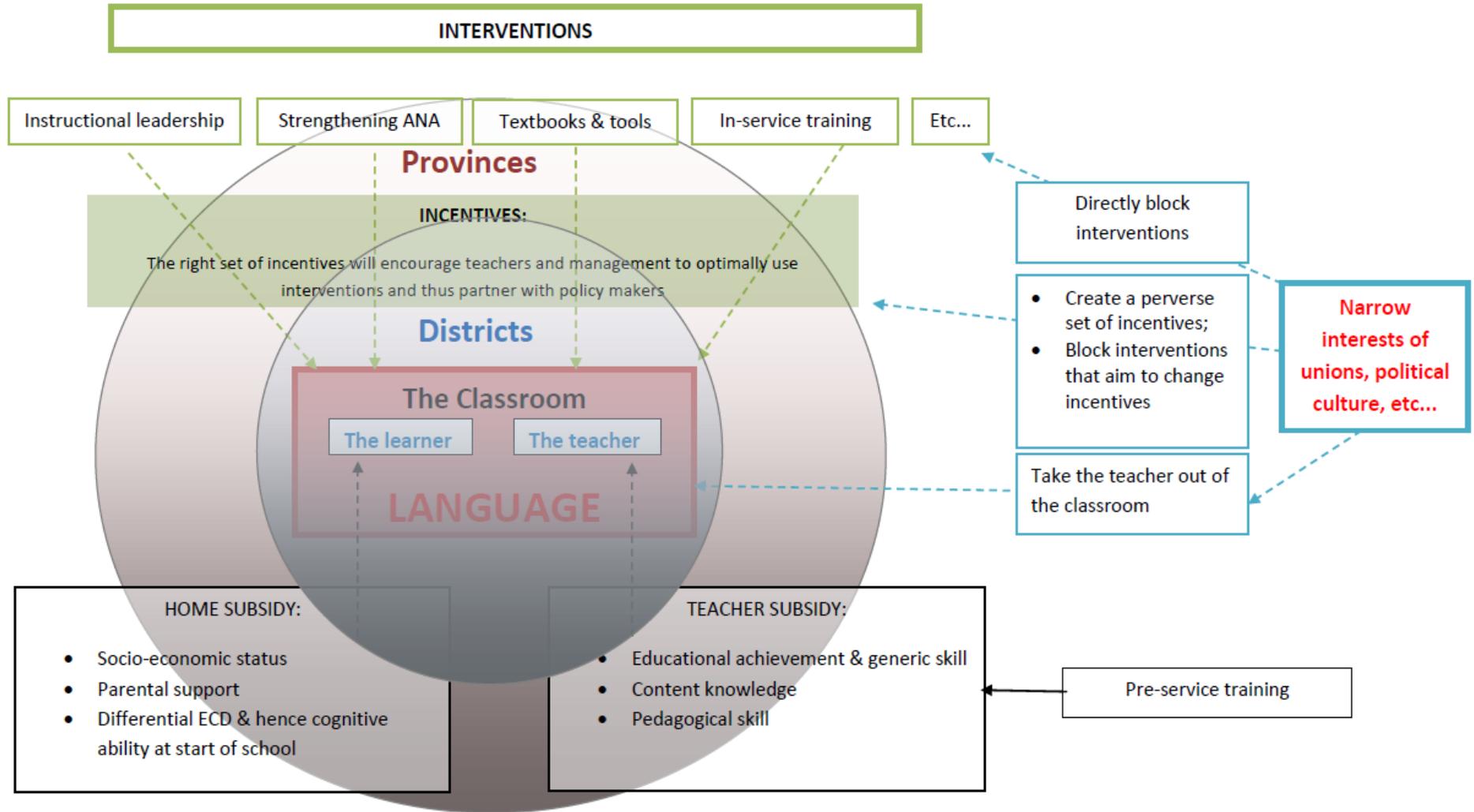
There are numerous existing and potential policy interventions aiming at improving the interaction between the teacher and the learner in the classroom. Examples of these include expanding access to good textbooks and classroom tools, in-service training, measures to

strengthen the ANA and measures to improve the quality of instructional leadership within schools.

As the schematic diagram suggests, these policy interventions do not occur in isolation, but are mediated by the service delivery chain (simplified in the diagram by circles representing provinces and districts) and the incentives environment facing actors within the system. The extent to which teachers (and indeed other education officials) have an incentive to maximise effort and to improve learner outcomes (the goal of policy makers) is dependent on the conditions attached to promotions and to teacher pay, the status of teachers in society, the rewards or sanctions associated with particular behaviours, etc. If the structure of incentives is such that the goals of teachers and policy makers are aligned, then teachers will make optimal use of interventions to improve learner outcomes. For example, teachers will make extensive use of textbooks, doing their best to ensure that children have access to them, using them as teaching aids and using them to sharpen their own content knowledge. Similarly, teachers and school managers will optimally use other interventions and thus partner with policy to produce improved learner achievement. In summary, the effectiveness of interventions is crucially dependent on the incentive structures facing actors within the system.

A set of political culture issues negatively impact on the incentives facing actors in the system – as illustrated on the right hand side of the diagram. Problems around political culture, as highlighted by the National Development Plan for example, include the narrow interests and obstructive behaviour of unions and a culture of nepotism. These affect the production of educational outcomes at several levels. Firstly, unions have been known to interfere with or block particular interventions. Secondly, the political culture problems create a perverse set of incentives in which promotions, pay and status are not linked to merit but to networks and relationship to the unions. Thirdly, strike activity can take teachers out of the classroom completely.

Figure 23: Schematic diagram of the production of educational outcomes in South Africa



### **b. Policy and institutional reforms required**

A number of priority actions have been identified throughout this report. For the sake of coherence, the most important of these are highlighted and consolidated below:

- a. There needs to be a strong focus on Early Childhood Development to reduce the deficits in cognitive development that many children carry upon entering school.
- b. Implement early remedial interventions to reduce the inequalities that are observed at later stages in the school system. Such interventions include improving the quality of the Grade R programme, expanding the pre-Grade R year, encouraging teachers to identify children who are falling behind and offer them specific remedial attention, and increased time devoted to basic numeracy and literacy activities in the Foundation Phase both within the school day and outside of it. Afternoon classes and holiday clubs should be experimented with as ways to increase the time spent of basic literacy and numeracy activities outside of school.
- c. Investigate exactly what materials are required for effective reading acquisition in the African languages and identify to what extent a lack exists. Preliminary evidence suggests there needs to be better access to materials supporting the acquisition of reading in mother tongue.
- d. Make school and pupil performance information available to parents in an accessible format. Experimental research is needed in order to establish how best to do this and what impact it will have.
- e. Assist teachers, principals and district officials to use the ANA to inform remedial practices.
- f. Include several anchor items in the tests administered to schools participating in Verification ANA to allow comparability of results across grades and across years.
- g. Test alternative models of teacher development using a rigorous impact evaluation methodology in order to determine what are the binding constraints to improved teacher utilisation and what interventions have the most impact on teacher outputs and learning outcomes.

- h. Review the content of pre-service training at teacher training institutions, particularly to evaluate whether there is sufficient attention given to subject content knowledge and knowledge of how best to teach particular subject matter.
- i. In addition to short-term solutions, such as fixing a particular textbook delivery issue or building a certain number of new schools, there needs to be a concerted effort to improve systems and process relating to procurement.
- j. Design and pilot a system for rewarding teachers for objectively measurable performance indicators, such as through a voluntary subject knowledge test linked to a bonus. Restrict the system to no-fee schools to improve pro-poor targeting.
- k. An alternative non-academic route to the labour market needs to be made attractive to youths who are unlikely to reach and pass matric.

### **c. Processes to be put in motion to initiate required actions**

The recommendations put forward in this report should not replace existing plans as coordinated in the overall sector plan, the “Action Plan to 2014”.

Rather, the recommendations here in many ways confirm and expand on the direction already taken in the Action Plan and elsewhere.

This report will be circulated to the Director-General and all branches within the DBE.

The Chief Directorate for Strategic Planning will host a meeting to discuss the findings and recommendations of the report and to plan a way forward.

Those responsible for updating and developing the Action Plan will receive a copy of this report. The analysis and recommendations of this report will thus feed into the process of updating the Action Plan.

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