MACRO INDICATOR REPORT

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DEPARTMENT OF BASIC EDUCATION

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ACRONYMS

ABET	Adult basic education and training
ANA	Annual National Assessment
ASS	Annual School Survey
DBE	Department of Basic Education
DHET	Higher Education and Training
DoE	Department of Education
DSD	Department of Social Development
ECD	Early Childhood Development
EMIS	Education Management Information System
FET	Further Education and Training
GDP	Gross Domestic Product
GER	Gross enrolment rate
GHS	General Household Survey
GNP	Gross National Product
IIEP	International Institute for Educational Planning
LER	Learner educator Ratio
LTSM	Learner Teacher Support Materials
LURITS	Learner Unit Record Information and Tracking System
NEIMS	National Education Infrastructure Management System
NER	net enrolment ratio
NSC	National Senior Certificate
OHS	October Household Surveys
OPM	Oxford Policy Management
PIRLS	Progress in International Reading Literacy Study
RSA	Republic of South Africa
SACMEQ	Southern and Eastern African Consortium for Monitoring Education Quality
SAQA	South African Qualification Authority
Stats SA	Statistics South Africa
TIMMS	Third International Mathematical and Science Study
UNICEF	United Nations Children's Fund

EXECUTIVE SUMMARY

The purpose of the basic education macro indicator report is to provide a wide range of stakeholders with an overview of the schooling system. The information and analysis should inform policy makers and planners in the education sector. Secondly, the report makes information available to researchers, both local and international. Thirdly, the report aims to provide an accurate and detailed picture of the basic education sector to the public at large, who have an obvious interest in the health of schooling in South Africa.

The main findings of this report can be summarised in the following nine points:

1. Measuring access to education is not an unproblematic exercise. Choices must be made regarding the operational definitions of access and about the sources of data to use. The report argues that Gross Enrolment Ratios and Net Enrolment Ratios, which are often presented in international reports, can be quite misleading due to definitional inadequacies and problems with the data sources which must be used for their calculation. Rather, Age-Specific Enrolment Rates, which use household survey data to measure the proportion of a specific age group that is enrolled in some form of education, provide a more meaningful picture of education access.

2. Participation in pre-school education has dramatically increased over the past decade largely due to the expansion of the Grade R programme. According to administrative data, the number of Grade R enrolments increased from 156 292 in 1999 to 734 654 in 2011. As a result, the proportion of 5-year-olds enrolled in some form of educational institution increased from 40% in 2002 to 84% in 2011. The largest increases in educational participation amongst 5-year-olds were experienced in Mpumalanga, North West and Northern Cape.

3. By the transition to democracy, access to primary education was already high by developing country standards and this has continued to improve. In 2011 approximately 99% of 7- to 15-year-olds were enrolled in school, up from 96% in 2002. A comparison with Age-Specific Enrolment Rates in other developing countries indicates that South Africa has remarkably good access to primary education.

4. Participation in secondary education is also high compared with other developing countries. The proportion of 16- to 18-year-olds attending an educational institution has increased marginally from 82.9% in 2002 to 84.9% in 2011. While males still enjoy better access to secondary education in most developing countries, South Africa has achieved

gender parity in access to secondary education with a slightly higher proportion of females enrolled than males.

5. Enrolment rates, however, paint an overly optimistic picture of education in South Africa and mask various internal systemic inefficiencies caused by sub-optimal school entry patterns, grade repetition practices or drop-out patterns. One positive trend over time is that late entry into school has been decreasing. Grade repetition remains fairly high, especially in grades 10 and 11. More significantly, grade repetition is often random (i.e. not related to learning outcomes) and is typically not sufficiently remedial in nature. A "queuing phenomenon" is observed in grades 10 and 11, where many learners spend a few years in these grades and then drop out of school without completing the matric examination. The report argues that a responsible estimate of the proportion of youths that pass matric is about 40%. It is inefficient that large proportions of individuals spend many years in the school system but do not ultimately attain a meaningful educational outcome. These inefficiencies are undesirable in and of themselves. More significantly, however, they are symptoms of a more fundamental problem in the school system of low quality in the early grades despite high learner retention.

6. Local and international assessments of educational achievement have consistently shown that South African children are performing at alarmingly low levels. Low scores in these assessments reflect that our children are taking far too long to acquire foundational literacy and numeracy skills. As a result of these learning deficits, many learners reach a situation in secondary school where acquiring the skills needed to succeed in the matric examination is no longer realistic and they consequently drop out of school. On a positive note, the recent TIMSS study indicates substantially improved mathematics and science performance amongst South African learners between 2002 and 2011, although the level of performance remains low by international standards.

7. Although this report does not attempt to explain what factors contribute to learning outcomes, it can be observed that the poorly performing part of the school system is also characterised by weak "input indicators" or characteristics of school and teacher practices. The report showed, in particular, that incomplete coverage of the curriculum and inadequate teacher subject knowledge are examples of the problematic "inputs" to education quality. On the other hand, certain inputs have been improving over time, such as access to and use of learning materials in classrooms. It was also shown that although Learner-Educator Ratios are now at acceptable levels and do not vary hugely across schools, some schools still have unacceptably large classes due to inefficient teacher utilisation and timetabling.

8. Adult literacy rates (as defined by the proportion of adults with at least primary education) have been steadily increasing in recent years. This is largely because recent generations of South Africans (especially non-white South Africans) experienced far better access to basic education than previous generations.

9. Public spending on education is one area where historical inequalities have now been largely eliminated. The overall amount spent on education has increased substantially in the last decade especially since 2007/08, even after adjusting for inflation. South Africa's prioritisation of education spending relative to overall government spending is high by international standards. Growth in education spending occurred in all nine provinces, but was largest in some of the poorer provinces with the positive effect of greater equity in spending between provinces. Although teacher compensation increased substantially in real terms over the period, spending on non-personnel items grew even faster. This led to an increase in the proportion of education spending going to non-personnel items from only 9% in 2000/01 to a much more favourable 22% in 2010/11.

It is debatable whether more should be spent on education. Spending more on existing inputs is unlikely to substantially improve education outcomes. Rather, additional spending on strategic interventions designed to improve outcomes may hold some potential. Some examples include targeted teacher development programmes, remedial education programmes to assist the acquisition of basic literacy and numeracy in the early grades and the strengthening of recent initiatives such as the Annual National Assessments and the DBE Workbook programme. However, any such new initiatives should proceed on the basis of solid evidence produced through rigorous piloting and impact evaluation.

CHAPTER 1: INTRODUCTION AND BACKGROUND

There has been a mounting interest in recent years in worldwide in macro-indicators and composite indices of economic and social well-being. This reflects growing recognition of the important role macro-indicators can play as a tool for evaluating trends in educational, economic and social development and for assessing the impact of policy on well-being.

This report provides an overview of the schooling system in South Africa. The report focuses on the data, research and information at macro level that provide an indication of the performance of the basic education sector. The report covers four broad components of education system functioning: access to schooling, system efficiency, education quality and education financing. Throughout, an emphasis on equity as well as the overall levels of performance is foregrounded. Where possible, trends over time are examined.

On the one hand this report aims to publish certain indicators that are used internationally and in this way to make information available for cross-country comparisons. On the other hand, this report aims to provide indicators that are relevant to the various goals outlined in the DBE's sector plan – the Action Plan to 2014. Finally, and more ambitiously, the report aims to make an analytical contribution through not only reporting indicators but also providing some analysis of observed trends and presenting additional information which casts light on why we observe specific trends.

1.1 PURPOSE OF THE REPORT

The purpose of the basic education macro indicator report is to provide a wide range of stakeholders with an overview of the schooling system. The information and analysis should inform policy makers and planners in the education sector. Secondly, the report makes information available to researchers, both local and international. Thirdly, the report aims to provide an accurate and detailed picture of the basic education sector to the public at large, who have an obvious interest in the health of schooling in South Africa.

1.2 BACKGROUND TO THE REPORT

Education in South Africa is a critical socio-economic right. The Bill of Rights provides for the right to basic education, including adult basic education, for all. It also provides for the right to further education, though it declares that this right must be made progressively available and accessible (Republic of South Africa, 1996a).

More specifically, the South African Schools Act (Act 84), passed by Parliament in 1996 (Republic of South Africa, 1996b) defines basic education as the equivalent of the first nine grades of school (or for those aged between 7 and 15) and further education the equivalent of grades ten to twelve.

Furthermore, anyone has the right to establish an independent educational institution as long as it does not discriminate on the grounds of race, is registered with the state, and maintains standards that are not inferior to those of comparable public institutions (Republic of South Africa, 1996a).

Despite working in this favourable legal environment, the South African education system faces serious difficulties which have presented great challenges to meeting the high expectations of the population – especially of the poor and disadvantaged. Since 1994, South Africa's education policy and legislation has been largely concerned with processes of transforming the systemic legacy of apartheid.

There are public concerns about the quality of public education. The concerns range from infrastructure to transport, from textbooks delivery to quality of teaching, to inequality in learner performance, to quality of passes, to dropouts, to catch up opportunities for youths, to skills training, to higher education success rates.

Though the current government has undertaken numerous measures to reform policies, practices and institutions, the legacy of the past inequalities continues to be reflected in current patterns of access to a quality education.

1.2.1 Overview of Education in South Africa

In 2012, South Africa had 12.4 million learners, some 425 167 educators and 25 826 schools, including 1 571 registered independent or private schools. Therefore approximately 6% of schools in the country are independent schools. Of the 12 428 069 learners in the country, 504 395 learners (4%) were attending independent schools in 2012. The ratio of learners to state-paid educators in public ordinary schools in 2012 was estimated to be 32.3 to one (Department of Basic Education, 2012).

Responsibility for schooling is shared between national and provincial governments. The national Department of Basic Education develops national norms and standards and creates the main policy and legislative frameworks for schooling. The nine provincial departments of education are largely responsible for enacting policy and making funding decisions. While the central government provides a national framework for school policy, administrative responsibility lies with the provinces. Power is further devolved to grassroots level via the

election of school governing bodies, which have a significant say in the running of their schools.

1.2.2 Three phases of basic education

In South Africa, there are 13 years of formal schooling running from Grade R (reception year), through to Grade 12. The Foundation Phase runs from Grade R to Grade 3, intermediate phase that runs from Grade 4 to Grade 9. The Foundation Phase and Intermediate phases are compulsory in terms of the SASA. The final three years of secondary school (Grades 10-12) represent the Senior Phase known as the Further Education and Training and are not compulsory, but government is obliged to make this progressively available in terms of the South African Constitution.

Further Education and Training also includes career-oriented education and training offered in Further Education and Training Colleges, community colleges and private colleges. Diplomas and certificates are qualifications recognised at this level.

1.3 METHODOLOGY (INCLUDING DATA ISSUES)

Compared to other sectors, the basic education sector in South Africa is relatively rich in data at the micro-level available at regular frequency. Especially in recent years, substantial amounts of data have become readily available and publicly accessible. In compiling the basic education Macro Indicator report, numerous sources of data were used. These include the DBE information system known as the Education Management Information System (EMIS), various Statistics South Africa Surveys, DBE data on academic performance including the Annual National Assessments (ANA) and NSC data, international surveys of school achievement such as PIRLS, TIMSS and SACMEQ, and various other government publications and existing literature.

Any analysis such as that presented in this report will necessarily encounter various data related challenges. For example, information pertaining to one indicator may have been collected differently across surveys in ways which affect the estimates obtained. For example, asking teachers or learners about access to textbooks may yield a different result to that obtained through classroom observation. Apart from inconsistencies in methods, the reliability of data will vary across datasets and within datasets between variables. Measurement error is a feature of virtually any dataset, and may not substantially affect the analysis if measurement error is effectively random. However, if for example there is a lot of missing data or unreliable data in one part of the school system, then the resulting estimates will be biased.

For these reasons, statistics such as those presented in this report should not be interpreted as “the truth”. As far as possible, the report aims to be transparent about the data issues where they exist and about decisions that were taken to deal with data issues, and to offer reasonable interpretations rather than merely presenting data as if it were “the truth”.

CHAPTER 2: INDICATORS OF ACCESS TO EDUCATION

2.1 INTRODUCTION AND BACKGROUND

The concept of education access remains a subject of debate internationally. The meanings attached to the notion of access vary widely ranging from narrow definitions such as the opportunity to enrol in an educational institution, to broader approaches where children must have access to education that meaningfully empowers them to succeed in various aspects of life. According to a recent South African Human Rights Commission report on the right to education, access to education has three overlapping dimensions. Firstly there must be no discrimination. Secondly education must be physically accessible in terms of geographic distance and safety while travelling to school. Thirdly it must be economically accessible, affordable for all and free at the primary level (South African Human Rights Commission, 2012).

Each of these principles poses challenges in the South African context that have not yet been overcome. On the first principle, while there is little evidence of active discrimination in the schooling system, inequities in the availability of infrastructure and services in schools continue to exist. Although great strides have been made to ensure that many more schools have access to services such as water, electricity and sanitation, the availability of libraries and laboratories across schools remain inequitable. The language of teaching and learning and health and disability exclude many children from full access to appropriate education.

As far as the second principle of physical accessibility is concerned, safe transport for all urban and rural learners who live far from their schools has not yet been ensured. Although specially organised school transport has increasingly been made available, much remains to be done. The safety of learners and teachers from violent attack continues to be a pressing concern despite numerous interventions to deal with this challenge.

In respect of the third principle of economic accessibility, great advances have been made, including the legislation of fee-free primary schools for the poorest 60% of learners (in 52% of schools). Moreover, no learner enrolled in a fee-paying school, whose parents cannot afford to pay fees can be denied access to that school. In essence, public schooling is free for those who cannot afford to pay school fees.

2.2 LEGISLATIVE FRAMEWORK

In 1995 the South African Qualification Authority (SAQA) Act provided the framework of the national certification system and in 1996 the South African School Act (SASA) established the framework for non-discriminatory inclusive education systems, which outlined also new models of school governance and funding. With the new Act, school governance was decentralized and led by autonomous School Governing Bodies (SGB), composed of principals and elected representatives of parents (majority), educators, non-teaching staff and learners (in secondary schools). The SGB have powers to determine admission policy, administer school property, recommend appointment of staff, raise funds and charge fees (with the approval of parents).

Education in South Africa is mandatory for children between the ages of 7 and 15 (grade 1 to 9) and the government must ensure that no child is denied this right on social-economic factors. In recent years Government has also made more effort to include grade R (pre-primary) as part of the formal education system. Under the new constitution basic and secondary education became the responsibility of the nine provincial departments as well as the national department of education, which in 2009, was split between Department of Basic Education (DBE) and Higher Education and Training (DHET).

2.3 STRENGTHS AND WEAKNESSES OF ALTERNATIVE MEASURES OF EDUCATION ACCESS

Gross Enrolment Ratios are widely used to show the general level of participation in a given level of education. The Gross Enrolment rate is defined as the total numbers enrolled in a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school-year. A weakness of GERs is that they can be inflated due to internal inefficiencies such as high rates of repetition and the enrolment of many under-aged and over-aged children. For this reason, GERs often exceed 100%.

An alternative indicator that has become widely used is the Net Enrolment Ratio (NER). This indicator is calculated by dividing the number of pupils of the correct age enrolled in a given level of education by the population of the age-group which officially corresponds to the given level of education, and multiply the result by 100 (UNESCO Institute of Statistic, 2002). The weakness of this indicator is that it tends to underestimate enrolment in systems where significant numbers of children within the specified age group are indeed enrolled but in an earlier or later grade.

A further problem common to both GERs and NERs is that they rely on two sources of data. The numerator is taken from administrative data on school enrolments while the denominator is taken from official population estimates. If either source of data is inaccurate the resulting GER or NER will be biased. If both sources are inaccurate with one being an underestimate and the other being an overestimate, the error in the resulting ratios will be compounded. This is especially problematic in many developing countries where the official data can be of doubtful quality. Consequently, GERs and NERs such as those reported in the Education For All (EFA) Reports can present implausible cross-country comparisons. For example, the Primary NERs reported in the 2011 EFA Global Monitoring Report (UNESCO, 2011: 343-344) indicate high enrolment in some very poor countries (e.g. Zambia-95%, Uganda-97%, Tanzania-99% and Malawi-91%) and lower enrolment in wealthier countries (e.g. Botswana-87%, South Africa-87%, Namibia-89%).

This report contends that Age-Specific Enrolment Rates (ASER) taken from a single source – household survey data – provide a far more meaningful picture of access to education than GERs and NERs. ASERs are calculated as the percentage of all respondents of a particular age group that reportedly were enrolled. Survey weights should be applied in this calculation to ensure that the estimates are representative of the overall population.

An alternative method to calculate GERs and NERs is to use household survey data and inflate the numbers in the sample that are enrolled and the numbers in the relevant age group to the overall population they represent. This can be done using the sampling weights. This method uses the usual formulas for GERs and NERs but non-traditional data sources. However, in the South African case this data comes from a more reliable source, and importantly from a single source of data, thus reducing the scope for bias. GERs and NERs using this alternative method are also presented in this section.

2.4 ACCESS TO EARLY CHILDHOOD DEVELOPMENT (ECD)

ECD is an umbrella term that refers to the processes by which children from birth to 9 years of age grow and flourish socially, physically, mentally, emotionally, spiritually and morally (Department of Education, 2001). The provision of ECD programmes in South Africa is an inter-sectoral responsibility, shared amongst the Department of Social Development (DSD), the Department of Health and DBE, with the Office of the Rights of the Child in the Presidency playing a monitoring role. DSD takes primary responsibility for the provision of ECD to children under the age of five, while the DBE is responsible for ensuring that children who are five years of age and older have access to quality education.

International research on physical, social and cognitive development points emphatically to the crucial importance of the first years of a child's life. Over and above the persuasive theoretical work done by health, nutrition, psychology and education researchers, a significant contribution has been made in recent years by economists such as Feinstein (e.g. 2003) and Heckman (e.g. 2006). They demonstrate the hierarchical nature of learning, whereby all learning builds on earlier foundations. Numerous studies, mainly from the USA and Latin America, have demonstrated that quality pre-school education improves cognitive ability as measured in later grades. Moreover, pre-school interventions are a particularly cost-effective way of reducing later inequalities between students of different socio-economic status.

ECD is far broader than just pre-school education such as the grade R programme, beginning much earlier even before birth. The focus in this report, however, is predominantly on children of an age which places them under the responsibility of basic education. However, one statistic that is worth noting comes from the 2011 General Household Survey (GHS), which asked whether children aged zero to four were attending some form of ECD programme, whether at home or at an institution. Perhaps surprisingly, a fairly large proportion of 3- and 4-year-old children were reportedly exposed to some form of ECD: 46,1% of 3-year-olds and 62,1% of 4-year-olds were reportedly exposed to some form of ECD programme. White Paper 5 on Early Childhood Development (Department of Education, 2001) initiated the roll-out of the Grade R programme. The target was to universalize access to Grade R by 2010.

Table 1 shows the number of children enrolled in Grade R in public schools since 1999. The data in this table therefore excludes children attending Grade R at community sites that provide Grade R programmes. There has been a dramatic increase in enrolments from 156 292 in 1999 to 734 654 in 2011.

The table also shows Gross Enrolment Ratios (GER) for Grade R, defined as the number of children enrolled in Grade R in public schools as a proportion of the 5-year-old population. The number of Grade R enrolments is obtained from DBE administrative data and the 5-year-old population is obtained using Statistics South Africa's mid-year population estimates. According to this measure of access, there has been a steady increase in participation from 15% in 1999 to 70% in 2011. Furthermore, the participation rates by males and females in Grade R are almost equal, which is an encouraging sign for the promotion of gender equity in the schooling system.

Table 1: Enrolments in Grade R and Gross Enrolment Rates for Grade R in ordinary schools, 1999-2011

Year	Females	Males	Total	GER (Female)	GER (Male)	Total GER
1999	78 574	77 718	156 292	15.3	15	**15.2**
2000	113 607	113 024	226 631	22.1	21.8	**21.9**
2001	121 076	120 449	241 525	23.5	23.2	**23.4**
2002	139 708	139 018	278 726	27.2	26.9	**27.0**
2003	157 855	157 532	315 387	31.0	30.7	**30.8**
2004	178 643	177 844	356 487	35.4	34.9	**35.2**
2005	202 607	202 590	405 197	40.6	40.3	**40.3**
2006	219 969	221 652	441 621	44.3	44.1	**44.2**
2007	242 409	245 116	487 525	49.0	48.9	**48.9**
2008	271 113	272 686	543799	49.9	50.1	**51.9**
2009	308 628	311 595	620 223	60.4	60.2	**60.3**
2010	351 351	355 852	707 203	66.8	66.5	**66.7**
2011	365 256	369 398	734 654	69.9	69.5	**69.7**

Source: *Department of Basic Education, Education Statistics in South Africa, 1999 to 2011 and Statistics South Africa Mid-Year Population Estimates*

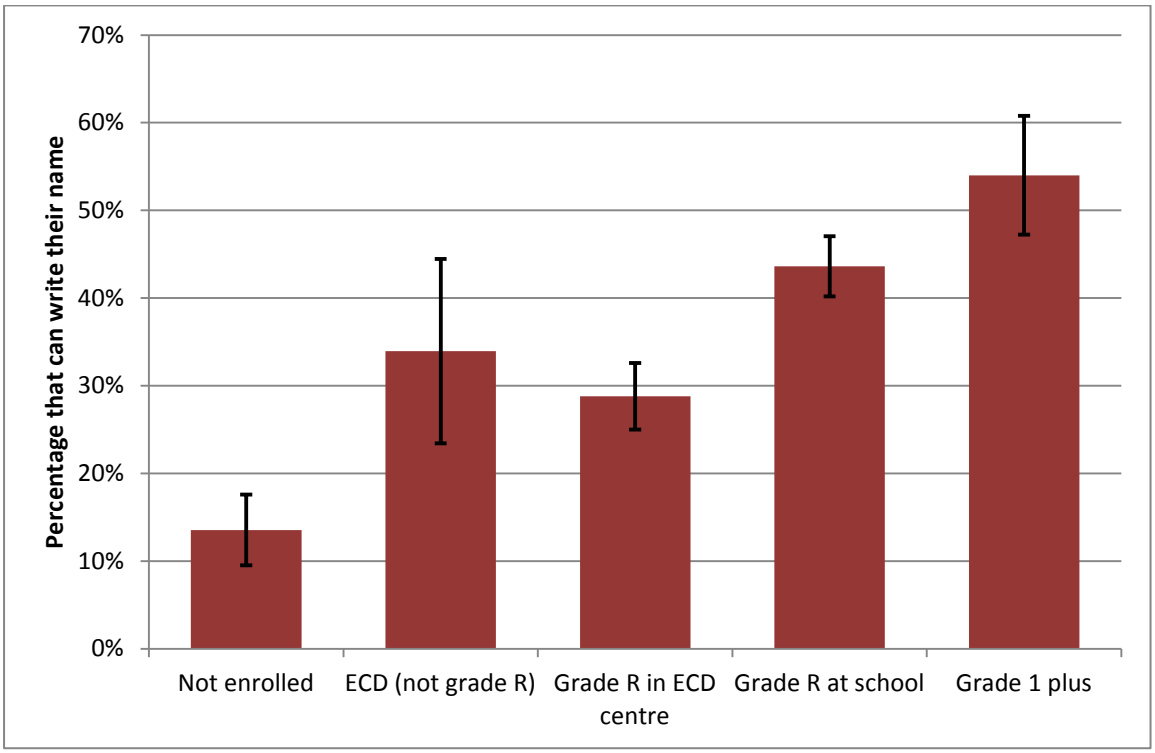
Household survey data offers several advantages over the data reported in Table 1. Firstly, it collects information about those enrolled in Grade R and in other forms of pre-schooling outside public schools. Secondly, the estimated participation rates will not be subject to the data error that occurs due to combining data from two sources.

GHS data from 2011 was used to estimate the Grade R GER as defined by the number of 5- to 10-year-olds enrolled in Grade R divided by the number of 5-year-olds in the population. Children who reportedly attended Grade R in a primary school as well as children attending Grade R at another institution, such as an ECD Centre, were included as Grade R attendees. This produces a GER of 99.7%. Note that because 4-year-olds were not asked about Grade R attendance it is possible that this estimate is downwardly biased.

Another variation of this measure was calculated by subtracting those repeating Grade R from the number of Grade R enrolments. This participation rate was estimated to be 96.7% -- slightly lower given that about 3% of those attending Grade R were reportedly repeating. The figure of 69.7% from Table 1 (only counting public school Grade R) can probably be regarded as a lower bound estimate or narrow definition of Grade R participation, while the figure of 96.7% can be regarded as an upper bound estimate or broad definition of participation because some of those reportedly enrolled in Grade R may actually have been attending a less formal programme. Figure 1 confirms this possibility. Parents or caregivers

were asked whether children were able to write their own name. Amongst 5-year-olds, those attending Grade R at a school were more likely to be able to write their name without any difficulty than children who reportedly were attending Grade R at another institution.

Figure 1: Percentage of 5-year-olds that reportedly could write their own name with no difficulty in 2011



Source: *DBE calculations using GHS 2011 data*

Note: *95% confidence intervals are indicated for each bar*

The National Income Dynamics Study (NIDS) of 2010 asked whether children up to the age of 14 had attended "pre-school or Grade R" before entering Grade 1. Table 2 reports the percentage having attended pre-school by age. Younger cohorts were consistently more likely to have attended pre-school than older children. For example, 78.1% of 8-year-olds had attended pre-school. This is again consistent with the dramatic expansion in access to pre-school that has been driven by the roll-out of the Grade R programme.

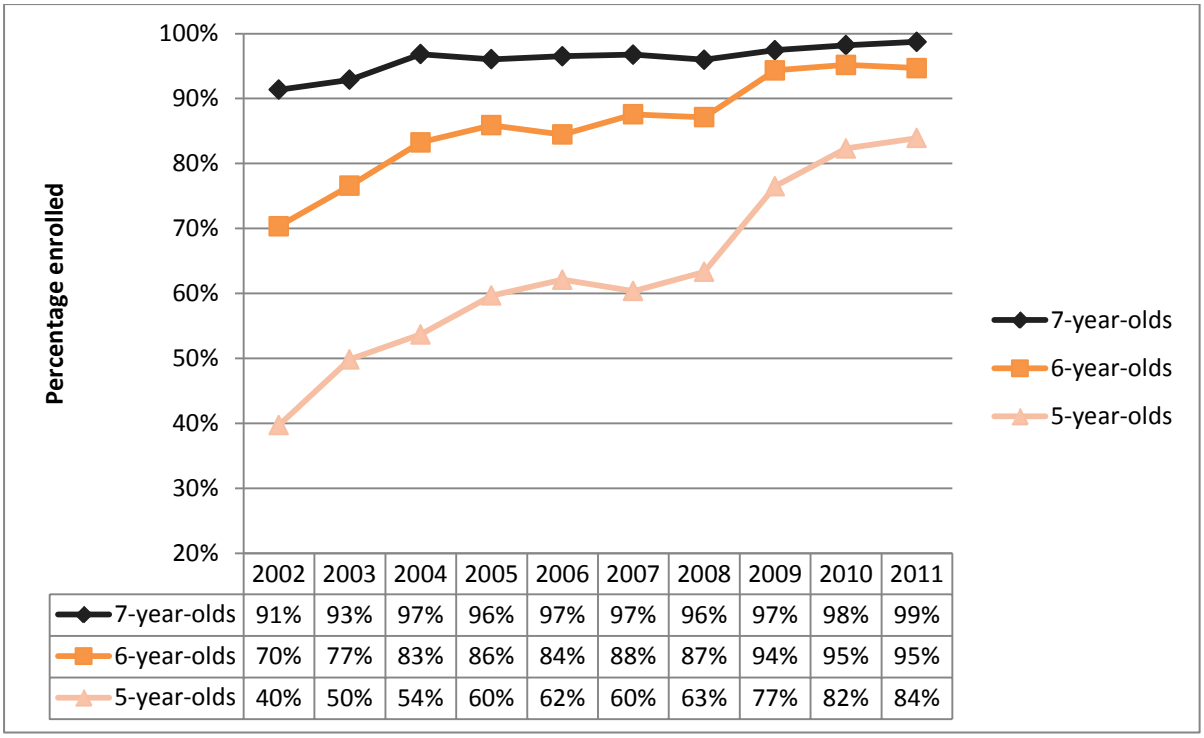
Table 2: Proportion of children that had previously attended pre-school or Grade R

Age	Percentage attended pre-school
8	78.1%
9	67.0%
10	69.6%
11	70.0%
12	67.8%
13	64.6%
14	51.8%

Source: *DBE calculations using NIDS, 2010*

A final perspective on access to pre-school education is offered by Age-Specific Enrolment Rates (ASER). This is simply the proportion of an age group that is attending some form of educational institution. Figure 2 shows ASERs for 5-, 6- and 7-year-olds between 2002 and 2011, using GHS data. Clearly, the proportion of 5-year-olds enrolled has increased remarkably over the last decade, from 40% in 2002 to 84% in 2011. Similarly, the proportions of 6- and 7-year-olds has increased noticeably over the period. The increase for 6- and 7-year-olds is probably a result of these age-groups attending Grade R, but also a reflection of less late entry into schooling, something that will be discussed in Section 3.4**.**

Figure 2: Proportion of 5-, 6- and 7-year-olds enrolled in an educational institution since 2002

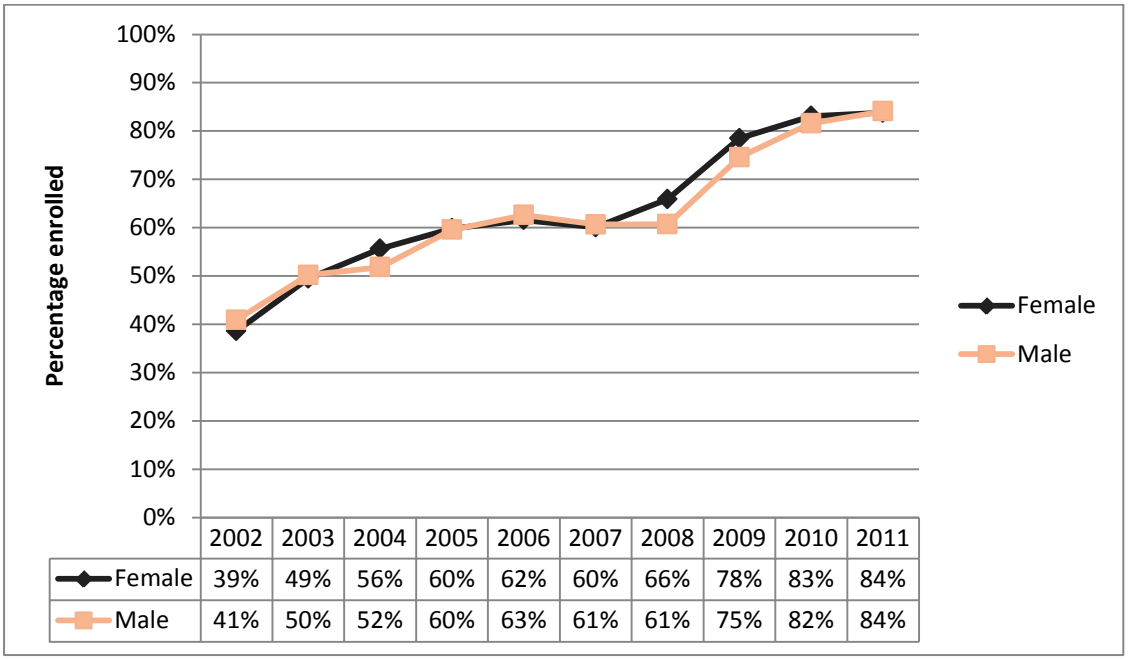


	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
7-year-olds	91%	93%	97%	96%	97%	97%	96%	97%	98%	99%
6-year-olds	70%	77%	83%	86%	84%	88%	87%	94%	95%	95%
5-year-olds	40%	50%	54%	60%	62%	60%	63%	77%	82%	84%

Source*: DBE calculations using GHS, 2002 - 2011*

The following figure indicates that the increase in enrolment amongst 5-year-olds was evenly attributed to males and females. Access to early education is therefore equitable across gender.

Figure 3: Proportion of 5-year-olds enrolled in an educational institution by gender since 2002



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Female	39%	49%	56%	60%	62%	60%	66%	78%	83%	84%
Male	41%	50%	52%	60%	63%	61%	61%	75%	82%	84%

***Source**: DBE calculations using GHS, 2002 - 2011*

A provincial break-down of the enrolment of 5-year-olds produces a striking picture. Table 3 indicates that the expansion was most dramatic in the poorer provinces. The enrolment rate amongst 5-year-olds more than doubled in six provinces between 2002 and 2011. In the Northern Cape the enrolment rate amongst 5-year-olds increased by 263.1% over the period.

Table 3: 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%

***Source**: Own calculations based on GHS (2002 & 2011)*

2.5 ACCESS TO PRIMARY EDUCATION

There have been considerable drives to accomplish universal access to primary education throughout the world in recent years. These include the Education For All initiative and the Millennium Development Goals. As this section will demonstrate, South Africa has effectively achieved universal access to primary education.

According to the Consortium for Research on Educational Access, Transitions and Equity (CREATE, 2008), almost all children of school-going age (7 to 13 years) are enrolled in schools in South Africa, with just under 2% of learners never entering the school system. According to CREATE (2008) using 2005 data, the majority of learners stayed in school until the end of their primary schooling, with 89% completing Grade 7.

Primary Gross Enrolment Ratios (GERs) are widely reported internationally. However, the problems with GERs discussed earlier are especially evident when looking at primary GERs for South Africa. Table 4 shows GERs nationally and for each province between 2002 and 2011. This table would suggest that there has been a substantial decline in primary education participation over the last decade – South Africa's GER declined from 105 in 2002 to 93 in 2011. However, this is contrary to all other evidence and common sense regarding educational participation over the period. For example, GERs for secondary school participation indicate a trend of increasing participation over the same period, as will be reported in the next section. It seems highly improbable that participation in primary education can decline so substantially while participation in secondary education increases. A leading explanation for the strange results in Table 4 is that the official mid-year population estimates used in the GER calculation are inflated. Gustafsson (2012) conducts an extensive investigation of population estimates and enrolment data comparing DBE administrative data, Statistics South Africa's mid-year population estimates, Census data and household survey data. He estimates that the mid-year population estimates for 7- to 14-year-olds is inflated by about 1.1 million children, or about 14% (Gustafsson, 2012: 22).

Table 4: Implausible primary Gross enrolment Ratios using traditional method, 2002-2011

Province	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Eastern Cape	117	118	114	120	116	120	119	121	116	109
Free State	102	99	94	91	92	91	90	92	93	96
Gauteng	101	100	104	99	99	90	87	83	81	81
KwaZulu-Natal	106	104	105	104	101	100	99	97	92	92
Limpopo	101	99	101	102	99	102	101	100	97	97
Mpumalanga	105	101	105	104	109	102	102	100	98	101
North West	101	98	99	92	97	91	94	94	96	94
Northern Cape	108	111	101	96	96	91	93	101	94	100
Western Cape	99	97	102	97	95	85	84	88	86	84
National	**105**	**104**	**104**	**103**	**102**	**99**	**98**	**98**	**94**	**93**

Source: *DBE, Education Statistics in South Africa 2002-2010; DBE, School Realities, 2011.*

An alternative way to calculate GERs and NERs is to use the same formula but a different data source, namely household survey data. The advantage of this is that both the number of enrolled children and the number of children in the age-specific population are estimated from the same data source. This greatly reduces the scope for measurement error. Table 5 reports GERs and NERs for South Africa and each province according to the 2011 General Household Survey.

Table 5: GERs and NERs in 2011 using household survey data

	GER	NER
Gauteng	102	88
Western Cape	105	91
Free State	111	92
Northern Cape	113	93
Mpumalanga	114	91
KwaZulu-Natal	114	90
Limpopo	117	91
North West	118	94
Eastern Cape	130	93
National	**113**	**91**

Source*: DBE calculations using GHS, 2011*

When using the GHS the national primary GER comes to 113%, which is 20 percentage points higher than that calculated using administrative enrolment data and mid-year population estimates. A comparison across the provinces further illustrates the problems with GERs as a suitable measure of access to education. The province with the lowest GER is Gauteng (102%) and the province with the highest GER is Eastern Cape (130%). The reason for such a high GER in Eastern Cape is the prevalence of many children aged 14 and older in primary schools. Lower GERs in Gauteng and Western Cape are in fact indicative of better

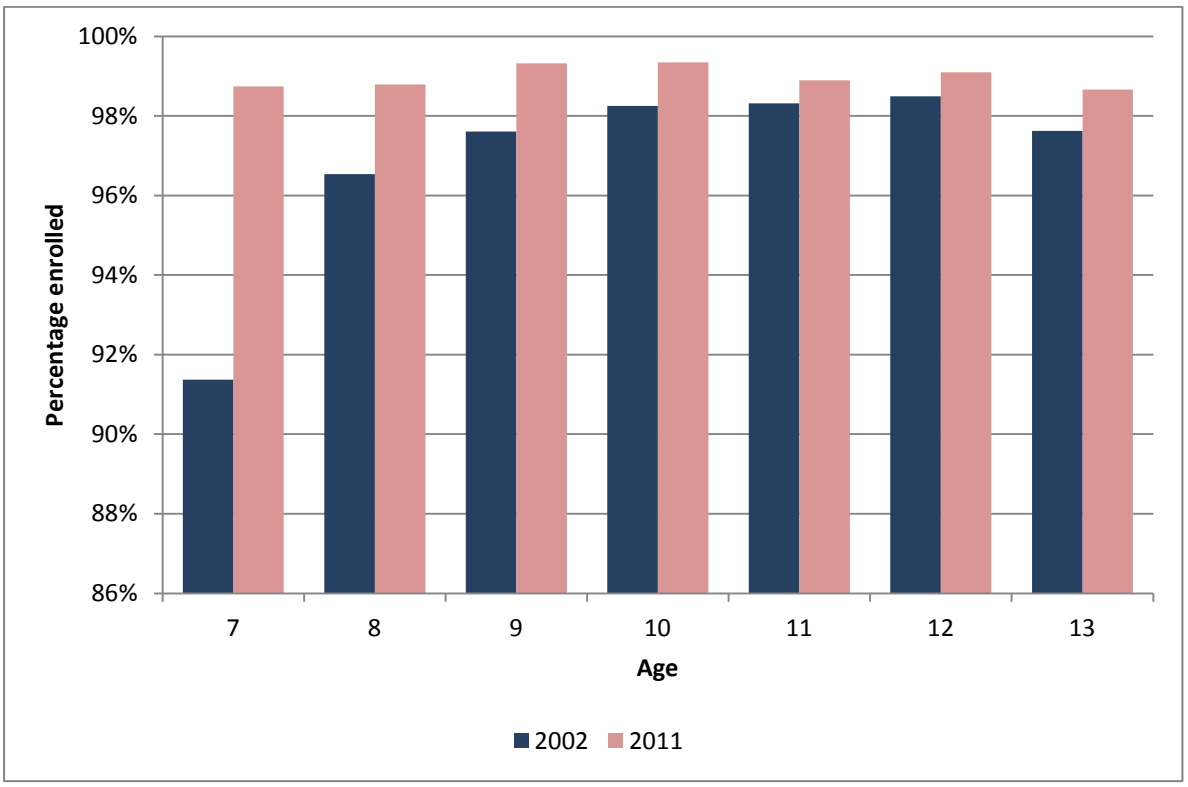
efficiency as there are fewer over-aged learners in primary schools. GERs are therefore not suitable for comparisons of education access across the South African provinces.

The second column shows NERs, which exclude children enrolled in primary school if they are older than 13. Now, the differences across the provinces are less substantial. However, this is still not an entirely helpful measure of access. For example, Gauteng still has the lowest ratio, but this does not reflect poor access to primary education. Rather, it reflects the fact that a significant number of 13-year-olds in Gauteng are already enrolled in secondary school. The national NER is estimated to be 91%. However, it would be erroneous to assume that this indicates that 9% of primary school-aged children are out of school.

The main point about GERs and NERs is that in a country where primary school access is near universal, all that these ratios reflect is internal inefficiencies, such as grade repetition and the extent of under- and over-aged learners in the system.

A superior measure of access to education is provided by Age-Specific Enrolment Ratios (ASER) which use household survey data to calculate the proportion of a specific age group that are enrolled in an educational institution. Figure 4 reports ASERs for each age group between 7 and 13. The ASER is shown for 2002 and for 2011 to provide a sense of the change over time. The figure shows that for each age group approximately 99% of children are enrolled in an educational institution. Secondly, for every age group the proportion enrolled has increased since 2002. This confirms the implausibility of the trend suggested in Table 4 when using the traditional method of calculating GERs. The largest increases in enrolment have been for younger children (aged 7 to 9). This is probably a reflection of the expansion of the Grade R programme (in which some 7- to 9-year-olds are enrolled) and a decline in late entry into school, a trend documented by Timaeus, Simelane and Letsoalo (2013).

Figure 4: Age-Specific Enrolment Rates (ASER) for 7-13-year-olds in 2002 and 2011

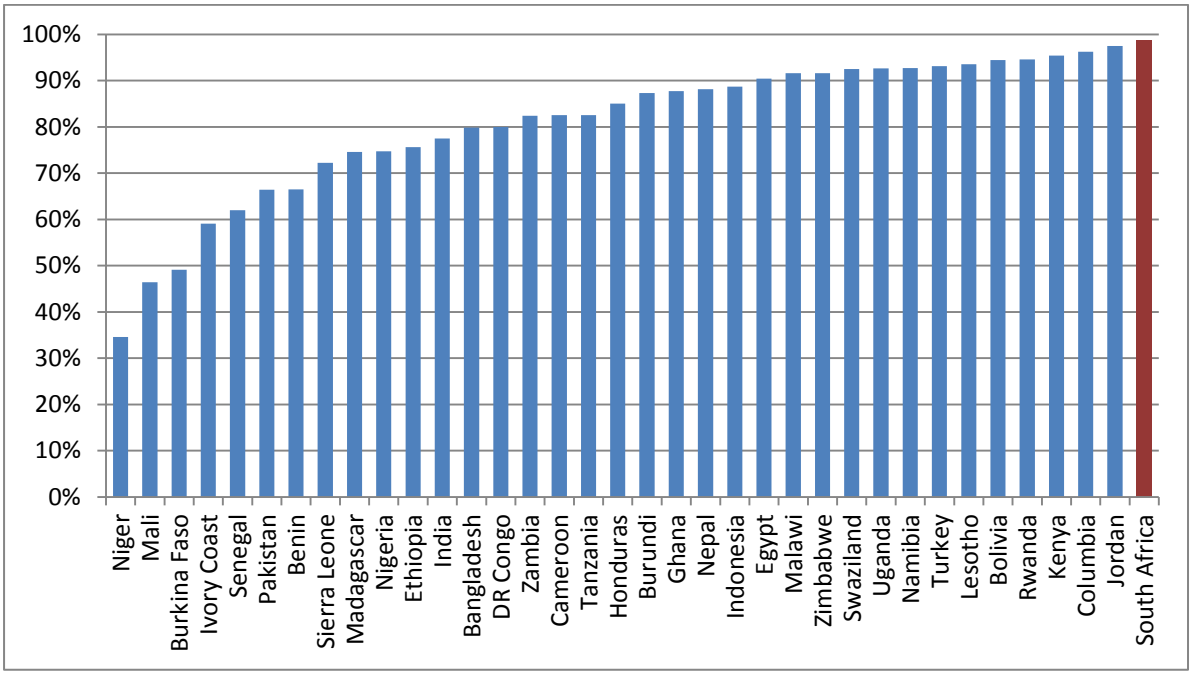


***Source**: DBE calculations using GHS, 2002 & 2011*

A comparison with ASERs in other developing countries indicates that South Africa has remarkably good access to primary education. Filmer (2010) has provided a repository of data on educational attainment, including ASERs, for a large number of developing countries. The data come from the World Bank's Demographic and Health Surveys (DHS) or other strictly comparable household survey data. Figure 5 shows that South Africa has the highest proportion of 13-year-olds attending school amongst this selection of developing countries.[1]

[1] 36 countries were selected out of a possible 50 developing countries with available data more recent than 2005. Those countries not chosen to be included in this analysis included especially small countries and some countries outside Africa. In other words, these 36 countries were chosen because they were deemed to be most relevant for comparison with South Africa.

Figure 5: Age-Specific Enrolment Rates for 13-year-olds in a selection of countries



Source: *Own calculations using data from Filmer (2010)*

Note: *All data used in the figure is from 2005 or a more recent year.*

Although the primary school-age population is usually taken as 7 to 13, the South African Schools Act of 1996 stipulates that children aged 7 to 15 years should attend compulsory education, that is, Grade 1 to Grade 9. Since 2002, the ASER for this age group has increased from 96% to approximately 99% in 2011, as shown in Table 6. There is slight variation across the provinces although all provinces have high attendance and all had an increasing trend since 2002.

Table 6: Percentage of 7 to 15 year-old children attending an educational institution by province, 2002-2011

Province	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Eastern Cape	95.5	95.9	97.0	97.4	97.3	97.7	97.6	97.8	98.5	98.5
Free State	97.5	96.8	97.0	97.5	98.7	98.7	98.2	98.7	98.9	98.9
Gauteng	98.1	98.9	98.9	98.5	97.7	97.5	98.3	98.5	98.8	99.3
KwaZulu-Natal	94.8	96.4	97	97.7	97.2	97.5	97.9	98.0	98.2	98.7
Limpopo	97.4	98.0	98.8	99.0	98.9	98.5	98.2	98.8	99.1	99.1
Mpumalanga	97.2	98.1	98.6	97.9	98.1	97.9	98.2	98.3	99.1	99.0
North West	95.4	96.7	97.7	96.3	95.9	96.9	97.3	97.6	97.8	98.6
Northern Cape	93.6	95.7	96.6	97.5	97.6	97.5	97.5	98.5	98.2	98.6
Western Cape	97.3	97.1	98.1	98.2	97.6	98.2	97.0	98.1	99.1	97.9
National	**96.3**	**97.1**	**97.8**	**97.9**	**97.7**	**97.8**	**97.9**	**98.5**	**98.7**	**98.8**

Source: *Statistics South Africa, General Household Survey, 2002-2011, DBE own calculations*

Table 7 shows the participation of 7- to 15-year-olds in educational institutions by gender. This shows no significant differences between enrolment for males and females within this age group.

Table 7: Percentage of 7- to 15-year old children attending an educational institution by gender, 2002-2011

Gender	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Male	96.0	96.7	97.4	97.6	97.4	97.6	97.8	98.3	98.6	98.7
Female	96.6	97.6	98.1	97.9	97.8	98.2	98.1	98.6	98.7	98.8
Total	**96.3**	**97.2**	**97.7**	**97.8**	**97.6**	**97.9**	**97.9**	**98.5**	**98.7**	**98.8**
GPI	**1.01**	**1.01**	**1.01**	**1.00**	**1.00**	**1.01**	**1.00**	**1.00**	**1.00**	**1.00**

Source: *Statistics South Africa, General Household Survey, 2002-2011, DBE own calculations*

With regards to participation of 7- to 15-year-olds by population group, Table 8 shows that participation was near universal for all four population groups by 2011. The increase in participation since 2002 has been mainly driven by that amongst the black and coloured population. Meanwhile the participation of Indian/Asian and White children has remained over 99% since 2002.

Table 8: Percentage of 7- to 15-year-old children attending an educational institution by population group, 2002-2011

Population Group	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
African/Black	96.0	96.9	97.5	97.7	97.5	97.9	97.9	98.4	98.6	98.8
Coloured	95.9	97.4	98	97.5	97.6	97.5	97.4	98.2	98.5	97.8
Indian/Asian	99.5	98.9	99.2	99.5	94.7	98.1	100	99.9	99.8	99.6
White	99.6	99.4	99.7	99.5	99.9	99.6	98.3	99.0	99.6	99.2

Source: *Statistics South Africa, General Household Survey, 2002-2011, DBE own calculations*

2.6 ACCESS TO SECONDARY EDUCATION

According to the Age Requirements for Admission to an Ordinary Public School (DoE, 1998), learners between 14 and 18 years of age are officially regarded as being of appropriate age for the secondary Grades 8-12. The Gross Enrolment Ratio (GER) for secondary education is therefore defined as the number of learners enrolled in secondary school as a proportion of the total number of 14- to 18-year-olds in the population.

Table 9 shows secondary GERs when calculated in the traditional way, which is to use DBE administrative data for enrolments and Statistics South Africa's mid-year population estimates. Nationally, the secondary GER has increased from 81% in 2002 to 87% in 2011. Note that this data covers ordinary secondary schools only, and excludes enrolment of

students in the same age group who were receiving a Grade 12-equivalent education in FET colleges, an option that expanded considerably in the late 1990s and early 2000s. As was the case with GERs for primary education, these values should be interpreted with caution. Some of the poorer provinces such as Limpopo and Mpumalanga have considerably higher secondary GERs than the more affluent provinces such as Western Cape and Gauteng.

Table 9: Traditional Secondary Gross Enrolment Ratio (GER), 2002-2011

Province	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Eastern Cape	72	72	72	72	75	78	75	74.8	77	77
Free State	83	81	83	85	87	87	85	81.4	88	87
Gauteng	81	81	97	101	101	90	88	88.9	84	84
KwaZulu-Natal	81	80	91	90	91	88	83	87.3	88	90
Limpopo	91	90	100	100	102	107	102	100.9	101	102
Mpumalanga	88	87	97	94	103	97	95	93.1	95	96
North West	83	82	88	81	89	81	81	76.1	79	82
North Cape	76	79	82	85	85	79	76	80.8	82	80
Western Cape	72	71	86	87	86	74	71	72.1	76	76
Total	**81**	**80**	**89**	**89**	**91**	**88**	**85**	**85.3**	**86**	**87**

***Source**: DBE, Education Statistics in South Africa 2002-2010; DoE, School Realities, 2011 and population estimates from Statistics South Africa.*

Table 10 shows secondary GERs and NERs by province derived using the General Household Survey of 2011. When calculating GERs using household data, which is unlikely to be substantially affected by data error, the national GER is considerably higher (103%) than when using the traditional sources of data, where it was 87%. Interestingly, though, similar patterns are evident across the provinces. The lowest secondary GER is observed in the Western Cape (86%) and the highest is observed in Limpopo (120%). As a consequence of the GER formula it will inflate the ratio for provinces where there is a lot of grade repetition and where there are many over-aged learners in the system. To a large extent this probably explains the gap between Limpopo and Western Cape. Nevertheless, Limpopo has also got the highest NER (which only counts 14- to 18-year-olds who are enrolled), though it is much lower at 80%. The Eastern Cape has the lowest secondary NER at 65%.

Table 10: Secondary GERs and NERs in 2011 using household survey data

	GER	NER
Western Cape	86	71
Northern Cape	93	73
Eastern Cape	94	65
North West	95	74
Gauteng	103	79
Free State	104	77
Mpumalanga	106	74
KwaZulu-Natal	107	76
Limpopo	120	80
National	**103**	**74**

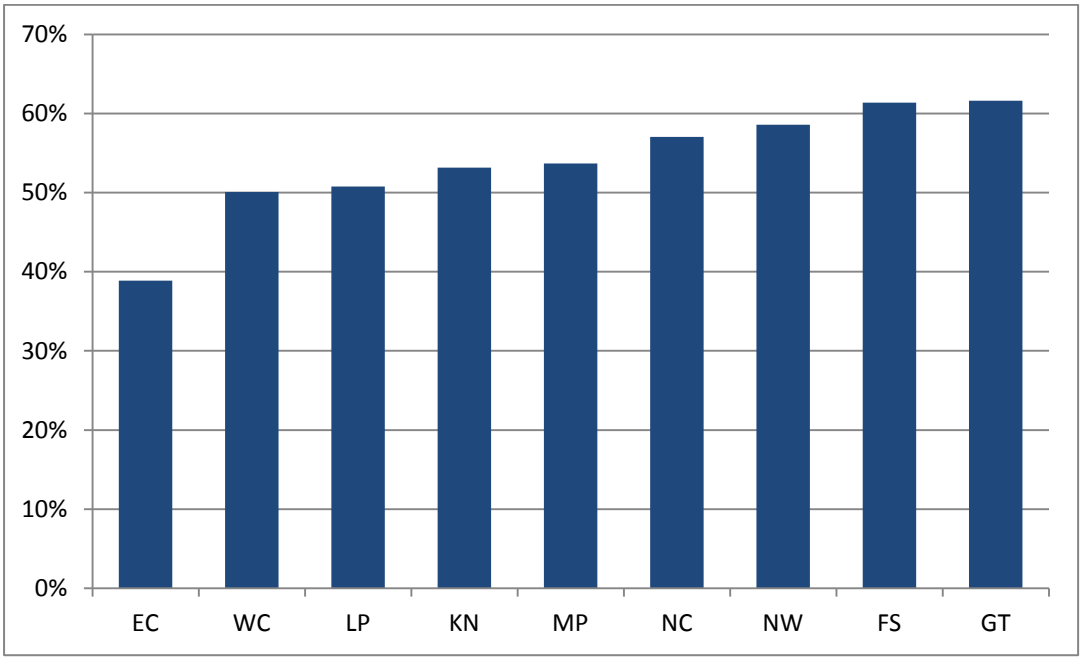
Source: *DBE calculations using GHS, 2011*

Note: *The secondary GER is defined as the number of people enrolled in secondary school (of any age) divided by the number of 14- to 18-year-olds in the population. The NER is defined as the number of 14- to 18-year-olds enrolled in secondary school divided by the number of 14- to 18-year-olds in the population.*

What is surely more important than the extent to which provinces retain learners in the school system is the likelihood that learners will obtain a matric. Figure 6 shows the proportion of 21- to 30-year-olds who have completed grade 12 by province of birth. The National Income Dynamics Study (NIDS) of 2010 captured not only current province but also province of birth. Educational attainment within this age group by current province may favour those provinces towards which more educated youths tend to migrate. Therefore, analysing educational attainment by province of birth is more likely to reflect the educational opportunity that exists in each province, albeit with a time lag. Figure 6 indicates that those born in the Eastern Cape had the lowest probability of completing grade 12 while those born in Gauteng had the highest probability. Interestingly, only 50% of those born in the Western Cape completed grade 12. Given that learner achievement scores in earlier grades where there is near universal enrolment tend to be comparably high in the Western Cape, this figure points to relatively poor conversion into matric passes. However, more research should be conducted to confirm or challenge this finding.

Finally, while Limpopo has a considerably higher GER and NER than the Western Cape the proportion that complete grade 12 is virtually identical. This suggests that in Limpopo 14- to 18-year-olds are more likely to attend secondary school than in other provinces but not necessarily more likely to attain matric.

Figure 6: Proportion of 21- to 30-year-olds with matric by province of birth

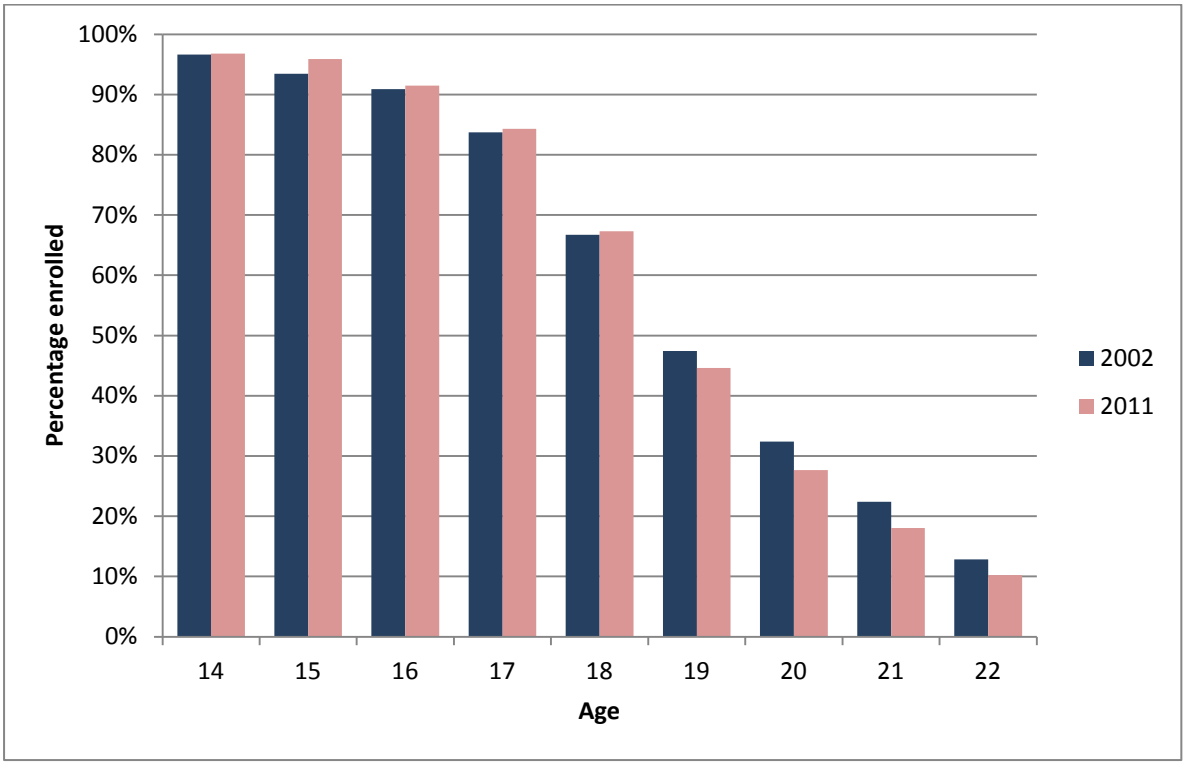


Source: *DBE calculations using NIDS 2010 data*

As discussed, ASERs provide a more meaningful measure of educational participation in South Africa than do GERs and NERs. Figure 7 depicts ASERs for those aged 14 to 22 at two points in time: 2002 and 2011. Note that in this case only those enrolled in school were counted as enrolled. Enrolment in any educational institution is there likely to be somewhat higher than the estimates reported in Figure 7, especially amongst the older categories.

The figure indicates that amongst 14- to 18-year-olds participation in school has remained stable since 2002, with only slight increases observed over the period. Up until the age of 16 educational participation is above 90%. After that it begins to drop substantially. Those aged 19 to 22 were less likely to be enrolled in 2011 than in 2002. This points to the trend of declining participation of over-aged learners over time, something that has been discussed in detail by Burger, Van der Berg and Von Fintel (2012). Significantly, while enrolment in school has declined for those aged 19 to 22, the proportion enrolled in other educational institutions such as universities and FET Colleges has increased since 2002 (not shown in the figure).

Figure 7: Age-Specific Enrolment Rates (ASER) in school for 14- to 22-year-olds in 2002 and 2011



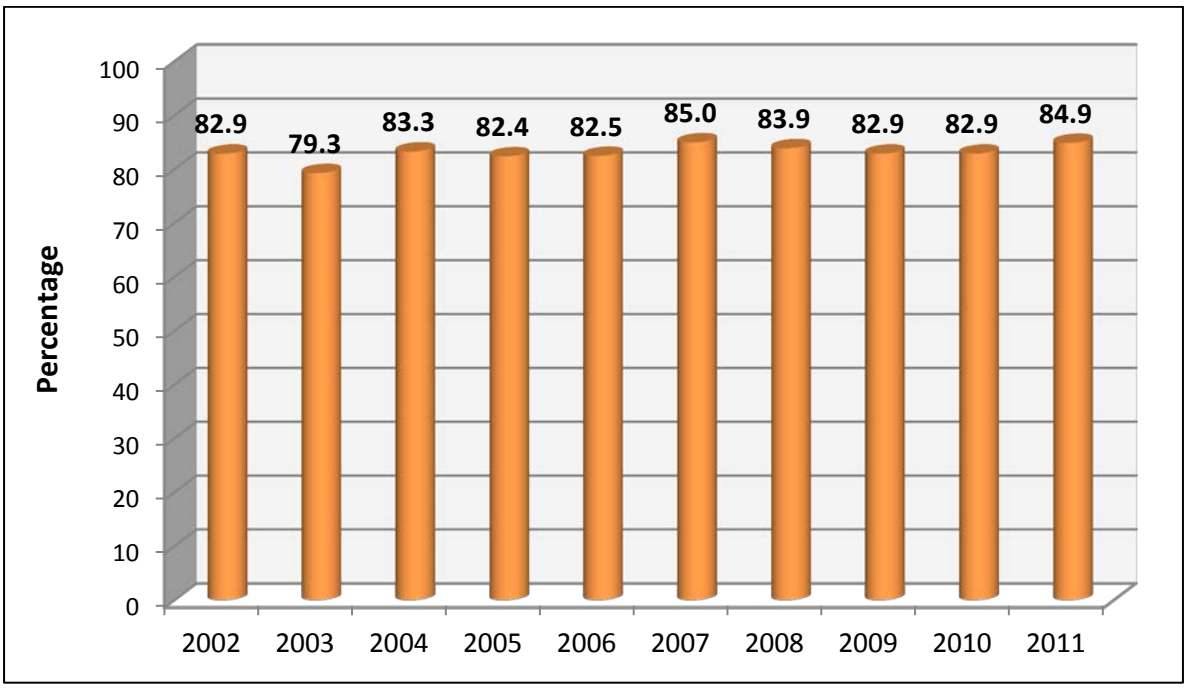
***Source**: DBE calculations using GHS 2002 and 2011*

***Note**: This figure shows the percentage enrolled in school. Therefore, those enrolled in other educational institutions are counted as not enrolled.*

According to the age admission policy, 16- to 18-year-olds make us the appropriate age group for enrolment in the FET band of schooling, which corresponds to Grades 10, 11 and 12. However, children in this age group are also encouraged to enrol in other educational institutions, such as Further Education and Training (FET) colleges, after completing Grade 9, and indeed many do. Hence this section reports not only on school attendance but on the attendance of 16-to-18-year-olds attending educational institutions in general.

Figure 8 indicates the percentage of children, aged 16 to 18 years attending educational institutions in South Africa. Since 2002, trends in enrolment figures reveal that attendance of educational institutions amongst the 16- to 18-year-old age group has not changed significantly over this period. In 2011, approximately 85% of 16- to 18-year-olds were attending educational institutions compared to 83% in 2002. There has been a mere 2% increase between 2002 and 2011.

Figure 8: 16- to 18-year-olds attending educational institutions, 2002-2011



Source: *Statistics South Africa, General Household Survey, 2002-2011, DBE own calculations*

Limpopo has the highest percentage of children in this age group participating in educational institutions at 93% in 2011, as the next table shows. Meanwhile, Western Cape has the lowest percentage of 16- to 18-year-olds attending educational institutions at 76% in 2011. It should be noted that the low enrolment in the Western Cape may not necessarily reflect the failings of the school system, but also the higher availability of employment opportunities in this province, which provides an alternative to schooling that does not exist to the same extent elsewhere. There has been a minimal increase in the participation of this age group in educational institutions across the provinces.

Table 11: 16- to 18-year-olds attending educational institutions by province, 2002-2011

Province	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Eastern Cape	83.0	78.5	78.5	80.9	83.9	85.4	83.0	80.9	81.8	83.3
Free State	85.4	86.0	86.6	88.7	83.3	90.7	85.8	83.8	83.9	86.3
Gauteng	87.7	86.5	85.6	84.2	80.6	82.2	85.6	87.2	85.1	81.7
KwaZulu Natal	79.3	81.9	82	81.4	83.3	83.7	84.6	80.7	80.5	85.7
Limpopo	88.2	89.3	91.5	87.4	89.3	92.1	90	91.5	92.0	93.1
Mpumalanga	86.2	57.7	88.1	86.7	85.5	93.2	87.1	84.5	85.2	86.7
North West	81.2	80.8	84.3	83.9	84.1	81.6	79.1	81.4	79.2	84.9
Northern Cape	71.0	67.7	68.8	75.4	71.9	77.8	76.0	73.4	79.6	79.2
Western Cape	72.6	73.2	72.6	69.7	66.0	73.7	71.6	73.7	73.6	76.4
National	**82.9**	**79.3**	**83.3**	**82.4**	**82.5**	**85.0**	**83.9**	**82.9**	**82.9**	**84.9**

Source: *Statistics South Africa, General Household Survey, 2002-2011, DBE own calculations*

There are some disparities in the attendance of 16- to 18-year-olds across the population groups. As indicated in Table 12, in 2011 high proportions of African/Black and White children aged 16 to 18 were attending some form of educational institutions at approximately 86%, followed Indian/Asian at 81%. Only 69% of the Coloured children aged 16 to 18 were attending educational institutions in 2011. The lower enrolment amongst Coloured youths relative to Black youths points to factors other than poverty as causes of non-enrolment. A large proportion of the Coloured population reside in the Western Cape and, as noted above, this province may have attractive alternatives to schooling to a greater extent than other provinces.

Table 12: Percentage of 16- to 18-year-olds attending educational institutions by population group, 2002-2011

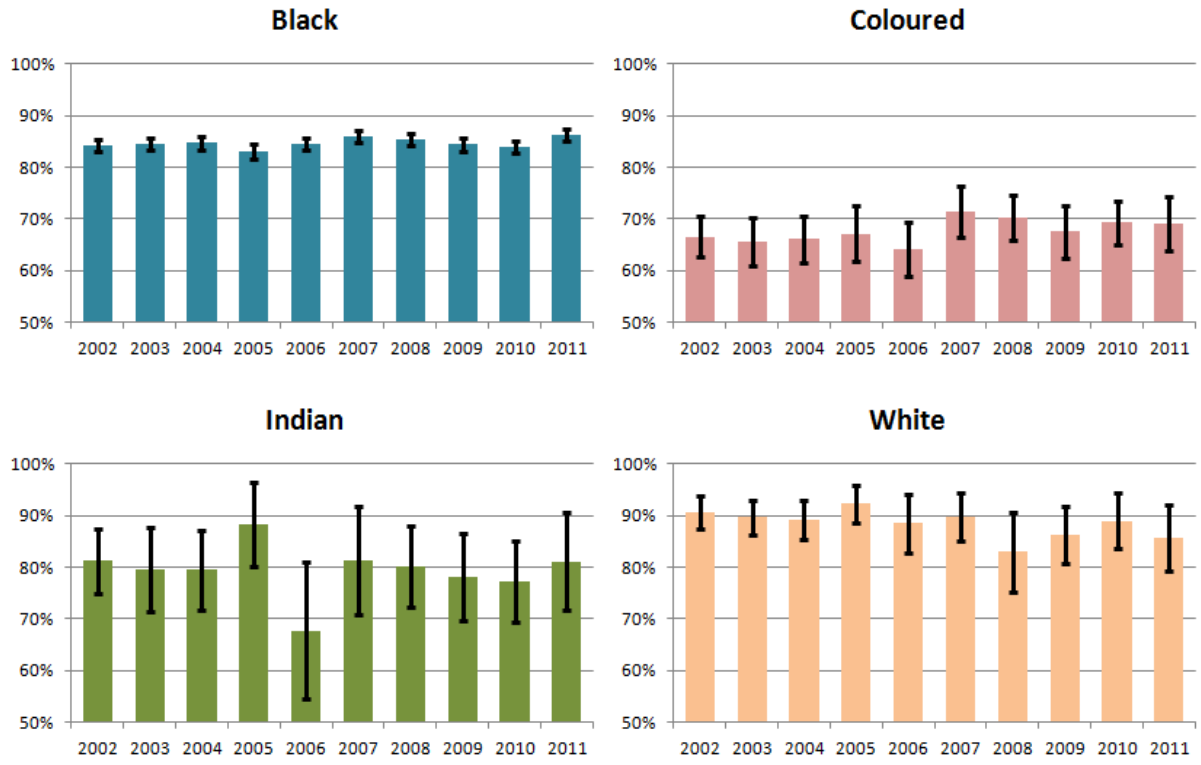
Population Group	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
African/Black	83.1	84.0	83.7	82.6	84.1	86.3	85.2	84.6	83.9	86.4
Coloured	67.5	64.9	66.2	66.5	63.3	70.7	69.4	68.0	69.3	69.2
Indian/Asian	80.3	79.3	80.5	88.0	69.1	82.1	80.7	79.7	77.4	81.1
White	91.9	90.5	89.1	92.1	88.4	89.7	83.8	86.6	89.3	85.7

Source: *Statistics South Africa, General Household Survey, 2002-2011, DBE own calculations*
Note: The estimates for the Indian population are highly variable from year to year due to the small sample size of Indians included within the GHS.

The table also indicates that there have been no dramatic increases or decreases in enrolment since 2002 among any of the population groups. Although it would appear that enrolment has moved around rather a lot amongst the White and Indian population, these movements are due to the fact that the samples of 16- to 18-year-olds in the GHS are relatively small. The next figure shows enrolment amongst this age group by population group graphically and also depicts the 95% confidence intervals around the estimates. It is

evident that the confidence intervals are relatively narrow for the estimates of enrolment amongst Black youths. This is because of the large number of black youths in the GHS sample, thus allowing for a more precise estimate. On the other hand, the confidence intervals are very wide for the Indian population due to the small numbers present in the sample. When taking confidence intervals into consideration it becomes clear that there were no definite trends in enrolment for any of the population groups over this period.

Figure 9: Percentage of 16- to 18-year-olds attending educational institutions by population group, 2002-2011

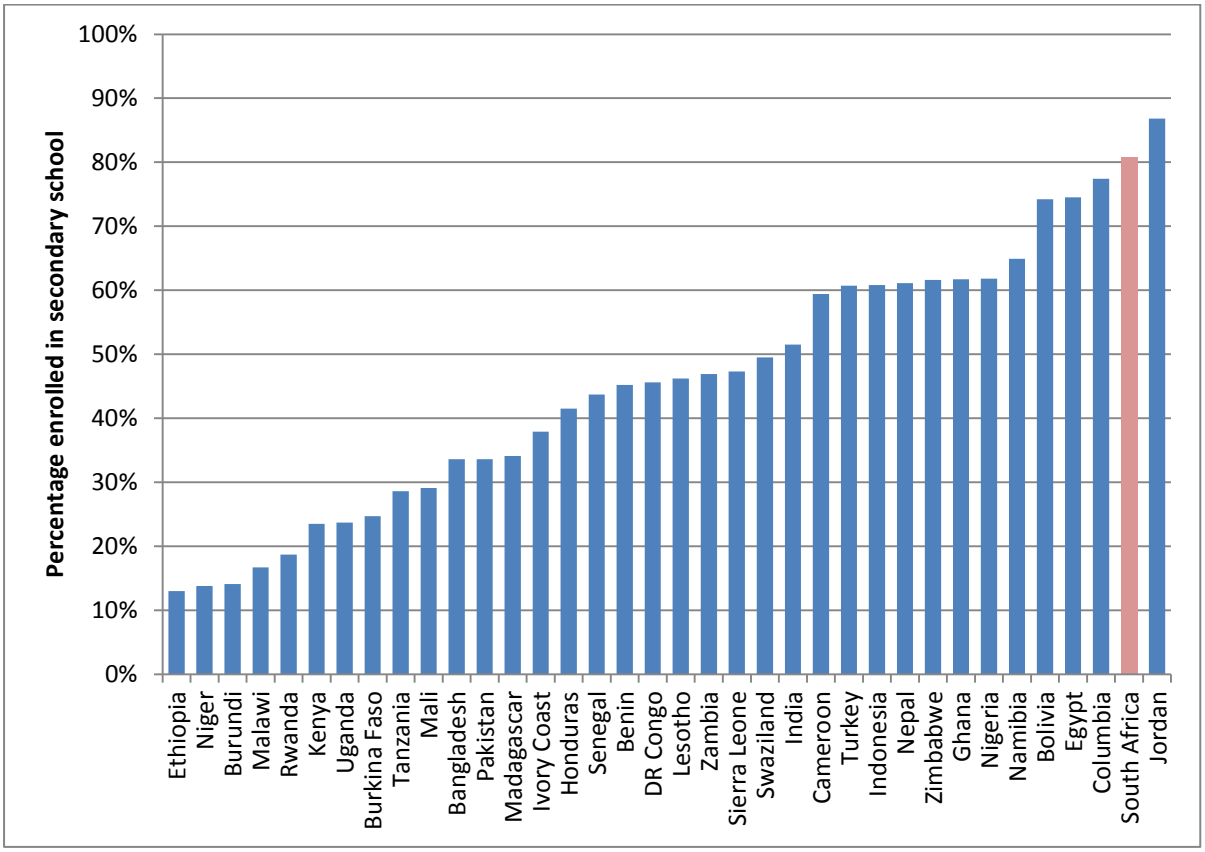


Source: *DBE calculations using GHS, 2002 – 2011*

Note: *The graphs indicate 95% confidence intervals around the estimated values.*

The next figure provides a comparison of enrolment amongst 16-year-olds with other developing countries. The graph was calculated using the repository of data from Demographic and Health Surveys (DHS) provided by Filmer (2010). As was the case with access to primary education, Figure 10 indicates that access to secondary education is particularly high in South Africa relative to other developing countries.

Figure 10: Proportion of 16-year-olds attending secondary school in a selection of developing countries

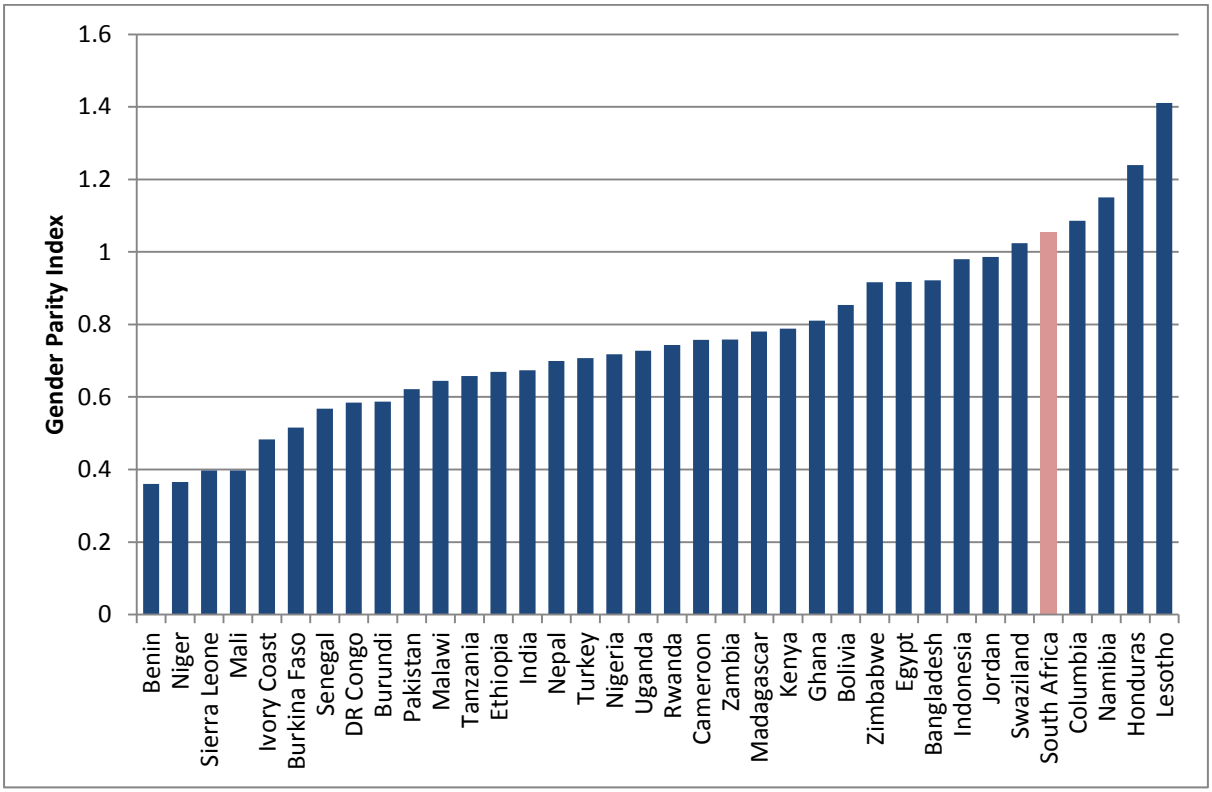


Source: *Own calculations using data from Filmer (2010)*

Note: *All data used in the figure is from 2005 or a more recent year.*

The next figure indicates that South Africa has achieved gender parity in access to secondary education, while males still enjoy better access to secondary education in most developing countries. The Gender Parity Index (GPI) shown below was calculated by dividing the proportion of 16-year-old girls that is enrolled in secondary education by the proportion of 16-year-old boys that is enrolled in secondary education. When the GPI is above 1 this means that a higher proportion of girls is enrolled than boys.

Figure 11: Gender Parity Index (GPI) for a selection of developing countries



Source: *Own calculations using DHS data from Filmer (2010)*

Note: *All data used in the figure is from 2005 or a more recent year.*

Note: *The GPI in this graph is defined as the proportion of females aged 20 to 29 that have attained grade 9 divided by the proportion of males aged 20 to 29 that have attained grade 9.*

2.7 CONCLUSION

Despite all the barriers to access referred to above, participation levels in the South African education system are generally high. Evidence from household surveys confirms that by 2011, as much as 99% of 7- to 15-year-old children and 85% of 5-year-olds participated in some form of educational activities. Provisioning of the reception year, Grade R (for children aged 4 turning 5) has improved significantly and the target is to reach full coverage of Grade R by 2014.

Access to education in South Africa is high in comparison with other developing countries and there now is near universal access to formal public schooling up to the end of the compulsory phase of education. However, as Pritchett (2004) argues, the objective of education is to equip people with a range of competencies (including cognitive and non-cognitive skills, knowledge and attitudes) necessary to lead productive and fulfilling lives

fully integrated into their societies and communities. While getting children into school is clearly necessary, it is by no means sufficient to produce these intended competencies.

This section has shown that South Africa has comparably good and improving access to basic education. However, as the next sections demonstrate this may mask various internal inefficiencies and low quality of learning and teaching

CHAPTER 3: MEASURES OF INTERNAL EFFICIENCY IN THE SCHOOLING SYSTEM AND LEARNER RETENTION STRATEGY

3.1 INTRODUCTION

The internal efficiency of the education system refers to the way in which learners enter and then progress through the system. Inefficiencies are therefore caused by sub-optimal school entry patterns, grade repetition practices or drop-out patterns.

In 2007, a Ministerial Review on Learner Retention in the South African Schooling System was carried out. This report contains extensive discussion on retention, grade repetition, and other aspects of internal efficiency. As a follow-up to this review, the DBE is currently finalising an internally produced report entitled, “The internal efficiency of the school system: A report on selected aspects of access to education, grade repetition and learner performance.”

The indicators of internal efficiency presented in this chapter provide a short version of the more extensive analysis contained in both the 2007 Ministerial Review and the forthcoming DBE report on internal efficiency.

3.1.1 Perspectives on school entry, grade repetition and drop-out

It is generally maintained that it is socially and educationally advantage for children to be of a similar age to their peers in school. Therefore, late entry into schooling, which is often prevalent in rural and poor communities, can be one avoidable source of social and educational disadvantages. Grade repetition tends to result in learners being older than their peers, which is one factor often thought to lead to drop-out of school. The Ministerial Report on Learner Retention, for example, found that grade repetition was a chief cause of drop-out. The extent to which a school system does not retain talented individuals

represents an inefficient waste of talent. Conversely though, retaining learners for many years can be inefficient if they do not ultimately attain a meaningful qualification.

There is a range of views in academic literature and within society on the effect of grade repetition. Proponents of repetition argue that a learner who repeats a grade will improve academically and will perform better in subsequent grades. They claim that repetition is a means to ensure that learners master the basic skills necessary for success in higher grades and that repetition prevents schools from graduating learners who lack the basic skills necessary to be productive members of society and successfully enter the job market or attain further education.

Opponents of repetition on the other hand contend that repetition does not lead to improved academic performance. They assert that it instead leads to undesirable effects such as drop-out, behavioural problems, difficulties in class management and even actual achievement losses. A more nuanced view would no doubt recognise that the potential impact of repetition will probably depend on the extent to which meaningful remedial attention is given to repeaters.

From an economic perspective, repetition is a costly practice since it results in the need for extra teachers, classrooms, furniture and other resources that are needed to cater not only for the regular group of learners, but also for those who repeat and spend a longer time in the schooling system. Therefore, if repetition does not in fact lead to better educational outcomes for those repeating, it can be viewed as a source of inefficiency in the system.

The South African policy on repetition supports the principle of progression with age cohorts and acknowledges that repetition rarely results in better learning attainment and that it often has the opposite result. However, the policy permits schools to retain a learner in a grade at most once per school phase. It therefore allows for learners to complete a 12 year schooling cycle in a maximum of 16 years (DoE, 1998).

3.1.2 Alternative methods for calculating drop-out and repetition rates

There are two main methods for calculating drop-out rates and repetition rates. The traditional method uses administrative data collected by the education authorities. Using EMIS data for a particular grade, the repetition rate can be expressed as the number of repeaters in a particular year (Year T) as a proportion of the number of enrolments in the same grade in the previous year (Year T-1). The equation is as follows:

$$RR_{g,t} = R_{g,t}/E_{g,t-1}$$

Similarly, the drop-out rate for a particular grade can be expressed as the number of children dropping out at the end of the year as a proportion of the number that enrolled in that grade at the start of the year. However, the number that dropped out must first be derived as the difference between enrolments in the relevant grade and enrolments in the next grade in the next year (after subtracting repeaters). This is clearer with an equation:

$$D_{g,t} = E_{g,t} - (E_{g+1,t+1} - R_{g+1,t+1})$$

Where $D_{g,t}$ is the number that dropped out of Grade *G* in Year *T*; $E_{g,t}$ is the number enrolled in Grade *G* in Year *T*; $E_{g+1,t+1}$ is the number enrolled in Grade *G+1* in Year *T+1*; and $R_{g+1,t+1}$ is the number of repeaters in Grade *G+1* in Year *t+1*.

Once the number of those dropping out has been obtained, the drop-out rate for a particular grade ($DR_{g,t}$) can then be calculated as the number that dropped out as a proportion of the number that enrolled in that grade in the same year:

$$DR_{g,t} = D_{g,t}/E_{g,t}$$

Unfortunately, EMIS data on the number of repeaters was not deemed reliable enough to perform these calculations. Firstly, it is suspected that schools substantially under-report grade repetition. Secondly, changes in the way repetition data has been collected affect the validity of observed time trends.

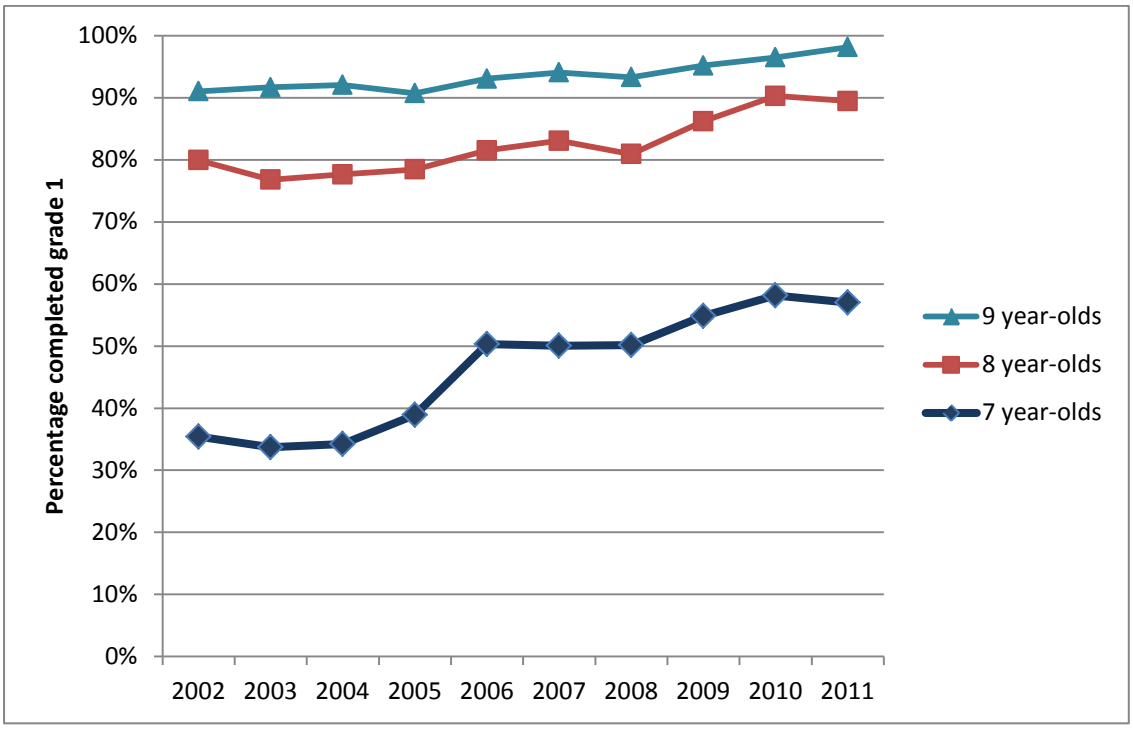
The second method for calculating repetition rates and drop-out rates is to use household survey data, providing those surveys captured information on current grade as well as the previous year's grade. Since 2009, the General Household Survey (GHS) has collected this information. The National Income Dynamics Study (NIDS) also collected this information in 2008 and in 2010.

Using household data, the calculation is considerably simpler than the above equations. Grade repetition is simply calculated as the proportion of those in a particular grade that are repeating. This assumes that the number enrolled in a particular grade does not vary substantially from year to year. Two approaches to estimating drop-out rates are followed. The first, using NIDS, calculates the proportion of those in a particular grade in the previous year that are currently not attending school. The second approach, using the GHS, calculates survival rates to each grade and then interprets the difference between the proportion that reached one grade and the proportion that reached the next grade as the drop-out rate for that grade.

3.2 PATTERNS IN SCHOOL ENTRY

The previous chapter demonstrated that educational participation amongst 5-, 6- and 7-year-olds has substantially increased in recent years. The chief explanation behind this was shown to be the expansion of the Grade R programme. However, increased enrolment amongst young children may also partly reflect a decline in late entry into school. The next figure provides one indication of the extent to which late entry has occurred since 2002. It shows the proportion of 7-, 8- and 9-year-olds that have already completed grade1, since 2002 until 2011. The proportion of 7-year-olds having already completed grade 1 increased from about 36% in 2002 to about 57% in 2011. This must reflect a combination of less grade repetition in the first grade and less late entry into school. The same applies for 8-year-olds (for whom grade 1 completion rose from 80% to 89%) and 9-year-olds (for whom grade 1 completion rose from 91% to 98%). Late entry is known to have a negative impact on later educational outcomes (Timaeus, Simelane and Letsoalo, 2013). Therefore, this trend of declining late entry must be seen as improved efficiency in the system.

Figure 12: Proportion of children having completed grade 1 by age



***Source**: Own calculations based on GHS, 2002 - 2011.*

Two further possible factors contributing to the increased enrolment of young children and to the incremental improvements in enrolment amongst 8 to 18 year-olds include the expansion of the National School Nutrition Programme (NSNP) and the expansion of no-fee schools. Internationally, the provision of meals at school and the lowering of financial

constraints are both known to increase the likelihood of participating in school, though there is not yet empirical evidence demonstrating this dynamic in South Africa.

3.3 GRADE REPETITION

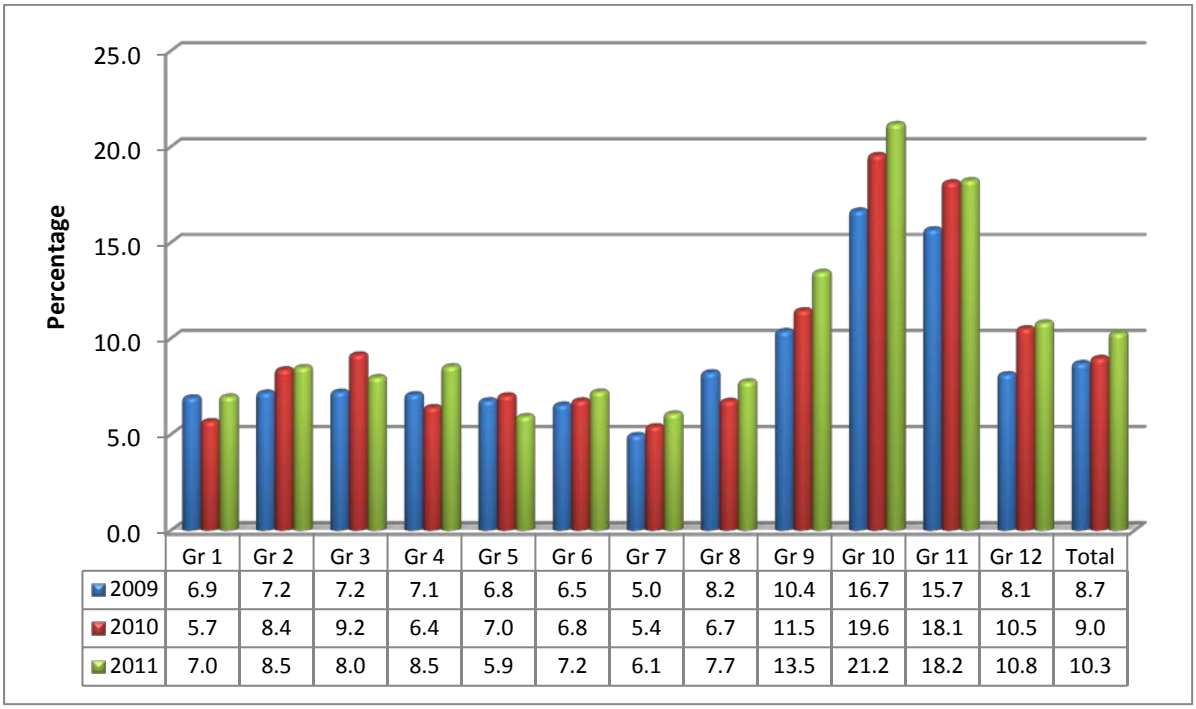
As discussed earlier, research indicates that repetition is a strong predictor of dropout. Having said this, there are very few studies that have been able to estimate the causal impact of repetition on drop-out. This is because low-performing children are both likely to repeat and to eventually drop-out; simply because those who repeat are more likely to drop out does not prove that repetition caused drop-out. Nevertheless, there are strong theoretical reasons to expect repetition to cause drop-out, especially when repetition is not characterised by meaningful remedial intervention. Each year learners must decide whether to participate in school for an additional year. As they become older the attractiveness of alternatives such as entering the labour market or devoting oneself to family responsibilities increases. Therefore, repeating a grade makes it that much more likely that a decision to not participate in school will be made before completing the school programme.

South Africa's level of repetition is high by international norms. Comparative information on repetition in primary schools in 2007 (UNESCO, 2010:355), shows that South Africa's average level of repetition (at 7%) was higher than the average level for developing countries (5%) and for developed countries (less than 1%).

Figure 13 shows the percentage of repeaters[2] for each grade as obtained from the 2009 to 2011 GHS. Data on the percentage of repeaters for previous years cannot be obtained from the GHS, since the question on repetition was only introduced in 2009. Figure 13 shows that overall, at both primary and secondary levels, over 10% of all learners enrolled in schools in 2011, were repeaters. The GHS data also reveals that grade repetition is highest in Grades 10 and 11, with over 21% of Grade 10 learners in 2011 being repeaters. In 2011, 10.8% of school learners enrolled in Grade 12, were repeaters. However the actual level of repetition in Grade 12 is likely to be somewhat higher, since some learners enrol in FET colleges and Adult Education Centres to have a second chance at passing Grade 12.

[2] The percentage of repeaters is calculated by dividing the number of learners who are repeating a grade, by the total enrolment of learners in that grade, in the same year.

Figure 13: Percentage of repeaters: 2009-2011



	Gr 1	Gr 2	Gr 3	Gr 4	Gr 5	Gr 6	Gr 7	Gr 8	Gr 9	Gr 10	Gr 11	Gr 12	Total
2009	6.9	7.2	7.2	7.1	6.8	6.5	5.0	8.2	10.4	16.7	15.7	8.1	8.7
2010	5.7	8.4	9.2	6.4	7.0	6.8	5.4	6.7	11.5	19.6	18.1	10.5	9.0
2011	7.0	8.5	8.0	8.5	5.9	7.2	6.1	7.7	13.5	21.2	18.2	10.8	10.3

***Source**: Statistics South Africa, General Household Survey, 2009 - 2011, DBE own calculations*

Research has shown that in 2007, a third of all children at school had repeated a grade. This applied to 21% of learners in the Foundation Phase (Grades 1 to 3) while 52% had repeated by the time they were in the Further Education and Training (FET) phase (Grades 10 to 12) (Social Surveys Africa and Centre for Applied Legal Studies, 2009:11).

Table 13 shows that repetition is higher among male learners than female learners in all grades except Grades 11 and 12. This is not a new phenomenon and it is also not unique to South Africa. The SACMEQ surveys of 2000 and 2007, for example, indicate that grade repetition is higher amongst males in most countries Southern and East Africa.

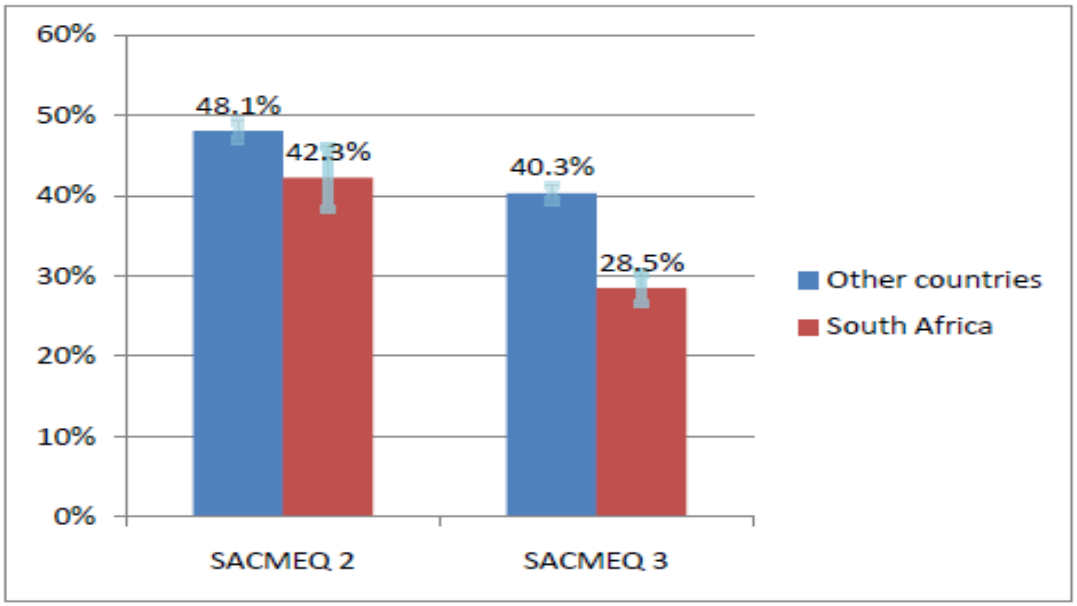
Table 13: Percentage of repeaters at schools by grade and gender: 2011

Grade	% of male repeaters	% of female repeaters
Grade 1	4.8	2.1
Grade 2	5.0	3.5
Grade 3	5.1	2.8
Grade 4	5.9	2.7
Grade 5	3.8	2.1
Grade 6	4.8	2.5
Grade 7	3.8	2.4
Grade 8	4.9	3.0
Grade 9	8.0	5.5
Grade 10	12.1	9.2
Grade 11	8.6	9.7
Grade 12	3.9	7.0
Total	**6.0**	**4.3**

***Source**: Stats SA, General Household Survey (2011)*

Figure 14 provides another source of information about the trends in repetition rates over time. It shows the proportion of grade 6 children that reported having repeated at least once in the 2000 SACMEQ survey and in the SACMEQ 2007 survey. This statistic is shown for South African learners as well as for grade 6 learners in all the other SACMEQ countries. The levels of grade repetition observed in 2007 were lower than the levels that were recorded during 2000. This would indicate that between the late 1990s and the mid 2000s there was a decrease in the amount of repetition in South African primary schools. One factor that may have contributed to decreased grade repetition over this period was the introduction of the policy stipulating that schools may retain learners at most once per phase of schooling.

Figure 14: Percentage of learners having repeated at least once by grade 6 in SACMEQ 2 and 3



Source: *DBE calculations using SACMEQ 2000 and 2007 data*

Note: *95% Confidence Intervals are shown*

There is a further inefficiency inherent in grade repetition in South Africa because in many schools grade repetition is not well targeted, i.e. some learners who should not repeat in fact do repeat and other learners who should repeat are promoted. For Grade 12 learners there is a nationally standardised and externally evaluated matric examination that determines the passing of Grade 12. For other grades, the decision about whether or not to promote a learner is made at the school level.

A paper by Lam, Ardington and Leibbrandt (2010) finds that grade progression in the majority of schools attended by black learners is poorly linked to actual ability and learning. In fact, they argue, grade repetition is something of a lottery. Using data from the Cape Area Panel Study, Lam *et al* find that grade repetition is only weakly linked to performance in cognitive tests. These random grade repetition practices are most likely symptomatic of weak assessment practices in schools. This problem was one of the chief reasons motivating the introduction of the Annual National Assessments, which are designed to strengthen school-based assessment practices and provide reliable feedback to learners, teachers and parents.

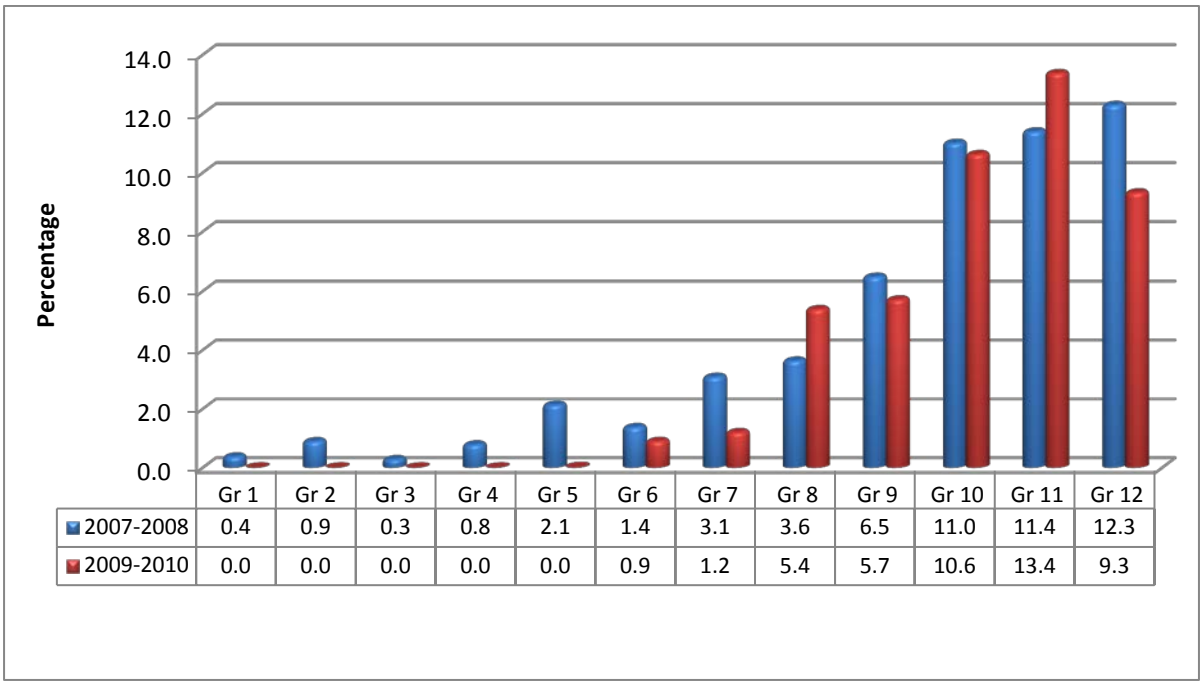
3.4 DROPPING OUT OF SCHOOL

Research by Strassburg (2010) has found that dropping out of schools is not a single event but is usually the result of a combination of inter-related factors that lead up to a child

eventually dropping out of school (Strassburg, 2010). Fleisch (2009) noted that poverty alone did not explain why children were not in school and identified other factors (such as disability, family structure, i.e., not living with biological parents or grandparents, orphanhood, being eligible for, but not accessing social welfare and living in isolated communities) which, combined with poverty, make children more vulnerable to dropping out of schools (Fleisch, 2009). Strassburg (2010: 40-41) found that financial pressures and complex social processes (such as teenage pregnancy and substance abuse) combined with in-school factors (such as lack of stimulation and support) result in youth disengaging from their education and eventually dropping out of school.

For many years, the Department had limited ability to accurately determine dropout rates due to the limitations of administrative data. The recent National Income Dynamics Study (NIDS) has, however, proved to be a useful source for this indicator. Figure 15 shows the drop-out rate from school by grade between 2007 and 2008 (i.e. children who were enrolled in a particular grade in 2007 and were not enrolled in school in 2008). The figure also shows dropout rates according to the second wave of the NIDS survey in 2010.

Figure 15: Learner dropout rates by Grade



	Gr 1	Gr 2	Gr 3	Gr 4	Gr 5	Gr 6	Gr 7	Gr 8	Gr 9	Gr 10	Gr 11	Gr 12
2007-2008	0.4	0.9	0.3	0.8	2.1	1.4	3.1	3.6	6.5	11.0	11.4	12.3
2009-2010	0.0	0.0	0.0	0.0	0.0	0.9	1.2	5.4	5.7	10.6	13.4	9.3

***Source**: Presidency, National Income Dynamics Study, Wave1 (2008) and Wave 2 (2010)*

It can be seen in Figure 15 that the drop-out rate before Grade 9 was extremely low in 2008 and 2011. It was less than 1% in Grades 1 to 4. From Grades 5 to 8 the drop-out rate was also minimal, ranging between 2% and 5%. The low drop-out rate in the lower grades is consistent with the high enrolment rates in these grades. From Grade 9 upwards, however, the drop-out rate increases, reaching almost 13% in both Grades 10 and 11 in 2011.

We construct drop-out rates (and conversely survival rates) for each grade using GHS data to further investigate these patterns. Table 14 shows drop-out rates and survival rates for three age cohorts (those born during 1981-1983, those born in 1984-1986 and those born in 1987-1989) in order to identify whether there are discernible time trends in these outcomes. Data for each of these cohorts was taken from different years of the GHS to ensure that they were of the same age when measured. The table shows for every 1000 children born into each of the three cohorts how many reached each subsequent grade. This indicates the survival rate to each grade and conversely the drop-out rate after each grade.

Table 14: Survival rates and drop-out rates associated with each grade

GHS years	2003-2005		2006-2008		2009-2011	
Birth Cohort	1979-1981		1982-1984		1985-1987	
Birth	Survival per 1000	Percentage dropping out with this grade attained	Survival per 1000	Percentage dropping out with this grade attained	Survival per 1000	Percentage dropping out with this grade attained
Zero education	1000	2.0	1000	1.8	1000	1.1
Grade 1	980	0.3	983	0.2	989	0.2
Grade 2	977	0.4	980	0.4	987	0.3
Grade 3	973	0.9	976	0.5	985	0.6
Grade 4	964	1.3	971	1.1	979	0.9
Grade 5	951	1.8	961	1.6	970	1.3
Grade 6	935	3.1	945	3.1	957	1.9
Grade 7	906	5.2	916	5.2	939	3.7
Grade 8	858	7.5	868	7.4	904	5.7
Grade 9	793	11.1	804	11.3	853	9.9
Grade 10	705	18.5	713	17.5	769	17.5
Grade 11	575	27.6	588	28.3	634	28.3
Grade 12	416		422		455	

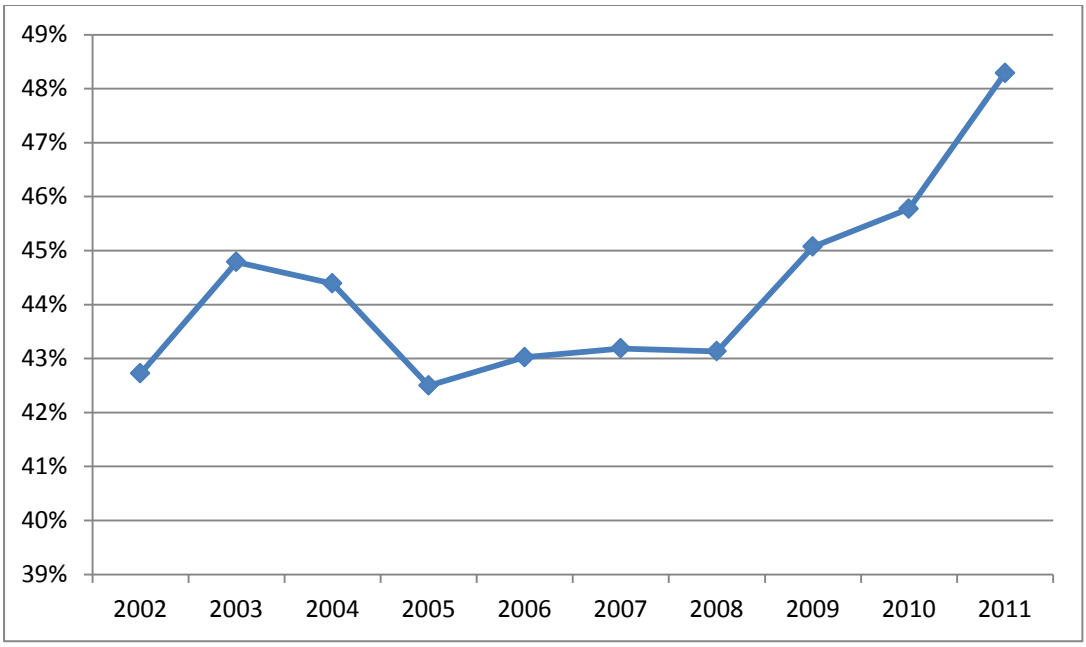
Source: *General Household Surveys: 2003-2011*

For the most recent cohort in Table 14, those born between 1985 and 1987, we see that 989 children per 1000 completed grade 1. As seen in the table, the dropout rate increases with each grade level. The drop-out rates peak in grades 10 and 11: 17.5% of those who attain grade 10 achieve no more education, and 28.3% of those who attain grade 11 do not attain matric. This estimate of 28.3% is probably a slight underestimation since we know that only in the last couple of years has the matric pass rate been above 70%. This underestimate is most likely caused by some respondents saying that have attained grade 12 when in fact they participated but did not pass.

When comparing trends between the three age cohorts it is encouraging that for most grades the drop-out rates have decreased somewhat over time. For example, 904 per 1000

people in the most recent cohort attained grade 8 while only 858 per 1000 amongst those in the oldest cohort achieved grade 8. Survival to achieving a matric also increased from 416 per 1000 to 455 per 1000. This increase in grade 12 attainment is probably partly a reflection of the fact that more recent cohorts contain fewer over-aged learners. For example, amongst those born during 1979 – 1981 some 22 year-olds may have still been completing matric at the time of the survey, thus causing the estimate of 416 per 1000 achieving matric to be a slight underestimate. The best way to estimate grade 12 attainment is therefore to use household survey data and to restrict the analysis to an age category that is old enough to be unlikely to contain many members still completing grade 12 but young enough so as to reflect relatively recent trends. Figure 16 shows the proportion of people aged 24 to 27 with grade 12. As referred to above, the possibility that certain respondents claiming grade 12 only participated unsuccessfully in grade 12 probably means that these estimates are upwardly biased by a few percentage points, but at least this should not bias the trend over time which suggests a moderate increase in grade 12 attainment.

Figure 16: Proportion of 24- to 27-year-olds with grade 12



Source: *Own calculations using GHS, 2002 - 2011*

A final way to estimate the proportion of youths that attain matric is to divide the number of matric passes in a particular year by the population of an age cohort. The mid-year population estimates published by Statistics South Africa suggest that number of 18-year-olds is roughly 1.08 million. However, Gustafsson (2012) argues convincingly that these estimates are inflated by about 14%. The most recent Annual Survey of Schools data indicates that approximately 950 000 7-year-olds are enrolled in the school system. Given that this is the age group with the most enrolments of all age groups and that household

survey data indicates that about 99% of 7-year-olds are enrolled, this figure can be regarded as a lower bound estimate of an age cohort. The Statistics South Africa figure can be regarded as an upper bound estimate, although reason suggests that it is considerably too high.

In the last three years the number passing matric has ranged between 350 000 and 370 000. However, these numbers do not include those writing the supplementary examinations or part-time candidates. Therefore, the true number attaining matric could be as much as 40 000 more. Therefore, it is again sensible to think of a lower bound estimate and an upper bound estimate. The lower bound estimate can be set at 360 000 (the mid-point between 350 000 and 370 000) and the upper bound can then be set at 400 000 (360 000 plus 40 000).

Combining the lower and upper bound estimates of matric passes and of the size of an age cohort, one can estimate an overall lower bound estimate and an upper bound estimate of the proportion of youths that pass matric. The lower bound estimate comes to 33% while the upper bound estimate is 42%. Given the implausibly high mid-year population estimates, this report argues that a responsible best estimate of the proportion passing matric is about 40%. Note that this is somewhat lower than the estimates obtained in Figure 16. This discrepancy probably occurs due to over-reporting of having attained matric in the household surveys.

3.5 THE QUEUING PHENOMENON TOWARDS THE END OF SECONDARY SCHOOL

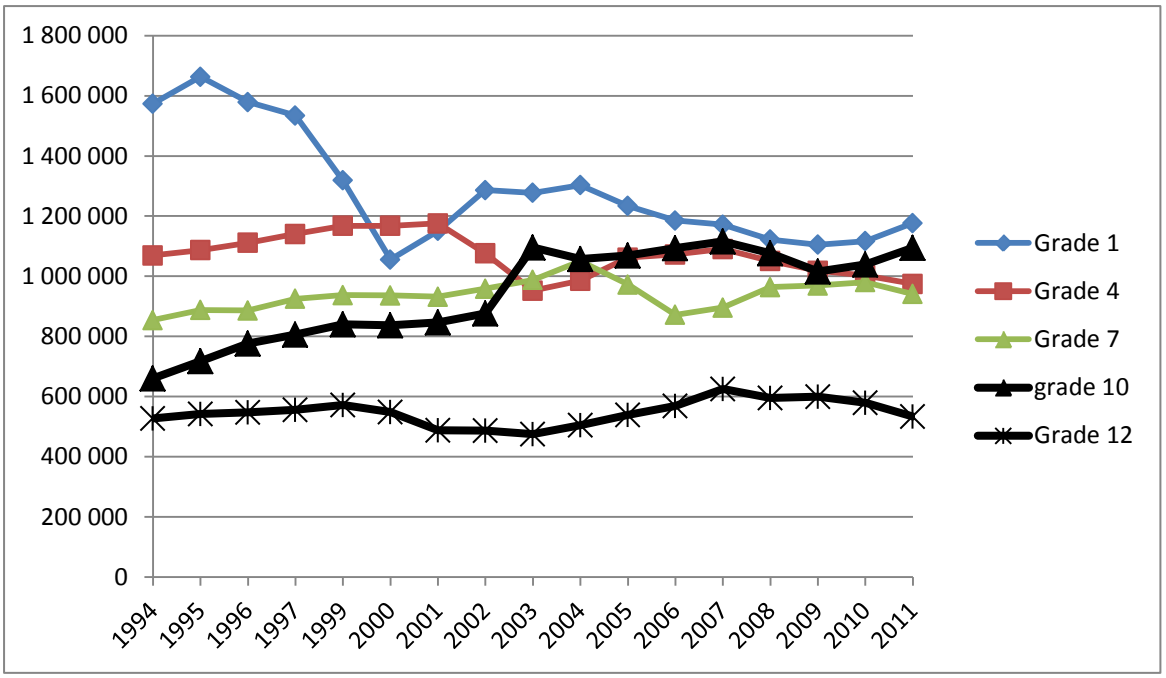
Figure 17 depicts the numbers enrolled in selected grades since 1994. Grade 1 is typically the largest grade and this is due to the high rates of repetition in this grade, partly linked to the enrolment of under-aged children in some provinces. The sharp drop in grade 1 enrolments in 1999 and 2000 was due to a specific event in which the age-of-entry policy changed so as to raise the appropriate age of school entry (Notice 2433 of 1998). The effect of this policy was a temporary drop in the numbers entering school: children who previously might have entered in the year in which they turned six were now not allowed to, while other children of the appropriate age under the new policy had already entered in the previous year. Since this policy was announced late in 1998 it would appear that it was partly implemented in 1999 and more universally applied in 2000; hence the low enrolments for those two years.

The gradual decline in grade 1 enrolments since 2004 probably reflects lower repetition rates together with the possibility that many children now spend a year in Grade R and then a year in Grade 1 rather than two years in Grade 1. Therefore, declining enrolments in

Grade 1 combined with increased age-specific enrolment rates (as demonstrated earlier) must be viewed as an improvement in the internal efficiency of the education system.

Another noteworthy feature of Figure 17 is the large gap between grade 10 enrolments and grade 12 enrolments. In fact this gap has increased in recent years. Too a large extent this gap is caused by high drop-out rates in grades 10 and 11. However, it is also caused by high rates of repetition in these grades. It is interesting to note that prior to 2003 there were always considerably more grade 4 learners in the system than grade 10 learners. However, since 2003 there have always been more grade 10 learners enrolled than grade 4. This is not what one might expect given that a proportion of children drop-out of school after each grade. Therefore, what we observe is a queuing phenomenon in grades 10 and 11: more children are nowadays retained in the school system until grades 10 and 11 but at that point the impending matric examination induces many schools to not promote weak students any further. Many such students spend a few years in grades 10 and 11 before dropping out.

Figure 17: Enrolments in selected grades since 1994



Source: *DBE administrative data*

Note*: Data for 1998 is not available*

3.6 DEPARTMENT'S RESPONSE TO DROPOUT RATE

The "Action Plan to 2014: towards the realisation of schooling 2025" has indicators that focus on tracking retention of learners in the schooling system such as percentage of youth with NSC and FET qualifications, grade progression and learner attendance. Goal 13

(Improve the access of youth to Further Education and Training beyond Grade 9) of the Action Plan to 2014 speaks directly to the problem of dropout and retaining learners in the schooling system.

Presently around 40% of South Africa's youths obtain a National Senior Certificate from a school. A relatively small proportion of youths obtain some other qualification at the Further Education and Training level such as a qualification from a public or private FET college. However, most of these youths also hold a National Senior Certificate. Consequently, nearly 60% of youths are left with no qualification beyond the Grade 9 level. This has serious negative implications for youths when they attempt to find jobs and makes enrolling in post-school studies difficult and often impossible. Moreover, the psychological and social implications of having no qualification to show as evidence for what is usually more than ten years of education are no doubt large. Getting more youths to obtain at least one relevant FET qualification, either from a school in the form of the National Senior Certificate, or from an alternative institution such as an FET college, continues to be a major part of the challenge of tackling unemployment and disillusionment amongst youths.

3.7 CONCLUSION

Three aspects of internal efficiency were reported on in this chapter: late entry into school, grade repetition and drop-out rates. In all three areas the available data indicate that improved efficiency has been achieved over the last decade or so. However, there remain serious inefficiencies. In particular, while access to education has improved to especially high levels up until about grade 10 and 11, the numbers passing matric has not improved commensurately. This can be viewed as an inefficient outcome: a large proportion of individuals spend many years in the school system but do not ultimately attain a meaningful education outcome.

These inefficiencies are undesirable in and of themselves. More significantly, however, they are symptoms of a more fundamental problem in the school system of low quality in the early grades despite high learner retention.

CHAPTER 4: INDICATORS OF QUALITY IN EDUCATION

This chapter presents a wide range of indicators of the quality of basic education in South Africa. First, the results of local assessments are described. Thereafter, South Africa's performance in independently conducted international surveys of educational achievement is described. These assessments also offer valid comparisons over time, thus facilitating a sense of whether quality has been improving or not. The chapter then examines selected input indicators all of which are expected to influence education quality, including the availability of Learning and Teaching Support Materials (LTSM), curriculum coverage, teacher qualifications, teacher content knowledge, Learner-Educator ratios and class size. Finally, some measures of youth and adult literacy are provided.

4.1 LEARNER ACHIEVEMENT AND OUTCOMES

4.1.1 Annual National Assessments

The introduction of Annual National Assessments (ANA) in 2011 was a major step towards improving the information available about school and learner performance at the primary school level. Prior to the ANA, the only regular nationally standardised assessment was the matric examination. South Africa's participation in occasional international surveys, such as TIMSS, PIRLS and SACMEQ, were starting to indicate that the roots of South Africa's education problems were insufficient acquisition of basic literacy and numeracy skills at the primary school level. In spite of this, many parents and education stakeholders were unaware of the problem due to high levels of grade progression and retention into secondary school.

Universal ANA (as opposed to Verification ANA, which is a sample-based component of ANA designed to be a more accurate measure of system performance and to identify determinants of school performance) is expected to have four key effects on schools:

a) expose teachers to better assessment practices,
b) make it easier for districts to identify schools in most need of assistance,
c) encourage schools to celebrate outstanding performance; and
d) empower parents with important information about their children's performance (Department of Basic Education, 2011).

ANA was first administered in February 2011 and tested all learners in Grades 2 to 7 in Literacy and Numeracy in public schools. ANA tested the performance learners previous year's work, which was performance of the Grades 1 to 6 Literacy and Numeracy curriculum. Almost 6 million learners were tested in 2011.

ANA was administered for the second time in September 2012 in public and state-funded independent schools. All learners in Grades 1 to 6 and Grade 9 wrote the test for Language and Mathematics. Over 7 million learners wrote ANA in 2012.

The overall national average percentage scores in ANA 2012 are shown in Table 15 for each grade and subject. Note that in grades 1 to 3 all schools wrote a language test in the home language as identified by each school, while in grades 4 to 6 and 9 it was only possible to write the language test in English or Afrikaans at either the Home Language level or at the First Additional Language level. Therefore, schools with predominantly English- or Afrikaans-speaking children would have marks for Home Language in grades 4 to 6 and 9, while schools with a majority of children whose Home Language is neither English nor Afrikaans would have marks for First Additional Language. As the table indicates, the marks were relatively low, especially in the higher grades. However, it should be noted that these assessments were not equated across the grades so there is no way of comparing performance across grades.

Table 15: National percentage scores in ANA 2012 by grade and subject

	Mathematics	Home Language	First Additional Language
Grade 1	68.1	57.5	
Grade 2	57.4	55.3	
Grade 3	41.2	52.0	
Grade 4	37.0	42.6	33.6
Grade 5	30.5	39.9	29.6
Grade 6	26.7	42.8	35.6
Grade 9	12.7	43.4	34.6

Table 16 provides a provincial break-down of ANA performance in grades 3, 6 and 9. As is typically the case with various educational outcomes, the Western Cape and Gauteng are consistently the top-performing provinces, although the Free State also recorded relatively strong results in most grades and subjects.

Table 16: ANA 2012 percentage scores by subject and province

	Grade 3 Maths	Grade 3 HL	Grade 6 Maths	Grade 6 HL	Grade 6 FAL	Grade 9 Maths	Grade 9 HL	Grade 9 FAL
EC	40.5	50.3	24.9	38.4	36.3	14.6	42.6	35.0
FS	44.7	56.3	28.4	52.2	37.3	14.0	48.9	37.2
GP	46.9	54.8	30.9	49.3	42.8	14.7	50.3	40.3
KN	42.2	53.5	28.1	40.9	35.3	12.0	37.7	32.3
LP	34.5	47.9	21.4	28.2	31.7	8.5	31.2	29.8
MP	35.6	48.0	23.5	33.4	31.1	11.9	40.3	37.4
NC	37.9	49.4	23.8	39.0	36.5	13.2	44.3	37.9
NW	34.1	46.5	23.6	33.1	36.1	11.2	39.3	39.1
WC	47.5	57.1	32.7	49.7	38.3	16.7	48.4	37.2

Table 17 confirms what in recent years has been an increasingly common pattern in South Africa: girls outperform boys in literacy and numeracy tests. Taylor and Spaull (2013) examine this pattern using SACMEQ data. They find that the educational outcomes of girls have been improving relative to boys throughout the Southern and Eastern African region since 2000. They find that in East African countries, boys still tend to achieve better educational outcomes than girls, while in Southern African countries girls are now typically outperforming boys.

Table 17: ANA 2012 percentage scores by gender and subject

	Females	Males
Grade 3 Maths	42.9	39.6
Grade 3 HL	56.1	48.2
Grade 6 Maths	27.5	25.8
Grade 6 HL	46.0	39.6
Grade 6 FAL	38.8	32.6
Grade 9 Maths	13.4	11.9
Grade 9 HL	46.9	39.9
Grade 9 FAL	38.1	31.4

4.1.2 National Senior Certificate

The National Senior Certificate (NSC), commonly known as matric, is a three year qualification that signifies the end of twelve years of schooling. The NSC replaced the Senior Certificate and was implemented in 2008 in the Further Education and Training band. The NSC was designed to be responsive to the social, cultural and economic needs of the South African citizens. The NSC examination was administered across the country for the fifth year in 2012 (Department of Basic Education, 2012).

The primary purposes of the National Senior Certificate are to:

a) equip learners with knowledge, skills, values and attitudes that will enable learners to participate meaningfully in society;
b) provide access to higher education;
c) facilitate the transition of learners from education institutions to the workplace; and
d) provide employers with a sufficient profile of a learner's competencies.

The table below shows the number of learners who wrote the NSC, the number that passed, and the pass rate for the years 2008 to 2012. While the pass rate has increased substantially in recent years from 62.7% in 2008 to 73.9% in 2012, some observers have expressed caution that the number of candidates has been somewhat lower in the last few years. This is always a valid concern when analysing matric results, but there is a specific reason for the drop in numbers writing matric in 2011, and to some extent in 2012. As described in an earlier section, a change in the age-of-school-entry policy in the late 1990s caused a particularly low grade 1 intake in 2000. This cohort of learners was always noticeably smaller than previous and subsequent cohorts, and this remained noticeable until they reached grade 12 in 2011. Grade repetition throughout the interim years meant that this cohort became less noticeably smaller and also resulted in the class of 2012 being slightly smaller than usual, though not as small as the class of 2011. Encouragingly, the number passing the NSC reached a high in 2012.

Table 18: National results of NSC 2008-2012

	Numbers wrote NSC	Number passed NSC	NSC pass rate
2008	532561	333744	62.7%
2009	552073	334718	60.6%
2010	538577	365181	67.8%
2011	496087	348114	70.2%
2012	511152	377829	73.9%

Note: *This does not include IEB candidates*

Table 19 reports the overall NSC results for 2012 by province. Gauteng achieved the highest pass rate (83.9%), followed by the Western Cape and Free State. The Eastern Cape had the lowest pass rate at 61.6%. Note that the full NSC report for 2012 is available on the DBE website (DBE, 2012).

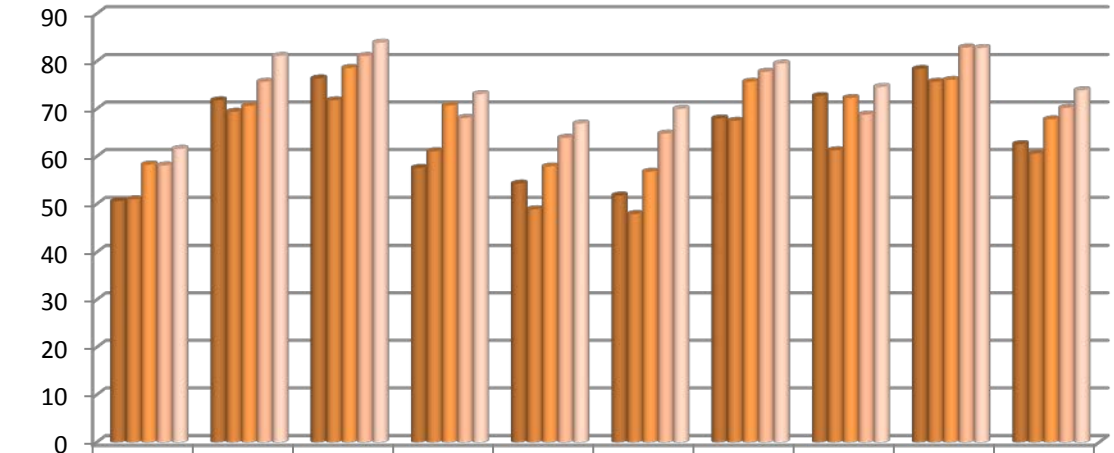
Table 19: Overall performance of candidates in the 2012 NSC examination by province

	Total Wrote	Total Achieved	%Achieved
EC	63989	39443	61.6
FS	24265	19676	81.1
GP	89627	75214	83.9
KZ	127253	93003	73.1
LP	77360	51745	66.9
MP	47889	33504	70.0
NW	27174	21609	79.5
NC	8925	6661	74.6
WC	44670	36974	82.8
SA	**511152**	**377829**	**73.9**

***Source**: Department of Basic Education, Report on the National Senior Certificate Results, 2012*

Figure 18 shows NSC pass rates by province since 2008. Improvements have been consistent across all the provinces. It is perhaps most encouraging that the biggest improvements have been achieved in some of the poorer provinces – Mpumalanga, Limpopo and KwaZulu-Natal.

Figure 18: National Senior Certificate pass rates, by province, 2008 to 2011



	EC	FS	GP	KZN	LP	MP	NW	NC	WC	RSA
2008	50.6	71.8	76.4	57.6	54.3	51.8	68	72.7	78.4	62.6
2009	51	69.4	71.8	61.1	48.9	47.9	67.5	61.3	75.7	60.6
2010	58.3	70.6	78.6	70.7	57.9	56.8	75.7	72.3	76.1	67.8
2011	58.1	75.7	81.1	68.1	63.9	64.8	77.8	68.8	82.9	70.2
2012	61.6	81.1	83.9	73.1	66.9	70	79.5	74.6	82.8	73.9

***Source:** DBE, National Senior Certificate Database, 2008-2011.*

4.1.3 Southern and Eastern African Consortium for Measuring Educational Quality

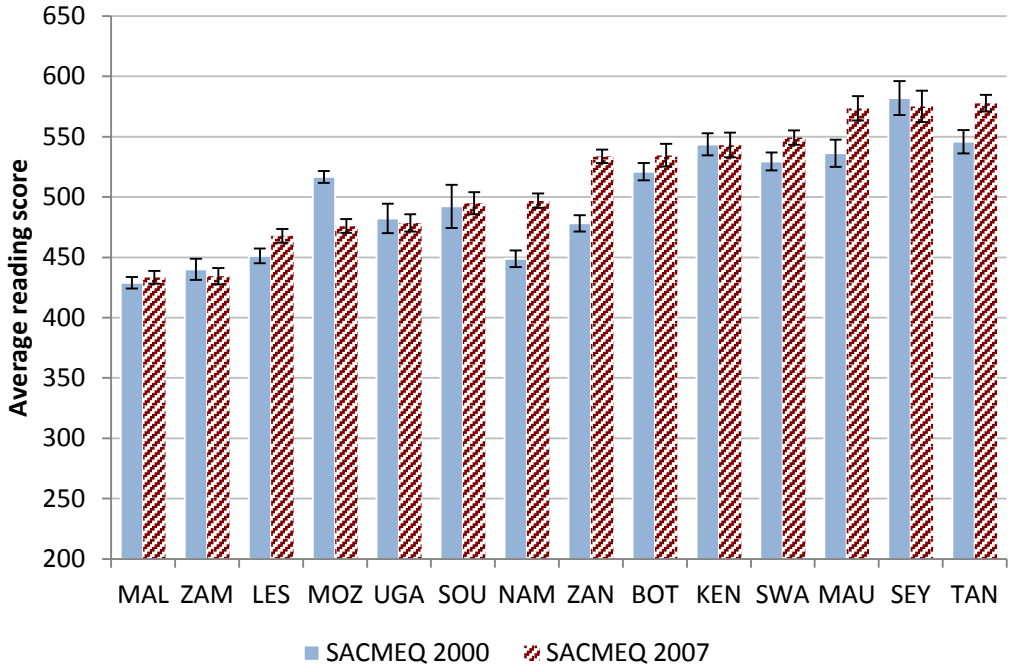
The Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) is an international non-profit developmental organisation of 15 Ministries of Education in Southern and Eastern Africa that work together to share experiences and expertise in developing the capacities of education planners to apply scientific methods to monitor and evaluate the conditions of schooling and the quality of education, with technical assistance from UNESCO International Institute for Educational Planning (IIEP) (SACMEQ, 2012).

The 15 Ministries of Education that constitute the SACMEQ network are Botswana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, **South Africa**, Swaziland, Tanzania (Mainland), Tanzania (Zanzibar), Uganda, Zambia and Zimbabwe. SACMEQ has completed three major surveys of educational achievement in these countries – in 1995, 2000 and 2007 (SACMEQ, 2012).

The SACMEQ 2007 survey tested 9083 Grade 6 learners in reading and mathematics and 1488 teachers from 392 schools cross South Africa. The test was conducted in English and Afrikaans. Figure 19 (for reading) and Figure 20 (for mathematics) show the mean scores in 2000 and in 2007 for the 14 education systems that participated in both years. Note that in most international surveys such as SACMEQ, TIMSS and PIRLS, achievement scores are set on a scale with an international mean of 500 and standard deviation of 100. This means there is no maximum score but merely a distribution of scores relative to each other.

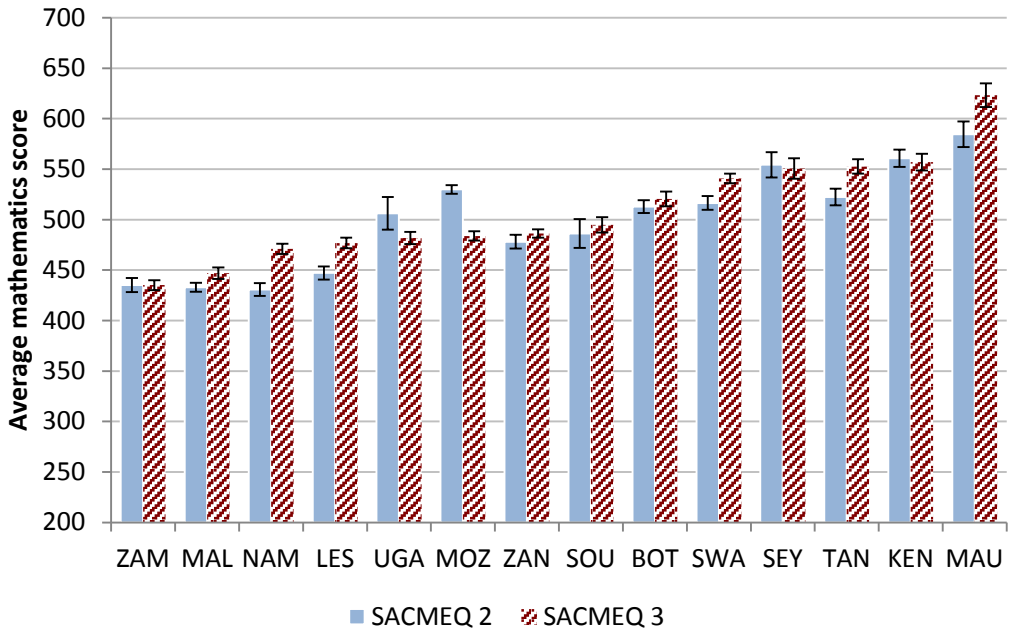
In both reading and mathematics, South African children performed at roughly the average level of the region. There was no statistically significant change in South Africa's performance between 2000 and 2007. In contrast, Lesotho, Namibia, Zanzibar, Swaziland, Mauritius and Tanzania experienced improvements in both mathematics and reading while Mozambique's average score declined over the period.

Figure 19: Reading achievement in SACMEQ 2 and 3 by country



***Note**: The 95% confidence intervals are shown for each estimated country mean score*

Figure 20: Mathematics achievement in SACMEQ 2 and 3 by country



***Note**: The 95% confidence intervals are shown for each estimated country mean score*

The next table shows performance in SACMEQ 2007 for both learners and teachers (measured on the same scale) by province. Performance amongst learners was particularly low in the Eastern Cape and Limpopo provinces and was strongest in the Western Cape and Gauteng.

Table 20: Overall mean scores of Grade 6 learners in Reading and Mathematics in 2007

	Reading	Mathematics
Eastern Cape	447.8	468.8
Free State	491.1	491.6
Gauteng	573.1	545.0
KwaZulu Natal	485.6	485.2
Limpopo	425.3	446.7
Mpumalanga	473.6	476.1
North West	506.3	503.1
Northern Cape	505.6	498.7
Western Cape	583.4	565.7
South Africa	**494.9**	**494.8**

***Source**: The SACMEQ III Project in South Africa: A study of the conditions of schooling and the Quality of education. South Africa, Country Report*

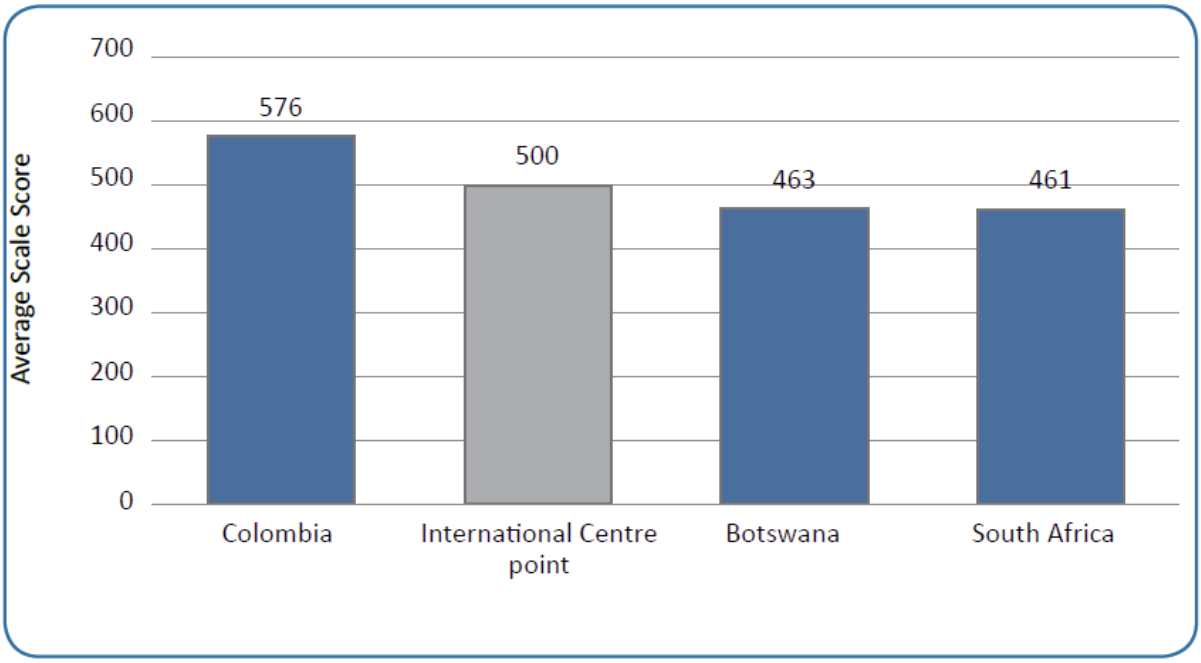
Comprehensive reports on the performance of South African children and other school characteristics according to SACMEQ are available on the SACMEQ website.

4.1.4 Progress in the International Reading Literacy Study (PIRLS)

The Progress in International Reading Literacy Study (PIRLS) measures trends in reading comprehension for Grade 4 learners. It has been carried out every five years since 2001. In 2011, PIRLS was expanded to include pre-PIRLS, which is a less difficult version of PIRLS (Howie Sarah, 2012).

South Africa participated in PIRLS 2006 and PIRLS 2011. PIRLS 2006 was conducted in the 11 official languages and administered to grade 4 and grade 5 samples. In 2011, Grade 4 learners participated in pre-PIRLS in all 11 official languages and Grade 5 learners were tested in PIRLS in English or Afrikaans (Howie Sarah, 2012). However, the grade 5 sample was not representative of all South Africa's schools since only those schools in which the Foundation Phase language of learning and teaching was English or Afrikaans were included. Note that it is not possible to make any valid comparisons of nationally representative samples between 2006 and 2011 at either the grade 4 level (different assessments in each year) or the grade 5 level (different samples).

Figure 21: South African Grade 4 Learner Performance in pre-PIRLS compared internationally



Source: *PIRLS 2011: South African Children's Reading Literacy Achievement Report*

The figure above compares Grade 4 learner performance in pre-PIRLs of South African learners with that of Columbia and Botswana – the other pre-PIRLS participants. South Africa learners scored 461 which is considerably lower than the score for Columbia, but similar to that of Botswana. Analysis of pre-PIRLS data indicated that 29% of grade 4 children in South Africa failed to reach a low international benchmark score of 400. This means that these children were unable to "locate and retrieve an explicitly stated detail" in a text (Howie *et al*, 2012).

4.1.5 Trends in International Mathematics and Science Study (TIMSS)

The Trends in International Mathematics and Science Study (TIMSS) is an international assessment of mathematics and science for Grade 4 and Grade 8 learners. TIMSS has been conducted every 4 years since 1995.

TIMSS was first administered in South Africa in 1995 and again in 1999 to Grade 8 learners. In 2002 it was administered to Grade 8 and 9 learners. South Africa did not participate in 2007. TIMSS 2011 was conducted amongst 11 969 Grade 9 learners in 285 schools (HSRC, 2012). Only 3 countries – South Africa, Botswana and Honduras – administered the assessments at the Grade 9 level. South African Grade 9 learners scored higher than Honduras but less than Botswana for Mathematics. Of the three countries, South African learners scored the lowest for Science.

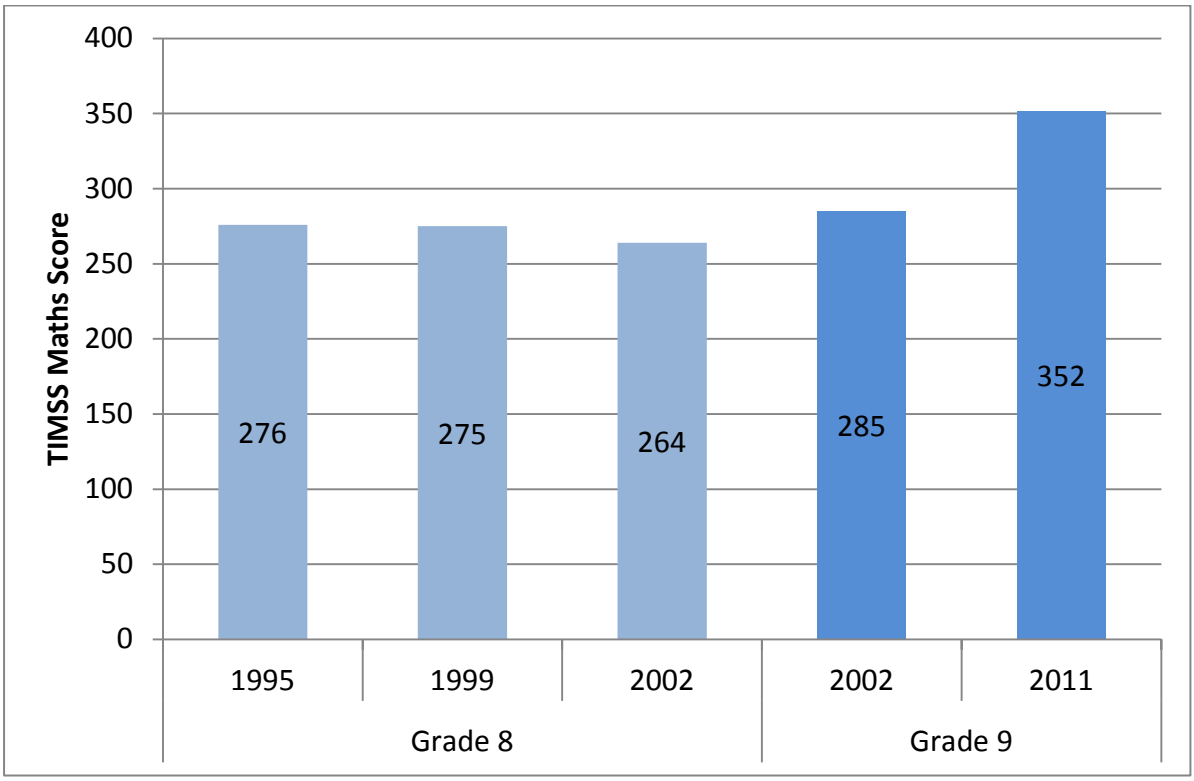
Table 21: Grade 9 learner average performance in Mathematics and Science

Country	Mathematics		Science	
	Average	SE	Average	SE
Botswana	397	2.5	404	3.6
South Africa	352	2.5	332	3.7
Honduras	338	3.7	369	4

Source: *Highlights from TIMSS 2011: The South African perspectives. HSRC 2012*

Figure 22 describes South Africa's performance in the various TIMSS studies between 1995 and 2011. In the earlier TIMSS surveys South Africa participated at the grade 8 level while in the most recent survey grade 9 learners participated. Fortunately, in 2002 both grade 8 and grade 9 learners participated, thus allowing comparability across the years. Figure 22 shows an essentially flat trend in grade 8 mathematics performance between 1995 and 2002. Between 2002 and 2011, however, there was a considerable improvement in the mathematics performance at grade 9 level. The same was true for grade 9 science achievement (not shown in the graph below). Encouragingly, the improvements were largest amongst historically disadvantaged schools (HSRC, 2012).

Figure 22: South Africa's performance in TIMSS since 1995



Note: *The TIMSS scores were set on a scale with an international mean of 500 points and a standard deviation of 100 points.*

Table 22 shows the performance in TIMSS 2002 and 2011 by province. For TIMSS 2011, the Western Cape had the highest performance for both Mathematics (404) and Science (409). The lowest performance for Mathematics (322) was noted in Limpopo and for Science (282) in the Eastern Cape.

Since 2002, the average Mathematics score improved in most provinces. There was an increase of 86 points for Gauteng, 78 points for Limpopo and 70 points for the North West. There was a decline of 10 points for the Western Cape, although this change was not statistically significant. In other words, we cannot conclude that performance in the Western Cape was any different between 2002 and 2011.

The average Science score has also improved since 2002, with the highest improvements being in Gauteng (86 points), the North West (74 points) and Limpopo (68 points). Again, the Western Cape was the only province with no statistically significant change between 2002 and 2011.

In 2011 the difference between the highest and lowest performing provinces was 88 points for Mathematics and 127 points for Science. In 2002, however, the difference was 170 points for Mathematics and 205 points for Science. This reflects a reduction in inequality across the provinces.

Table 22: Grade 9 Provincial Performance in Mathematics and Science

Province	Mathematics		Science	
	TIMSS 2002	TIMSS 2011	TIMSS 2002	TIMSS 2011
Eastern Cape	250	316	222	282
Free State	291	359	280	341
Gauteng	303	389	301	387
KwaZulu Natal	278	337	253	308
Limpopo	244	322	216	284
Mpumalanga	287	344	266	326
North West	280	350	260	334
Northern Cape	340	366	357	368
Western Cape	414	404	421	409
National	**285**	**352**	**268**	**332**

Source: *Highlights from TIMSS 2011: The South African perspectives. HSRC 2012*

4.2 ACCESS TO LEARNER TEACHER SUPPORT MATERIALS (LTSM)

In order for quality teaching and learning to take place, every learner should have access to their own textbooks for every subject. Goal number 19 of the Action Plan to 2014 is to ensure that each learner has access to the minimum set of textbooks and workbooks required according to national policy. The most recent nationally representative data on this indicator is from 2011. Where historical trends can be established, there is some indication of improving access to learning materials in recent years, as will be shown in this section.

Table 23 shows the percentage of grade 6 learners with access to a textbook of their own, according to the SACMEQ surveys of 2000 and 2007. The table shows figures for reading and mathematics textbooks separately, and by province. In 2007, 45% of grade 6 learners reportedly had sole use of a reading textbook and 36% of learners had sole use of a maths textbook. Note, however, that remaining learners would not necessarily have had no access to a textbook but may have shared with other learners, as Figure 23 will show. In 2007, 68% of learners in the Western Cape had sole use of a reading textbook compared with 32% of learners in KwaZulu Natal. For maths textbooks, 53% of learners in Mpumalanga had sole use compared with 25% of learners in KwaZulu Natal. The data also do not indicate any significant improvement or deterioration in access to textbooks at the national level between 2000 and 2007. Even the difference between mathematics textbook access in 2000 (41%) and 2007 (36%) is not statistically significant.

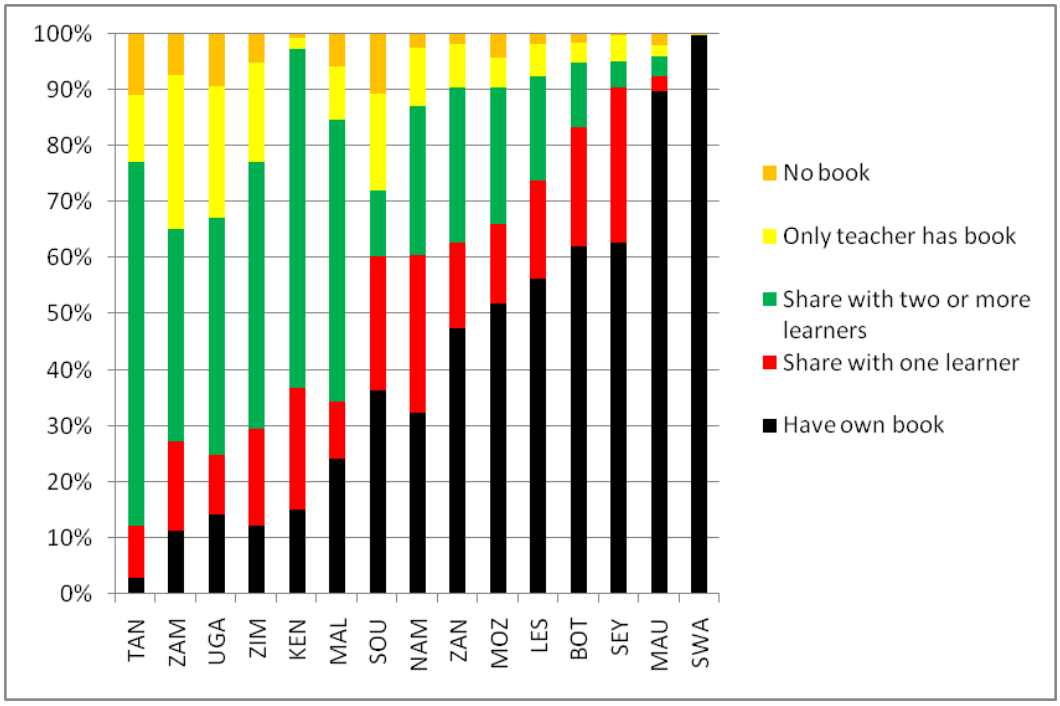
Table 23: Percentage of Grade 6 learners with sole use of textbooks by province and year

Province	Own Reading Textbook		Own Math Textbook	
	2000	2007	2000	2007
EC	42.2	43.2	42.4	33.3
FS	60.9	39.7	49.1	36.9
GP	55.3	44.6	50.7	33.3
KZ	40.3	32.1	39.9	24.9
LP	44.2	51.7	43.1	46.7
MP	44.8	62.2	34.6	53.0
NC	29.9	38.7	28.4	30.9
NW	35.4	39.4	24.7	40.8
WC	49.1	67.8	36.9	46.4
SA	**45.5**	**45.0**	**41.0**	**36.4**

***Source**: The SACMEQ III Project in South Africa: A study of the conditions of schooling and the Quality of education. South Africa, Country Report*

The next graph indicates that amongst SACMEQ countries, South Africa was in 2007 just below the middle in the ranking, from worst to best, of mathematics textbook access in Grade 6. Countries are sorted by an estimated learner/textbook ratio, using the data that is available in SACMEQ.

Figure 23: Access to mathematics textbooks in SACMEQ countries 2007



The School Monitoring Survey (SMS) of 2011 also collected detailed information about access to textbooks, although using a different method to that of SACMEQ, making the two sets of statistics incomparable. Whereas SACMEQ asked each learner about access to textbooks, the SMS asked teachers about textbook usage and then counted textbooks that were physically present. Table 24 shows that 83% of grade 6 mathematics teachers reported that a textbook was being used. The second column makes it clear that when textbooks are not being used, a shortage of textbooks is not always the cause. Particularly in more affluent schools, it would appear that teachers sometimes choose not to make use of textbooks, perhaps favouring other materials. While 83% of teachers claimed to use a textbook, only 72% of teachers were able to present at least one textbook to the fieldworker. The last column indicates that, amongst classes where at least one book was present, the average number of textbooks per 100 learners was 81.[3] According to this table, the Western Cape stands out as the province with best access to textbooks while the Free State appears to have had the lowest access to textbooks in 2011.

[3] Note that the statistics reported in this paragraph are all learner-weighted and are therefore not representative of the total number of teachers but of the total number of learners taught by those teachers.

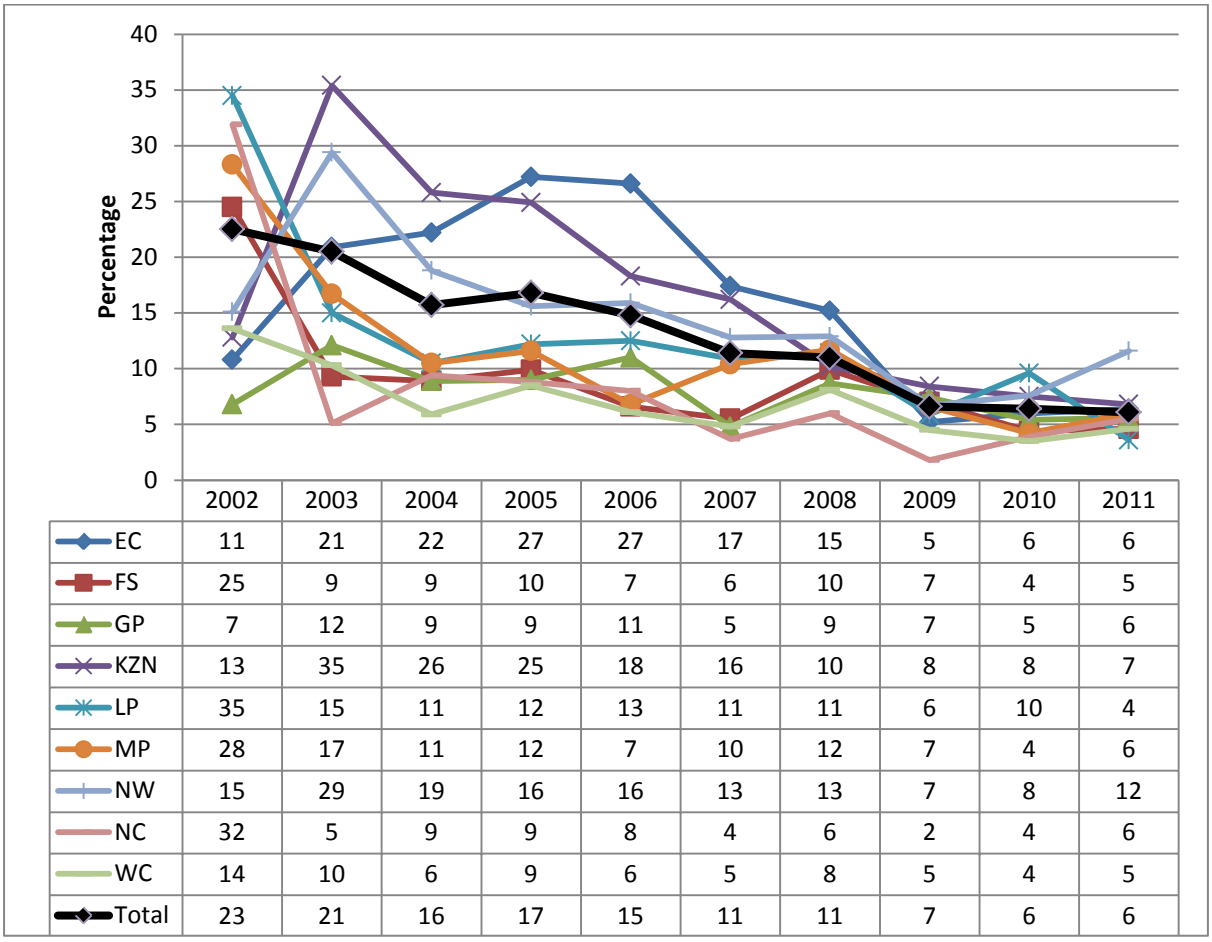
Table 24: Grade 6 access to mathematics textbooks (2011)

	Teacher said a textbook was being used	% of previous column where textbook shortage was the cause for non-use	At least one book could be shown to fieldworker	Average shown textbooks per 100 learners (where there was at least 1)
EC	87	71	74	78
FS	50	59	39	65
GP	80	49	70	86
KN	86	81	75	78
LP	84	72	71	80
MP	67	80	54	83
NC	86	27	68	83
NW	91	74	85	78
WC	98	0	97	94
SA	**83**	**67**	**72**	**81**

Note: *All statistics except the textbooks per 100 learners ratio are percentages of learners.*

The General Household Surveys (GHS) have annually collected information from households about various problems with schools they have experienced. Figure 24 shows that the percentage of households experiencing a lack of books as a problem at schools has consistently been declining since 2002 in all provinces. Nationally, this percentage decreased from 23% in 2002 to 6% in 2011.

Figure 24: Percentage of households that experienced a lack of books at school as a problem by province, 2002 – 2011



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
EC	11	21	22	27	27	17	15	5	6	6
FS	25	9	9	10	7	6	10	7	4	5
GP	7	12	9	9	11	5	9	7	5	6
KZN	13	35	26	25	18	16	10	8	8	7
LP	35	15	11	12	13	11	11	6	10	4
MP	28	17	11	12	7	10	12	7	4	6
NW	15	29	19	16	16	13	13	7	8	12
NC	32	5	9	9	8	4	6	2	4	6
WC	14	10	6	9	6	5	8	5	4	5
Total	23	21	16	17	15	11	11	7	6	6

Source: *Statistics South Africa, General Household Survey, 2002-2011, DBE own analysis*

The TIMSS datasets of 2002 and 2011 also suggest that a policy emphasis on access and use of textbooks has had the effect that textbooks are used more frequently in classroom practice. According to TIMSS data, 30% of grade 9 mathematics teachers in 2002 reported using textbooks as the basis for instruction. In 2011, this figure had risen to 70%.

Over and above the trends in access to traditional textbooks, the DBE workbook initiative has considerably increased the availability of learning materials in South African classrooms. Furthermore, supplementary textbooks for Maths and Physical Science were developed in 2011/12 by the Department of Basic education in partnership with the Shuttleworth Foundation. Learners in Grades 10-12 received supplementary textbooks in Physical Science and Mathematics (Department of Basic Education, 2012).

4.3 CURRICULUM COVERAGE

The extent to which learners cover the curriculum and the frequency with which written exercises are undertaken in a school represents an important indicator of education quality. It is debatable whether one should regard curriculum coverage as an input into learning or an outcome of learning. If one considers such indicators as reflecting the level of effort or "time-on-task", then this surely is an input which schools have some control over. Curriculum coverage has been shown to be a strong predictor of learning outcomes (Taylor, 2011).

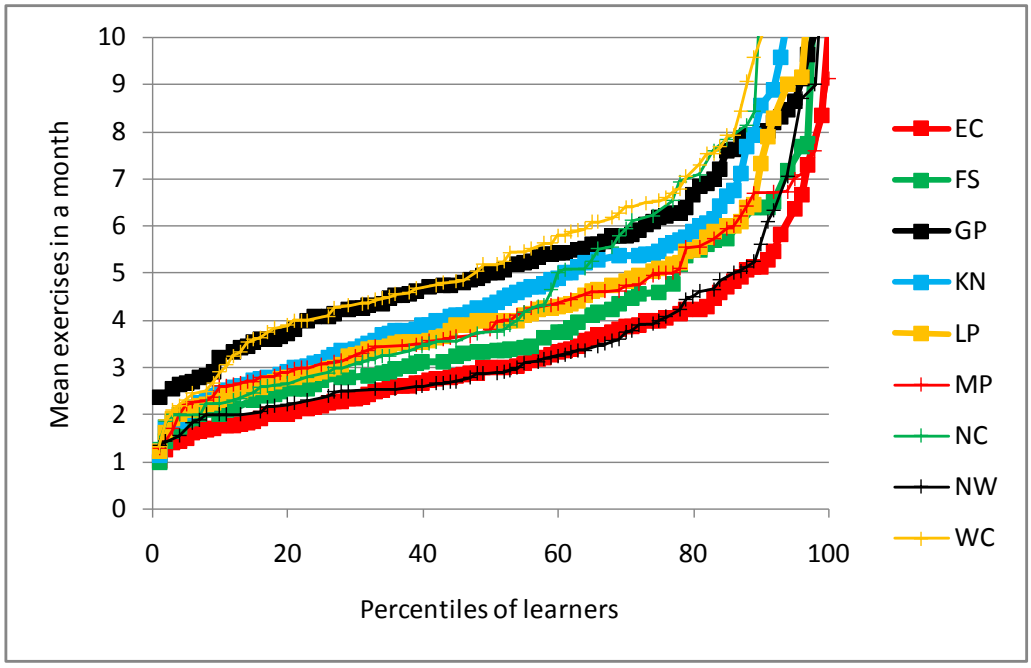
During the School Monitoring Survey (SMS), fieldworkers gathered the writing books of one learner per visited class, specifically the learner considered to be 'one of the best learners', and examined the books to check curriculum coverage. This occurred for both language of learning and teaching (English in the great majority of schools, Afrikaans being almost certainly the only other possibility) and for mathematics.

The following four graphs show percentile plots of the mean number of exercises observed per month in learner workbooks by province. To explain how the plots work, the first percentile represents the 1% of schools with the lowest number of exercises, while the 100th percentile represents the 1% of schools with the highest number of exercises. Within each percentile the mean number of exercises is shown.

One important thing that the following graphs confirm is that there are not many schools with no exercises to be seen at all. Put differently, the notion of a large proportion of schools which have reached a state of complete dysfunctionality is not supported by the data. Some learning is happening in virtually all schools, even if the level of effort is often too low. Another point to note is how much the completion of exercises varies across schools. For grade 6 mathematics, for instance, roughly 20% of schools complete 4 or fewer exercises per month while another 20% of schools complete 10 or more exercises per month. This difference in the level of effort is bound to lead to differences in learning outcomes.

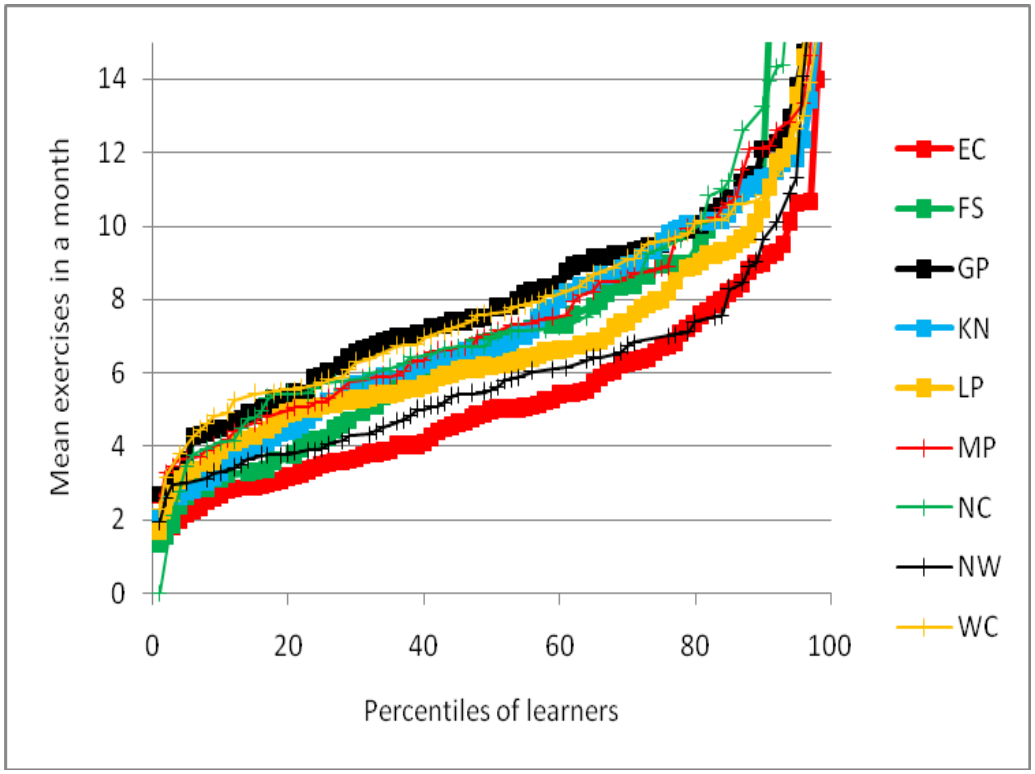
Comparing across the provinces in Figure 25 to Figure 28, the Eastern Cape and North West provinces typically recorded low numbers of exercises completed, while the Western Cape and Gauteng typically recorded relatively high numbers of exercises.

Figure 25: Exercises seen per month in Grade 6 language by province



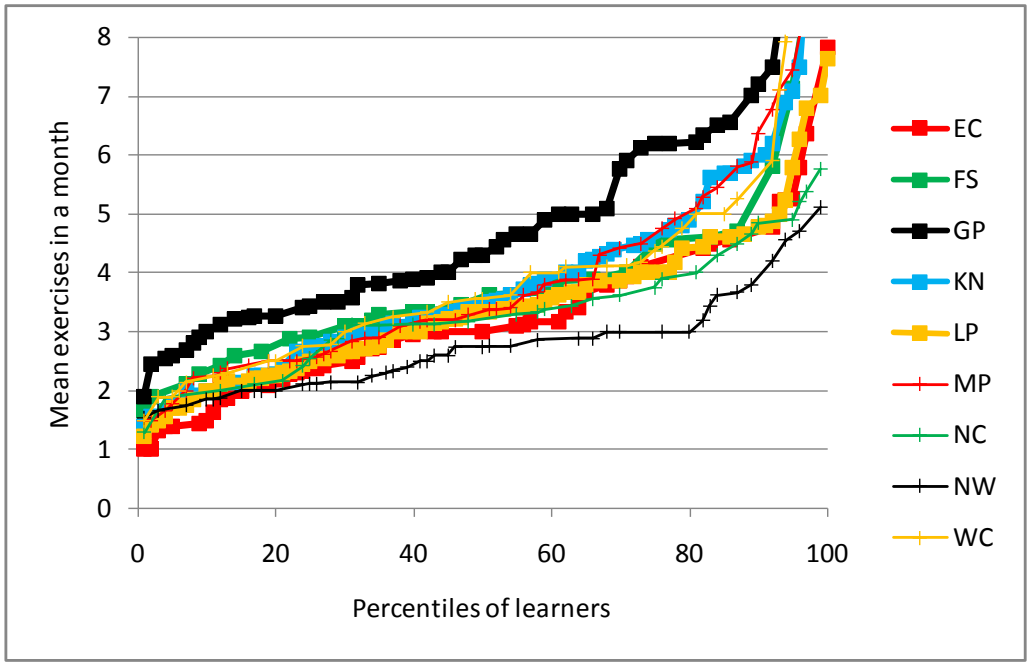
***Source**: School Monitoring Survey 2011 dataset. Learner weights used.*

Figure 26: Exercises seen per month in Grade 6 mathematics by province



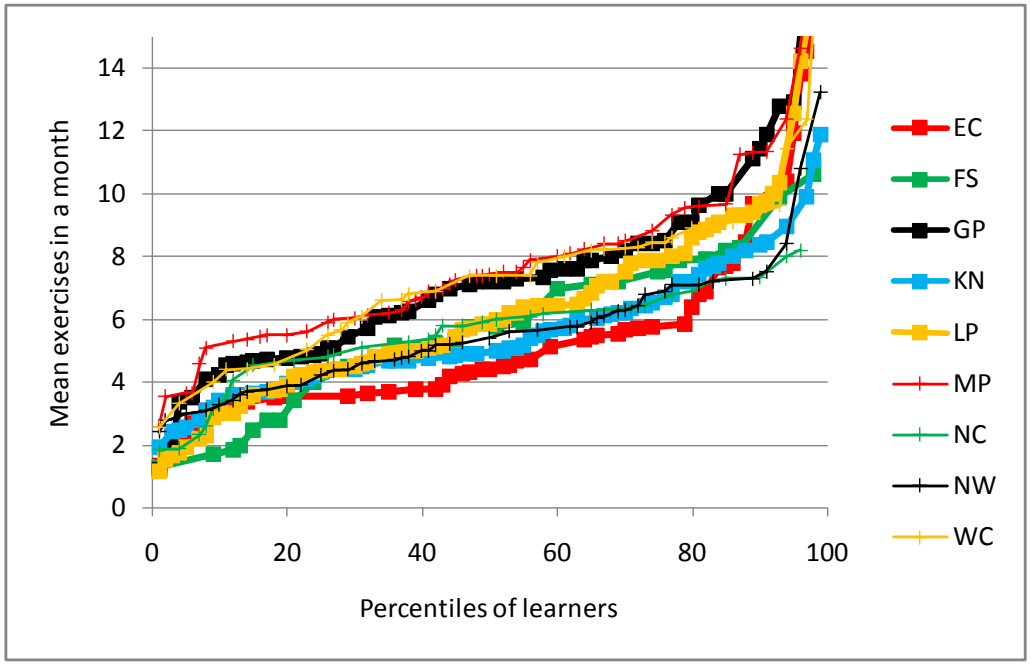
***Source**: School Monitoring Survey 2011 dataset. Learner weights used.*

Figure 27: Exercises seen per month in Grade 9 language by province



Source: *School Monitoring Survey 2011 dataset. Learner weights used.*

Figure 28: Exercises seen per month in Grade 9 mathematics by province



Source*: School Monitoring Survey 2011 dataset. Learner weights used.*

4.4 TEACHER INPUTS

4.4.1 Teacher qualifications

In 2006, the Department of Education developed a National Policy Framework for Teacher Education and Development in South Africa. The policy provides an overall strategy for the successful recruitment, retention and professional development of teachers to meet the social and economic needs of South Africa.

Table 25: Percentage of qualified teachers

	2008	2009	2010	2011	2012
Eastern Cape	95	95	98	97	99
Free State	91	92	95	96	96
Gauteng	98	98	99	99	99
KwaZulu Natal	88	87	89	90	92
Limpopo	97	98	99	99	100
Mpumalanga	95	96	98	99	99
North West	93	94	99	99	99
Northern Cape	92	92	93	94	95
Western Cape	95	94	94	96	97
Total	**94**	**94**	**96**	**96**	**97**

Source: *PERSAL, August 2008 – 2012*

The *Criteria for the Recognition and Evaluation of Qualifications for Employment in Education, based on the Norms and Standards for Educators*, specifies that an educator is considered to be appropriately qualified if he/she obtained a Senior Certificate at the end of Grade 12 and thereafter a minimum of three years of appropriate training.

Nationally, the percentage of qualified teachers has been improving from 94% in 2008 to 97% in 2012. All provinces reported an increase in the percentage of qualified teachers over the reporting period, 2008 to 2012. In 2008, Limpopo reported the highest percentage of qualified teachers at 97% with the lowest being reported in KwaZulu Natal at 88%. In 2012, Limpopo reported that 100% of its teachers were qualified in comparison with KwaZulu Natal at 92%.

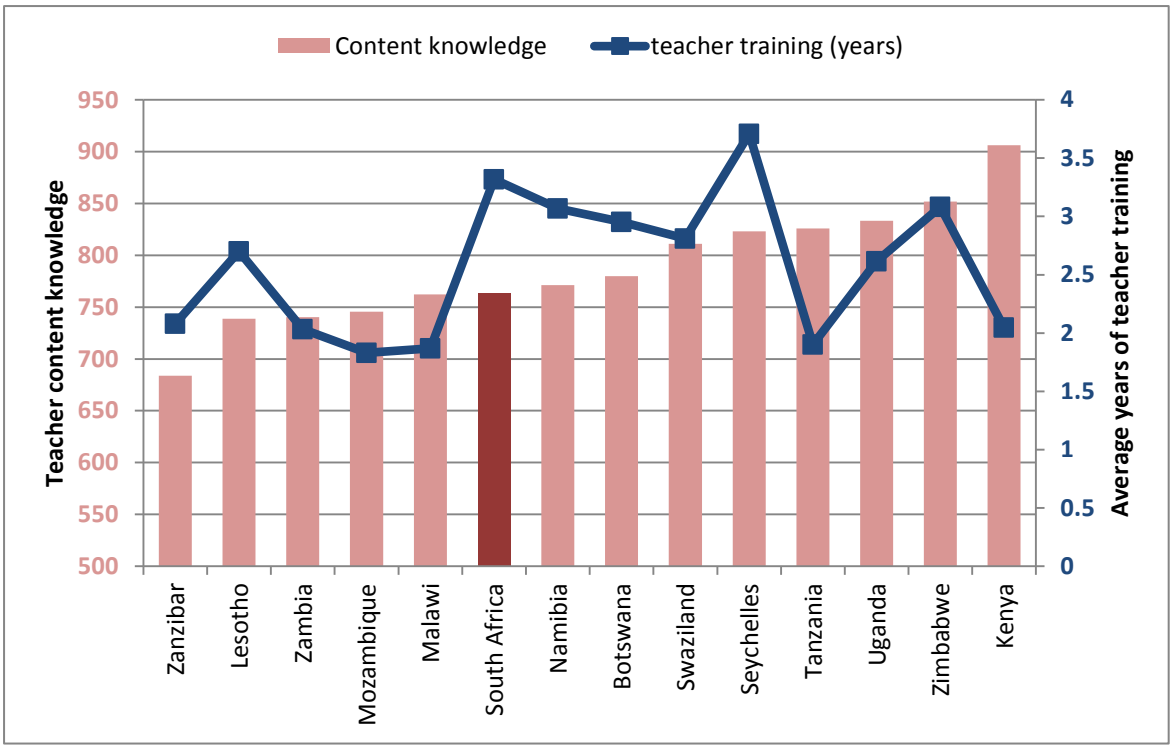
4.4.2 Teacher subject knowledge

While teacher qualifications represent a fairly quantitative measure of the input of teachers, a more qualitative and arguably more meaningful measure is the subject knowledge of teachers. The best available source of information on teacher subject knowledge is the Southern and Eastern African Consortium for Monitoring Educational Quality (SACMEQ) survey of 2007, in which grade 6 mathematics and language teachers were given

comprehensive mathematics and language comprehension tests. South African language teachers ranked 7th out of 14 Southern and East African education systems and our mathematics teachers ranked 9th out of 14.

The SACMEQ data also indicates that South Africa is the country in the region with the highest proportion of teachers with a degree and has the second highest average years of teacher training. The fact that our teachers have had more training but have worse content knowledge than teachers in countries like Kenya and Tanzania poses questions about the quality of pre-service and in-service teacher training. The graph below shows South Africa's relatively weak teacher knowledge despite relatively high amounts of teacher training.

Figure 29: Teacher subject knowledge and years of teacher training amongst Mathematics teachers



Source: *Own calculations using SACMEQ 2007 data*

Note: *The bars depict teacher test scores and correspond to the axis on the left hand side; the line depicts average years of teacher training and corresponds to the right hand axis.*

Table 26 indicates that teacher subject knowledge was particularly low in the Eastern Cape and Mpumalanga provinces. To put this in perspective, more than half of the mathematics teachers tested in Mpumalanga scored below the level needed to put them in the top 10% of grade 6 learners in the Western Cape.

Table 26: Teacher scores in mathematics and reading by province

Province	Reading	Mathematics
Eastern Cape	724.2	730.0
Free State	757.2	782.2
Gauteng	776.4	787.8
KwaZulu Natal	758.1	764.9
Limpopo	744.7	748.4
Mpumalanga	753.9	700.1
North West	757.7	766.9
Northern Cape	755.6	796.3
Western Cape	813.4	852.0
South Africa	**757.7**	**763.6**

***Source**: Own calculations based on SACMEQ 2007 data*

4.4.3 Teachers leaving the profession

Teacher attrition includes all reasons for teachers leaving the profession due to retirement, illness, resignation etc. The number of teachers that have been leaving the teaching profession has been increasing slightly in the last few years. In 2005/06, almost 11 400 teachers left the teaching profession and this increased to close to 13 500 in 2011/12.

In 2005/06, the Western Cape had the highest number of teachers that left the profession at over 2 600, the lowest was in the Northern Cape at 330. In 2011/12, the highest number of teachers that left the teaching profession was observed in KwaZulu Natal at over 3200. The Northern Cape still has the lowest number of teachers leaving the profession at slightly over 360.

Table 27: Number of teachers leaving the teaching profession

Province	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Eastern Cape	1 701	1 560	1 676	2 102	2 193	2 114	2 559
Free State	781	741	878	1 001	969	966	826
Gauteng	1 891	2 142	2 428	2 792	2 359	2 431	2 842
KwaZulu Natal	1 881	2 095	2 153	2 906	3 029	2 832	3 288
Limpopo	893	1 098	783	1 107	1 337	1 118	1 384
Mpumalanga	657	643	618	1 210	1 064	928	523
North West	566	718	584	575	454	665	819
Northern Cape	330	311	381	385	491	311	364
Western Cape	2 680	2 717	1 823	1 560	1 195	944	892
National	**11 380**	**12 025**	**11 324**	**13 638**	**13 091**	**12 309**	**13 497**

***Source**: PERSAL, 2005/06 to 2011/12*

4.4.4 Post provisioning and learner-educator ratios

According to PERSAL data from August of 2012, there were over 380 000 teacher posts in 2012, of which over 24 600 posts were vacant. In 2012, the national vacancy rate for teachers was 6%. In one sense, the overall vacancy rates could even be lower than 6% as some of the vacancies are occupied by substitute teachers appointed by schools. The Eastern Cape had the highest vacancy rate at 13% whereas the lowest was in the Free State at 1%.

Table 28: Teacher vacancy rates by province, 2012

Province	Number of Posts	Vacancies	Vacancy rate
Eastern Cape	62 229	7 834	13%
Free State	24 007	141	1%
Gauteng	56 246	2 577	5%
KwaZulu Natal	87 163	4 587	5%
Limpopo	55 775	2 598	5%
Mpumalanga	33 059	3 129	9%
Northern Cape	84 97	434	5%
North West	24 462	1 730	7%
West Cape	29 490	1 592	5%
RSA	**380 928**	**24 622**	**6%**

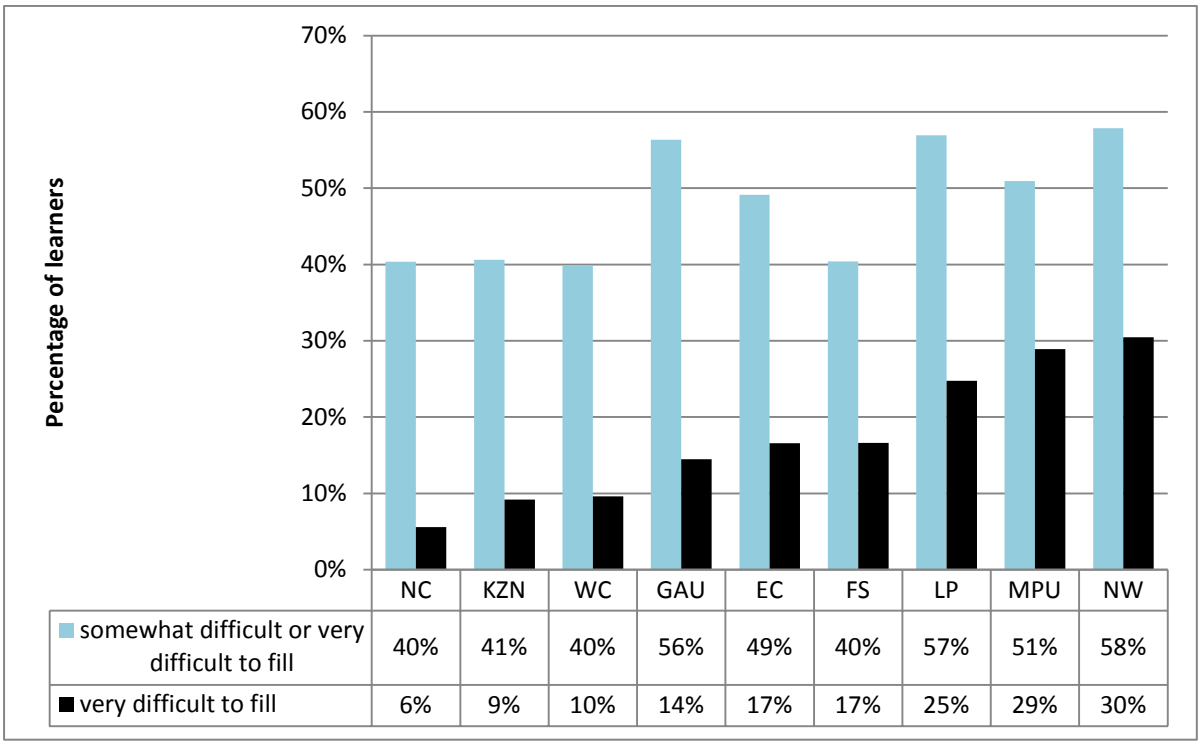
***Source:** PERSAL August 2012*

Another perspective on teacher vacancies is offered by the TIMSS dataset, in which principals were asked how difficult it was to fill vacancies in their experience. Nationally, 16% of grade 9 learners were in schools where vacancies for mathematics teachers were reportedly “very difficult to fill” and a further 31% of learners were in schools where

vacancies were “somewhat difficult to fill”. Of the 44 countries participating in TIMSS 2011 at the grade 8 or 9 level, only in Thailand were larger proportions of children in schools where vacancies were somewhat or very difficult to fill. This indicates that, at least by developed country standards, post-provisioning problems are high in South Africa. Note that Ghana, Morocco and Botswana were the other African countries participating in TIMSS and difficulties in filling vacancies were reportedly less prevalent there than in South Africa.

Figure 30 shows the percentage of learners in schools where mathematics teacher vacancies were “somewhat” or “very” difficult to fill and the percentage in schools where vacancies were “very difficult” to fill by province. Note that the “very difficult to fill” category is included in the “somewhat or very difficult to fill” category. According to this data, problems in filling posts were largest in Limpopo, Mpumalanga and North West.

Figure 30: Schools with difficulties filling mathematics teacher vacancies according to principals in 2011



	NC	KZN	WC	GAU	EC	FS	LP	MPU	NW
somewhat difficult or very difficult to fill	40%	41%	40%	56%	49%	40%	57%	51%	58%
very difficult to fill	6%	9%	10%	14%	17%	17%	25%	29%	30%

Source: *Own calculations using TIMSS 2011*

The Policy Framework for Teacher Education and Development in South Africa documented the policy response to teacher shortages and recruitment. The Initial Teacher Education Directorate within the Department is undertaking research on youth attitudes towards teaching as a profession. Findings of the research will be used to inform teacher recruitment strategies.

The recommended learner-educator ratios according to policy for ordinary primary schools are 40 learners per class and for ordinary secondary schools, 35 learners per class. The Learner Educator Ratio (LER) contributes to the quality of schooling; the more learners per educator, the less the educator can give personal attention to learners.

In 2012, the Learner-Educator Ratio including State paid and SGB educators was 30 learners to one educator. Including only State-paid educators, the ratio was 32 learners to one educator. The Learner School Ratio (LSR) was 492 learners per school whilst the Educator School Ratio (ESR) stood at 16 educators per school.

The Northern Cape had the highest LER at 32:1 for state paid and SGB paid educators. The lowest LER for state paid and SGB paid educators was in the Free State at 27:1. The Western Cape had the highest LER at 37:1 for state paid educators. The lowest LER for state paid educators was in the Free State at 29:1.

The highest LSR and ESR were in Gauteng and the lowest in the Eastern Cape, which reflects a large number of small schools in this province.

Table 29: Learner-Educator ratio by Province

Province	LER State-paid and SGB paid Educators	LER State-paid Educators	LSR	ESR
Eastern Cape	29.1	30.5	340.0	11.7
Free State	27.1	28.9	478.0	17.7
Gauteng	31.4	34.9	909.0	28.9
KwaZulu Natal	31.2	32.6	472.0	15.2
Limpopo	30.1	30.5	423.0	14.0
Mpumalanga	31.1	32.0	569.0	18.3
Northern Cape	31.8	33.5	490.0	15.4
North West	30.6	32.3	478.0	15.6
Western Cape	30.6	36.5	683.0	22.3
South Africa	**30.4**	**32.3**	**492.0**	**16.2**

Source: *DBE School Realities 2012*

Table 30 shows LERs between 2009 and 2012 as derived from the annual SNAP surveys. The LER was 29.6 learners per educator in 2009 and this decreased to 29.2 learners per educator in 2012. In 2009, KwaZulu Natal had the highest LER at 32: 1 whilst the lowest LER was 28:1 in the Free State. In 2012, the highest LER was in the Northern Cape at 31: 1 and the lowest was in the Free State at 27:1.

Table 30: Learner educator Ratios (LER) by province, 2009-2012

Province	Learner Educator Ratio			
	2009	2010	2011	2012
Eastern Cape	29.8	29.7	28.7	28.7
Free State	27.5	27.5	27.4	26.7
Gauteng	28.7	28.1	28.2	28.1
KwaZulu-Natal	31.6	30.5	30.5	30.3
Limpopo	29.2	29.3	29.2	29.8
Mpumalanga	29.4	30.0	30.2	30.4
North West	29.1	29.2	29.5	29.9
Northern Cape	29.4	30.5	30.9	31.3
Western Cape	28.5	28.3	28.3	28.5
National	**29.6**	**29.3**	**29.2**	**29.2**

Source: *SNAP Ordinary Schools 2009 and 2012*

There are huge differences in the LER for public and independent schools. As Table 31 shows, the LER for public ordinary schools remained range-bound between 30.3 and 30.5 between 2009 and 2012.

Table 31: Learner educator Ratio in ordinary public schools (LER), 2009-2012

Province	Learner educator ratio in ordinary public schools			
	2009	2010	2011	2012
Eastern Cape	30.1	30.1	29.0	29.1
Free State	27.8	27.8	27.6	27.1
Gauteng	31.5	30.9	31.3	31.4
KwaZulu-Natal	32.3	31.4	31.4	31.2
Limpopo	29.4	29.7	29.6	30.1
Mpumalanga	29.9	30.5	30.8	31.1
North West	29.7	29.8	31.3	31.8
Northern Cape	29.8	30.9	30.1	30.6
Western Cape	30.2	30.1	30.3	30.6
National	**30.5**	**30.3**	**30.3**	**30.4**

Source: *SNAP Ordinary Schools 2009 and 2012*

The LER of public schools is almost double that of independent schools which ultimately affects the quality of education provided. The LER for ordinary independent schools was 16 learners per educator in 2009 and 15 learners per educator in 2012. In 2009, the Eastern Cape and KwaZulu-Natal had the highest LER at 20: 1 whilst the lowest LER was 12 in the Western Cape. In 2012, the highest LER was in Limpopo at 21: 1 and the lowest was in the Western Cape at 12:1.

Table 32: Learner educator Ratio (LER) in ordinary independent schools, 2009-2012

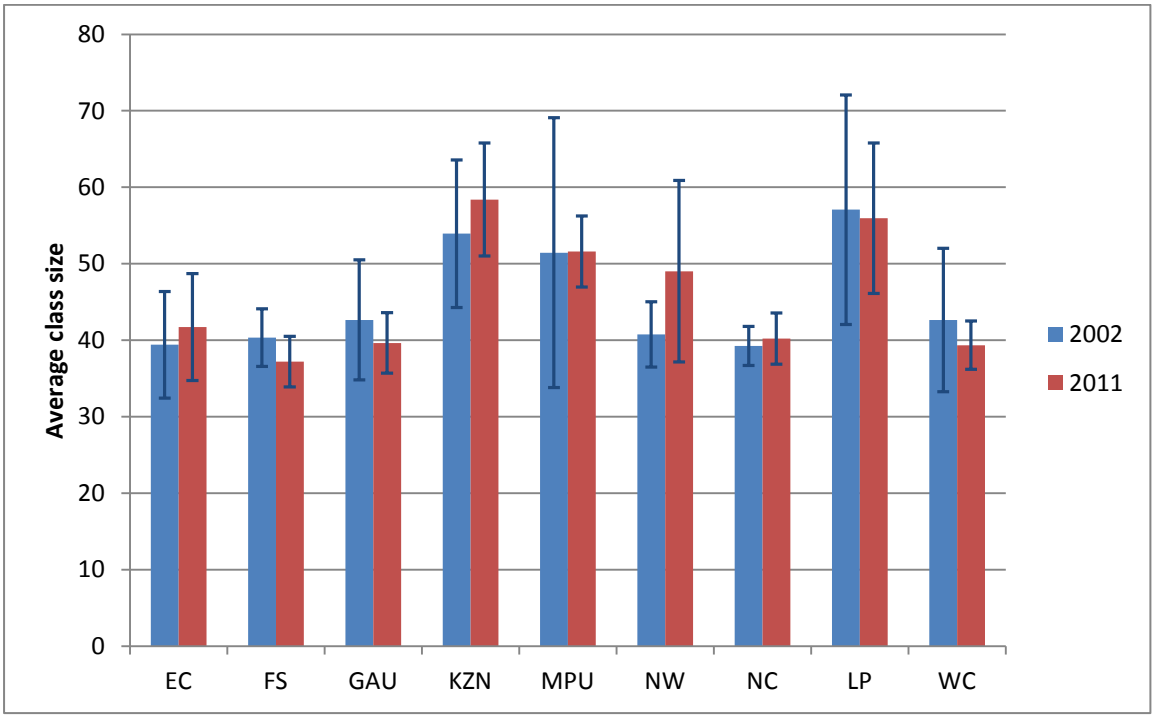
Province	Learner educator ratio in ordinary independent schools			
	2009	**2010**	**2011**	**2012**
Eastern Cape	19.9	20.6	20.2	20.6
Free State	18.6	19.1	19.7	16.3
Gauteng	15.6	15.3	15.2	14.7
KwaZulu-Natal	13.9	14.1	14.4	13.9
Limpopo	19.8	20.8	21.2	21.2
Mpumalanga	15.5	17	16.6	16.8
North West	13.7	14	14.8	14.3
Northern Cape	12.6	13.5	13.9	14.2
Western Cape	11.8	11.7	11.8	11.7
National	**15.6**	**15.7**	**15.7**	**15.4**

Source: *SNAP Ordinary Schools 2009 and 2012*

The ratio of learners to educators in a school is a reflection of post-provisioning efficiency. The number of learners in a class with one teacher at any point during the school day, however, is a reflection of school managerial efficiency. The class size, defined in this way, is determined partly by the LER but also by the efficiency with which schools use teachers within the timetable and on how many hours per day each teacher spends teaching.

Figure 31 shows grade 9 mathematics class sizes by province according to the TIMSS 2011 data. As the figure indicates, class sizes are typically considerably larger than LERs because not all teachers are simultaneously active in the classroom. It is also clear that there is much more variation in class size across the provinces than there is variation in the LER. This would indicate that the efficiency with which schools use teachers varies widely across the provinces. In particular, there is a problem of large grade 9 mathematics classes in KwaZulu-Natal, Mpumalanga and Limpopo.

Figure 31: Grade 9 mathematics class sizes by province



Source: *Own calculations using TIMSS 2002 and 2011 data*

4.5 LITERACY

Literacy refers to the percentage of people in a population who can both read and write with understanding a short simple statement of his/her daily life. Literacy also includes numeracy which is the ability to do simple arithmetic calculations. In South Africa, a proxy measure for literacy that is often used is proportion of persons that have completed Grade 7 or above. (Department of Basic Education, 2012).

4.5.1 Youth Literacy

Youth literacy refers to the number of persons aged 15-24 years who can both read and write (with understanding) a short simple statement on their everyday life, divided by the population in that group. Literacy also considers numeracy which is the ability to undertake simple arithmetic calculations (Department of Basic Education, 2012). Until recently nationally representative measures of these literacy activities have not been available. The 2011 General Household Survey, however, asked about whether people were able to undertake several literacy activities and with what level of difficulty.

Table 33 shows the percentages of youths that could undertake each of six basic literacy activities with "no difficulty". The table provides a general sense that the majority of youths could undertake activities such as writing their name to writing a letter with no difficulty. However, there is substantial proportion of non-response on these items and this means that the estimates below should be interpreted with caution. An analysis indicated that non-response was more common amongst higher socio-economic status respondents. This would suggest that the estimates below are more likely to be underestimates than overestimates.

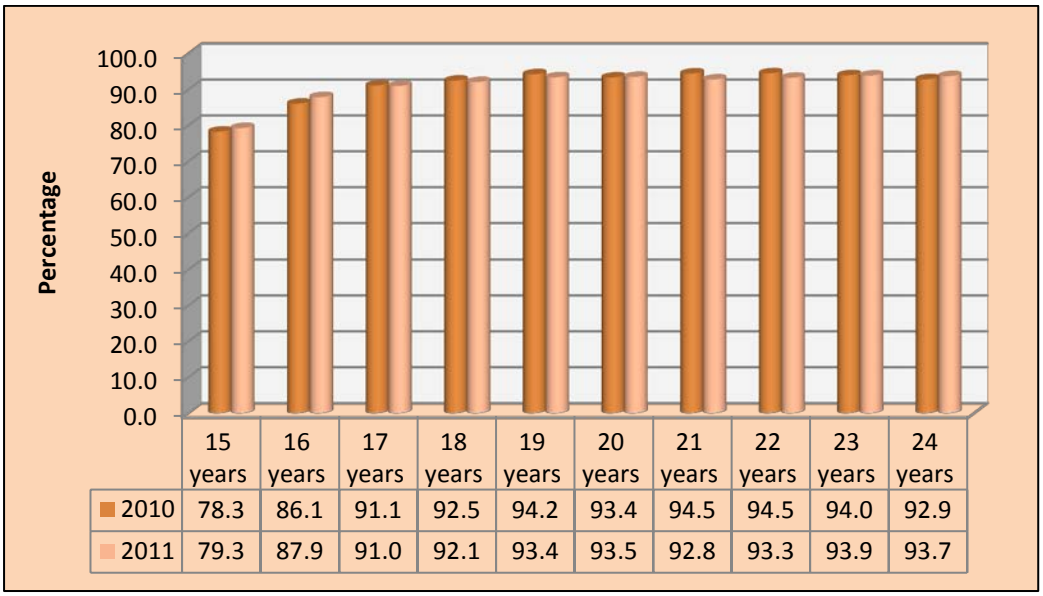
Table 33: Percentage of youths (aged 15-24) that can undertake various literacy activities with no difficulty

Literacy activity	Proportion
Percentage that can read with no difficulty	80.0%
Percentage that can write their name with no difficulty	90.8%
Percentage that can fill in a form with no difficulty	54.2%
Percentage that can read road signs with no difficulty	66.9%
Percentage that can write a letter with no difficulty	75.8%
Percentage that can calculate change when shopping	86.0%

***Source**: Own calculations using GHS 2011*

The figure below shows the percentage of youths (aged 15 to 24) who are literate by single age for 2010 and 2011, using the definition of literate as having attained at least grade 7. For those aged 18 and higher the literacy rate is fairly stable at around 935 to 94%. For those between 15 and 17 the literacy rate is somewhat lower, reflecting the fact that some of this age group are still completing grade 7.

Figure 32: Percentage of 15- to 24-year-old youth who have completed at least Grade 7 by age, 2010-2011

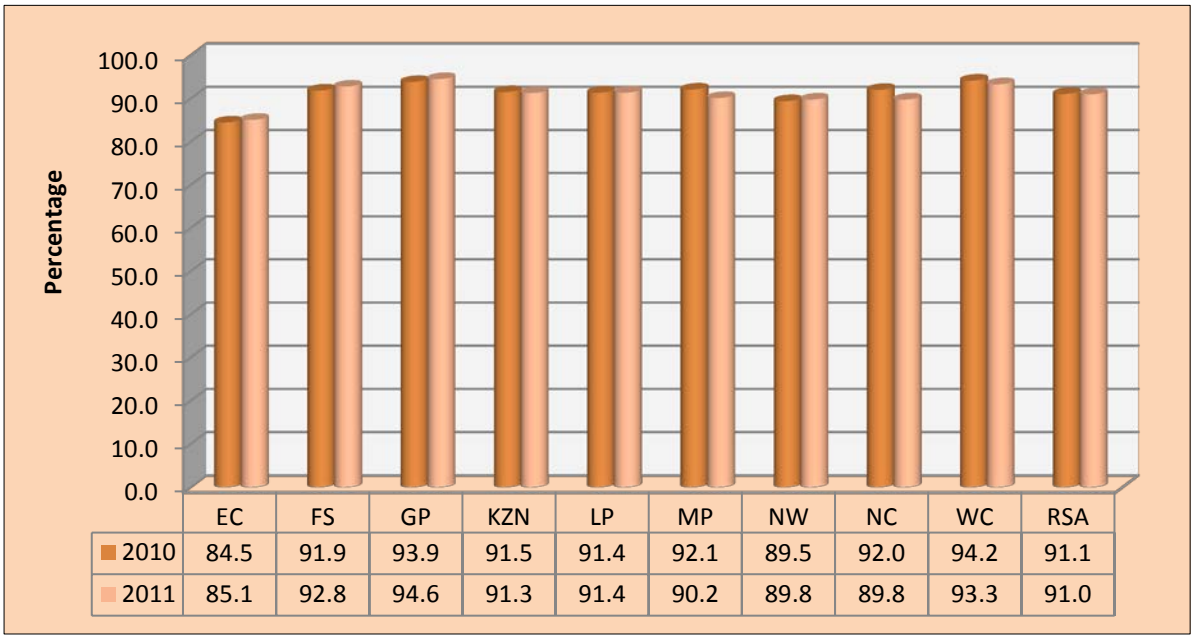


	15 years	16 years	17 years	18 years	19 years	20 years	21 years	22 years	23 years	24 years
2010	78.3	86.1	91.1	92.5	94.2	93.4	94.5	94.5	94.0	92.9
2011	79.3	87.9	91.0	92.1	93.4	93.5	92.8	93.3	93.9	93.7

***Source:** Statistics South Africa, General Household Survey, 2010-2011, DBE own calculations*

The figure below shows the percentage of youth who were literate by province for 2010 and 2011. Nationally 91% of youth were literate over 2010-2011. In 2011, Gauteng (95%) had the highest literacy rate for youths and was followed by the Western Cape (93%). The Eastern Cape, on the other hand, had the lowest youth literacy rate at 85%.

Figure 33: Percentage of 15- to 24-year-old youth who have completed at least Grade 7 by province, 2010-2011



	EC	FS	GP	KZN	LP	MP	NW	NC	WC	RSA
2010	84.5	91.9	93.9	91.5	91.4	92.1	89.5	92.0	94.2	91.1
2011	85.1	92.8	94.6	91.3	91.4	90.2	89.8	89.8	93.3	91.0

Source: *Statistics South Africa, General Household Survey, 2010-2011, DBE own calculations*

Table 34 demonstrates that the literacy rate was higher amongst female youth throughout the years 2002 to 2011. The youth literacy rate for females increased from 88% in 2002 to 93% in 2011 and for males from 83% in 2002 to 89% in 2011.

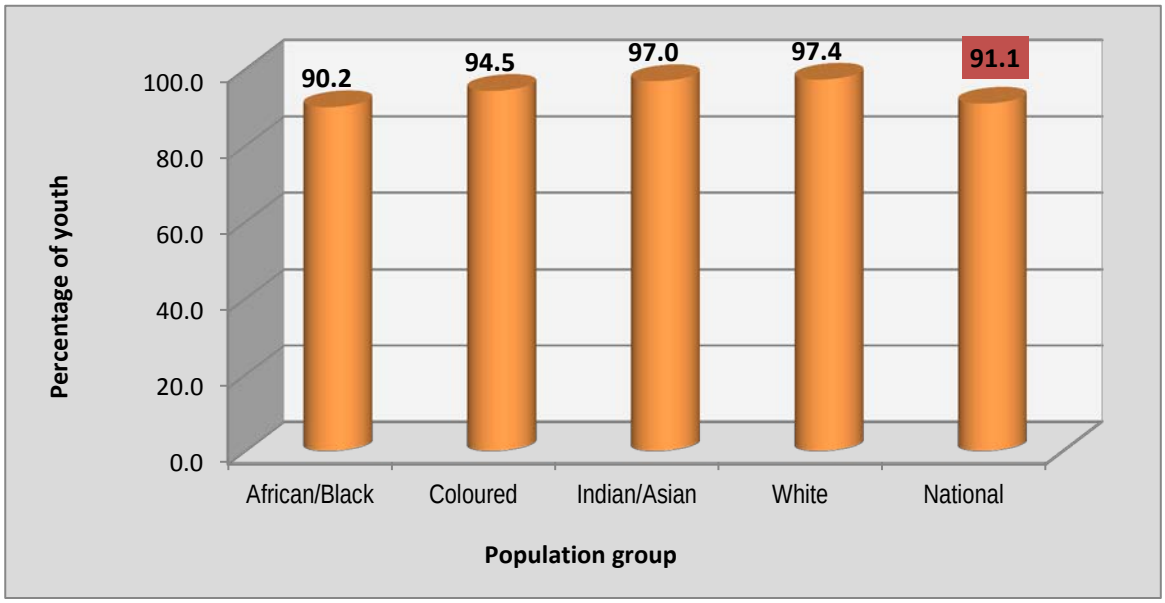
Table 34: Percentage of 15- to 24-year-old youth who have completed at least Grade 7 by gender, 2002-2011

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Male	83.4	84.7	84.9	86.6	87.3	87.7	88.6	89.0	89.0	89.0
Female	88.4	89.7	90.5	91	91.4	91.4	92	93.1	93.3	93.1
GPI	**1.06**	**1.06**	**1.07**	**1.05**	**1.05**	**1.04**	**1.04**	**1.05**	**1.05**	**1.05**

Source: *Statistics South Africa, General Household Survey, 2002 - 2011, DBE own calculations*

The figure on youth literacy rate by population groups indicate that more White and Indian/Asian youth are literate than African/Black or Coloured youth. In 2011, 97% of both Whites and Indian/Asian youth completed Grade 7 compared with 90% of African/Black youth.

Figure 34: Percentage of 15- to 24-year-old youth who have completed at least Grade 7 by population group, 2011



Source: *Statistics South Africa, General Household Survey, 2011, DBE own calculations*

4.5.2 Adult Literacy

Table 35 shows the percentages of adults that could reportedly undertake the various literacy activities that were asked about in the 2011 General Household Survey. Interestingly, literacy according to these measures was consistently lower than amongst youths (compare with Table 33 earlier). As mentioned earlier, the large amount of non-response on these questions means that the estimates in the table should be interpreted with caution.

Table 35: Percentage of adults (aged 25 plus) that can undertake various literacy activities with no difficulty

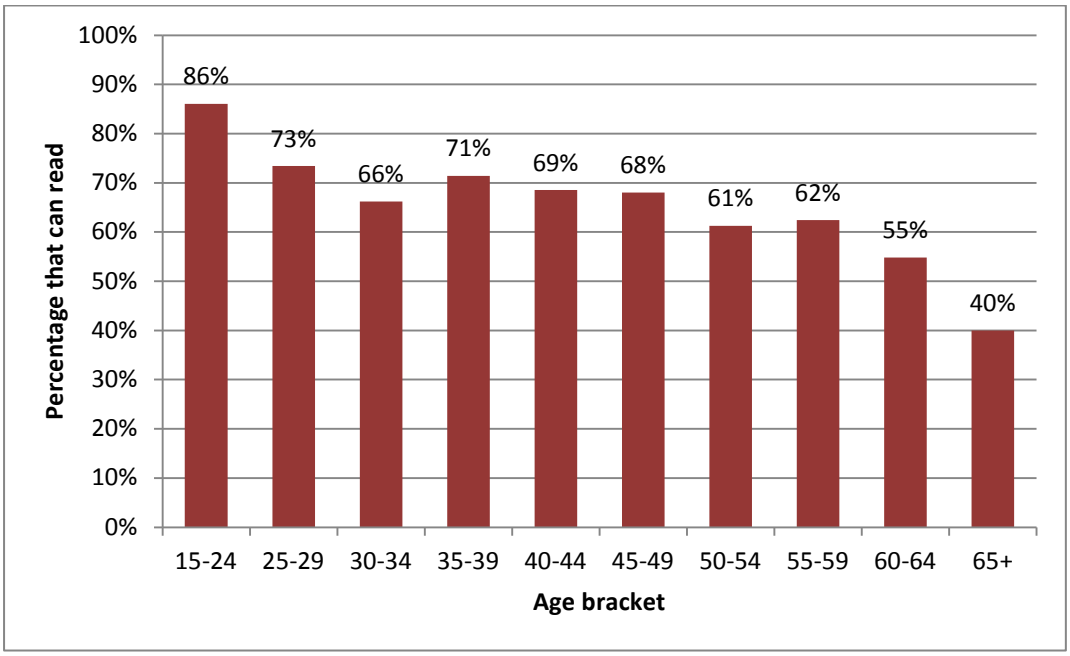
Literacy activity	Proportion
Percentage that can read with no difficulty	47.5%
Percentage that can write their name with no difficulty	66.6%
Percentage that can fill in a form with no difficulty	28.5%
Percentage that can read road signs with no difficulty	48.2%
Percentage that can write a letter with no difficulty	42.6%
Percentage that can calculate change when shopping	71.1%

Source: *Own calculations using GHS 2011*

Figure 35 shows the percentage of people in various age categories that reportedly could read with either “no difficulty” or “some difficulty”. The youngest group (15- to 24-year-olds) were the most literate according to this measure, even though many of them would

still have been completing school. It is evident that older generations of South Africans are increasingly less likely to be able to read. This reflects greater access to education over time.

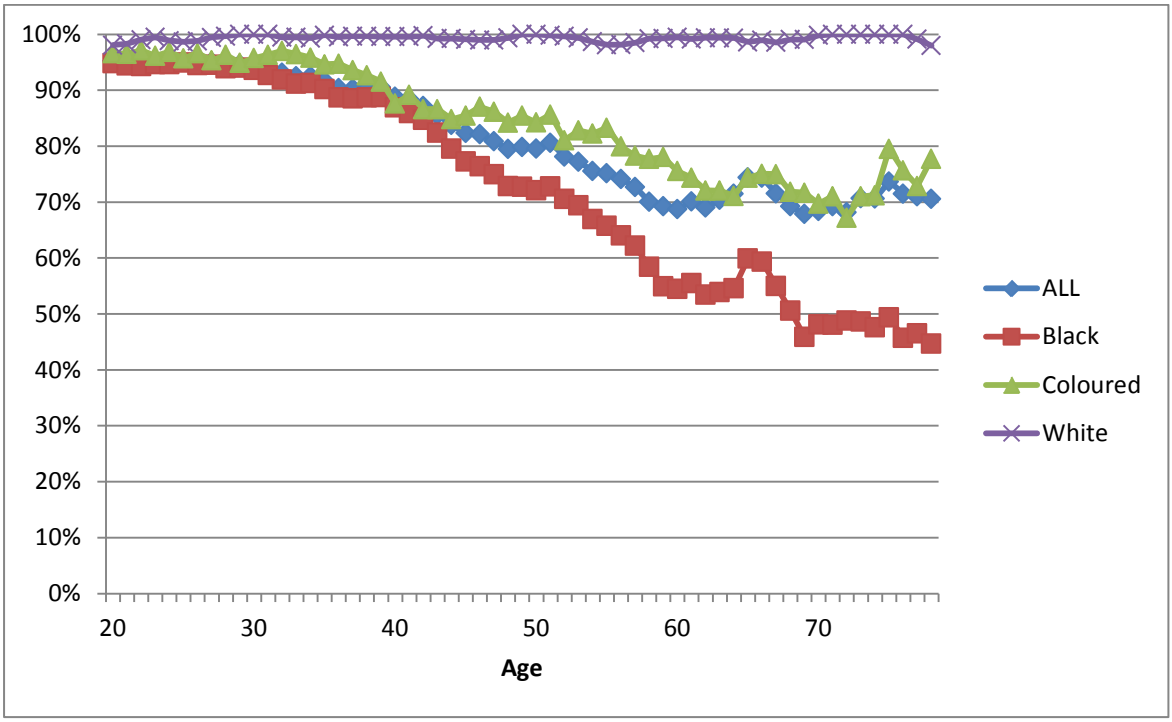
Figure 35: Percentage that can read with "no difficulty" or only "some difficulty" by age bracket



Source: *Own calculations using GHS 2011*

This greater access to education over time is also reflected in the next figure, which shows the percentage of each age group (by individual year) that have attained at least grade 7. The graph shows this measure of literacy separately for each race group, except the Indian group due to low sample size. White South Africans, old and young, have almost universally achieved at least grade 7. For Black and Coloured people this is not the case. Wide racial gaps in the attainment of grade 7 exist amongst the older generations, reflecting historical inequalities in access to education. Fortunately, younger generations of Black and Coloured people are also highly likely to be literate on this measure.

Figure 36: Percentage of the population that have attained grade 7 or higher, by race and age

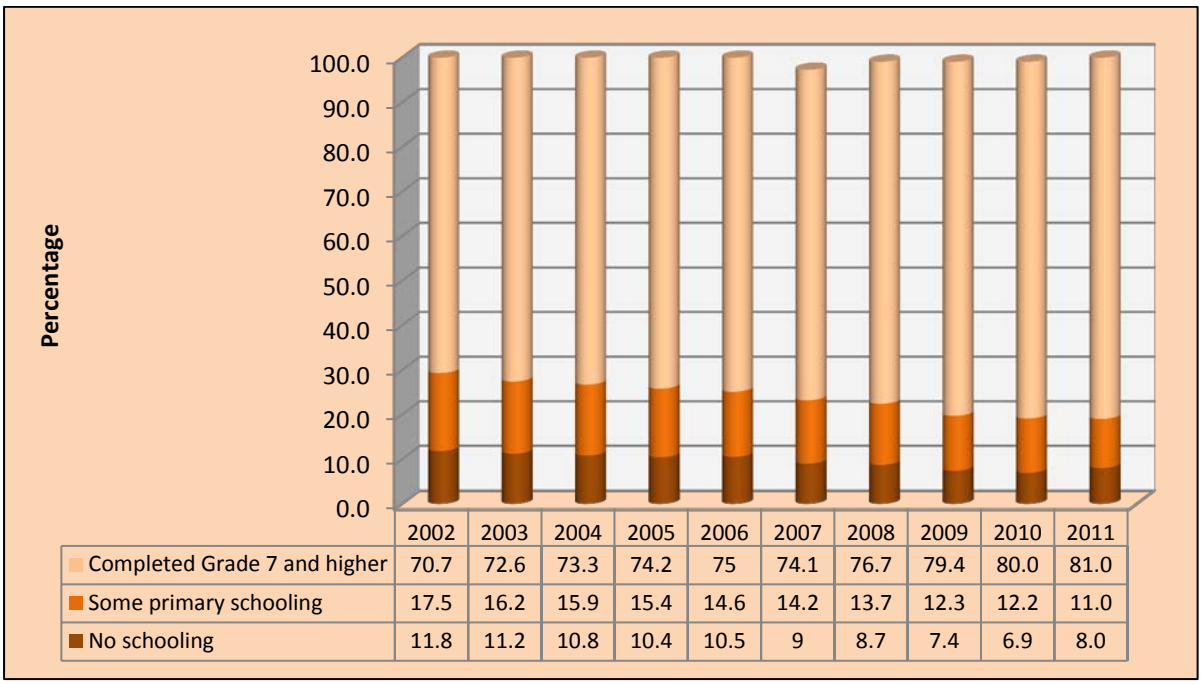


Source: *Own calculations using GHS 2011*

Note: *The Indian population was omitted from the graph due to small sample size and hence unstable estimates for each age group. The graph shows 3-year moving averages of the percentage that can read.*

The figure below illustrates the percentage of literate and illiterate adults from 2002 to 2011. The literacy rates for adults have increased from 71% in 2002 to 81% in 2011. In 2002, 18% of adults had some primary schooling and this decreased to 11% in 2011. Also in 2002, 12% of adults had no schooling and this declined to 8% in 2011. These trends reflect the increasing proportion of recent generations (who had better access to education) forming part of the adult population between 2002 and 2011.

Figure 37: Percentage illiterate and literate adults aged 20 year and above: 2002-2011

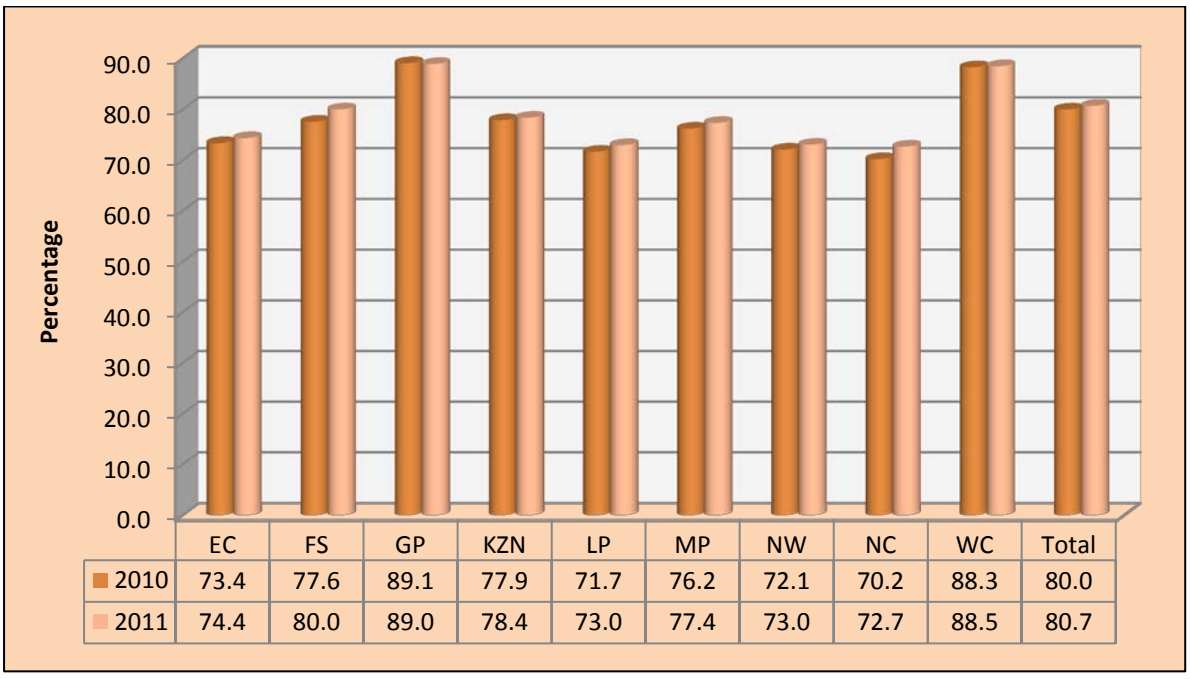


	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Completed Grade 7 and higher	70.7	72.6	73.3	74.2	75	74.1	76.7	79.4	80.0	81.0
Some primary schooling	17.5	16.2	15.9	15.4	14.6	14.2	13.7	12.3	12.2	11.0
No schooling	11.8	11.2	10.8	10.4	10.5	9	8.7	7.4	6.9	8.0

Source: *Statistics South Africa, General Household Survey, 2002-2011, DBE own calculations*

The figure below shows the percentage of literate adults by province over 2010 to 2011.. For both years, Gauteng and the Western Cape had the highest percentages of adults who were literate while the Northern Cape, Limpopo and the North West had the lowest percentages of literate adults.

Figure 38: Percentage of adults 20 year and above who completed at least Grade 7: 2010-2011

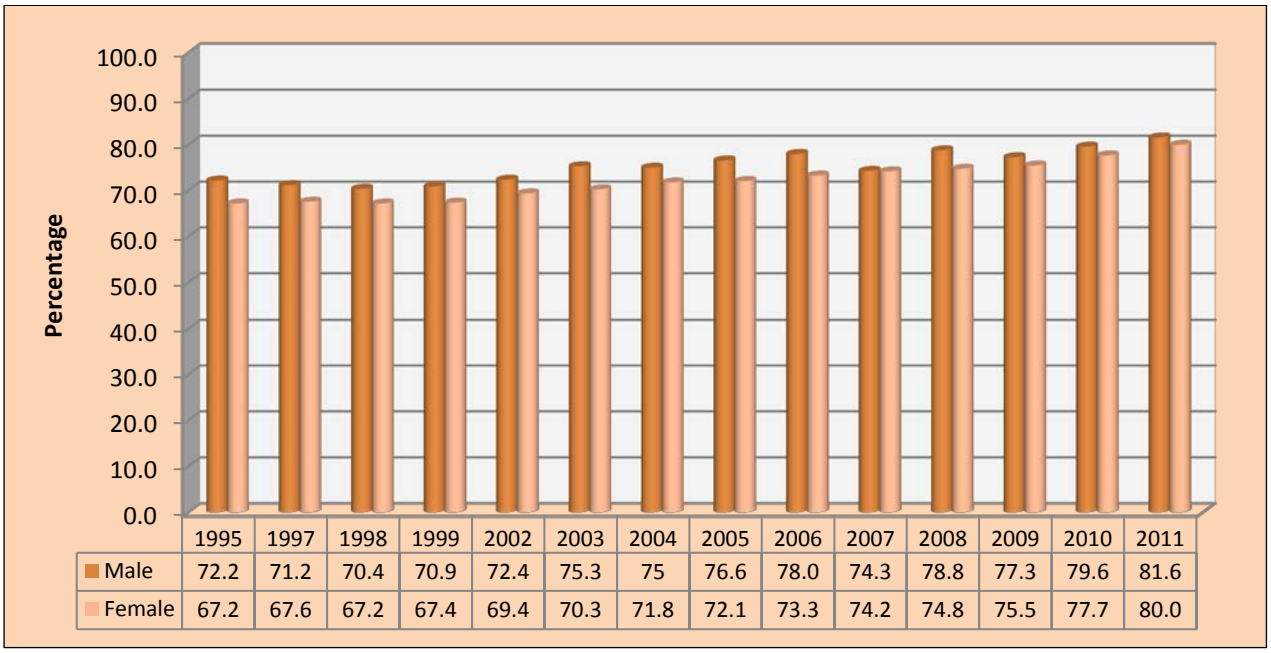


	EC	FS	GP	KZN	LP	MP	NW	NC	WC	Total
2010	73.4	77.6	89.1	77.9	71.7	76.2	72.1	70.2	88.3	80.0
2011	74.4	80.0	89.0	78.4	73.0	77.4	73.0	72.7	88.5	80.7

Source: *Statistics South Africa, General Household Survey, 2010-2011, DBE own calculations*

There are more male adults that were literate throughout the years 1995 to 2011 than females. The adult literacy rate for males increased from 72% in 1995 to 82% in 2011 and for females from 67% in 2002 to 80% in 2011. The gap has therefore been narrowing over time, reflecting better educational participation amongst females in recent years.

Figure 39: Percentage of the population aged 20 and above who completed at least Grade 7 by gender, 1995-2011



	1995	1997	1998	1999	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Male	72.2	71.2	70.4	70.9	72.4	75.3	75	76.6	78.0	74.3	78.8	77.3	79.6	81.6
Female	67.2	67.6	67.2	67.4	69.4	70.3	71.8	72.1	73.3	74.2	74.8	75.5	77.7	80.0

Sources: *Statistics South Africa, literacy reports 1995 to 1999, General Household Survey, 2002-2011, DBE Own calculations*

4.6 CONCLUSION

The performance of learners in the national and international assessments remains below satisfactory levels. The most encouraging evidence on learning achievement trends has come from the latest TIMSS study, which indicates improvements between 2002 and 2011. Given that the SACMEQ surveys indicated no substantial changes in learning achievement between 2000 and 2007, it may be that the bulk of the improvement has occurred since 2007. The TIMSS improvements also indicate improved equity in that the low-performing section of the school system improved more than better-performing schools.

Although research is needed to further understand and explain the improvements in TIMSS, this section has also described how several educational inputs have been improving over time. Improvements to streamline the curriculum through the Curriculum and Assessments Policy Statements (CAPS), greater access to learning materials in the form of textbooks and DBE Workbooks, increases in teacher qualifications and lower Learner-Educator Ratios are

amongst these. On the other hand, teacher subject knowledge and large classes (due to inefficient time-tabling in schools) are amongst the education inputs that need improvements. Unfortunately these last-mentioned are softer inputs and therefore less amenable to policy interventions.

The percentage of adults who are literate is on the rise. The adult literacy rate improved over 1995-2011 from 72% to 82%. Over this period, more adult males were literate than adult females. Meanwhile, youth literacy increased from 71% in 2002 to 81% in 2011. These increases in adult literacy are mainly due to greater access to basic education amongst recent generations of South Africans.

CHAPTER 5: FINANCIAL INDICATORS

The amount a country spends on education as a proportion of overall economic activity (often measured using the Gross Domestic Product or Gross National Product) or as a proportion of overall government spending reflects the prioritisation given to education. This chapter therefore provides some international comparisons as well as trends over time to gain perspective on the investment in education in South Africa. Moreover, the spending on different items (e.g. personnel versus non-personnel items) and on different groups of the school-going population (e.g. poor versus affluent) also reflects the priorities within the education sector, such as a concern with equity.

Historically, SA had a highly unequal education system, divided along racial lines, with massive differentials in spending on children from different race groups. As this chapter will show, public spending on education has become increasingly pro-poor since 1994. There remain inequalities in real resources at schools, however, due to historical infrastructural backlogs and the choice of some schools to charge fees and in this way supplement resources with private spending.

Key trends identified are continued real growth in education spending including real per learner spending, increased equalisation in spending levels between provinces and the growing role of demographic shifts in affecting real levels of funding. The chapter then analyses the composition of spending to identify how this real growth, especially that in poor provinces, was allocated and utilised.This chapter draws largely on a draft report done by Oxford Policy Management Africa and Researchers at the Department of Economics, University of Stellenbosch entitled “Public Expenditure Analysis for the Basic Education Sector in South Africa: Overall national and provincial expenditure trends” by John Kruger and Georgina Rawle in June 2012.

5.1 FISCAL CONTEXT

Over the last decade the South African economy grew steadily but not spectacularly. Nominal GDP increased from just under R1 trillion in 2000/2001 to R2.7 trillion in 2010/11. With negative growth in only one year (a negative 1.7% in 2009/10), real growth over the decade averaged 3.5% per year. The output expansion combined with population growing at an average rate of 1.1% over the decade to generate a nominal GDP per capita increasing from R21,030 in 2000/01 to R54,513 in 2010/11, or by an average of 4.0% per year in real terms.

Steady growth in the size of the economy created significant fiscal space over the decade, in contrast to the period 1994 to 2000 when fiscal consolidation saw real expenditures remaining very flat if not declining; government expenditure grew by 5.4% per year on average in real terms between 2000/01 and 2010/11. As a result consolidated government spending as a proportion of GDP grew from 25% in 2000/01 to 31% in 2010/11.

5.2 OVERALL EDUCATION SPENDING TRENDS

There are four main sources or components of education expenditure, namely: spending by provincial government education departments, spending by national education departments, education spending of other national government departments (e.g. Department of Health) and, fourthly, household, or private consumption expenditure on education.

National income data provide estimates of private consumption expenditure on education while Government Finance Statistics provide comparable data on education spending by general government, including national and provincial education departments and other government departments.

Table 36 shows the amount spent by households (private education spending) and by government on education (including higher education and basic education) in current rands between 2000 and 2008. Unfortunately, since the split of the Department of Education into the Department of Higher Education and Training (DHET) and the Department of Basic Education (DBE) in 2009 it is not possible to disaggregate household spending for basic education.

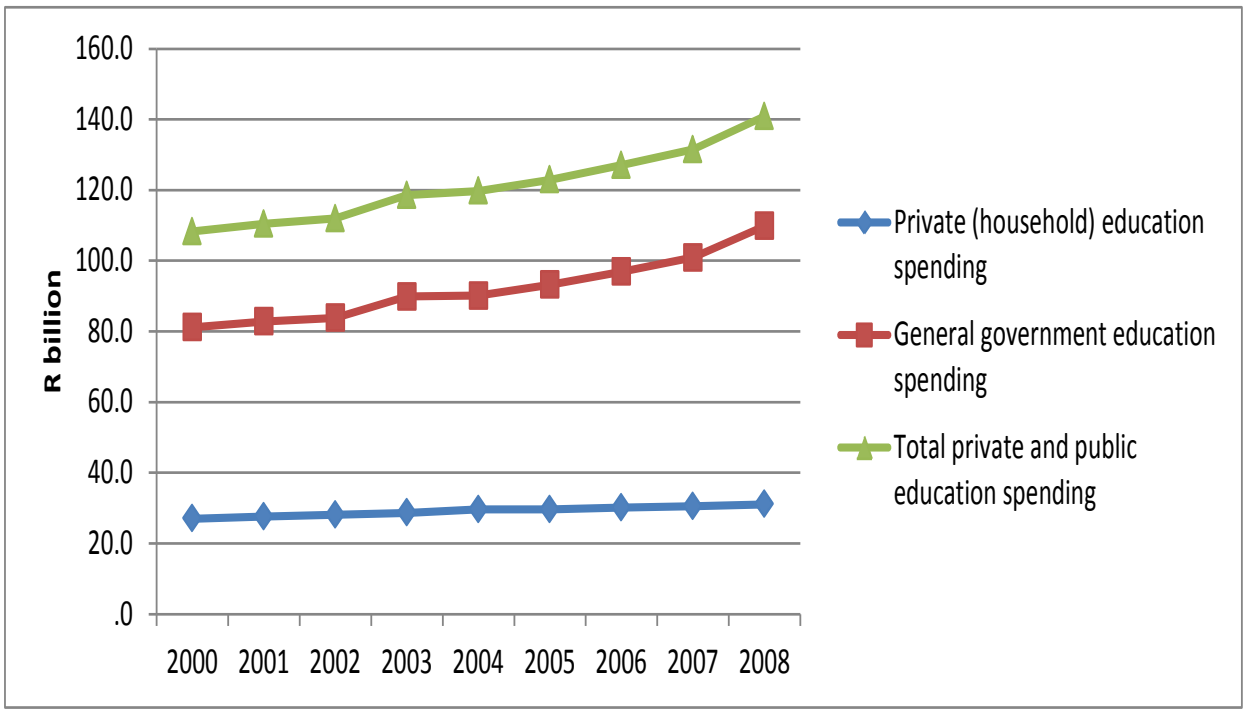
Table 36: Government and household spending on education, 2000 to 2008, current Rand

R billion	2000	2001	2002	2003	2004	2005	2006	2007	2008
Private (household) education spending	17.6	19.9	21.9	24.1	27.3	29.7	32.5	35.5	39.1
General government education spending	57.5	63.2	70.8	80.1	85.5	93.3	103.2	116.2	137.7
Total private and public education spending	**75.1**	**83.1**	**92.7**	**104.2**	**112.8**	**122.9**	**135.7**	**151.7**	**176.8**

As shown in Table 36, household education spending together with spending of general government on education totalled nearly R177 billion (in current rand) in 2008. This was equal to 7.8% of GDP with government spending being 6.1% of GDP and household spending 1.7%. Thus, household spending comprised 22% (R39.1 billion) of total education spending in South Africa and government spending the remaining 78% (R137.7 billion).

Figure 40 shows in real terms (values converted to 2005 Rands) the amounts spent on education by households and by government between 2000 and 2008. Overall education spending increased significantly in real terms by an average annual rate of 3.3% or 30% in total. Both household and government spending on education grew in real terms but government spending increased significantly faster, growing 35% over the period against the 15% growth in private spending.

Figure 40: Growth in general government and household spending on education, 2000 to 2008 in real terms (2005 Rand)



5.3 SPENDING BY GOVERNMENT EDUCATION DEPARTMENTS

A narrower definition of expenditure on education, but more closely focused on the role of government in providing education, is expenditure by government departments of education. The former national Department of Education, which was responsible for both school and tertiary education, was split in 2009 into a Department of Basic Education (responsible for school or pre-tertiary education) and the Department of Higher Education and Training which is responsible for tertiary education and for skills development and training, the latter formerly the responsibility of the Department of Labour. In addition to the two national departments, there are nine provincial education departments. Table 37 shows in current prices the amounts spent by provincial and national departments since 2000.

Table 37: Spending on education by national and provincial departments, 2000 to 2011, current Rand

R billion	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
National education spending	7.3	7.8	8.4	9.4	10.4	11.2	14.2	14.4	16.9	18.9	22.2
Provincial education spending	43.7	47.3	53.2	60.3	64.7	72.0	79.0	88.4	107.2	125.9	143.0
TOTAL Departmental Spending	51.1	55.1	61.5	69.7	75.0	83.2	93.1	102.7	124.1	144.8	165.2

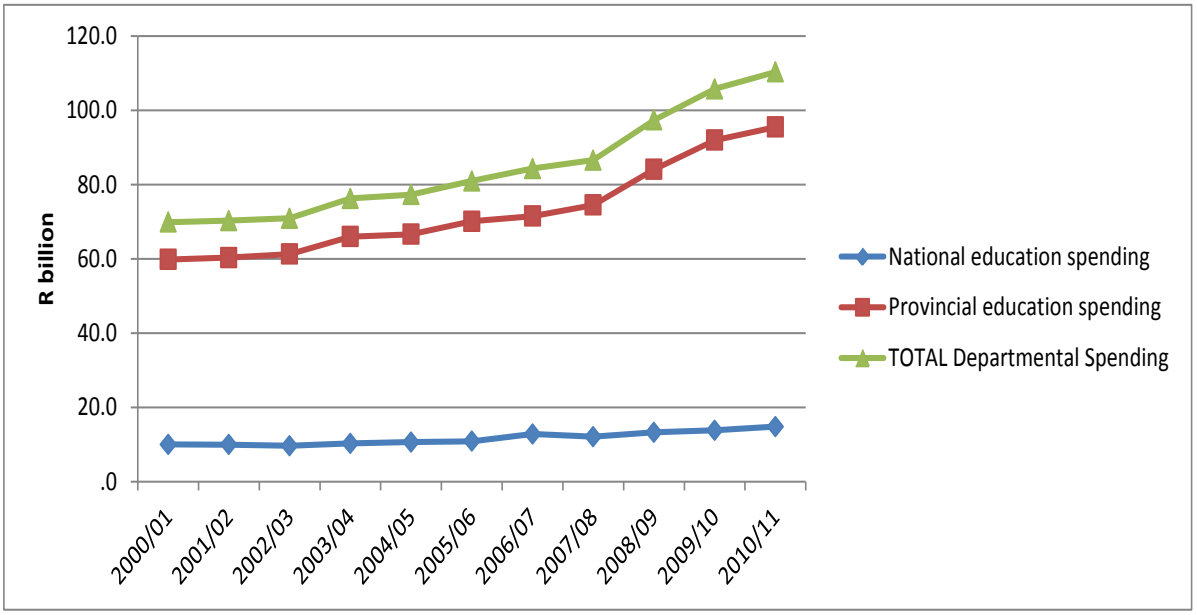
Source: National Treasury, Budget Review (2011 and various years); National Treasury, provincial expenditure database 2011; National Treasury, Intergovernmental Fiscal Review & Provincial Budget Review (various years).

In 2010/11 expenditure by education departments amounted to R165 billion which equalled 6.0% of GDP and 19.5% of consolidated general government spending. In nominal terms, education spending more than tripled from 2000/01 to 2010/11.

Figure 41 shows the growth trajectory in real terms and confirms substantial real growth in education expenditure. Between 2000/01 and 2010/11 real education expenditure grew by 58% in total or an average annual rate of 4.7%. Provincial spending grew faster than national spending (4.8% per year on average against 4.0% for national education.)[4]

[4] Real growth rates were calculated using the GDP deflator with base year 2005. Since GDP inflation outpaced CPI (headline) inflation over the last decade, using the CPI would provide higher real growth rates. Specifically, overall growth in education department spending using the CPI would have been shown to be 84% over the decade, rather than the 58% using the GDP deflator. On an average annual basis using the CPI generates real growth of 6.3% per year compared to the 4.7% using the GDP deflator. Arguably, it is more appropriate to use the GDP deflator than that using CPI inflation considering the bundle of items comprising government spending.

Figure 41: Spending by education departments, real (2005) Rand, 2000/01 to 2010/11



This period of overall real growth can be divided into two sub-periods. The period up to 2007/08 saw modest real growth of around 3% per year (somewhat stronger at the provincial than the national level). From 2008/09 there was acceleration in the growth of spending on education. This acceleration saw real growth in spending averaging 8.4% over the three years to 2010/11, with provincial education expenditure (including education conditional grants from national) growing significantly faster than national education spending (8.6% per year against 7%).

The more rapid growth in education spending after 2007/08 saw, for the first time in a decade or more, education spending increasing as a proportion of GDP as well as of general government spending. Between 2000/01 and 2007/08 education expenditure by government departments declined from 5.4% of GDP to 4.9% but has since jumped to 6% of GDP. Similarly, after declining to 18.1% of government expenditure in 2007/08 (from 21.0% in 2000/01), education expenditure has recovered to 19.5% by 2010/11.

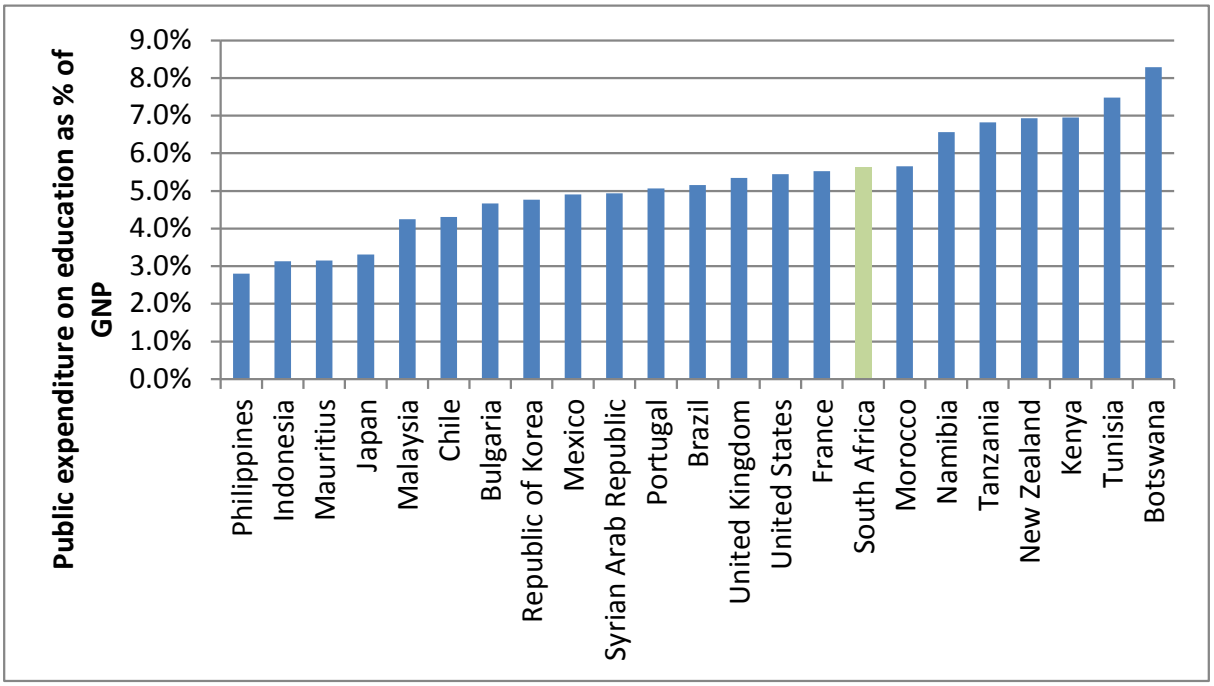
This more rapid growth in education spending and its increase as a proportion of GDP was a result of the resumption of more rapid growth in personnel cost which flowed from a significant upward adjustment in pay scales in terms of the Occupation Specific Dispensation for educators. This came after nearly a decade of relatively slow growth in teacher remuneration and not only addressed certain anomalies in pay scales (such as limited reward for experience) but, arguably, also served to restore the position of teachers relative to other civil servants and ensure the entrance of appropriate individuals into the profession.

5.4 INTERNATIONAL COMPARATIVE PERSPECTIVES

For South Africa the generalisation has for long been that the country spends a relatively high proportion of its resources on education, with the implication, often implicit, that the education constraint does not lie in funding or resourcing. For example, in 1998 the National Treasury concluded that, "As a country, we already invest proportionately more on education than most countries in the world" (Department of Finance, 1998).

Out of the 122 countries for which 1999 data were available to UNESCO (2011), South Africa ranked number 22 in education spending as a proportion of GNP. At that stage spending was estimated at 6.2% of GNP, the same as Finland and Malaysia. Some of the biggest spenders were Denmark (8.2%) and Namibia (7.9%) with the lowest levels of spending coming from countries such as Tanzania, Zambia (both 2%) and Pakistan (2.6%) and Greece (3.2%). The 6.2% in South Africa was also higher than the average for developing countries (4.5%) and for middle-income countries.

Figure 42: Public expenditure on education for selected developed and developing countries, 2009 or closest year to 2009 available



Source: *UNESCO, 2011 (Education for All, Global Monitoring Report).*

By 2009, and after a long decline in education spending relative to GNP, South Africa ranked 39th, with spending of 5.6% compared to the developing country average of 4.6% and the middle-income country average of 4.8%. In that year the higher levels of spending came from countries such as Cuba 13.8%), Botswana (8.3%) and Denmark at 7.7% with the lowest figures coming from countries such as the Philippines (2.8%) Mauritius (3.2%) and Zambia (0.9%) (UNESCO 2011).

An analysis by the Department of Education (2007) pointed out that South African education spending is “at face value … high relative to that of many other countries” but also pointed out that education spending as a proportion of GDP is not only a matter of “choice” and “prioritisation” but is driven by a set of underlying cost factors. They identified four sets of factors driving education expenditure relative to GDP, namely:

- The proportion of population of school-going age;
- The proportion of children and youths enrolled in the education system;
- Educator pay relative to average income in the country; and
- The learner-educator ratio.

It was pointed out that in South Africa (and in many other developing countries) the proportion of the population that is of school-going age is relatively high and in South Africa one must add to that a relatively high level of enrolment as well as educator remuneration that is high relative to average incomes and to that in other countries. From this analysis it follows that South Africa’s high spending on education should not necessarily be seen as wasteful or inefficient but also might indicate that some space for a reduction may arise given predicted demographic trends and potentially increased efficiency in the system (less out-of age enrolment, for example).

5.5 PROVINCIAL SPENDING ON EDUCATION

This Section provides an overview of the differences between education spending among the nine provinces in South Africa. The broad questions are whether there are signs of inequality in spending between provinces and whether some provinces are spending less than they should be in the light of educational needs and funding available to provinces.

Table 38 provides provincial expenditure by provinces for the period 2000/2001 to 2010/11. As was seen above, provincial education expenditure comprises about 87% of expenditure by government education departments. In 2010/11 provincial education expenditure amounted to R143 billion or 5.2% of GDP.

Table 38: Provincial education spending by province, 2000/01 to 2010/11 (R million, current rand)

Province	2000/2001	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
	R million	R million	R million	R million	R million	R million	R million	R million	R million	R million	R million
Eastern Cape	7,282	7,948	9,268	10,308	10,654	11,523	12,873	14,485	17,524	20,750	24,342
Free State	3,025	3,201	3,551	4,087	4,400	4,916	5,346	5,797	6,713	7,846	8,617
Gauteng	6,856	7,314	8,129	9,539	9,835	10,406	11,623	13,829	16,688	20,058	23,118
KwaZulu-Natal	8,286	9,288	10,432	12,022	13,033	15,030	16,219	18,407	22,992	26,231	29,760
Limpopo	6,463	6,740	7,450	8,264	9,610	10,362	11,367	11,815	14,697	17,865	20,547
Mpumalanga	3,027	3,363	3,922	4,529	4,871	5,780	6,273	7,823	9,361	10,940	11,962
Northern Cape	974	1,031	1,181	1,305	1,397	1,563	1,643	2,288	2,853	3,184	3,509
North West	3,732	3,996	4,416	4,896	5,179	5,951	6,686	6,206	7,179	8,391	9,177
Western Cape	4,094	4,393	4,802	5,305	5,691	6,449	6,920	7,738	9,192	10,613	11,998
TOTAL	43,739	47,274	53,151	60,255	64,670	71,980	78,950	88,387	107,198	125,878	143,031

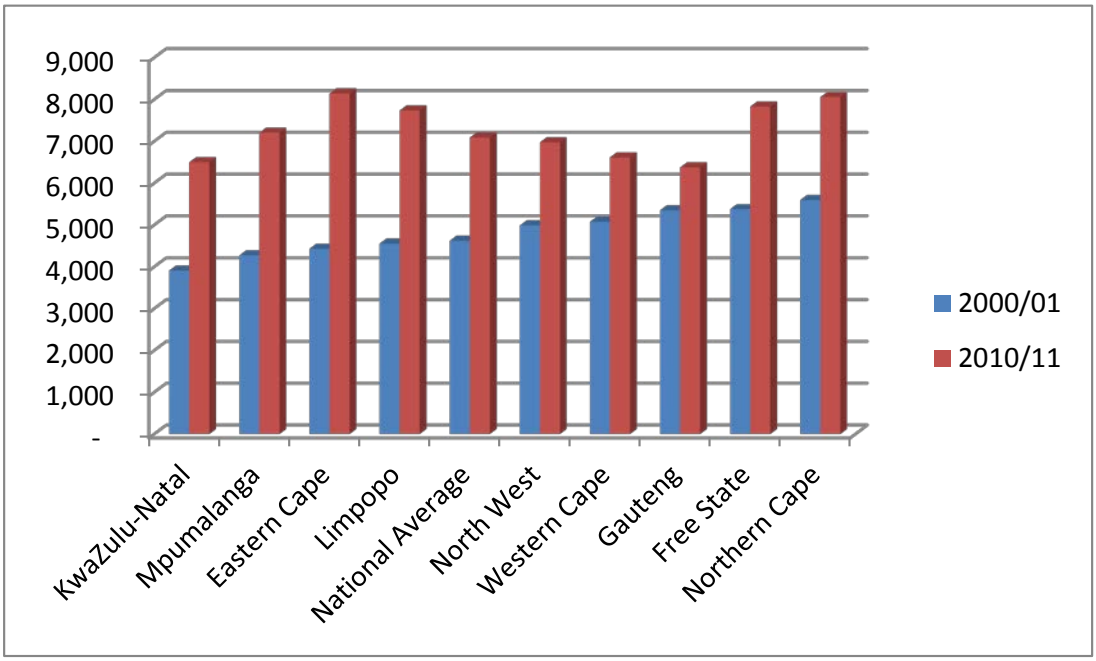
Source: National Treasury, Provincial database 2011 and various issues of the Intergovernmental Fiscal Review and Provincial Budget Review

The total education spending of one province relative to another, in the first place, should reflect population size and composition of the population (or the proportion of the population of schooling age). The "big spenders" such as KwaZulu-Natal, Gauteng and Eastern Cape are also the provinces with the largest population of school-going age. While there has been a threefold increase in nominal provincial education spending since 2000/01 this amounts to real growth of 60% over the period or an average of 4.8% per year.

In order to get a better idea of prioritisation and adequacy of education spending in provinces and inequalities between provinces there is a need to look at spending relative to the target population. For this, total provincial education expenditure is taken as representing the resource commitment of the province and compared to the population aged 5 to 17 as a broad indicator of need. Five-year olds are included to focus on the target group for Grade R. Although Grade R is not compulsory and not equally available between the provinces, expansion of access is an important policy priority.

The data used for this part of the analysis are from the provincial models of the 2008 Actuarial Society of South Africa model. In real (2005) terms the average provincial spending on people in the target group (relevant age cohort) has increased from R4,621 to R7,088 or by 53% (4.4% per year) (Figure 3.2).

Figure 43: Provincial Education spending per population aged 5 to 17, in real 2005 Rand, 2000/01 and 2010/11



The per capita spending picture in 2000/01 (Figure 43) reflected the typical public service delivery situation in South Africa at the end of the 1990s with four of the poorest provinces with the biggest education challenges spending below the national average per capita education spending. KwaZulu-Natal spent the least per person (R3,910). The two wealthy provinces (Gauteng and Western Cape) and two smaller provinces with historically more unified bureaucracies spent more than the average.

Such unequal spending has for long been the target of sector and financial policy although some part of the difference relate to wealthier provinces having higher levels of attendance at more expensive secondary levels of education – thus reflecting the stage of socio-economic development rather than discrimination or underfunding.

As Table 39 below shows, By 2005/06 the basic picture was more or less intact, with three of the poor provinces still below average. However, two shifts had taken place: Mpumalanga and Gauteng had exchanged the third and 8th position. In the case of Gauteng, moderate real spending growth (on average less than 2% per year) combined with rapid population growth (2.7% per year, driven by in-migration) to produce a reduction in real spending per person from R5,350 to R5,063 between 2000/01 and 2005/06. In Mpumalanga slow population growth (0.6% per year) combined with expenditure growth averaging 6.3% per year (2001/01 to 2005/06) to provide for rapid real growth in expenditure. KwaZulu-Natal remained at the bottom of the inter-provincial ranking with the spending ratio between the Northern Cape and Kwazulu-Natal having narrowed slightly to 1.35.

By 2010/11 the traditional South Africa picture in terms of interprovincial funding had changed considerably. Of the poorer provinces, both Eastern Cape and Limpopo had moved to the top half of the spending table with the Eastern Cape, spending most per person aged 5 to 17 - R12,200 per person in nominal terms, compared to an average for all provinces of R10,619. The dramatic increase for the Eastern Cape was a function of increasing real expenditure on education, a decline in the population of school-going age and the loss of about 5% of its population due to a change in provincial boundaries.

Table 39: Provincial per capita education spending, real (2005) Rand, 2001/02, 2005/06 and 2010/11 (ranked from highest spending to lowest spending)

Province	2000/2001	Province	2005/06	Province	2010/11
NC	5,594	NC	6,606	EC	8,143
FS	5,377	FS	6,410	NC	8,055
GT	5,350	MPU	5,637	FS	7,827
WC	5,074	NW	5,575	LIM	7,734
NW	4,986	WC	5,510	MPU	7,207
LIM	4,553	LIM	5,189	NW	6,973
EC	4,429	EC	5,075	WC	6,614
MPU	4,271	GT	5,063	KZN	6,499
KZN	3,910	KZN	4,887	GT	6,374
National	4,621	National	5,268	National	7,088

Source: Calculations from expenditure data (National Treasury, provincial database) and provincial demographic data (based on ASSA 2008)

In 2007 the DoE concluded that "inequalities among the different provinces have been reduced and spending per learner has increased in all the provinces since 1994. However, there is still inequality in spending, with the poorer provinces spending less than what is ideal." This new analysis of the recent data shows that inequalities between provinces in per capita education spending and per learner spending on schools have now largely been eliminated. With the exception of KwaZulu-Natal (an important exception given its size) poor provinces (such as Limpopo and Eastern Cape) now spend higher amounts per learner than richer provinces (such as Gauteng and Western Cape).

5.6 PROVINCIAL EDUCATION SPENDING COMPARED TO PROVINCIAL FUNDING

The previous sections point out that most of the poorer provinces now spend more per capita on education than some of the richer provinces and that this was not the result of "equalising downwards", indeed real expenditure per person increased in all provinces. This can also be read to imply that the adequacy of spending in poorer provinces has improved significantly.

Another perspective on provincial commitment to education is to compare provincial education spending to provincial funding. In the 2007 Investment Review, the DoE did this

by comparing actual provincial education spending to a "theoretical allocation" for education based on the formula for distributing the equitable share to provinces. On the basis of these comparisons it was argued that three of the provinces with the greatest poverty challenge (Eastern Cape, KwaZulu-Natal and Limpopo) have "consistently 'underspent'" on education since 2001. It was also argued that over time there was a downward trend in the proportion of provincial budgets going to education across provinces.

In the DoE analysis of the data a theoretical allocation for education is set at the "province's education share in the equitable share formula". In 2011/12 provinces received an equitable share allocation of R288.5 billion. Forty-eight percent of this allocation (R140 billion) was distributed to provinces on the basis of the relative size of the school-going age cohort and the number of learners. For example, in terms of the education component the Eastern Cape received 16.7% of the education share of R140 billion, namely R23.4 billion which is 44% of the actual provincial budget. This 44% is then viewed as a theoretical allocation to education. In actual fact the province allocated R24.6 billion to education or 47% of its budget.

Table 40: Assessment of provincial education funding relative to provincial budgets

	Provincial equitable share allocation	Provincial share of equitable share allocation	Proportion of education component going to province	Theoretical provincial education allocation	Actual provincial total budget	Provincial education budget	Theoretical allocation for education	Prov educ budget/ prov budget
	(1)	(2)	(3)	(4) [1]	(5)	(6)	(7)	(8)
Province	R million	%	%	R million	R million	R million	% of total budget	% of total budget
Eastern Cape	44,052	15.1%	16.7%	23,386	52,644	24,635	44%	47%
Free State	17,504	6.0%	5.6%	7,842	23,188	9,496	34%	41%
Gauteng	51,929	17.8%	15.5%	21,705	67,645	25,965	32%	38%
KwaZulu-Natal	63,890	21.9%	23.1%	32,348	77,300	32,618	42%	42%
Limpopo	35,884	12.3%	13.9%	19,465	43,932	20,859	44%	47%
Mpumalanga	23,339	8.0%	8.4%	11,763	29,198	12,952	40%	44%
Northern Cape	7,877	2.7%	2.2%	3,081	10,285	4,062	30%	39%
North West	19,838	6.8%	6.3%	8,822	24,465	10,261	36%	42%
Western Cape	27,423	9.4%	8.3%	11,623	36,839	13,332	32%	36%
	291,736	100%	100.0%	140,033	365,496	154,181	38%	42%

1. Equals the total provincial equitable share allocation multiplied by 48% (the education component) multiplied by the province's share of the education components (column 3)

Source: Calculations based on National Treasury, Budget Review 2012 (web annex W1)

This analysis, although based on hypothetical norms, nevertheless serves to underline the significant shift in spending patterns that has taken place since about 2005. While in 2005 three of the poor provinces (Eastern Cape, Kwazulu-Natal and Limpopo) spent less than the theoretical allocation on education, in 2011/12 eight provinces spent more than the

theoretical allocation on education with only KwaZulu-Natal lagging by spending a proportion equal to the theoretical allocation.

This analysis provides further evidence that education spending in the poor provinces has increased relative to that in other provinces and may have reached adequate levels compared to other provinces. “Underfunding of education” in most of the poor provinces, excluding KwaZulu-Natal, may have come to an end. But even in KwaZulu-Natal real education spending has grown significantly and is now nearly on par with that in provinces such as Gauteng and Western Cape.

These findings underline the need to move on from a focus on the quantity of spending to an analysis of quality of spending and value for money.

5.7 COMPOSITION OF EDUCATION SPENDING BY PROGRAMME AND ECONOMIC CATEGORY

This section shows the composition of provincial department spending on education over the past ten years from 2000/01 and 2010/11. It starts with an overview of aggregate provincial spending patterns by programme and then by economic classification. The analysis compares spending patterns at the start and end of the ten year period (2000/01 to 2010/11). It also presents figures for 2007/08 (seven years into the ten years) because this is the year before there was a noticeable acceleration of real expenditure.

It is striking that the distribution of total spending on education by programme has not changed markedly over the ten years since 2000/01, despite this decade being a period of substantial real growth in spending (almost 5% per annum on average). The limited movement is shown in the first three columns of Table 41 where the share spent on public ordinary school (POS) education (the largest programme) declined by a few percentage points to reach 82%, while most of the other far smaller programmes retained their share or gained slightly (by 1.6 percentage points at most).

Table 41: Composition of aggregate provincial spending on education by programme

	Proportion of total spending (%)			Average annual real change (%)		
	2000/01 actual[2]	2007/08 actual	2010/11 revised	First 7 yrs	Last 3 yrs	All 10 yrs
Administration	5.7	7.3	6.6	7.0	4.9	6.4
Public Ordinary School Education	85.6	83.1	82.4	2.9	8.3	4.5
Public primary schools	*51.4*	*43.5*	*41.0*	*0.9*	*6.6*	*2.6*
Public secondary schools	*31.7*	*35.5*	*35.3*	*5.0*	*8.4*	*6.0*
Other	*2.5*	*4.2*	*6.2*	*11.4*	*23.7*	*14.9*
Independent School Subsidies	0.5	0.5	0.5	4.2	8.1	5.3
Public Special School Education	2.6	2.7	3.0	4.0	11.9	6.3
Further Education And Training	1.9	2.7	2.8	8.8	8.8	8.8
Adult Basic Education And Training	0.9	1.0	0.9	3.5	8.0	4.8
Early Childhood Development	0.5	0.8	2.1	11.7	50.3	22.1
Auxiliary And Associated Services	1.5	1.9	1.7	6.5	5.6	6.2
All Programmes	**100.0**	**100.0**	**100.0**	**3.4**	**8.6**	**4.9**

Sources: Provincial expenditure databases (various years); IGFR (2003). Note: In 2000/01 there was an unlabelled 'other' programme which accounted for 0.7% of provincial spending on education.

Not surprisingly, given the comparatively large volume of learners, spending on school education programmes (POS, independent school subsidies (ISS), and public special school education (PSSE)) accounts for the vast majority of spending on education. The latest figures show that school education accounts for 86% of total provincial expenditure on education (down from 89% at the start of the decade).

The small shift in the overall composition of expenditure towards non-school programmes over the decade manifests itself in substantial real resource growth for some of these smaller programmes. The real growth rates by individual programme are in the right-hand panel of Table 41. Resources have clearly been targeted at early childhood development (ECD), in line with the policy priority to expand access to grade R. ECD experienced extremely high real growth of 22% per annum on average over the decade, and 50% per annum between 2007/08 and 2010/11. (It is important to note that this is not a comprehensive picture of provincial spending on ECD because departments of social welfare also fund ECD interventions). Of the remaining programmes, further education and training (FET) experienced the next highest real growth rate, averaging 9% per annum.

The main school education programme (POS) grew at an average approaching 5% per annum in real terms. There was a marked difference in real growth rates between its three subcomponents, but this is difficult to interpret because the 'other' category largely consists of conditional grants which are used to provide resources for schools and students at both levels. This 'other' component has seen a steep rise in real spending of almost 15% per

annum on average over the ten years compared with far lower growth rates for the separate school components. One implication of the increasing reliance on conditional grants is that provinces (and public schools) have less autonomy over how resources for public schools are spent.

There has been a major shift in the composition of education spending by economic item over the decade. Spending across the main economic categories has become more balanced, as Table 42 reveals. The share spent on compensation has fallen markedly from 91% in 2000/01 to 78% by the end of this period of 10 years. There were two distinct stages. Almost all change in the spending mix occurred during the first seven years. During this period, compensation only grew by 1% in real terms per annum on average, while 'other current' and capital categories experienced real annual growth rates in double digits.

The strong real spending growth in 'other current' items raised its share of total spending to 17% by the end of the first seven years. This category covers direct purchasing of goods and services (including learner/teacher support materials and food supplies, recorded separately in the table), interest and rent, and current transfers (mainly to non-profit institutions, including schools). Note that the proportion of public resources directly spent on learner/teacher materials and food (about 4%) represents a lower bound, partly because the funding mechanism for these items varies across provinces. Some ear-marked spending on these items is included in transfer payments.

The initial seven year period has witnessed high and sustained growth in capital investment of nearly 18% per annum in real terms on average. By 2007/08 this item accounted for nearly 5% of total provincial spending on education, up from under 2% at the start of the decade.

The second stage of the decade, the final three years, is characterised by strong real growth of almost 9% per annum in overall spending but little change in the economic composition of expenditure. There is a resumption of significant real growth in compensation (8% per annum on average), but this has not crowded out spending on 'other current' or capital items. The latter are both still growing faster than compensation, albeit at a lower rate than during the first seven years. The drop in the rate of real spending growth between the two periods is particularly large for 'other current' items (from 16% to 9% per annum on average).

Table 42: Composition of aggregate provincial spending on education by economic classification

	Proportion of total provincial spending on education (%)			Average annual real change (%)		
	2000/01 actual	2007/08 actual	2010/11 revised	00/01-07/08 (7 yrs)	07/08-10/11 (3 yrs)	00/01-10/11 (10 yrs)
Compensation of employees	**90.9**	**78.9**	**78.0**	**1.3**	**8.2**	**3.3**
Other current expenditure	**7.5**	**17.3**	**17.4**	**16.4**	**8.9**	**14.1**
learner & teacher support materials	*n/a*	*2.7*	*2.1*	*n/a*	*-0.3*	*n/a*
food and food supplies	*n/a*	*1.4*	*1.7*	*n/a*	*17.6*	*n/a*
transfers/subsidies	*1.9*	*7.1*	*7.3*	*24.6*	*10.0*	*20.0*
Other	*n/a*	*6.1*	*6.2*	*4.7*	*9.3*	*6.0*
Capital	**1.6**	**3.9**	**4.6**	**17.7**	**15.5**	**17.0**
transfers/subsidies	*0.0*	*0.1*	*0.1*	*52.0*	*40.4*	*48.4*
Other	*1.5*	*3.8*	*4.5*	*17.3*	*14.7*	*16.5*
All items	**100.0**	**100.0**	**100.0**	**3.4**	**8.6**	**4.9**
Memo item						
Transfers/subsidies	1.9	7.2	7.6	24.8	10.5	20.4

Source: Provincial expenditure databases (various years).

Looking at the upturn in real spending on compensation in more detail, Table 43 demonstrates that it is not growth in personnel numbers which is driving this trend but gains in the average level of payments. The number of employees increased by less than 3% over the period, while spending on compensation grew by 60% in nominal terms, and almost 30% in real terms. The level of average compensation per employee has risen sharply, at least partly because of the implementation of the occupational specific dispensation (OSD). Taking inflation into consideration, real annual growth in average compensation per employee was 9% in both 2008/09 and 2009/10, dropping to 4% in 2010/11.

Table 43: Trends in total and average compensation per employee

	Actual	Actual	Actual	Revised
	2007/08	**2008/09**	**2009/10**	**2010/11**
Compensation of employees (in R million)	69,708	84,015	99,146	111,512
Number of employees	486,072	499,967	504,541	498,959
Average compensation per employee (R, nominal)	143,410	168,040	196,507	223,490
Nominal annual growth in average compensation (%)		17.2	16.9	13.7
Real annual growth in average compensation (%)		9.1	8.9	4.0

***Source**: Provincial expenditure databases (various years).*

5.8 CONCLUSIONS REGARDING EDUCATION SPENDING TRENDS

The decade since 2000/01 saw substantial real growth in education expenditure, especially in the years between 2007/08 and 2010/11. Real growth in education spending occurred in all nine provinces, but was largest in some of the poorer provinces with the positive effect of greater equity in spending between provinces. Although teacher compensation increased substantially in real terms over the period, spending on non-personnel items grew even faster. This led to an increase in the proportion of education spending going to non-personnel items from only 9% in 2000/01 to a much more favourable 22% in 2010/11.

Historically, there were massive fiscal differentials in spending on children from different race groups. Analyses of fiscal incidence (Gustafsson and Patel, 2006; Van der Berg, 2009) have demonstrated that most of the current spending differentials had been eliminated by 2000 and that there were virtually no spending differentials remaining by 2005. The remaining differential at a racial level largely result from the fact that teachers in more affluent schools are generally better qualified and therefore earn higher salaries. For this reason also, there are similar differentials in spending per pupil between black pupils in higher and lower quintiles, probably also reflecting differences in teacher qualifications between urban and rural schools. One other remaining differential is that in spending on non-teacher personnel. Many formerly white schools historically have had such personnel paid from public funds, while the same does not apply to former black schools.

CHAPTER 6: CONCLUSION

This report has provided a wide range of indicators regarding the school system in South Africa, where possible showing international comparisons. The report has attempted to go beyond an uncritical presentation of statistics by discussing the reliability of various data sources and measures and by interpreting the educational significance of observed trends.

The report has documented how virtually all South African children now gain access to the school system and remain in school for a substantial number of years. The enrolment rate amongst 7- to 15-year-olds has been increasing in recent years and is now roughly 99%. Access to pre-school, in particular, has increased considerably over the last decade largely due to the expansion of the Grade R programme.

Secondary school completion and access to higher education, however, remains at a level below that which South Africa aspires to, although these indicators too have been improving incrementally in recent years. The report has shown how this low access at higher levels of education is mainly a symptom of weak education quality in the earlier parts of the school programme. Both local and international assessments of educational achievement have consistently shown South African children to be performing at alarmingly low levels. Low scores in these assessments reflect that our children are taking far too long to acquire foundational literacy and numeracy skills. The end result of these learning deficits is that learners reach a situation in secondary school where acquiring the skills needed to succeed in the matric examination becomes improbable and they consequently drop out of school. An encouraging trend that was observed is that the recent TIMSS study indicates improved mathematics and science performance amongst South African learners between 2002 and 2011, although the level of performance remains low by international standards.

Poor learning outcomes can be traced to differential “input indicators” or characteristics of school and teacher practices. The report showed, in particular, that incomplete coverage of the curriculum and inadequate teacher subject knowledge are examples of the problematic “inputs” to education quality. On the other hand, certain inputs have been improving over time, such as access to and use of learning materials in classrooms.

Public spending on education is clearly one area where historical inequalities have now been eliminated. The overall amount spent on education has increased substantially in recent years, even after adjusting for inflation. South Africa’s prioritisation of education spending relative to overall government spending is high by international standards. Whether more should be spent on education is debatable. Certainly, spending more on existing inputs is unlikely to substantially improve education outcomes. Rather, additional spending on

strategic interventions designed to improve outcomes may hold some potential. Some examples include targeted teacher development programmes, remedial education programmes to assist the acquisition of basic literacy and numeracy in the early grades and the strengthening of recent initiatives such as the Annual National Assessments and the DBE Workbook programme. However, any such new initiatives should proceed on the basis of solid evidence produced through rigorous piloting and impact evaluation.

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Macro Indicator

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