Trends in Education Macro Indicators Report 2009 South Africa

education

Department:
Education
REPUBLIC OF SOUTH AFRICA

Trends in Education Macro-Indicators: South Africa

Department of Education

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Abbreviations and Acronyms

AIB	Advanced International Benchmark
AIR	Apparent Intake Rate
ABET	Adult Basic Education and Training
ASER	Age-specific Enrolment Rate
ASS	Annual School Survey
CR	Completion Rate
DoE	Department of Education
ECD	Early Childhood Development
EFA	Education for All
ELRC	Education Labour Relations Council
EMIS	Education Management Information System
FET	Further Education and Training
FTE	Full-time Equivalent Enrolment
GDP	Gross Domestic Product
GER	Gross Enrolment Rate
GHS	General Household Survey
GNP	Gross National Product
GPI	Gender Parity Index
HDI	Human Development Index
HIB	High International Benchmark
HSRC	Human Sciences Research Council
IEA	International Association for the Evaluation of Educational Achievement
IBE	International Bureau of Education
IIB	Intermediate International Benchmark
JIPSA	Joint Initiative on Priority Skills Acquisition
LER	Learner:educator ratio
LIB	Low International Benchmark
LOLT	Language of Learning and Teaching
MDGs	Millennium Development Goals
MLA	Monitoring Learning Achievement
N/A	Not available
NER	Net Enrolment Rate
NGO	Non-governmental Organisation
NIR	Net Intake Rate
NPHE	National Policy for Higher Education
PERSAL	Personnel and Salary System
PIRLS	Progress in International Reading Literacy
PR	Promotion Rate
RR	Repetition Rate
SA	South Africa
SACMEQ	Southern and Eastern Africa Consortium for Monitoring Educational Quality
SADC	Southern African Development Community
SANLI	South African National Literacy Initiative
SCE	Senior Certificate Examination
SES	Socio-economic Status
SET	Science, Engineering and Technology
TIMSS	Trends in International Mathematics and Science Study
TNER	Total primary age net enrolment rate

UNESCO United Nations Educational, Scientific and Cultural Organisation
UNICEF United Nations International Children's Emergency Fund

Abbreviated names for policies are as follows:

Admissions Policy refers to the Admissions Policy for Public Ordinary Schools (Department of Education, 1998b).

Age-grade Regulations refers to the Age Requirements for Admission to a Public Ordinary School (Department of Education, 1998a).

Executive Summary

This report sets out the key trends in the macro-indicators for the education sector in South Africa. The report aims to give policy-makers, researchers and implementers a sense of the trajectory of the system over the past decade or more, with the intention of providing both a summary of the past and a guide for the future.

The report mostly uses indicators that are widely used internationally. These tend to have a solid tradition behind them and they reflect international commitments that South Africa has made. The indicators are "macro"-indicators in the sense that generally, they do not delve deeper into classroom process issues or school-level service delivery issues. They are meant to provide a "macro" overview of performance. Similarly, while the report is more than a mere presentation of indicators and trends, it does not pretend to be a full-fledged document on policy analysis and research. Where relevant, the report points out the need for more research, or refers to research that has already been undertaken.

The substantive conclusions of the report can be summarised in just 10 points, namely:

1. As is perhaps well known by now, South Africa's education system is characterised by a high level of participation and even completion up to a certain level. This is demonstrated in the report by presenting South Africa's gross and net enrolment rates, completion rates and age-specific enrolment rates (ASERs). These point out that, for example, up to age 15 or so, more than 95% of the youth are engaged in education in one way or another and that, similarly, in the entire age range of 7-to-18, which corresponds with the theoretical age range for primary to secondary schools, 94% of the youth are participating in the education sector. Participation rates for sub-sectors, which are often regarded as under-performing, such as early childhood development, are often much higher than is commonly accepted – if one takes into account all sources of provisioning. Household Survey data indicates that, by 2007, as many as 88% of 6-year-olds and 60% of 5-year-olds were participating in some form of care, although some of it was informal and of uncertain quality. However, progress in this area is fast.

2. Participation and learner success in advancing the system is not only high by international standards, but has also been increasing. For example, between 1995 and 2007, the completion rate for Grade 7 (the end of the primary school cycle) had increased from about 88% to 93%, and the completion rate for Grade 9 (the end of the general education cycle) had increased from 75% to 83%. These improvements in completion rates are an indication that literacy, defined as the percentage of the population with seven or more completed grades of education, has increased significantly. Literacy amongst the youth (defined as those in the 15-to-24 age group, with at least seven completed grades of education), in particular, has increased and stands at 90%, compared to 81% for developing countries in general.

3. The total primary net enrolment rate for school is arguably the most important international Education-for-All indicator. It measures the participation of primary-aged youth in primary and secondary schooling. Current trends indicate that South Africa will achieve a 100% total primary net enrolment rate by the year

2015, which is the target year for the Education for All Project. This rate has improved from about 94% in 1999 to almost 97% in 2006 and, based on this trend would, as noted, reach 100% somewhat earlier than 2015. This report does not claim that achievement of the 100% goal is an automatic and a foregone conclusion. Reaching the last few percent of children who are out of school will require some concerted effort. The report simply states that, if current trends continue, 100% participation could be achieved. The trend for the primary completion rate, another important concept and indicator, is also positive, and suggests that, at the current pace, South Africa will achieve about 98% completion by 2015

4. Education statistics in South Africa are somewhat controversial. There have been important and useful debates around issues related to the measurement of the repetition, drop-out and survival rates, for example. For this reason, the report often relies on two sources of data in developing key indicators, namely data officially obtained from schools, and data obtained from Household Surveys. The former is known to produce less optimistic scenarios, because it tends to under-report certain key data, and to produce unreliably high estimates of drop-out behaviour. The Household Survey data generally produces estimates that are statistically more stable, year-on-year, as well as more stable in terms of its internal structure, and therefore seems to be considerably more reliable. On the other hand, the data obtained from schools often contains some interesting detail that could sometimes be difficult to discern from Household Survey data. The report concludes that, at times, the schools-based data is of interest in understanding some of the dynamics of enrolment patterns, but that the Household Survey data proves to be more useful for judging overall averages and trends.

5. While South Africa's education system achieved a significant reach of children of school-going age, actual learning in schools has not kept pace. Cognitive development of children is, of course, not the only indicator of quality, but it is perhaps the most widely discussed, and it is arguably the most important indicator, as it focuses directly on outcomes. On this score South Africa does not do as well as it does on access and participation. All the international and national learner assessments that South Africa participated in are discussed and summarised. The conclusion that children are not learning nearly as much as they should be learning, or could be learning, is inescapable. Some lower-income countries outperform South Africa, even though South Africa is a middle-income country. However, since these countries have lower participation rates, the comparison is difficult in some cases, as these countries tend to test a relative elite sample of children, whereas South Africa tends to test a far more average sample of its children and young people. Nevertheless, the conclusion that much more needs to be done to boost measurable cognitive achievement is clear. On the "outcomes" front, it is important to note that youth literacy has improved and is fairly high (assuming that completing seven grades of education results in literacy), as noted above.

6. With regard to "input" indicators of quality, South Africa fared much better and the situation has improved markedly over the past decade. In fact, it is difficult to imagine scenarios in which more could have been done, given the circumstances. The degree to which equity of measurable input quality has been improved, is also remarkable. The proportion of educators that could be considered as qualified, improved from 64% in 1994 to 94% by 2008. These

improvements largely took place amongst African educators, which is an indication that equity in the distribution of qualifications has improved a great deal. In 1994, there was a 45 percentage point difference between African and white educator qualification levels; by 2008 this gap has been reduced to about 6 percentage points. It is important to note that these figures refer to qualifications in the sense of formal certifications of one kind or another – they do not measure classroom competency, which is an issue that remains a concern for many analysts. The learner: educator ratio was reduced from about 34 in 1994 to 31 in 2007. More importantly, the range between the most-deprived and least-deprived provinces narrowed from a range of 23-to-39 in 1994 to a range of 29-to-33 in 2007.

7. At tertiary level, South Africa's participation rate (using the 20-to-24-year-old age group as the common denominator), which stood at 16% in 2005, was relatively low by international standards, although it had improved from 13% in 2000 to just over 16% in 2007.

8. Gender parity in South Africa is high and stable. In the primary and secondary phases, for example, the parity index (female participation divided by male participation, measured in terms of the gross enrolment rate) stands at almost exactly 1, and has stood there for some years. But this conceals disturbing patterns that are emerging in many other countries as well. For example, in South Africa, boys "over-participate" at primary level, which is most likely due to repetition. Since repetition tends to result in frustration and dropping-out amongst boys more so than amongst girls, girls then "over-participate" at secondary level relative to boys – by about 6%. On the positive side, these gender imbalances appear to be improving, with girls' relative over-participation at secondary decreasing slightly over the past few years. At tertiary level, these patterns continue, with greater female than male participation in general, though with greater male participation in the more technical fields.

9. Overall financing for South African education has been on the decline for the past 12 years. Based on education spending as a share of the gross domestic product (GDP), financing has dropped from 6.4% of GDP in 1994/95 to about 5.3% in 2006/07. However, South Africa still allocates a healthy proportion of its GDP to the education sector, compared to other developing countries. With regard to finance, it is important to mention two caveats. Firstly, spending as a share of GDP has decreased partially because of a steady growth in GDP, and partially because the pace of spending in other social sectors has increased faster than it has in education. Secondly, per learner expenditure, in real terms, has actually increased, because enrolments are approaching peak levels and the growth in the student population of South Africa has not increased as fast as expenditure.

10. Finally, the distribution of expenditure has improved markedly in various respects during the past few years. Firstly, in terms of distribution pertaining to "inputs", there has been an improvement in the budget allocation to items that were previously lagging behind, such as capital spending and materials – from about 10% in 2000 to 20% in 2005. Secondly, there has also been a substantial improvement in terms of equity of distribution between provinces. In 2000, the highest spending province spent some 56% more per learner than the lowest spending province. By 2007, this gap has been reduced to just 17%. The long-term gains in funding equity in South Africa (since the mid-1990s) are even more noteworthy and have few, if any international precedents.

It is envisaged that this report would result in a deeper understanding of the macro issues confronting South African education – the many successes and the remaining challenges. It is also envisaged that, to the degree that there are still uncertainties and debates surrounding some of the data issues, researchers and government officials would continue discussions and that they would rise to the challenge of further improving the present statistical systems.

CHAPTER 1

1.1 Introduction

Since the transition to democracy in 1994, following the end of apartheid, South Africa's education system has experienced significant interventions, aimed at improving education access, quality and efficiency, as well as redressing the imbalances created by historical inequalities. This report provides numerical indicators, which provide an overview of progress towards the achievement of South Africa's education goals of access, equity, quality and efficiency. It does so by examining trends in selected macro-indicators of the South African education system since 1997. This progress report was written within the mandate of monitoring and evaluating achievements within the education system (National Education Policy, Act 27 of 1996), as well as in the spirit of the Education for All and the Millennium Development Goals.

The report serves several purposes. The main purpose is to inform South African researchers and policy-makers about progress made since 1997, compiling as many relevant indicators as is reasonable in one document. South Africa has become an increasingly open society since the end of apartheid, and can readily compare itself to other societies. Therefore, the decision was taken to use, for the purposes of this report, indicators similar to those used in other countries, as well as by the international community, to track educational progress.

A secondary purpose of the report is to serve as a source document for the more general public – a public of researchers and non-governmental organisations (NGOs), who may be motivated to inquire more deeply into certain issues, which are often debated in the media in a somewhat uninformed manner. Some of the discussions and debates surrounding educational development in South Africa, which occasionally surface in the media and in the academic and NGO community, are motivated by the publication of indicators by international bodies. The publication of such indicators provokes internal debate. However, many of the participants in these debates do not understand that sources of data are often difficult (indeed, sometimes intractable) technical issues involved in the construction and interpretation of these indicators.

This is another reason why this report tends to present indicators that are similar to, and sometimes exactly the same as those used for international progress monitoring. Therefore, many of the indicators selected for the report were adopted from international developments in reporting, in particular those related to the goals of Education for All (EFA) and the Millennium Development Goals (MDGs). One final advantage of utilising internationally accepted indicators of access, equity, quality and efficiency, is that they allow for comparison between countries. All this said, the main purpose is, of course, to provide information to South African researchers and policy-makers.

This report provides, for the first time in the history of the Department of Education, a formal and official account of trends in macro-indicators in the education system. Other reports present one-year snapshots, or present trends in a great deal of technical detail. This report fills a niche by presenting all the key indicators in one

single compilation, and using the longest time trends available, given the availability of data.

It may be useful to emphasise that this report is not intended as an in-depth analytical document, which would supplant the kinds of analyses that academics or think-tanks typically engage in. Indeed, academics and think-tank participators are encouraged to use the data for further and deeper analysis. Nor does the report attempt to set out policy proposals for policy-makers, except in some special instances. It is expected that policy-makers, or those working closest to them, could come to their own conclusions.

On the other hand, the report is not a mere compilation of data presented in the form of tables and graphs. Perhaps the best way to summarise the nature of the report, is to state that it aims to serve as a thorough annotation of trend indicators, while it does not pretend to engage in serious policy-analysis or recommendations. The Department trusts that it would serve as a source document for further and more comprehensive research or policy-analysis, as well as contribute to the broadening of direct policy implications, and that this would be undertaken by other interested parties.

1.2 Data sources

The data used in this publication was obtained from various primary and secondary sources. Much of the data obtained from primary sources was provided by educational institutions, including schools, FET colleges and universities.

1.2.1 Primary data sources

- *The Annual School Survey (ASS)*. This survey is conducted annually in the month of March by the Department of Education in all ordinary public and independent schools.
- *The Snap Survey*. This survey is conducted annually by the Department of Education on the tenth day of the school year in all ordinary public and independent schools in the country.
- *The Senior Certificate Examination data*. This data was obtained from the Department of Education.
- *The Personnel and Salary System* (PERSAL). This data was obtained from the central government's Personnel and Salary System.
- *Mid-year population estimates for various years*, converted into single-year age-groups, supplied by Statistics South Africa.
- *The national audits of the Further Education and Training Sector* for 1998, 2000 and 2002.
- *Systemic evaluations*. This is a national learner assessment programme, conducted by the Department of Education, which has thus far focused on Grades 3 and 6.

1.2.2 Major secondary data sources

- *The Education for All Global Monitoring Report*. This is an annual UNESCO publication.
- *EduSource Data News*, which is a quarterly publication of the Education Foundation Trust.
- The *Education Labour Relations Council* (ELRC), 2005 data.
- *Monitoring Learning Achievement* (MLA). This is a project of the UNESCO/UNICEF Education for All Campaign, which was conducted in South Africa during 1999, in conjunction with other African countries.
- The *Southern and Eastern Africa Consortium for Monitoring Educational Quality* (SACMEQ). This is a collaborative network of education ministries in Southern and Eastern Africa.
- *The Trends in International Mathematics and Science Study* (TIMSS). This is a project of the International Association for the Evaluation of Educational Achievement (IEA).
- *The Progress in the International Reading Literacy Study* (PIRLS). This is an assessment conducted under the auspices of the International Association for the Evaluation of Educational Achievement (IEA).
- *Provincial budget statements*, produced annually by the National Treasury.
- *Inter-governmental fiscal reviews*, produced annually by the National Treasury.
- *Budget reviews*, produced annually by the National Treasury.
- *Quarterly reviews*, produced annually by the South African Reserve Bank.
- *The Ministerial Report on Literacy*, published by the Department of Education.
- *The Ministerial Report on Learner Retention in the South African Schooling System*, published by the Department of Education.
- *The Central Statistical Services*, Statistics South Africa.
- *The General Household Survey* (GHS). This is a sample survey of approximately 30 000 households that Statistics South Africa has been conducting annually since 2002. Other household surveys, such as the *Labour Force Survey* and the *October Household Survey*, conducted by Central Statistical Services, which was the agency predecessor to Statistics South Africa, have also been used.

A formal definition of all key variables used is included in Appendix A.

1.3 Selection of comparator countries

Throughout this report, a set of comparator countries is used, for the sake of comparing South Africa against key international benchmarks. Choosing comparator countries is more of an art than a science, and is never an easy process. A useful guideline to follow is to base the decision for choosing the comparator countries on clearly stated criteria. In this report, two simple rules were followed: Firstly, the selected countries are similar to South Africa in terms of GDP per capita, because this is a general economic and social development consideration. Secondly, countries in the Southern African Development Community (SADC) were considered, because of cultural and geographical similarities. The compilers of this report believe that this choice is broadly defensible on grounds of transparency and clarity. Readers are invited to use other comparisons should they wish to do so, as almost all of the international data used in this report are available on the Internet.

1.4 A note on population data and method

Throughout this report, much use is made of population estimates, provided by Statistics South Africa. Many of the key access and completion indicators depend on estimates of population numbers for singe-year age groups, or for age groupings that are specific to the education sector, such as the age group 7-to-13. These projections are technically complex and specialised. The indicators that use these projections typically use the population numbers in a denominator, and (typically) some form of enrolment data in the numerator.

The latter data comes from schools' reports to the provincial education departments. Therefore, the data in the denominators often come from a completely different source than the data in the numerators. For example, if the number of children aged 9 who are enrolled constitute one million, and the population of 9-year-olds is 1.1 million, then the ASER would be 90.9%, and the number "one million 9-year-olds enrolled", would have come from schools, whereas the number "1.1 million 9-year-olds in the population" would have come from demographic analyses and projections based on censuses and surveys. Now, it is clear that if schools under-report, and they often do, particularly with regard to the more specialised numbers, then this could create a problem. The results would be downwardly biased, and perhaps even by an unknown number.

An alternative way to calculate many of these indicators, also used in the report, is to work with data from a Household Survey. In this case, one relies on simply tabulating answers to questions, such as: "Is your 9-year-old child enrolled in school?" The ratio is obtained by dividing the number of "Yes" answers, with the total number of responses.

An important advantage of basing calculations on a survey, is that the data sources for both the numerator and the denominator are the same, and it is less likely that attendance data will be omitted, because the enumerator knows that the child exists. Furthermore, surveys are often less biased than incomplete returns from schools. The latter could be biased, and worse, the nature of the bias is usually unknown. For example, it may be the schools with the highest repetition rates that do not report their repetition data – but this is an unknown factor. Or it may be the more affluent and a greater number of urban schools that refuse to report data pertaining to race – but again the pattern of missing data cannot be ascertained.

A problem then arises if the indicators produced, using both approaches, differ from each other, either in their values at any given point or, just as importantly, in the trends that they indicate. Supposing that, as appears to happen widely in South Africa, the first type of indicator (schools data plus demographic projections) produces lower results. It is not known whether the source of the problem is an under-estimated numerator or an over-estimated denominator or both.

Care was taken with this report to compare the population dynamics inherent in the surveys used (when surveys were used), with the population dynamics inherent in the projections (when schools-plus-projection data) was used. The findings suggest that, in general, the problem does not lie with the demographic numbers – with some possible minor caveats. The population projections used tend to be a little more conservative about the age distribution of the youth. They tend to produce results, in general, that assume for example that there are more young people, aged 7 or 8 than 17 or 18 in the age group 7-to-18, than do the Household Surveys.

To be specific, in the entire period covered by this report, the population projections tend to assume that there are approximately 6 000 more children in each single-year age group than in the previous single-year age group – that is, about 6 000 more 9-year-olds than 8-year-olds and, equally, 6 000 more 10-year-olds than 9-year-olds, etc., whereas the surveys tend to indicate that there are about 1 600 fewer children in each single-year age group than in the previous single-year age group. This could have a slightly repressing effect on results produced, using the schools-plus-population projection methods that pertain to older children, such as completion rates, because the numbers of older children, in any given year, as indicated by the population projections, might be a little higher than they should be, according to the surveys. Or it could have an elevating effect on numbers pertaining to younger children, such as the intake rate.

However, it is the verdict of this report that these differences are only minor. The problem must therefore arise with problematic returns from schools – a problem highlighted in the report of the Ministerial Committee on Learner Retention in the South African Schooling System (Department of Education, 2008: 20-25). It is important to take cognisance of this as the background to everything that follows, but also in its own right, because it suggests a need to continue working on the accuracy of school returns.

CHAPTER 2: INDICATORS OF ACCESS TO EDUCATION

2.1 Introduction

In South Africa, the right of access to education has only been constitutionally guaranteed since 1994, with the advent of a democratic government. In terms of the Constitution (RSA, 1996a), everyone has the right to:

> (a) *a basic education, including adult basic education; and*
>
> (b) *further education, which the state, through reasonable measures, must make progressively available and accessible.*

The South African Schools Act (RSA, 1996b), makes provision for the promotion of access, quality and democratic governance in the schooling system. The Act, for the first time, made education compulsory for learners from age 7 to age 15, or up until the end of Grade 9, whichever came first.

Provisions for age requirements for admission to any public ordinary school (DoE, 1998), which were implemented in 2000, set parameters and guidelines for access to schooling by stipulating that learners could only be admitted to Grade 1 in the calendar year in which they have turned 7 and to Grade R in the calendar year in which they have turned 6. They also provide age-grade norms for all levels of schooling. According to this provision (DoE, 1998), the statistical age norm per grade was the grade number, plus six, making 7 to 13 years the appropriate age band for primary school, and 14 to 18 the appropriate age band for secondary school.

However, a subsequent amendment to this policy (RSA, 2002) lowered the ages at which learners could be admitted to Grade R and Grade 1, although the compulsory schooling age remained unchanged. From the beginning of 2004, children who were 4 turning 5 by 30 June in the year of admission could enrol for Grade R, and those who were 5 turning 6 by 30 June in the year of admission could enrol for Grade 1[1].

Since 2004 then, with learners being able to enrol for Grade 1 at either 5 turning 6, or 6 turning 7, there has been a theoretical dual age-grade norm for both primary and secondary education levels. The primary level caters for learners between the ages of 6 or 7 and 12 or 13, and the secondary level caters for learners between the ages of 13 or 14 and 17 or 18. For the sake of consistency though, throughout this report, the following ages are used when looking at all the indicators of access:

- 7 is used as the appropriate age of entry and as enrolment age for Grade 1;
- 7-to-13 years is used as the appropriate age band for primary school;
- 14-to-18 is used as the appropriate age band for secondary school; and
- 7-to-15 is used as the appropriate age band for compulsory schooling or basic schooling.

[1] *For international readers it is useful to note that the school year in South Africa coincides with the calendar year, as it starts in January and ends in December.*

The following indicators of access are covered in this report:

- Apparent intake rate
- Net intake rate
- Gross enrolment rates
- Net enrolment rates
- Age-specific enrolment rates
- Transition rates
- Completion rates

2.2 Intake rate

An important factor that impacts on learner participation at the various levels of school, is the age at which children enter Grade 1 for the first time. Since 1996, a series of regulatory mechanisms have influenced the age at which children enter Grade 1 (see the Introduction to this chapter – Section 2.1).

Since 2004, the theoretical entry ages for Grade 1 are 5, 6 and 7. In the section below, which deals with learners entering Grade 1 for the first time, the new intake into Grade 1 each year is compared to the population of 7-year-olds for each year. This age is referred to as "the appropriate age" for intake and enrolment in Grade 1. Since 2004, the cut-off date for intake into school is exactly in the middle of the year, so that half the children enrolling for the first time for Grade 1 should be turning 6 and half of them should be turning 7. Because the number of 6 and 7-year-olds in the South African population is almost identical, and has been for many years (see Table 77 in Appendix B), it makes no difference if intake (or enrolment) into Grade 1 is compared to either the 6 or 7-year-olds in the population. For the sake of consistency, however, 7 was chosen as the appropriate age for all the years.

2.2.1 Entry of learners into Grade 1

Between 1997 and 2005, over one million learners entered Grade 1 each year for the first time, with the exception of 2000, which was the year that the age-grade regulations were implemented, when less than a million children (923 463) entered school for the first time (see Table 1).

Table 1: Number of learners entering Grade 1 for the first time: 1997 to 2005

Age	1997*	1998	1999	2000	2001	2002	2003	2004	2005
5	54 842	4 1340	28 846	N/A	N/A	212 067	185 50	30 434	37 836
6	575 302	47 8843	505 347	221 425	247 127	358 508	453 586	410 372	344 386
7	315 445	32 8386	439 339	530 560	595 737	433 994	556 399	530 083	570 297
8	96 489	102 183	112 990	109 668	108 690	106 270	101 079	132 536	113 745
9	36 948	38 316	40 382	37 207	33 383	31 092	27 846	35 470	52 722
10	16 739	16 148	15 851	14 250	12 861	12 383	12 218	12 023	13 042
11	6 946	6 073	6 150	5 034	4 851	6 023	6 192	3 891	5 676
12	3 875	3 316	3 291	2 995	2 307	4 025	4 577	2 073	4 138
13+	3 347	2 671	2 744	2 324	1 402	4 219	6 152	1 695	5 488
Unknown	12 511	2 519	2 309	N/A	N/A	N/A	1 362	1 107	2 860
Total	1 122 444	1 019 795	1 157 249	923 463	1 006 358	1 168 581	1 187 961	1 159 684	1 150 190

Source: Data obtained from Department of Education data bases.
**Note: Data for 1997 is for public schools only. Data for independent schools was not available for that year.*
N/A: Not available.

Of the learners entering Grade 1 for the first time, the majority (between 68% and 85%) were 6 or 7 years old (see Table 2). However, it would appear from Table 2 that, during this period, only a very small proportion of learners entering Grade 1 for the first time was actually under-age (i.e. below age 6). The only exception was in 2002, when 18% of learners were recorded as being younger than 6 years of age. This deviation, however, is considered to be as a result of a data error. It is possible that the proportion of under-aged learners entering Grade 1 could be greater than those recorded in Table 2. Schools may be reluctant to admit that they are enrolling very young children. As a result, under-aged children may be recorded as being older than they really are.

Another problem is that, in some years (for example in 2000 and 2001), the survey form collecting the information did not make provision for learners who were 5 years old or younger, enrolling into school for the first time. Therefore, it is possible that those learners enrolling for school, who were younger than 6, were recorded as being 6 years of age.

What is cause for concern, however, is the large number of over-aged children (aged 8 years and older) supposedly starting school for the first time – ranging from 13% to 19% of the total of first-time entrants during the period 1997 to 2005. While there are undoubtedly some learners who are starting school for the first time when they are 8 years or older, it is highly unlikely that such a large percentage of over-aged children are continually being enrolled for the first time, year upon year. With intake rates of over 100% since 1997 (with the exception of 2000 and 2001), as indicated in Figure 1, most of the over-aged children must have been taken into school at some point. It is more likely that many of these over-aged children are repeating Grade 1, after dropping out in the middle of Grade 1 in a previous year, but who are then reported as new intakes when they re-enrol for Grade 1.

This situation is quite common in developing countries. According to UNESCO (UNESCO: IEB, 1996, 9), there is plenty of evidence to indicate that repetition is underestimated, because children who drop out of school in the middle of the year, and re-enrol for the same grade again the next year, are often counted as new entrants in official statistics, rather than as repeaters, thus leading to an underestimation of repetition data. These children "bulk up" the initial reported

enrolment in, e.g. Grade 1, when compared to Grade 2, producing an apparent drop-out problem between these two grades. The issue of repeater under-count is looked at in the section that deals with internal efficiency in education.

Table 2: Percentage of learners, entering Grade 1 for the first time, by age: 1997 to 2005

Age	*1997	1998	1999	2000	2001	2002	2003	2004	2005
<6	4.9	4.1	2.5	0.0	0.0	18.1	1.6	2.6	3.7
6	51.3	47.0	43.7	24.0	24.6	30.7	38.2	35.4	27.2
7	28.1	32.2	38.0	57.5	59.2	37.1	46.8	45.7	51.5
>7	14.6	16.5	15.7	18.6	16.2	14.0	13.3	16.2	17.6
Unknown	1.1	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0
Total	100	100	100	100	100	100	100	100	100

Source: Data obtained from Department of Education data bases.
** Data for 1997 is for public schools only. Data for independent schools was not available for that year.*

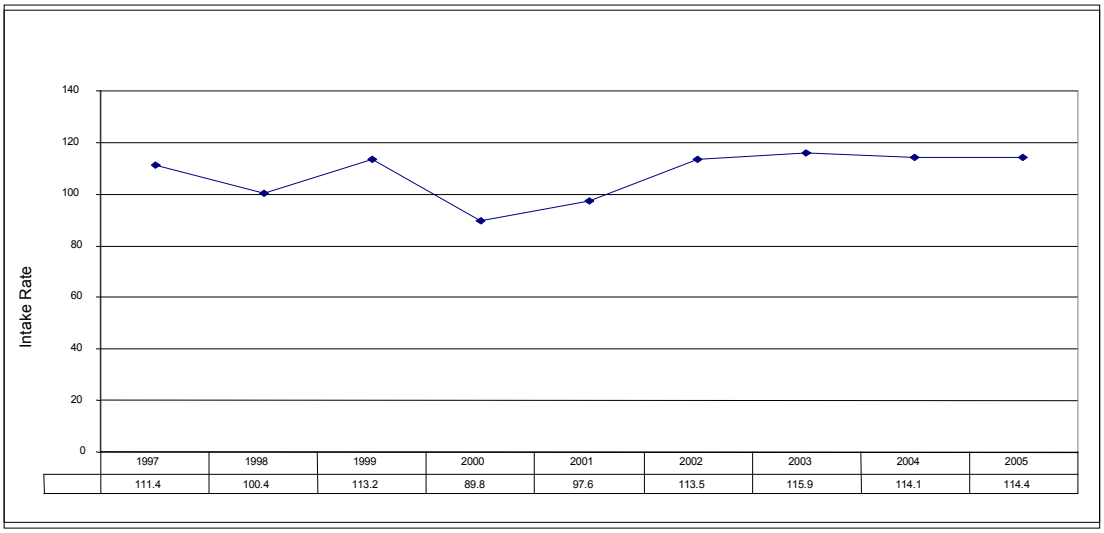
2.2.2 Apparent intake rate

The apparent intake rate (AIR), which is also referred to as the gross intake rate, measures the total number of new entrants into Grade 1, regardless of age, as a proportion of the total number of children in the population who are 7 years of age. (For a discussion on the "appropriate" age for entry into Grade 1, see the section on age of entry into Grade 1). The AIR reflects the degree of access to the first year of schooling and the capacity of the primary education level to accommodate all those children entering school for the first time.

In 2005, the AIR in South Africa amounted to 114% (see Figure 1). For five of the eight years between 1997 and 2005, the AIR ranged between 90% and 116%, indicating that large numbers of children, who were enrolling at school for the first time, were either older or younger than the official school-going age or, more likely, that repeaters were inappropriately reported as being new entrants. In 2000, the year in which the age-grade regulations were implemented, the AIR dropped to 90%. The effects of this regulation were still evident in 2001. By 2003, however, it appeared as though the regulation was no longer being strictly implemented, and the AIR increased to 116%. The AIR of 100% in 1998 is most likely to be the result of a data error, as it is much lower than the AIR values recorded in 1997 (111%) and 1999 (113%). As can be seen from Figure 1, the AIR generally tends to be greater than 110%.

It is important to note that the AIR cannot be greater than 100% on an ongoing basis, unless repeaters are misreported as new entrants. In a country where access to schooling expands substantially and suddenly, with very broad sections of previously totally unattended-to populations being brought into school, the AIR could be greater than 100% for a few years. However, according Dr Luis Crouch, who served as a consultant to the Department of Education, the AIR in South Africa was higher than 100% for many years, beginning in the 1980s – suggesting misreporting.

Figure 1: Apparent intake rate (AIR): 1997 to 2005



Source: New Entrants into Grade 1: EMIS data supplied to the UNESCO Institute of Statistics (UIS); Population Data: Mid-Year Population Estimates converted to Single-Year Age Groups, supplied by Statistics South Africa.
Note: Data for 1997 is for public schools only. Data for independent schools was not available for that year.

The inefficient intake of children who are older or younger than the official school-going age, is common in many middle-income countries. Table 3 compares South Africa's AIR to that of a selected group of countries.

As noted, these countries were chosen because they either have a similar gross national product (GNP) per capita to South Africa (see Appendix A), or they are member countries of the SADC. As may be seen from the Table 3, eight of the 13 countries have AIRs of more than 100%. Therefore, the issue of misreporting is hardly unique to South Africa.

Table 3: Apparent intake rate in selected countries

Country	AIR
Argentina	110
Botswana	105
Brazil	117
Gabon	94
Jamaica	92
Lesotho	137
Namibia	99
Panama	119
Russian Federation	97
South Africa	**114**
Turkey	91
Uruguay	106
Venezuela	101

Source: South African data calculated from Department of Education data bases; Data for other countries from UNESCO, 2006.
Note: In the case of some countries, the latest available information dates back to 2003, and for others it dates back to 2004 or 2005.

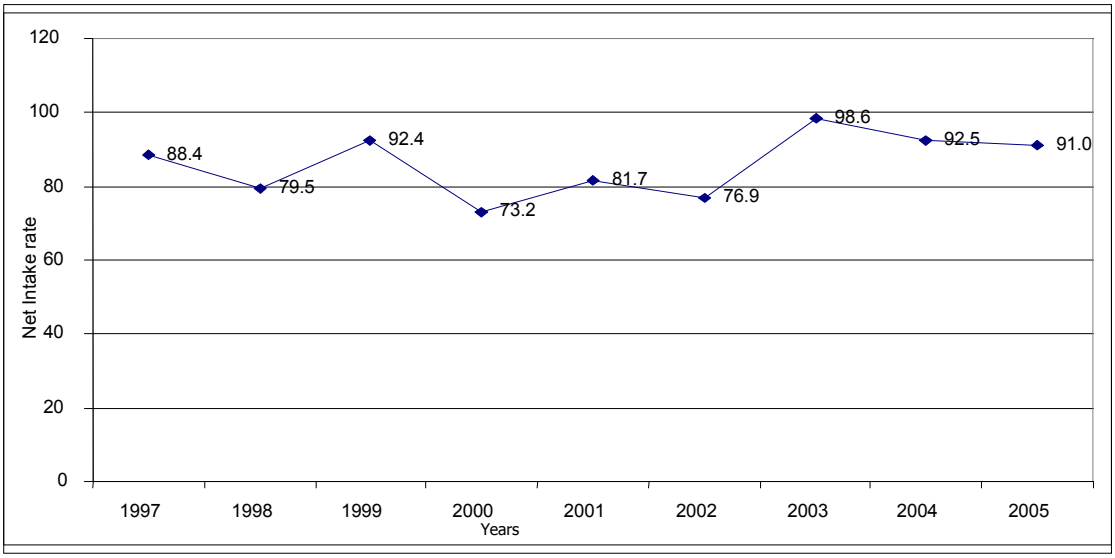
2.2.3 Net intake rate

The net intake rate (NIR) measures those learners of the official entry age entering Grade 1 as a proportion of the total number of children in the population of official school entry age. Because of the dual entry age discussed earlier, in this section on NIR, the intake of 6 and 7-year-olds into school is being examined. This is compared to the number of 7-year-olds in the population. (See Section 2.1, which deals with the age of entry into education.)

As is indicated in Table 2, some 21% of all children enrolled into school for the first time in 2005, did so when they were younger than 6 years or older than 7 years. As a result, the NIR is less than 100% in 2005.

As can be seen from Figure 2, there is no discernible trend in the net intake rate – it has fluctuated over the reporting years. In 2000, the NIR dropped considerably, as many children who turned 7 in that year had enrolled into school as 6-year-olds before 2000. Since 2003, the NIR has been above 90%, indicating that progress is being made in enrolling appropriately-aged first-time entrants into Grade 1.

Figure 2: Net intake rate of 6 and 7-year-olds: 1997 to 2005



Source: New Entrants into Grade 1: EMIS data supplied to the UNESCO Institute of Statistics (UIS); Population Data: Mid-Year Population Estimates Converted into Single-Year Age Groups, supplied by Statistics South Africa.
Note: Data for 1997 is for public schools only. Data for independent schools was not available for that year.

UNESCO (2006) provided comparative information on the NIR for various countries. Table 4 compares South Africa's NIR with that of a few other countries. In comparison to the selected countries, for which information is available, South Africa has a high intake rate into schools of children of the official school-going age. Only Argentina and South Africa recorded NIRs of higher than 91%, while the NIR for Panama was 88%. All the other countries featured have an NIR of lower than 75%.

Table 4: Net intake rate in selected countries

Country	NIR
Argentina	91
Jamaica	74
Lesotho	61
Namibia	55
Panama	88
South Africa	**91**
Turkey	72
Venezuela	63

Source: South African data calculated from Department of Education data bases; data for other countries from UNESCO, 2006.
Note: With regard to the countries in this table, the latest available information was either for 2003, 2004 or 2005.

2.2.4 Gender parity with regard to AIR and NIR

UNESCO (2004) advises that gender parity could be considered to have been achieved if the Gender Parity Index (GPI) is between 0.97 and 1.03. Table 5 and Table 6 indicate that there is a disparity in favour of male children in both the AIR and the NIR, as there appears to be a higher proportion of males than females entering school each year, and male children are slightly more likely to enter at the appropriate age than female children.

In terms of AIR, gender parity was achieved in only three of the nine years for which information was available, namely 1998, 1999 and 2004 (see Table 5). There is, however, greater gender parity in terms of children enrolling for Grade 1 at the appropriate age. According to Table 6, the years 2003 and 2005 were the only years between 1997 and 2005 that gender parity was not achieved.

The skewed distribution of learners according to gender could be explained by the fact that male children are actually more likely to repeat at a higher frequency than females, and they then get to be reported as new entrants rather than as repeaters. In that sense, the higher values for males in these indices are actually a sign of poor performance on the part of males.

The skewed distribution in favour of males could also possibly be attributed to concerns by parents for their daughters' safety as they walk to and from school (Colclough et al. 2000).

Table 5: Apparent intake rate by gender: 1997 to 2005

	Female	Male	Gender Parity Index
1997	109.2	113.5	0.96
1998	98.9	101.8	0.97
1999	111.4	115.0	0.97
2000	87.2	92.4	0.94
2001	95.3	99.9	0.95
2002	111.0	115.9	0.96
2003	112.0	118.1	0.95
2004	111.4	113.8	0.98
2005	110.0	118.8	0.93

Source: New Entrants into Grade 1: EMIS data supplied to the UNESCO Institute of Statistics (UIS); Population Data: Mid-Year Population Estimates Converted into Single-Year Age Groups, supplied by Statistics South Africa.
Note: Data for 1997 is for public schools only. Data for independent schools was not available for that year.

Table 6: Net intake rate of 6 and 7-year-olds by gender: 1997 to 2005

	Female	Male	Gender Parity Index
1997	87.2	89.6	0.97
1998	78.8	80.1	0.98
1999	91.7	93.1	0.99
2000	72.0	74.3	0.97
2001	80.9	82.6	0.98
2002	75.7	78.2	0.97
2003	96.2	100.0	0.95
2004	92.0	93.0	0.99
2005	88.0	94.0	0.94

Source: New Entrants into Grade 1: EMIS data supplied to the UNESCO Institute of Statistics (UIS); Population Data: Mid-Year Population Estimates Converted into Single-Year Age Groups, supplied by Statistics South Africa.
Note: Data for 1997 is for public schools only. Data for independent schools was not available for that year.

2.3 Gross enrolment rate (GER)

The gross enrolment rate (GER) measures enrolment, regardless of age, at a specific level of education, as a proportion of the appropriately-aged population for the given level of education. A GER of over 100% could be recorded. A GER that is greater than 100%, or one that is greater than the net enrolment rate, is usually due to the inclusion of over-aged and under-aged learners in the system, either as a result of early or late entry into the education system, or as a result of repetition (UNESCO Institute of Statistics, undated).

2.3.1 Gross enrolment rate in Early Childhood Development (ECD)

The Department of Education's approach to ECD provisioning, targets children from birth to age 6 years, with particular emphasis on education provisioning for Grade R. The Department of Education plans to gradually phase in the public provision of Grade R as part of the primary education level, so that by 2010, all children entering Grade 1 would have participated in an accredited reception year programme (Education White Paper 5 on Early Childhood Development, 2001), mainly in the

public sector. Current private energy devoted to Grade R could then be devoted to pre-Grade R ECD.

Partially because ECD is the responsibility of several government departments, and partially because the lines between formal and informal provisioning are not that clear, it is difficult to obtain reliable ECD data. To date, very little data has been made available on the many private and community-based ECD centres that provide ECD, particularly to the pre-grade R group. As a result, the data from different sources could not be compared to each other with a high level of reliability.

It is highlighted in the preceding paragraphs that the Department of Education has set a 100% access target for Grade R by 2010. As a result of the phasing in of more public Grade R facilities, in order to meet this goal by 2010, there has been a huge expansion in the number of learners enrolling for Grade R at sites attached to public and independent schools. Between 1999 and 2007, Grade R enrolment increased by 212%, from 156 292 learners in 1999 to 487 525 learners in 2007 (Table 7).

Table 7: Enrolment by gender in Grade R at sites attached to public and independent ordinary schools: 1999 to 2007

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Female	78 574	113 607	121 076	139 708	157 855	178 643	202 607	219 969	242 409
Male	77 718	113 024	120 449	139 018	157 532	177 844	202 590	221 652	245 116
Total	156 292	226 631	241 525	278 726	315 387	356 487	405 197	441 621	487 525

Source: Department of Education 2001b, 2002, 2003a, 2004, 2005a, 2005b, 2006a, 2006b, 2007.
Note: Data typically includes only learners in Grade R at ECD sites attached to schools.

The increase in Grade R enrolments indicates that the GER for an "official" Grade R (or those Grade R classes attached to schools) has increased from 15% of the 6-year age group in 1999 to 49% in 2007 (see Table 8). As this figure excludes Grade R learners who are enrolled in stand-alone and less formal ECD sites, the real GER, at any point in time, is actually much higher than is indicated in this table, but the table does indicate an important trend.

Table 8: GER by gender in Grade R: 1999 to 2007

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Female	15%	22%	24%	27%	31%	35%	41%	44%	49.0%
Male	15%	22%	23%	27%	31%	35%	40%	44%	48.9%
Total	15%	22%	23%	27%	31%	35%	40%	44%	48.9%

Source: Department of Education 2001b, 2002, 2003a, 2004, 2005a, 2005b, 2006a, 2006b, 2007; Mid-Year Population Estimates, Census 2001.
Note: Data typically includes only learners in Grade R at ECD sites attached to schools.

With the expansion of Grade R, access to education for children aged 5 and 6 improved rather dramatically. Table 9 indicates that the proportion of 5-year-olds enrolled in an educational institution increased from 40% in 2002 to 62% in 2006. Over the same period, the proportion of 6-year-olds in the population, enrolled at an educational institution, increased from 70% to 84%.

The decrease in the age of enrolment for Grade R from 2004 indicates that children, who are 4 turning 5, can enrol for Grade R. This has resulted in a considerable

increase in the proportion of 4-year-olds enrolled at an educational institution, from 19% in 2002 to 37% in 2006 (see Table 9).

Table 9: Age-specific enrolment rate amongst 4, 5 and 6-year-olds by gender: 2002 to 2006

		2002	2003	2004	2005	2006
4-year-olds	Male	17%	29%	27%	36%	37%
	Female	21%	26%	30%	38%	38%
	Total	**19%**	**27%**	**28%**	**37%**	**37%**
	GPI	82	1.13	0.89	0.95	0.98
5-year-olds	Male	41%	50%	52%	60%	63%
	Female	39%	49%	56%	60%	62%
	Total	**40%**	**50%**	**54%**	**60%**	**62%**
	GPI	0.95	0.98	1.08	1.00	0.98
6-year-olds	Male	69%	74%	82%	87%	84%
	Female	71%	79%	84%	85%	85%
	Total	**70%**	**77%**	**83%**	**86%**	**84%**
	GPI	1.03	1.07	1.02	0.98	1.01

Source: Statistics South Africa: General Household Surveys: 2002 to 2006

There are two reasons why the proportion of children aged 6 (or even 5), enrolled at an educational institution, is so much greater than the proportion of children enrolled in Grade R, as indicated in Table 8. Firstly, children often enrol into Grade 1 due to a lack of Grade R. Therefore, in a certain sense, the country is already providing more Grade R-equivalent education, but inappropriately in Grade 1, which is a situation that has existed for a long time. Secondly, Table 8 only reports Grade R enrolments at sites attached to primary schools, while ECD is also offered at stand-alone sites.

Data from the General Household Surveys since 2002, provides information on the number of children, 6 years of age and younger, who are enrolled at crèches, pre-school facilities and ECD centres, and excludes those enrolled for Grade R at sites attached to schools. As may be seen in Table 10, approximately 1,5 million children are enrolled at ECD centres. While the number increased since 2002, it appears to have stabilised during the past few years. The increase in the provisioning of ECD has resulted in the fact that enrolment for ECD, as a proportion of the population aged 3 to 5, increased from 29.7% in 2002 to 47.4% in 2007, which was slightly down from a high of 50.1% in 2006.

Table 10: Gross Enrolment Rate at ECD sites: 2002 to 2007

	2002	2003	2004	2005	2006	2007
Enrolment	911 699	1 304 885	1 253 969	1 407 349	1 561 808	1 416 790
Population 3 – 5	3 072 646	3 080 945	3 045 059	3 013 112	3 116 748	2 991 830
GER	29.7	42.4	41.2	46.7	50.1	47.4

Source: Statistics South Africa: General Household Survey: 1999 October.

The country's ECD policy goal (ECD White Paper 5) states that, by the year 2010, 100% of children would have had Grade R experience, and about 75% of those would have gained it at some form of officially (publicly) funded site. This target for public subsidisation was set with equity and poverty-fighting goals in mind, the assumption being that for the top 25% of income earners, it was equitable to expect

private self-provisioning of ECD. If the trends indicated in Table 8 for the period 2003 to 2006 continue, by 2010 some 65% of children would be enrolled at school-attached Grade R sites.

Since taking into consideration Grade R provisioning only at sites attached to schools is very exclusionary, it is likely that the target of 100% provisioning, with 75% of this target being publicly subsidised, would be met if current trends continue.

Similarly, an extrapolation of the trends indicated in Table 10 indicates 100% coverage for 6-year-olds by 2010, and nearly 100% for 5-year-olds. The education system, relying as it does on administrative data, tends to underestimate provisioning of ECD. South Africa is already, in general, providing more ECD than it typically acknowledges to itself, and hence to international organisations.

However, all that said, the system needs to improve its data collection, so as to ensure that the ECD goal is tracked more accurately. Given the importance of this data and the difficulty that the official data system, Education Management Information System (EMIS) experiences in tracking ECD provisioning that is not attached to a school, it seems feasible to request that Statistics South Africa re-initiate data-gathering at ECD options, which are being used by the population, via the Household Surveys.

Furthermore, the fact that extrapolation of trends suggests that the goals will be met, does not mean that they will be met *automatically*. Efforts must therefore be kept up to ensure that this happens.

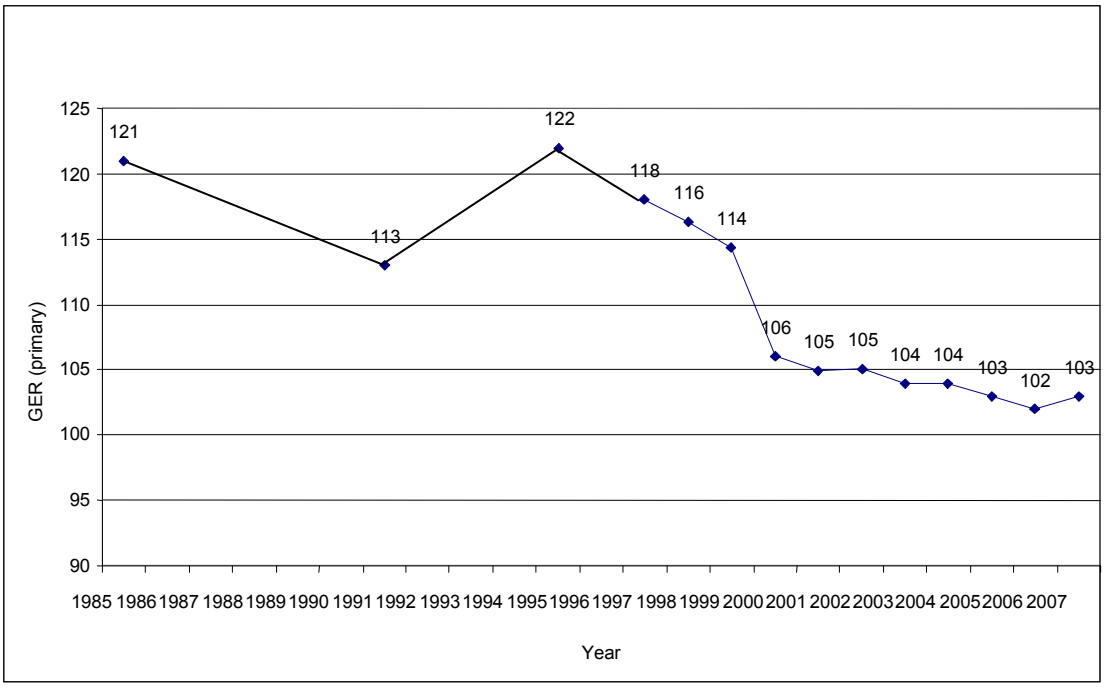
2.3.2 Gross enrolment rate at primary education level

If access to education is to be meaningful, children have to remain in school long enough to acquire the skills and knowledge that will enable them to function in society, to continue with higher levels of education and to make the transition into the workplace.

Figure 3 indicates that access to primary schooling (Grades 1 to 7) is very extensive and has been for many years, with GERs of over 100% in the primary schooling system being a reality for a long time. GERs over 100% can be attributed to the inclusion of learners who are not of the appropriate age, which is largely due to repetition. Between 1985 and 1991, the GER for primary school education declined, most likely because of the school unrest that took place during the 1980s (Shindler, 2005:11).

However, the increased provisioning of education by the homeland authorities during the 1980s, ensured that the primary GER remained well over 100%.

Figure 3: Gross enrolment rate at primary school level between 1985 and 2007



Source: 1985 data from Perry and Arends, 2004; 1991 data from Bot and Shindler, 1997; 1995 data from Crouch and Mabogoane, 1997; 1997 to 2001 calculated from Department of Education data bases (10th school-day survey) and Mid-Year Population Estimates by Single-Year Ages provided by Statistics South Africa; 2002 data from DoE, 2004; 2003 data from DoE 2005a; 2004 data from DoE 2005b; 2005 data from 2006a; 2007 data from DoE 2007d.

After 1991, access to primary school education increased steadily. This was driven mainly by political stability and the focus on the right of access to basic education by the new democratically elected government (South African Schools Act 84 of 1996). By 1995, the GER for primary schooling reached 122%. The introduction of regulations that provided age-grade norms for all levels in the schooling system, resulted in an improvement of the through-put rates, as well as in the normalisation of the system. This, in turn, resulted in a steady decline in GER, from a high of 122% in 1995, to 103% in 2007 (see Figure 3).

All of this most likely represented a decrease in repetition from extremely high levels in the mid-1990s, to more reasonable levels. Furthermore, the steady decline of the GER over this period is indicative of the fact that the implementation of the admissions policy in the year 2000 was effective in normalising the system.

In comparing South Africa's primary level GER with that of some selected countries, it is evident that over-enrolment in primary schools, of children who are older and younger than the appropriate schooling age, is not uncommon. In fact, South Africa's lower GER indicates that it has less over-enrolment than many of the other countries indicated in Table 11.

Table 11: Gross enrolment rate in primary schools in selected countries

Country	GER
Argentina	112
Botswana	105
Brazil	141
Gabon	130
Jamaica	95
Lesotho	131
Namibia	101
Panama	112
Russian Federation	123
South Africa	**104**
Turkey	93
Uruguay	109
Venezuela	105

Source: UNESCO, 2006; data for South Africa for 2004 from DoE 2005b.
Note: In the case of some countries, the latest available information dates back to 2003, and for others it dates back to 2004.

2.3.3 Gross enrolment in secondary education

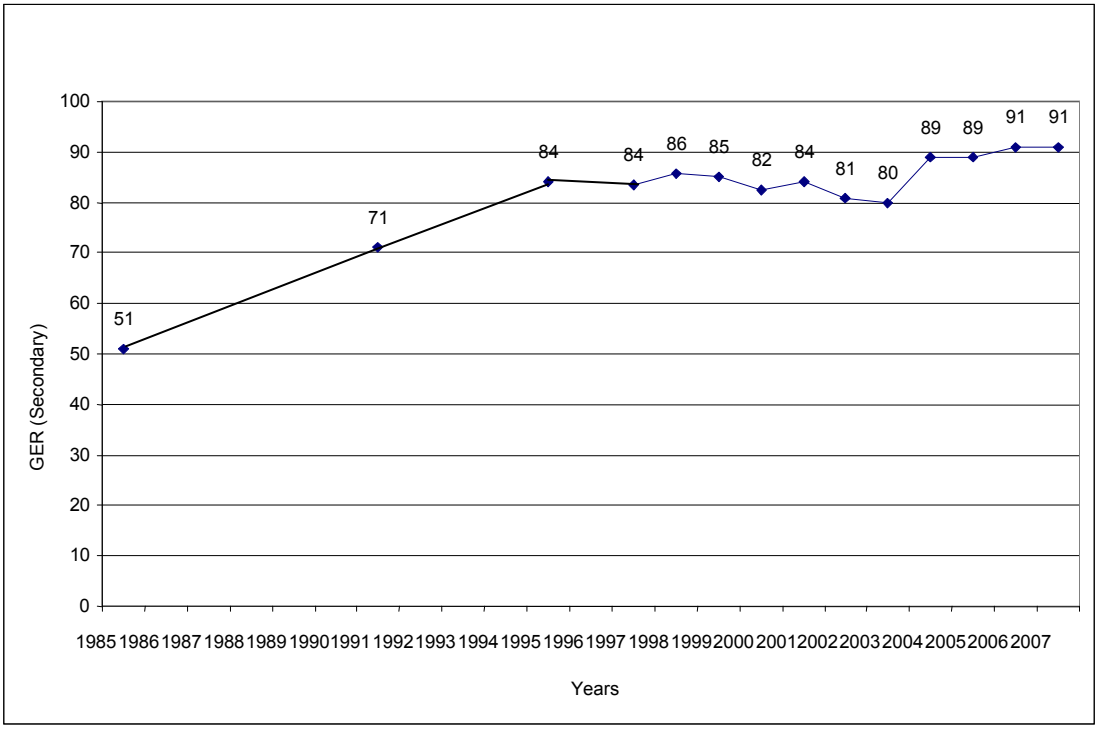
Overall participation in secondary education, both in public and private institutions, increased significantly over a 22-year-period: from 51% in 1985 to 91% in 2007 (Figure 4). A marked increase in the participation rate had been recorded between 1985 and 1995 in particular, after which it progressed relatively slowly from 81% in 1995 to 91% in 2007.

Generally, education systems develop in accordance with logistical or "S-shaped" growth patterns.

At first, growth is difficult while a specific type or level of education is in development, with the result that it is difficult to train sufficient teachers and provide the necessary infrastructure for it. Growth then accelerates.

Eventually, growth slows down again, as the last, hard-to-reach learners are slowly brought into the system. This data (in Figure 4) represents enrolment in ordinary secondary schools only, and ignores the enrolment of learners who are finishing a Grade 12-equivalent education in Further Education and Training (FET) colleges – an option that expanded considerably during the late 1990s and early 2000s.

Figure 4: Gross Enrolment Rate at secondary school level between 1985 and 2007



Source: 1985 data from Perry and Arends, 2004; 1991 data from Bot and Shindler, 1997; 1995 data from Crouch and Mabogoane, 1997; 1997 to 2001 calculated from Department of Education data bases (10th school-day survey) and Mid-Year Population Estimates by Single-Year Ages, provided by Statistics South Africa; 2002 data from DoE, 2004; 2003 data from DoE 2005a; 2004 data from DoE 2005b; 2005 data from 2006a; 2007 data from DoE 2007d.

If one includes learners who are finishing a Grade 12 equivalent education in FET colleges, the GER for secondary education increases substantially. For example, as Table 12 indicates, while the secondary school GER amounted to 89% in 2005, if one includes enrolment into FET colleges, the GER increases to 94%.

Table 12: Gross Enrolment Rate for secondary-level education, in relation to FET colleges enrolment: 1997 to 2005

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Secondary GER (excluding FET enrolment)	84	86	85	82	84	81	80	89	89
Secondary GER including FET enrolment	N/A	89	N/A	87	N/A	91	92	94	94

Source: Calculated from Department of Education data bases (10th school-day survey) and Mid-Year Population Estimates by Single-Year Ages, provided by Statistics South Africa.
N/A: Not available.

South Africa ranked fourth in learner participation in secondary school education amongst the 12 selected comparator countries in 2003/04 (Table 13). Furthermore, South Africa's secondary school GER is very high when compared to the GERs of other African countries, which range from 36% in Lesotho to 75% in Botswana (see Table 13).

Table 13: Gross enrolment rate in secondary schools in selected countries

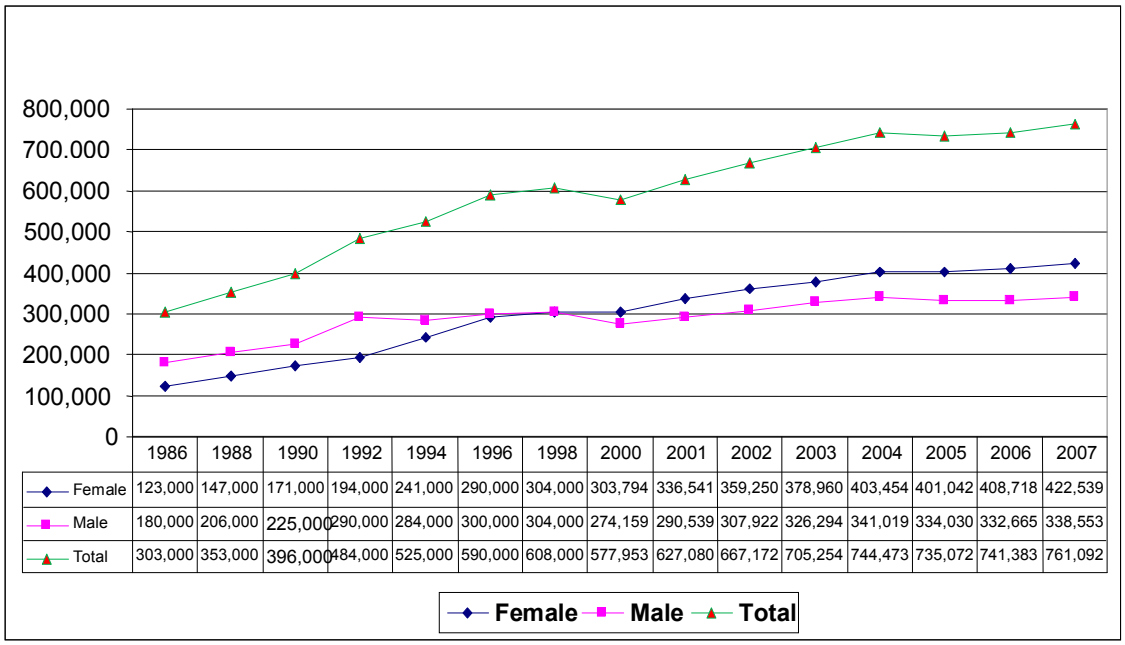
Country	GER
Argentina	86
Botswana	75
Brazil	102
Gabon	50
Jamaica	88
Lesotho	36
Namibia	58
Panama	70
Russian Federation	93
South Africa	**89**
Turkey	79
Uruguay	108
Venezuela	72

Source: UNESCO, 2006; Data for South Africa for 2004 from DoE 2005b.
Note: In the case of some countries, the latest available information dates back to 2003, and for others it dates back to 2004.

2.3.4 Access to higher education

Higher education experienced a massive increase in enrolment in the 20 years between 1986 and 2007. During this period, enrolment increased by as much as 151% from 303 000 in 1986 to 761 092 in 2007 (see Figure 5). The biggest period of growth occurred between 1986 and 1994, with enrolment increasing by 73%. Growth continued after 1994, although the pace slowed to 45% between 1994 and 2007.

Figure 5: Total head-count enrolment in tertiary education



	1986	1988	1990	1992	1994	1996	1998	2000	2001	2002	2003	2004	2005	2006	2007
Female	123,000	147,000	171,000	194,000	241,000	290,000	304,000	303,794	336,541	359,250	378,960	403,454	401,042	408,718	422,539
Male	180,000	206,000	225,000	290,000	284,000	300,000	304,000	274,159	290,539	307,922	326,294	341,019	334,030	332,665	338,553
Total	303,000	353,000	396,000	484,000	525,000	590,000	608,000	577,953	627,080	667,172	705,254	744,473	735,072	741,383	761,092

Source: 1986 to 1998 data from Bunting and Cloete 2007; 2000 to 2007 data from Department of Education, 2007b.

With the end of apartheid, the new democratically-elected government made a commitment to transform the Higher Education System from an elitist to a mass system, by improving access to the previously disadvantaged sectors of the community. Despite this policy goal, head-count enrolment increased by only 10% between 1994 and 2000 – an average annual increase of 1.6%, compared to an average annual increase of 7% during the period 1986 to 1994. Part of the challenge faced by tertiary institutions during this period, was the decline in the number of school leavers with a matriculation endorsement pass, which is the minimum requirement for entry into university.

Between 1994 and 2000, the number of matriculation endorsement passes declined from 88 497 to 68 626 (see Table 51 in the section dealing with the senior certificate examination). Another factor contributing to the slower pace of growth in head-count enrolment was the "significant fall" in the retention rate in higher education at the time (Ministry of Education, 2001:17). According to the Department of Education, the retention rate in some sub-sectors of the Higher Education System fell by up to 10% during the latter half of the 1990s, compared to the years in which rapid growth occurred (Ministry of Education, 2001:17).

In 2001, as the focus on higher education "moved beyond policy formulation to a strong implementation drive", the National Policy for Higher Education (NPHE) was published (Bunting and Cloete, 2007:18). The NPHE provided the implementation framework for transforming the Higher Education System and established indicative targets for the size and shape of the Higher Education System, including overall growth and participation rates, institutional and programme mixes, and equity and efficiency goals (Ministry of Education, 2001).

Other areas of focus for the Higher Education Sector between 2000 and 2005, were a new approach and method to funding public higher education, which came into effect for the first time in 2004, and the restructuring of the institutional landscape (Bunting and Cloete, 2007:18). The restructuring of the institutional landscape, which took place between 2003 and 2005, resulted in the reduction of higher education institutions from 36 to 23.

With much of the Department's focus mainly on restructuring the institutional landscape in the early 2000s, many universities rapidly expanded their student numbers between 2000 and 2004, regardless of quality, as they realised that their financial interests lay in growing their numbers as rapidly as possible (Bunting and Cloete, 2007:21). Between 2000 and 2004, head-count enrolment increased by 28.8%.

In 2004, the Department of Education responded to this rapid expansion by indicating that it was considering capping head-count enrolment in higher education at 723 000 in 2005, at 730 000 in 2007 and at 740 000 in 2009 (DoE, 2005f: 23). This was proposed because the Higher Education System's funding and infrastructure had not kept pace with the rapid increase in student enrolment; the system's output performance remained below the targets that had been set in the National Plan for Higher Education; and drop-out rates were high, indicating low levels of efficiency in the system. This proposal might have resulted in the 1% decrease in enrolment that took place between 2004 and 2005, and the very small increase of less than 1% between 2005 and 2006 (see Figure 6). The Department subsequently decided that the capping of enrolment for funding purposes would take place in 2005 and 2006,

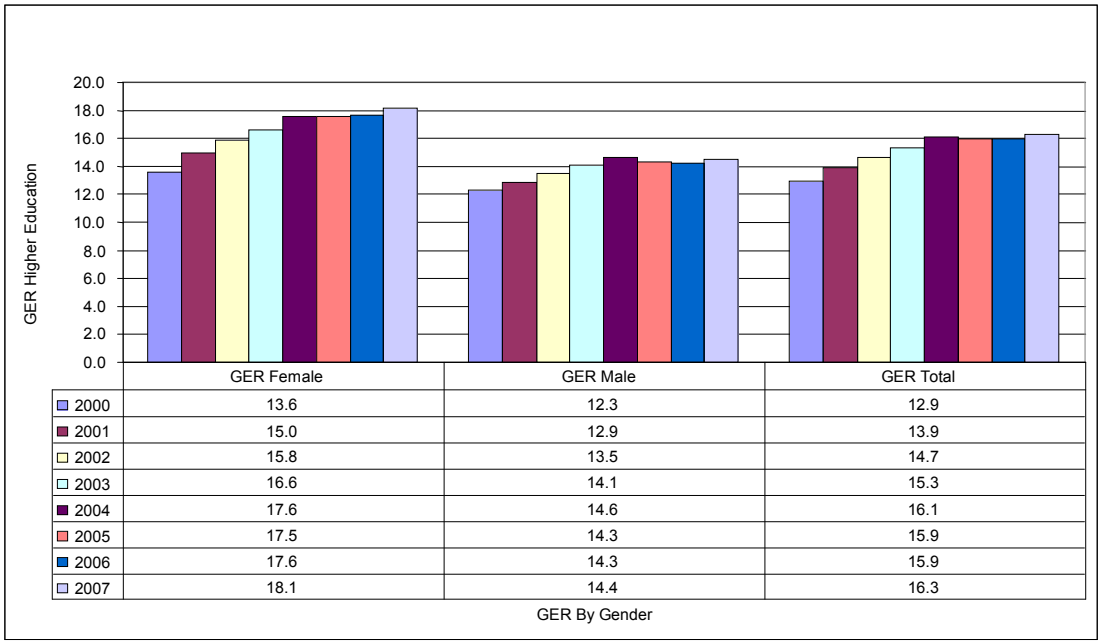
but for the period 2007 to 2009, the funded head-count and the Full-time Equivalent Enrolment (FTE) student total for each university would be decided via "bilateral discussions" between the Ministry of Education and each individual higher education institution (Ministerial Statement on Student Enrolment Planning, undated).

In 2007, the Department of Education (DoE 2007a) announced that, based on the enrolment plans for each individual higher education institution, the enrolment target for the public Higher Education System was expected to increase to 820 000 by 2010. At the same time, the balance of enrolments between broad fields of study would be changed. This would be done in order to increase the proportion of students in science and technology to 30% by 2010, while the proportion of students in business and management would stand at 33%, and those studying humanities would constitute no more than 37%. Furthermore, the throughput rates would be targeted to improve from the 2005 mean of 71% to 77%, resulting in the graduation of 150 000 students in 2010.

2.3.4.1 Gross enrolment rate in higher education

The gross enrolment rate in higher education measures enrolment in higher education institutions regardless of age, as a proportion of 20 to 24-year-olds in the population. In 2001, the National Policy for Higher Education, which provided the implementation framework for transforming the Higher Education System, set a target participation rate in higher education of 20% over a 10-to-15-year-period (Ministry of Education, 2001). In 2000, the gross enrolment rate in higher education was 12.9% (see Figure 6). With this major increase in higher education enrolment, the participation rate increased steadily. By 2007 it stood at 16.3%.

Figure 6: Higher education Gross Enrolment Rate (as a proportion of the population of 20-to-24-year-olds): 2000 to 2007



	GER Female	GER Male	GER Total
2000	13.6	12.3	12.9
2001	15.0	12.9	13.9
2002	15.8	13.5	14.7
2003	16.6	14.1	15.3
2004	17.6	14.6	16.1
2005	17.5	14.3	15.9
2006	17.6	14.3	15.9
2007	18.1	14.4	16.3

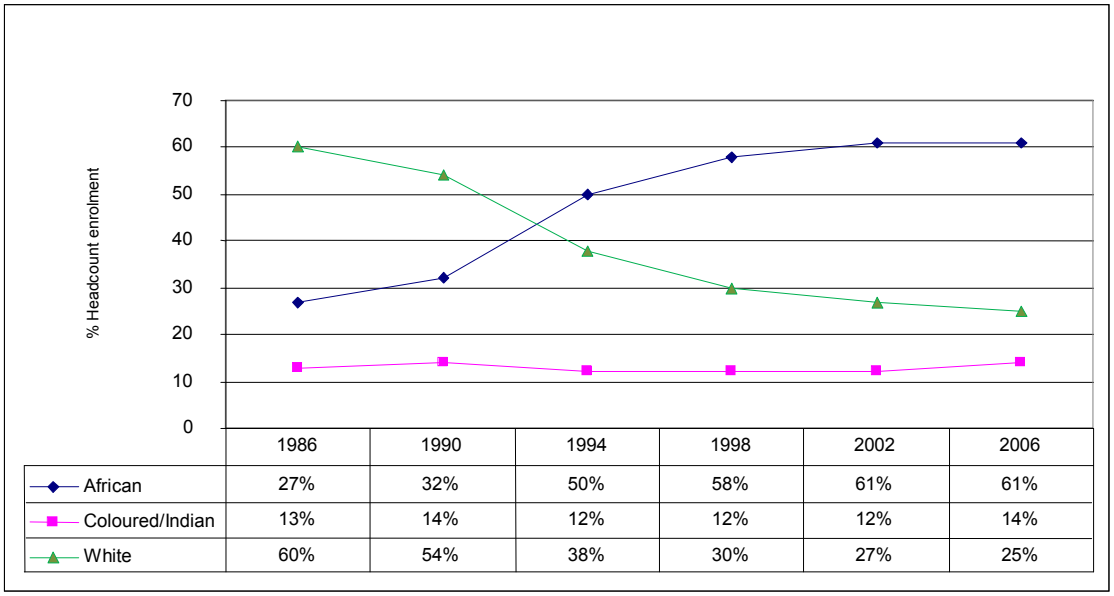
Source: Enrolment data: Department of Education, 2007b; Population Data: Mid-Year Population Estimates by Single-Year Age Group, supplied by Statistics South Africa.

Much of this increase in higher education enrolment took place amongst African students. African student enrolment increased by 115 000 between 2000 and 2004,

compared to 20 000 for Coloured students, 17 000 for Indian students and 37 000 for white students. As may be seen in Figure 7, the increase in enrolment of African students changed the student profile at higher education institutions.

Whereas in 1986, African students comprised only 27% of the share of higher education enrolment and white students 60%, by 2002 this situation had been reversed with African students comprising 61% of enrolment and white students 27%.

Figure 7: Percentage head-count enrolment at public higher education institutions by race: 1986 to 2006



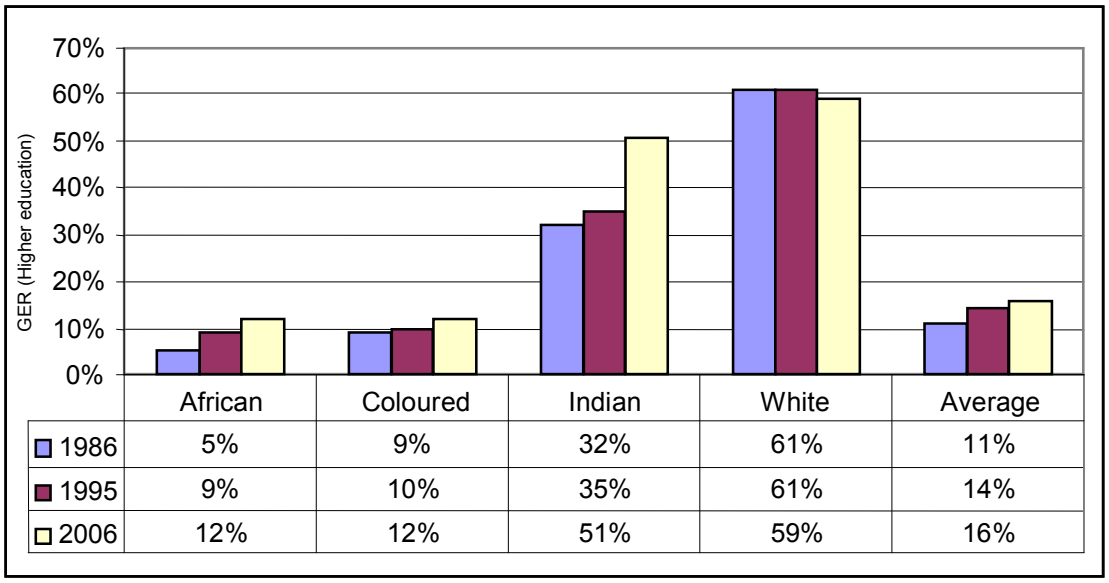
	1986	1990	1994	1998	2002	2006
African	27%	32%	50%	58%	61%	61%
Coloured/Indian	13%	14%	12%	12%	12%	14%
White	60%	54%	38%	30%	27%	25%

Source: 1986 to 2002 data from Bunting and Cloete, (2007); 2006 data from Department of Education, 2007b.

The major increase in the number of African students enrolling in higher education resulted in the participation rate of African students more than doubling between 1986 and 2005 (see Figure 8). However, this was from a very low base of only 5% of Africans participating in higher education in 1986.

By 2006, the participation rate of Africans in higher education was still very low, standing at only 12%. The situation was very similar for Coloured students, with only 13% of the Coloured population participating in higher education, up from 9% in 1986. In contrast to the situation of Africans and Coloureds, who remained under-represented in higher education institutions, the participation rate for whites held steady at around 60% since 1986, while the rates for Indians increased from 32% to 51%.

Figure 8: Gross enrolment rates in public higher education institutions by race (as a proportion of the population of 20-to-24-year-olds): 1986, 1995 and 2006



	African	Coloured	Indian	White	Average
1986	5%	9%	32%	61%	11%
1995	9%	10%	35%	61%	14%
2006	12%	12%	51%	59%	16%

Source: 1986 and 1995 data from Bunting and Cloete, (2007); 2006 data calculated from Department of Education, 2007b; and Mid-Year Population Estimates by Single-Year Age Group, supplied by Statistics South Africa.

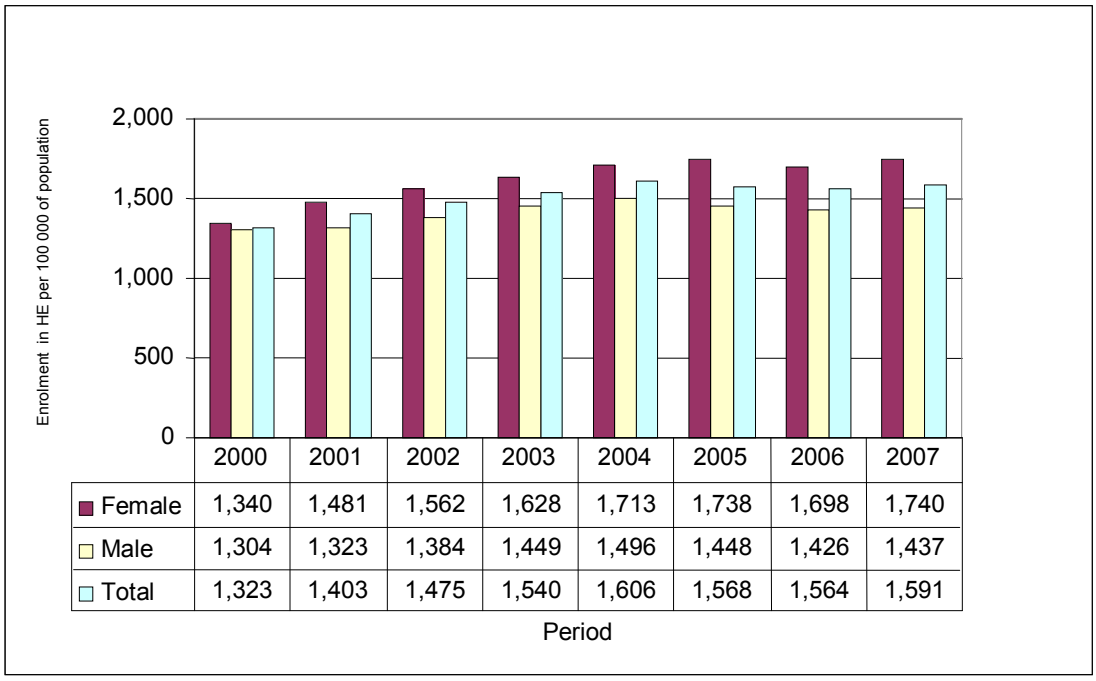
2.3.4.2 Participation in higher education per 100 000 of the population

Many enrolees in higher education are not in the 20-to-24 age group. Therefore, another common way of looking at the participation rate in higher education, is to focus on enrolment per 100 000 of the population as a whole, not just the 20-to-24 age group. Figure 9 indicates these participation rates.

Since 2000, there has been a substantial increase in the rate at which the population participates in higher education. In 2000, there had been 1 323 people out of every 100 000 of the population enrolled in higher education institutions. By 2004, this figure increased to 1 606 per 100 000.

With the decrease in higher education enrolment in 2005, the participation rate decreased very slightly to 1 568 per 100 000 of the population, and then it decreased again in 2006 to 1 564 per 100 000. However, in 2007 it increased slightly to 1 591 per 100 000.

Figure 9: Enrolment in higher education per 100 000 of the population: 2000 to 2007



	2000	2001	2002	2003	2004	2005	2006	2007
Female	1,340	1,481	1,562	1,628	1,713	1,738	1,698	1,740
Male	1,304	1,323	1,384	1,449	1,496	1,448	1,426	1,437
Total	1,323	1,403	1,475	1,540	1,606	1,568	1,564	1,591

Source: Department of Education, 2007b; Mid-Year Population Estimates by Single-Year Age Groups, supplied by Statistics South Africa.

2.3.5 Gender parity in gross enrolment rates

As stated earlier, the Gender Parity Index measures the proportion of females to males for a specific indicator. Parity is conventionally considered to have been achieved if the female-to-male ratio lies between 0.97 and 1.03 (UNESCO, 2000).

2.3.5.1 Gender parity in ECD

Table 8 indicates that, at least with regard to the data included in that table, gender parity in ECD has been achieved. Table 9 indicates the same. Although the data is not totally smooth year-on-year and age-by-age, it is obvious that there is gender parity in the enrolment of 5 and 6-year-olds.

2.3.5.2 Gender parity in the schooling system according to GER

An analysis of the GER of the entire schooling system reveals that overall gender parity was achieved for the period 1997 to 2007. In all instances, the GPI was between 0.99 and 1.03.

However, the above findings do not hold when GPI is aggregated according to level of education. For instance, learner enrolment with regard to primary school level was only equitably distributed between female and male learners in the years 1997 to 1999 (see Table 14), after which there was a male advantage. This indicates that, throughout the reporting period, the secondary-level GPI reflected a female advantage.

The apparent male advantage in primary enrolment, however, is misleading. On the contrary, it reflects greater male repetition, which contributes to greater eventual male drop-out rates, which is why the GPI favours females by the time the learners reach secondary school level. The analysis of repetition issues in Section 3.2 in the chapter on internal efficiency, indicates that repetition rates for males tend to be higher than for females, thus inflating the male enrolment in a way that does not imply any sort of preference or bias in favour of males but, on the contrary, reflects a performance problem amongst males.

Table 14: Gross enrolment rate (GER) of female and male learners by level of education: 1997 to 2007

	Gender	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Primary	Female	116	115	113	103	103	103	101	102	101	100	102
	Male	120	118	116	109	107	108	106	107	105	104	105
	GPI	0.97	0.97	0.97	0.95	0.96	0.95	0.95	0.95	0.96	0.96	0.97
Secondary	Female	90	92	91	87	89	84	83	93	92	95	93
	Male	77	80	80	77	79	78	77	85	85	87	88
	GPI	1.16	1.15	1.14	1.13	1.12	1.08	1.08	1.09	1.08	1.09	1.06
Total	Female	106	105	104	97	97	95	93	98	97	98	99
	Male	103	102	101	96	96	95	94	98	97	97	98
	GPI	1.03	1.03	1.02	1.01	1.01	1.00	0.99	1.00	1.00	1.01	1.01

Source: Data for 1997 to 2001 and for 2007 obtained from Department of Education data bases and Mid-Year Population Estimates by Single-Year Ages, provided by Statistics South Africa; 2002 data from DoE, 2004; 2003 data from DoE 2005a; 2004 data from DoE 2005b; 2005 data from 2006a; 2007 data from DoE 2007d.
Note: Data for 1997 is for public schools only. Data for independent schools was not available for that year.

2.3.5.3 Gender parity in higher education

Since 2000, there have been more females enrolled in higher education institutions than males (see Table 15). Furthermore, female enrolment increased at a faster rate than male enrolment. Between 2000 and 2007, female enrolment increased by 39% from 303 794 to 422 539, while male enrolment increased by only 23%, i.e. from 274 159 to 338 553 (see Figure 5). As a result, the disparity in favour of females in higher education increased from an already high 1.11 in 2000 to 1.26 in 2007 (see Table 15).

Table 15: Gender Parity Index in higher education: 2000 to 2007

	2000	2001	2002	2003	2004	2005	2006	2007
GPI	1.11	1.16	1.18	1.18	1.20	1.23	1.23	1.26

Source: Department of Education: HEMIS Data.

It is evident from Figure 6 and Table 15, that females have a higher GER than their male counterparts. However, as the National Plan for Higher Education points out, the spread of female students across different programme areas is uneven, with female students clustered in the humanities and under-represented in science, engineering and technology, as well as in business and commerce, and also in postgraduate programmes (Ministry of Education, 2001:34).

As with the GER by gender, the participation rate per 100 000 females in higher education is higher than that of males (see Figure 9). In 2000, there were 1 340 per 100 000 females in the population enrolled at higher education institutions, compared to 1 304 per 100 000 males in the population. While the participation rate of both males and females increased every year after 2000, the gap between the male and female participation rates widened. Therefore, in 2005, there were 1 738 females enrolled for every 100 000 females in the population, compared to 1 448 males enrolled for every 100 000 males in the population.

After increasing steadily from 2000 to 2004, the male participation rate decreased to 1 448 per 100 000 of the male population in 2005 (from 1 496 in 2004), while the female participation rate continued to increase in 2005. In 2006, both the male and female participation rates decreased in line with the decrease in the total participation rate. However, in 2007, the participation rate of males and females increased yet again.

2.4 Net enrolment rate (NER)

The net enrolment rate (NER) measures the extent to which learners participate in education at the correct level for their age. It takes the numbers of learners enrolled at a given level of education, who are of an age appropriate for that level, and divides this enrolment by the population of the same age. (See formal definitions of NER and Appropriate Age in Appendix A.) Therefore, the NER is a mixed measure: it combines measures of access or participation with measures of internal efficiency or flow-through.

This indicator has become popular with international organisations. However, in some respects, this is unfortunate, because it does conflate participation with internal efficiency. So, for example, if one looks at a system that comprises five years of schooling, and where virtually everyone participates and completes the cycle, but where one third of the learners enter and leave one year early, one third enter and leave on time, and on third enter and leave one year late, such a system would tend to show an NER of 87%, when both real coverage and completion stand at 100%.

The fact that the system is "straddled" by late and early entrants, makes it difficult to shift around the age range, so as to make the total come to 100%. As a result, the value of this indicator is limited, particularly in cycles that are short in duration, and in countries where the throughput rate is quite high, but takes place amongst sizeable figures of early or late entries.

Nonetheless, the NER has come to be widely used, so this report presents the NERs, albeit with some caution as to their utility. In fact, precisely due to problems experienced with the NER, UNESCO has come up with a new approach to the NER, referred to as the "total" NER. This relaxes the restrictions on the numerator by allowing learners, enrolled at any level of education, to be counted in the numerator, as long as they are of an appropriate *age* for the level in question. Thus, for the "total primary NER", the numerator would allow the counting of learners, who have progressed to secondary education, as long as they are in the age range normally regarded as appropriate for the primary level (ages 7-to-13: see Table 16). This report therefore indicates this measure as well. In order to emphasise the notion that enrolment is "open", but that the ages are restricted to the appropriate cycle, this report uses the terminology, "total primary-age NER".

2.4.1 NER in primary education

As stated in Section 2.1, from 1996 to 2003, the appropriate age for primary schooling was deemed to be between 7 and 13 years, while from 2004, the age of entry into primary school reverted to 6 years if the learner had turned 6 before 30 June of the year of admission. The compulsory schooling age remained unchanged during this period. With learners being able to enrol for Grade 1 at either 5 turning 6, or 6 turning 7, there has been a dual age-grade norm since 2004, with primary schools catering for learners between the ages 6 or 7 and 12 or 13 years.

However, for the purposes of this report, 7-to-13-years is used as the appropriate age for primary education for all the years under review, including 2004 and 2005. Using the age range 6-to-13 years would be inappropriate, as it would create a number of age groups larger than the number of grades, resulting in an NER that would be definitionally below 100%, even in a perfect system. For all these rates, the number of age groups in the numerator has to be equal to the number of grades in the denominator.

Therefore, the choice would have been to use 6-to-12 or 7-to-13 as the appropriate age groups. As the majority of children still enrol for Grade 1 in the year in which they turn 7, and as the difference between the number of 6 and 7-year-olds in the general population is insignificant (due to the current stability of South Africa's population), the choice of age group, used as the denominator, does not affect the NER to any appreciable degree.

The primary school NER, estimated conventionally, i.e. using EMIS data and projected population estimates for the period 1997 to 2005, would be cause for some concern, as it appears to have declined from a high of 92% in 1997 to 85% in 2005 (see Table 16). As a result, the number of children aged 7-to-13, who were either out of school or enrolled in pre-primary or secondary grades, or were simply of the wrong age, seems to have increased from 8% to 15% as a proportion of the population between 1997 and 2005.

However, there are some concerns pertaining to the data supporting these estimates. Firstly, these estimates are usually extremely sensitive to the decomposition of population projections into single-year age groups. However, this report examined the demographic projections used, and found them to be sound (see Section 2.2.1). Secondly, the age data gathered by the EMIS system is extremely unreliable, as has been indicated in the Ministerial Report on Learner Retention in the South African Schooling System (Department of Education, 2008). And thirdly, as noted above, a decrease in the rate could well mean that more learners are entering and leaving the system early, and are now enrolled in secondary education – and this is hardly cause for major concern. It seems likely that the problem with these declining rates is one of the latter two.

Table 16: Primary net enrolment rate of children aged 7-to-13 years: 1997 to 2005 [2]

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Primary NER (ages 7-13)	92.0	92.6	93.1	89.8	89.3	88.5	88.6	87.4	84.8

Source: Data obtained from Department of Education data bases; Mid-Year Population estimates by Single-Year Ages provided by Statistics South Africa.
Note: Data for 1997 is for public schools only. Data for independent schools was not available for that year.

South Africa's primary NER is lower than that of many of the comparator countries indicated in Table 17. Only Botswana and Namibia have lower primary NERs, while Lesotho records the same primary NER as South Africa. As noted, however, there are serious issues surrounding the estimation of NERs, particularly in South Africa.

Table 17: Net enrolment rate in primary schools in selected countries

Country	NER
Argentina	99
Botswana	85
Brazil	95
Jamaica	90
Lesotho	87
Namibia	72
Panama	98
Russian Federation	92
South Africa	**87**
Turkey	89
Venezuela	91

Source: UNESCO, 2007.
Note: In the case of some countries, the latest available information dates back to 2003 and for others it dates back to 2004.

To provide an alternative analysis, focusing on the total primary-age NER and its trends, the authors of this report proceeded as follows, using the Household Survey data: While Household Surveys do not ask individuals about their currently-attended grade, they do ask whether the individual is still attending school, and they ask for their highest completed grade thus far.

This would give a fairly accurate picture of the grade attended in the year of the survey, barring interruptions and reintegration into studies.[3] Even if there were some interruptions and re-insertions into school, the derived figures provide an "ever-enrolled" picture, which is arguably more appropriate, in any case, than an "instantaneous" NER. The process then followed took all the youth between the ages of 7 and 13, who were still enrolled, and whose highest previous grades had been 0-to-11 or, for a second variant, any grades at all, including Adult Basic Education and Training (ABET) or FET options (i.e. two variants) as the numerators,

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[2] These indicator values must be used with extreme caution, as they are based on data from schools that is considered to be unreliable.

[3] Or, more accurately, in the case of a trends analysis, barring major changes over time in the process of interruptions and re-insertions into studies. If there were interruptions and re-insertions, but the rate at which these happened did not change much over time, then at least the trends would be fairly unbiased.

and the youth in the population aged 7-to-13 as the denominator. The results are presented in Table 18.

Table 18: Alternative calculation: Total primary-age NER

	Attending primary or secondary grades	Attending some form of education
1995	N/A	96.8%
1997	N/A	93.8%
1999	94.1%	95.5%
2001	94.5%	95.4%
2002	95.1%	96.4%
2003	96.0%	97.5%
2004	96.5%	98.2%
2005	96.0%	98.2%
2006	96.6%	98.2%

Source: Statistics South Africa, 1995, 1997 and 1999; October Household Surveys, 2001 and 2002; September Labour Force Surveys; and 2003 to 2006 General Household Surveys.
Note: Due to the way in which the questions were structured, data for 1995 and 1997 could not be obtained for primary and secondary grades. The 1995 Household Survey asked the attendance question in a peculiar way, and therefore 1995 was regarded as unrepresentative.
N/A: Not available

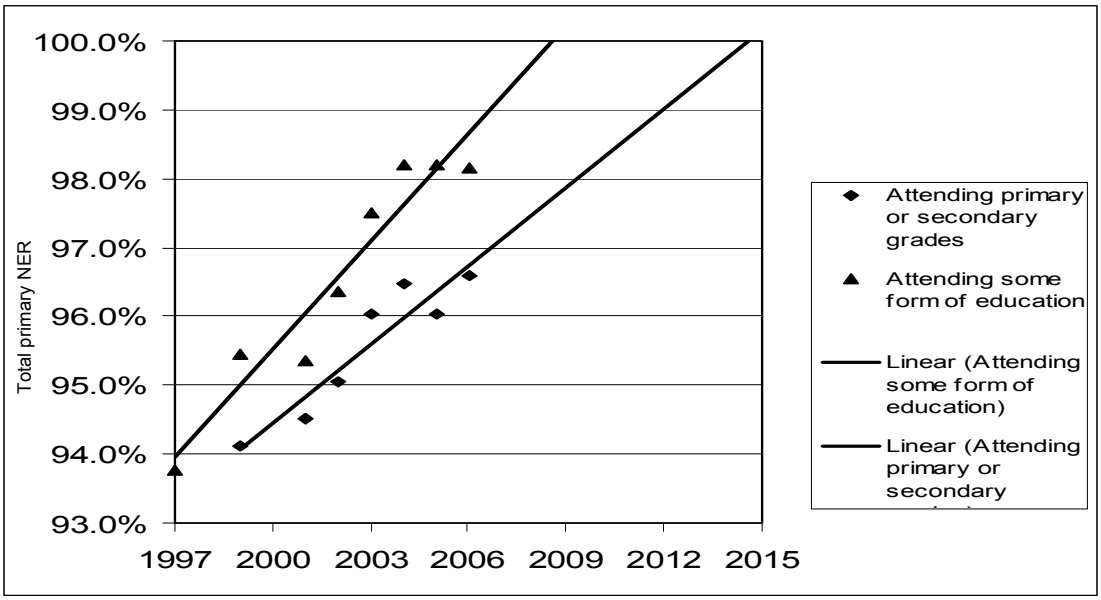
It may be regarded as a major weakness in the various Household Surveys that they did not ask the respondents about their current grade of enrolment, but only whether the respondents were currently enrolled and what the highest previous successfully completed grade had been. Fortunately, one Household Survey, the 2004 Human Sciences Research Council (HSRC) "Client Survey", did ask about the current grade of enrolment.

Using this data, it was possible to calculate a total primary-age NER of 96.1% for those attending primary or secondary school, compared to 96.5% in Table 18. Using this data, it was also possible to calculate a conventional primary NER, which came to 92.1% (compared to 87.4%, using the school-based data in Table 16). This suggests that simply moving to the notion of a total primary-age NER could address some of the concerns with regard to these figures.

In the view of the authors, the survey-based numbers should be considered more authoritative than the previous school-based numbers, since they do not suffer from the afore-mentioned distortions. Interestingly, an extrapolation of either of the two variants of the total primary-age NER to the year 2015, indicates that South Africa, if it stays with this trend, will indeed achieve 100% total primary-age NER, as indicated in Figure 10.

These projections are based on correlations of 0.94 and 0.96 between the total primary-age NER and the time trend respectively, pertaining to the two variants indicated in the table. These are solid correlations. However, as noted previously with regard to ECD enrolment (see Section 2.3.1), this does not mean that this achievement would automatically take place. Pressure must be kept up if the targets are to be met. More in particular, the fact that progress with the rate, including only primary and secondary levels (first variant), had become a little flat towards the end of the period and became somewhat stagnant at around 98%, is actually cause for concern.

Figure 10: Alternative calculation: Total primary-age NER projections up to 2015



Source: General Household Surveys: Statistics South Africa: 1995, 1997 and 1999; October Household Surveys: 2001 and 2002; September Labour Force Surveys; and 2003 to 2006 General Household Surveys.

It would have been possible to use Household Survey data to calculate a conventional NER for primary schools – i.e. using a numerator consisting of still-enrolled individuals, aged 7-to-13, whose prior highest achieved grades were 0-to-6, with the denominator still taking into account the ages 7-to-13. However, due to the minor problems experienced with the Household Survey, namely that the grade data was not available for the year of the survey, while it was for the previous highest year, it was deemed safer to take the "total" NER approach. At any rate, this is the approach now being used by UNESCO to forecast whether countries would achieve the EFA and MDG goals.

2.4.2 NER in secondary education

An analysis of the NER in secondary schools, using EMIS and population projections, as well as the conventional method for calculating NER (see net enrolment rate in Appendix A), indicates that secondary school NER increased substantially between 1997 and 2005, even while secondary GER (using the same data sources) increased only slightly during the same period. As may be seen from Table 19, the secondary school NER increased from 56% in 1997 to 67% in 2005. However, despite this improvement, there is still cause for concern, as one out of every three children, aged 14-to-18, were either still in primary school or were not in school at all in 2005. However, some of the learners might have progressed through the secondary school level quicker than "normal", or might simply have been availing themselves of other options, such as ABET centres or FET colleges.

Table 19: Net enrolment rate in secondary schools of children aged 14-to-18 years, based on conventional calculations: 1997 to 2005 [4]

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Secondary NER (ages 14-18) in %	55.9	58.8	60.0	59.9	66.6	64.1	66.0	67.2	67.2
Primary and Secondary NER (ages 7-18) in %	77.3	78.8	79.6	77.7	80.1	78.7	79.5	79.2	77.6

Source: Data obtained from Department of Education data bases and Mid-Year Population Estimates of Single-Year Age Groups, supplied by Statistics South Africa.
Note: Data for 1997 is for public schools only. Data for independent schools was not available for that year.
(This data must be used with extreme caution, as it is based on data from schools that is considered to be inaccurate.)

Out of the 11 countries selected for comparison to South Africa, pertaining to secondary-level NER, South Africa ranked sixth during 2003/04 (see Table 20). Out of the African countries for which information was available, South Africa had the highest secondary NER during 2003/04.

Table 20: Net enrolment rate in secondary schools in selected countries

Country	NER
Argentina	79
Botswana	61
Brazil	76
Jamaica	79
Lesotho	23
Namibia	37
Panama	64
Russian Federation	76
South Africa	**67**
Uruguay	69
Venezuela	61

Source: South African data obtained from Department of Education data bases; other data from UNESCO, 2006.

Although the NER of learners in secondary school has improved, the (apparent, though questionable, for the reasons noted) decline in primary school NER, actually indicates that there has been very little apparent improvement in the NER from Grade 1 to Grade 12 during the period under review, as derived from school-based data. In 2004, a total of 79% of children enrolled in school were between the ages of 7 and 18 years, which is merely 2 percentage points up from the 77% in 1997 (see Table 19).

Again though, the NER results for secondary schools are problematic. Aside from the problems already mentioned with regard to primary schools, a secondary school NER calculation, using only traditional school data, suffers from one additional problem, namely that many learners might have exited from the FET band in ordinary schools and were performing work that was equivalent to Grade 12 or higher in colleges, or they had transited into ABET centres.

[4] *These indicator values must be used with extreme caution as they are based on data from schools that is considered to be unreliable.*

To finalise this discussion of NERs, a total NER investigation was conducted for both primary and secondary ages, using Household Survey data. This total primary and secondary NER takes all persons currently attending some form of education into the numerator, as long as they are in the 7-to-18 age range, and divides this figure by the population in that age range. (In this sense, the data for the total primary and secondary NER is the equivalent of the "second variant", calculated for the primary school age group, above.) The results are quite significant, and reveal that, according to this notion of a total primary and secondary NER, nearly 95% of the population in the 7-to-18 age group were enrolled for some form of education (see Table 21).

To reiterate, evidently the problem with conventional definitions of the NER and, more in particular, as applied to South Africa, is that the administrative EMIS may have inaccurate age data; that single-year age groupings for the population denominators come from demographic projections rather than directly from "real" data (though this source of error is probably minor); and that the youth may already have moved on to other forms of education. If one corrects for these issues, using a notion similar to what UNESCO now uses for a total primary and secondary NER, then close to 95% of South Africa's youth, in the age range 7-to-18, are engaged in education.

There is no trend in the data, as the numbers have been very high for at least a decade. Year-on-year fluctuations most likely represent sampling error and slight variations in how questions might have been posed, as well as the range of permissible answers, rather than any differences of substance.

Table 21: Alternative calculation: Total primary and secondary-age NER: 1995, 1997, 1999, 2001 to 2006

	NER
1995	94.3%
1997	91.9%
1999	93.0%
2001	92.0%
2002	93.2%
2003	93.5%
2004	94.3%
2005	94.1%
2006	93.9%

Source: Statistics South Africa, 1995, 1997 and 1999; October Household Surveys, 2001 and 2002; September Labour Force Surveys; and 2003 to 2006 General Household Surveys.

2.4.3 Gender parity in the schooling system according to NER

The overall NER (Grades 1 to 12), as presented in Table 22, indicates that there was disparity in favour of female learners throughout the period under review. This skewed distribution in learner enrolment, with regard to appropriate age, affirms the internal efficiency problems highlighted in the preceding paragraphs. The situation with male learners is more evident amongst those of secondary school-going age (14-to-18 years). The GPI indicates a much higher NER for female learners at secondary school level throughout the 1997 to 2005 period.

As was highlighted in the afore-going paragraphs regarding NER, the declining NER for males, as they move through the system, could be explained in terms of the

internal efficiency of the system in respect of the males. It is namely a problem of higher repetition rates amongst males, resulting in "over-age", and therefore resulting in lower NERs for males than for females. These NER estimates are in accordance with conventional rules and using EMIS data and demographic projections.

Table 22: Net enrolment rate (NER) of female and male learners according to level of education, excluding learners enrolled in Further Education and Training colleges: 1997 to 2005 [5]

		1997	1998	1999	2000	2001	2002	2003	2004	2005
Primary ages 7-13	Female	92.5	93.1	93.5	89.6	89.5	88.7	88.6	87.0	84.6
	Male	91.4	92.1	92.7	90.0	89.2	88.3	88.6	87.7	85.0
	GPI	1.01	1.01	1.01	1.00	1.00	1.00	1.00	0.99	1.00
Secondary ages 14-18	Female	60.2	62.9	63.9	63.8	71.2	67.6	69.7	70.8	70.5
	Male	51.7	54.8	56.0	56.0	61.9	60.5	62.3	63.5	63.9
	GPI	1.16	1.15	1.14	1.14	1.15	1.12	1.12	1.12	1.10
Total	Female	79.3	80.7	81.4	79.1	82.1	80.2	81.0	80.5	78.8
	Male	75.3	76.8	77.7	76.2	78.2	77.1	78.0	77.9	76.3
	GPI	1.05	1.05	1.05	1.04	1.05	1.04	1.04	1.03	1.03

Source: Data obtained from Department of Education data bases; Mid-Year Population Estimates of Single-Year Age Groups, supplied by Statistics South Africa.
Note: Data for 1997 is for public schools only. Data for independent schools was not available for that year.

2.5 Age-specific enrolment rates

Age-specific enrolment rates (ASERs) indicate the percentage of the population of a specific age enrolled in education, irrespective of the level of education they are enrolled for. The ASER, therefore, makes it possible to calculate the proportion of the school-aged population who falls outside the education system. ASERs are, according to many experts, far more useful than either GERs or NERs. In effect, UNESCO's recent focus on the notion of a "total NER" is really nothing but a generalisation of the notion of an ASER that applies to more than one age group, and is a welcome innovation or solution to the problems posed by over-reliance on the GER and NER.

2.5.1 Primary school ASER

According to the General Household Survey, between 2002 and 2007, the participation of children of primary education age was above 95% (see Table 23). These findings indicate that the South African schooling system has made remarkable progress in ensuring that learners of the appropriate age participate in the education system. However, the participation of 7-year-olds was significantly lower when compared to the other age groups, particularly during 2002 and 2003 (see Table 24). The relatively lower participation rates of 7-year-olds can be explained on the basis of the admissions policy, which was implemented in 2000 (see Section 2.2.2) and its effect on improving the internal efficiency of the education system.

[5] *These indicator values must be used with extreme caution as they are based on data from schools that is considered to be unreliable.*

The appropriate age-grade regulation's ripple effect played itself out during 2002 and 2003, and had an impact on the participation of the group aged 7 on the one hand, and the repetition rate of those between the ages of 7 and 13 on the other.

While there was a significant increase in the participation of 7-year-olds during the three-year period, no significant increase was recorded in the other age groups, as their participation rates were already high.

There has, however, been a very slight increase in access for the compulsory education age group (7-to-15 years), from 96% in 2002 (which was already high) to about 98% in 2007, according to the General Household Survey for July 2006 (see Figure 11).

Table 23: Age-specific enrolment rates of 7-to-13-year age groups, obtained from the General household Survey: 2002 to 2007

	2002	2003	2004	2005	2006	2007
Male	96.4	96.9	97.9	98.1	97.9	99.0
Female	97.1	97.9	98.5	98.4	98.4	99.0
Total	96.7	97.4	98.2	98.2	98.2	99.0
GPI	1.01	1.01	1.01	1.01	1.01	1.00

Source: Statistics South Africa: General Household Survey, 2002 to 2007.

Table 24: Age-specific enrolment rates for single-year age groups of 7-to-13-year-olds, obtained from the General Household Survey: 2002 to 2007

	Age						
	7 yrs	8 yrs	9 yrs	10 yrs	11 yrs	12 yrs	13 yrs
2002	90.8	96.6	97.5	98.0	98.3	98.4	97.1
2003	92.5	97.3	98.3	98.1	98.8	98.5	98.3
2004	96.8	98.4	98.7	98.9	97.9	98.9	97.9
2005	96.0	97.7	98.4	98.8	99.3	99.0	98.1
2006	96.5	98.3	98.6	98.6	98.4	98.4	98.1
2007	96.7	97.2	98.6	99.1	98.6	98.9	98.8

Source: Statistics South Africa: General Household Survey, 2002 to 2007.

As mentioned previously, ASERs could also be used to give account of the measure of appropriately-aged children who are not served by the schooling system. From the results in Table 25, it is evident that 7-year-old children constituted the highest proportion of children who were not in school during the years 2002 and 2003 in particular. About 93 000 and 81 000 of children aged 7 had not been in school in 2002 and 2003 respectively, but by 2006 this dropped to 33 412. Between 2002 and 2006, the total number of out-of-school children, aged 7-to-13 years, dropped from 238 000 to 129 000.

Table 25: Proportion of 7-to-13-year-old children per single-year age groups, not receiving any form of education, according to the General Household Survey: 2002 to 2006

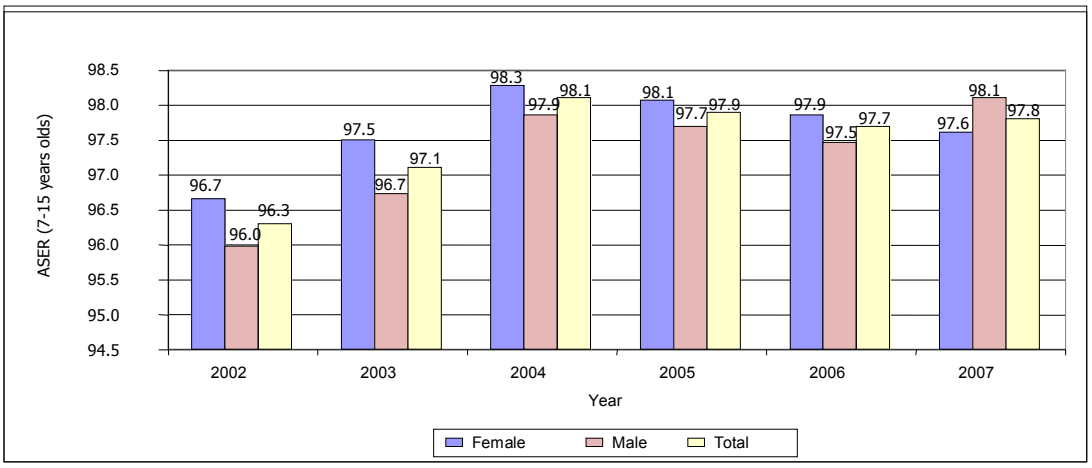
		7 yrs	8 yrs	9 yrs	10 yrs	11 yrs	12 yrs	13 yrs
2002	Number	93 500	36 397	26 457	20 054	16 784	16 962	27 742
	%	9.2	3.4	2.5	2.0	1.7	1.6	2.9
2003	Number	81 579	27 833	18 000	17 906	11 598	16 134	17 896
	%	7.5	2.7	1.7	1.9	1.2	1.5	1.7
2004	Number	35 056	17 552	13 588	10 475	20 161	11 266	21 578
	%	3.2	1.6	1.3	1.1	2.1	1.1	2.1
2005	Number	38 823	24 322	16 771	11 551	6670	10 278	18 925
	%	4.0	2.3	1.6	1.2	0.7	1.0	1.9
2006	Number	33 412	17 273	14 103	14 006	15 499	15 887	18 902
	%	3.5	1.7	1.4	1.4	1.6	1.6	1.9

Source: General Household Survey, Statistics South Africa, 2002 to 2006.

2.5.2 The ASER amongst 7-to-15-year-olds

The South African Schools Act (Act 84 of 1996) makes education compulsory for children between the ages of 7 and 15. Figure 11 represents the analysis of attendance at educational institutions of the 7-15-year-old age group. According to the General Household Survey (2006), the South African education system successfully made education accessible to a very high proportion of the 7-15-year-old population. Even though it may not be stated with certainty as to which level of education these learners were participating in, as much as 96.3% of this population group were in an educational institution during 2002, and the participation rate increased to 97.8% in 2007 (see Figure 11). These findings suggest that the out-of-school proportion of the 7-15-year-old population decreased steadily from 3.7% (336 059) in 2002 to 2.2% (212 820) in 2007. This is a truly laudable achievement in the provision of access to education for that part of the population that falls within the compulsory education age in the country.

Figure 11: Age-specific enrolment rate for the population, aged 7-to-15 years, by gender: 2002 to 2007



Source: General Household Survey: Statistics South Africa, 2006, 2007.

An analysis of the GPI in each of the years of the period under review, indicates that there is no disparity between male and female learners attending an educational institution within the 7-15-year-old population (see Table 26). While the number of

females in the 7-15-year-old age group attending an educational institution was lower than the number of males, it should be noted that the estimated general female population in this age range remained lower than the estimated male population during the period under review.

Table 26: Age-specific enrolment rate for the compulsory school-going age population (7-15-year-olds): 2002 to 2006

		2002	2003	2004	2005	2006
Attending	Female	4 210 286	4 189 089	4 255 286	4 262 320	4 245 464
	Male	4 555 269	4 662 006	4 783 403	4 719 784	4 602 299
	Total	**8 765 555**	**8 851 095**	**9 038 689**	**8 982 104**	**8 847 763**
Population	Female	4 356 069	4 296 335	4 329 596	4 346 171	4 338 412
	Male	4 745 546	4 819 766	4 888 229	4 831 210	4 722 172
	Total	**9 101 615**	**9 116 101**	**9 217 825**	**9 177 381**	**9 060 584**
ASER	Female	96.7	97.5	98.3	98.1	97.9
	Male	96.0	96.7	97.9	97.7	97.5
	Total	**96.3**	**97.1**	**98.1**	**97.9**	**97.7**
GPI		1.01	1.01	1.00	1.00	1.00

Source: General Household Survey: Statistics South Africa, 2006.

2.5.2 Secondary school ASER

The ASER for children between the ages of 14 and 18, reflects a quick decline after the age of 14 and, more in particular, after the age of 16. This is a real effect, not a data artefact of any sort, and reflects a drop-out process rather than a transfer to other sub-systems, such as ABET or FET (see Section 3.2 on drop-out rates). Nonetheless, it must be noted that more and more children persist over the years, even as late as at the age of 18.

Table 27: Age-specific enrolment rates of 14-to-18-year-olds by single-year age groups from the General household Survey: 2002 to 2007

	Age				
	14 yrs	**15 yrs**	**16 yrs**	**17 yrs**	**18 yrs**
2002	96.7	93.2	91.1	85.0	72.1
2003	96.5	95.9	92.1	83.6	73.9
2004	97.7	94.8	90.8	86.8	73.3
2005	98.2	95.2	91.1	85.5	71.7
2006	97.2	94.6	90.8	85.4	72.2
2007	97.8	94.3	90.8	88.2	73.9

Source: General Household Survey, Statistics South Africa, 2002 to 2006.

The proportion of secondary school-aged children, who may not be in the education system, constitutes the remainder of the numbers presented in Table 27. As indicated in Table 28, the proportion of children out of school increases from lower than 4% amongst 14-year-olds to more than 25% for 18-year-olds (or more than a quarter of a million 18-year-olds). In total, during the period 2002 to 2006, between 560 000 and 611 000 of 14-to-18-year-olds were out of school.

Table 28: Proportion of out-of-school children in the population aged 14-to-18: 2002 to 2006

		Age					
		14 yrs	15 yrs	16 yrs	17 yrs	18 yrs	Total
2002	Number	32 347	65 818	88 323	145 147	265 223	596 858
	Percentage	3.3	6.8	8.9	15.0	27.9	
2003	Number	36 209	37 851	77 063	155 517	279 543	586 183
	Percentage	3.5	4.1	7.9	16.4	26.1	
2004	Number	25 295	49 283	87 188	123 322	279 323	564 411
	Percentage	2.3	5.2	9.2	13.2	26.7	
2005	Number	20 473	47 465	85 324	139 407	293 973	586 642
	Percentage	1.8	4.8	8.9	14.5	28.3	
2006	Number	30 066	53 674	97 089	138 005	292 324	611 158
	Percentage	2.8	5.4	9.2	14.6	27.8	

Source: General Household Survey, Statistics South Africa, 2002 to 2006.

2.5.3 The ASER amongst 16-18-year-olds

Table 29 provides comparisons between the ASER for the 16-18-year-olds who are enrolled at school, and those who are enrolled at colleges. The results reflected in Table 29 reveal that the vast majority of this age group is enrolled in schools rather than in colleges. While only 1% of this population group are enrolled in FET colleges, as much as 80% are enrolled in the schooling system, and this has been the pattern from 2002 to 2006.

In exploring this discrepancy in the participation rates between schools and colleges, it must be noted that, even though the FET sector caters for the 16-24-old-population, the discrepancy would still remain large. Furthermore, this huge discrepancy in the participation rate of the 16-18-year-old age group in the two sectors must also be understood in the context of the major difference between the number of public ordinary secondary schools (5 466 in 2006) and the number of public FET colleges (50 in 2006).

Table 29: Age-specific enrolment rate for 16-18-year-olds in school and in FET colleges: 2002 to 2006

	2002	2003	2004	2005	2006
Attending school	2 337 898	2 418 581	2 388 002	2 363 586	2 454 551
Attending college	28 060	26 250	19 474	24 094	23 689
Population: 16-18 years	2 909 301	2 999 191	2 934 944	2 952 871.	3 057 103
ASER school	80.4	80.6	81.4	80.0	80.3
ASER college	1.0	0.9	0.7	0.8	0.8

Source: General Household Survey, Statistics South Africa, 2006.

While Table 26 indicates that there is no disparity between male and female learners attending an educational institution within the 7-to-15-year-old population, this is not the case with the 16-to-18-year-olds. As Table 30 indicates, for the period 2002 to 2007, a higher proportion of males, aged 16 to 18, than females, aged 16 to 18, was enrolled in educational institutions. This indicates that, after compulsory education ends, females tend to drop out at slightly higher rate than males. The gap between them is narrowing, however. In 2002 the GPI had been 0.93, but by 2007 it was up to 0.97.

Although males from the age of 16 are retained in the education system at a higher rate than females, females have a much higher GER and NER at secondary-school level than males (see Tables 14 and 22). This indicates that males must be repeating grades more than females do, and therefore they progress through the education system far less efficiently than females. This is confirmed in the section on the repetition rate in the chapter: Internal Indicators of Internal Efficiency in Education (see Tables 33 and 34).

Table 30: Age-specific enrolment rate by gender of 16-to-18-year-olds in all educational institutions: 2002 to 2007

	Number of 16-18-year-olds attending an educational institution		Total population of 16-18-year-olds		Percentage 16-18-year-olds in population, attending an educational institution		
	Male	Female	Male	Female	Male	Female	GPI
2002	1 324 547	1 086 297	1 543 109	1 366,192	85.8	79.5	0.93
2003	1 356 120	1 130 947	1 589 665	1 409 526	85.3	80.2	0.94
2004	1 327 539	1 117 573	1 543 428	1 391 517	86.0	80.3	0.93
2005	1 330 965	1 103 204	1 558 810	1 394 063	85.4	79.1	0.93
2006	1 401 967	1 127 718	1 658 999	1 398 104	84.5	80.7	0.95
2007	1 433 972	1 234 520	1 662 140	1 477 770	86.3	83.5	0.97

Source: General Household Survey: Statistics South Africa, 2002 to 2007.

2.6 Completion rate

The completion rate refers to the proportion of learners who complete a given level of the education system. In the majority of international reports, this is calculated as the number of learners promoted from a given grade, divided by the population appropriate to that grade (see Appendix A for the formula). Since true promotion rates are usually not known, they are approximated by taking into consideration enrolments in the given grade, enrolments in the next higher grade, and repetition in both grades.

Estimating completion rates, using the traditional methodology just described, and using EMIS data (in the numerator) and population projections or interpolations (in the denominator), proved to be highly unreliable. There were four main problems. Firstly, the estimates were highly unstable over time. The average absolute correlation (across grades) between these rates and a time trend was only 0.72. This is unusually low for a social variable, such as completion rate. It is known that, even during times of significant social change, education systems tend to move at a very slow pace.

Secondly, three out of the four (Grade 3, Grade 7 and Grade 11) rates showed negative trends. This is highly counter-intuitive, given that access to education was generally known to be improving after 1994.

Thirdly, due to ambiguities in the definition of the completion rate for Grade 12, the method used could not produce a Grade 12 completion rate.

In the fourth place, some of the completion rates for the higher grades were higher than those for some of the lower grades. This is not a theoretical impossibility, given the way these rates are being calculated, but it is somewhat surprising that the patterns are so inconsistent. (For example, in 2003, the estimated completion rate for Grade 9 was 92%, whereas for Grade 7 it was 89% in 2001.)

Given these problems, a more straightforward alternative, presented below, is to use Household Survey data. This data takes, as a proxy for the completion rate, the number of persons who state that they have completed a given grade or higher grade, as a proportion of all persons of any given age. However, to prevent the data from being "contaminated" by the low completion rates of older age groups, the age range is restricted to 9-to-23-year-olds. Furthermore, the maximum reported rate over that range is taken as the proxy for the given year.

Admittedly, this does not produce the "instantaneous" completion rate for that given year, but it does produce the "achieved" completion rate for that given year – and in many respects this is a more valid and policy-relevant concept. It also makes it possible to look at the completion rate for Grade 12, which signifies the end of the schooling system. This alternative method produced the following set of results, indicated in Table 31.

Table 31: Completion rate (alternative method): 1995 to 2007

	Grade 3	Grade 7	Grade 9	Grade 11	Grade 12
1995	97%	88%	75%	54%	39%
1997	97%	89%	75%	51%	37%
1999	98%	90%	76%	54%	41%
2001	99%	90%	77%	57%	42%
2002	99%	91%	79%	55%	40%
2003	99%	92%	79%	57%	42%
2004	99%	92%	82%	56%	42%
2005	99%	93%	81%	57%	42%
2006	99%	93%	82%	58%	43%
2007	99%	93%	83%	60%	44%

Source: Calculated from 1995, 1997 and 1999 October Household Surveys; 2001 and 2002 September Labour Force Surveys; and 2003, 2004, 2005, 2006 and 2007 General Household Surveys.
Note: The rates for 1995, for Grade 11 and 12 completions, are off trend, as the survey question regarding the highest level achieved was asked a little differently in that year (or rather, the response options were different). Therefore, for those two grades, the year 1995 was not used to establish the correlations discussed in the main text.

These trends are all positive, as intuition would suggest, and they are far more stable than the rates estimated using EMIS and population data, indicating an average correlation of 0.92 across time for all grades. A key advantage of working with survey data is that both the numerator and the denominator of all the key rates come from the same data source and are therefore much less subject to error.

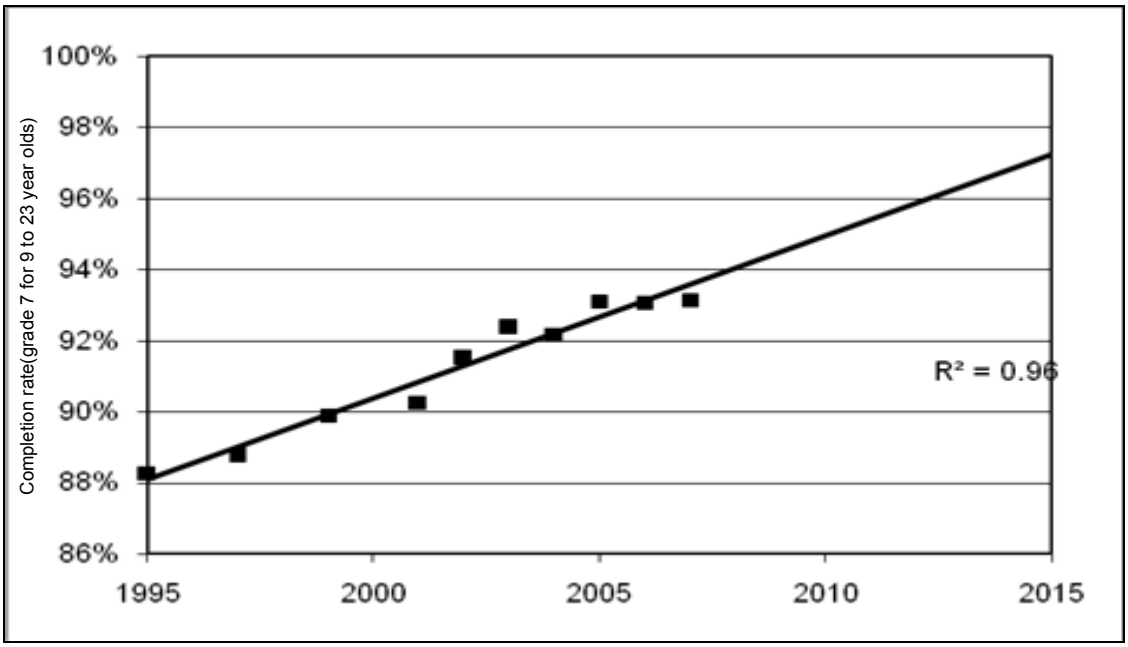
A projection of the Grade 7 completion rate up to 2015, as indicated in Figure 12 below, does suggest that the country would just miss the international goal of having 100% primary completion by 2015 by a mere 2 percentage points, unless efforts are stepped up to enrol the last remaining few percent of the youth. As can be seen, this is a highly predictable trend (or it has been for the past 11 years), with a coefficient of determination of 0.96 (see Figure 12).

To cover the last few percent still missing, and who are still likely to be missed by 2015 if trends continue, would most likely mean stepping up efforts in some remote rural areas, efforts amongst the troubled or disenchanted youth, and with regard to learners experiencing barriers to learning.

It must be noted that, according to all surveys, and as explained elsewhere in this report (see the section on drop-out rates), the main reasons that the youth provide for not completing school are economic in nature (either problems pertaining to affording the direct costs or needing to work); reasons pertaining to educational relevance and quality; and thirdly, illness or pregnancy – in that order. (Lack of opportunity as such is not often mentioned in the surveys.)

This 2 percentage-point gap projected for 2015 is definitely an area of concern, but it should not be viewed as a crisis of major proportions. However, one should note that, if sufficient efforts are not made, the curve could well flatten at say 94% or 95%, and then the goal would be missed by more than 2 percentage points.

Figure 12: A projection of the Grade 7 completion rate up to 2015



Source: Calculated from 1995, 1997 and 1999 October Household Surveys; 2001 and 2002 September Labour Force Surveys; and 2003, 2004, 2005, 2006 and 2007 General Household Surveys.

Gender differences in completion rates are marginal, though they slightly favour females. Given that they represent only slight gender differences, they are not presented for the entire period, but just for the most recent available year, namely 2006 (see Table 32).

Table 32: Completion rate by gender: 2006

	Male	Female	GPI
3 or more grades	98.5%	99.1%	101%
7 or more grades	92.1%	94.0%	102%
9 or more grades	80.7%	83.2%	103%
11 or more grades	56.9%	59.0%	104%
12 or more grades	42.9%	43.4%	101%

Source: General Household Survey: Statistics South Africa, 2006.

2.7 Conclusion

The afore-foregoing discussions regarding access indicate that access to schooling in South Africa has improved considerably over the past 10 to 15 years. Enrolment in Grade R grew substantially. South Africa is making progress towards ensuring that all learners entering Grade 1 would have had the opportunity to participate in an accredited reception year programme by 2010. With the introduction of compulsory education in 1996, access to primary schooling is almost universal. While access to secondary education is not as widespread as for primary schooling, it has improved during the period under review. Furthermore, completion rates are high and have improved over time. This is especially the case with primary and basic education completion rates.

Despite the fact that age-grade regulations were initially successful in reducing over-age and under-age enrolment, the regulations no longer appear to be effective. As a result, a large number of over-aged or under-aged children continue to enrol for Grade 1. Another area of concern centres around male learners who, particularly at secondary school level, appear to repeat more and drop out more than do female learners, and therefore they show lower participation rates.

Higher education experienced a massive increase in enrolment. However, this increase is likely to taper off as higher education institutions focus on improving their output performance. Once again males tend to be under-represented, as the female participation rate in higher education is higher than that of males, and has increased at a faster rate than it has for males during the period under review. On the other hand, females are generally enrolled for subjects in the humanities and are under-represented in science, engineering and technology, as well as in business and commerce, and also in postgraduate programmes.

CHAPTER 3: INDICATORS OF INTERNAL EFFICIENCY IN EDUCATION

3.1 Introduction

Internal efficiency in education refers to the way in which learners flow through the system ("throughput"), it is determined by repetition and drop-out behaviour and illustrates the retention of learners from one grade to the next.

Most reports similar to this one, would focus on repetition rates, promotion rates, dropout rates and survival rates. A major challenge in calculating these efficiency indicators though, is the question of the validity and reliability of repeater data, provided by schools in the Annual School Survey (ASS). A number of researchers have pointed to the under-reporting of the number of repeaters by schools in South Africa (DoE, 2006d:90; DoE, 2008 and Crouch 2005:2), as well as in other developing countries (see UNESCO: IEB 1996:9).

The under-reporting of repetition in South Africa is mainly due to problems experienced with the interpretation of repetition, the inclination on the part of schools to hide the extent of the problem, and poor compliance on the part of schools when completing the ASS form. Due to the under-reporting of repeater numbers, the efficiency indicators in this report, which are based on EMIS data, need to be read with considerable caution. In fact, this report challenges the basic results and offers alternative interpretations of the numbers for the sake of urging caution on the part of researchers.

3.2 Repetition rate

In spite of some basic problems in measuring repetition rates, and in spite of the problems of under-reporting, the repetition rate is worth reporting on, even with its defects, because of the interesting patterns of variation it shows across grades and gender. The stance this report takes is that the patterns and differences in repetition rates are valid and of interest, but that their overall average levels are probably understated. Therefore, the notion that males repeats more than females do is valid and worth remarking upon, based on official returns. However, for both genders, this rate, when based on official returns, is most likely an under-estimation.

Table 33 indicates the female repetition rate and Table 34 the male repetition rate. During the period 1997 to 2003, male learners on the whole had a higher repetition rate than females in both primary and secondary grades. (Only in Grade 12 has the female repetition rate been consistently higher than the male repetition rate.) The only exception was in 2000, when the female repetition rates for Grades 1 to 7 were so out of kilter compared to the rates measured before or after 2000, that they should be disregarded. Perhaps the higher rate of repetition amongst male learners provides one explanation for the higher participation rates amongst female learners, particularly by the time they reach secondary school. (See the chapter on access.)

Table 33: Female repetition rate by grade: 1997 to 2003 [6]

Grade	1997	1998	1999	2000	2001	2002	2003
1	10.5%	8.7%	7.1%	15.0%	7.8%	6.1%	9.6%
2	6.8%	8.1%	6.1%	12.2%	5.9%	4.3%	7.4%
3	6.4%	8.3%	7.0%	13.4%	6.2%	4.5%	8.3%
4	6.6%	9.0%	8.5%	17.1%	6.2%	4.8%	8.9%
5	6.2%	8.3%	7.5%	14.9%	6.8%	3.9%	6.7%
6	5.1%	7.5%	6.2%	12.4%	5.3%	3.8%	5.8%
7	4.5%	8.3%	4.9%	7.3%	3.3%	2.8%	5.3%
8	10.8%	16.5%	15.4%	15.7%	5.0%	5.9%	11.9%
9	10.6%	16.1%	14.9%	15.3%	13.8%	6.3%	12.6%
10	11.2%	17.0%	16.8%	17.3%	18.6%	16.5%	14.5%
11	11.4%	18.1%	18.4%	19.4%	19.9%	17.7%	18.8%
12	12.3%	15.1%	12.6%	14.0%	10.5%	7.3%	13.5%

Source: Calculated from Department of Education data bases.

Table 34: Male repetition rate by grade: 1997 to 2003 [7]

Grade	1997	1998	1999	2000	2001	2002	2003
1	12.8%	11.1%	9.5%	6.0%	10.4%	7.8%	10.7%
2	9.3%	11.2%	8.3%	5.8%	8.5%	6.0%	8.6%
3	8.7%	11.6%	10.2%	6.9%	9.4%	6.4%	9.8%
4	9.2%	12.4%	12.3%	8.5%	9.4%	6.9%	9.9%
5	8.1%	11.0%	11.9%	6.0%	9.7%	5.6%	7.8%
6	6.2%	9.4%	7.9%	2.9%	7.0%	5.3%	5.7%
7	5.3%	10.3%	6.4%	1.3%	4.2%	3.6%	5.6%
8	12.0%	18.3%	17.7%	17.7%	6.0%	7.7%	13.6%
9	11.9%	17.7%	17.0%	17.2%	15.7%	7.6%	14.0%
10	12.3%	18.1%	18.3%	18.6%	20.2%	18.3%	15.3%
11	12.3%	19.3%	19.6%	20.7%	20.8%	18.6%	19.7%
12	11.1%	15.1%	12.0%	13.1%	9.9%	6.9%	12.7%

Source: Calculated from Department of Education data bases.

The repetition rate, as measured for a given grade, indicates the number of learners who repeat a given grade in a given year, expressed as a percentage of the previous year's enrolment for the same grade.

In order to improve the internal efficiency of the education system, an Admissions Policy was passed in 1998 (DoE, 1998b), which sets norms for learners to proceed through school with their age group. The Policy makes provision for a learner to repeat only once per phase, but automatic promotion is not allowed. In order to assist learners in keeping up with their peers, the policy states that "a learner's needs must be attended to through the efforts of the learner, and his or her teachers, with support from the learner's family and peers".

Figure 13 indicates the repetition rate by grade from 1997 to 2003. During this period, the repetition rate in each grade fluctuated to such an extent between the different years, that it is very difficult to discern a trend or measure the effectiveness of the Admissions Policy on the repetition rate. However, what is clear is that the

[6] *These indicator values must be used with extreme caution, as they are based upon data from schools that is considered to be unreliable.*

[7] *These indicator values must be used with extreme caution, as they are based upon data from schools that is considered to be unreliable.*

repetition rate in secondary school is much higher than in primary school, and that there are key nodes in the system where repetition tends to be much higher when compared to other nodes.

In primary school, the Grade 1 repetition rate ranged from 7% to 11.7% between 1997 and 2003. In 1997, and then again from 2001 to 2003, the repetition rate for Grade 1 was the highest of all the primary schools grades. However, it is believed that the actual repetition rates for Grade 1 are much higher than the repetition rates that are reported here.

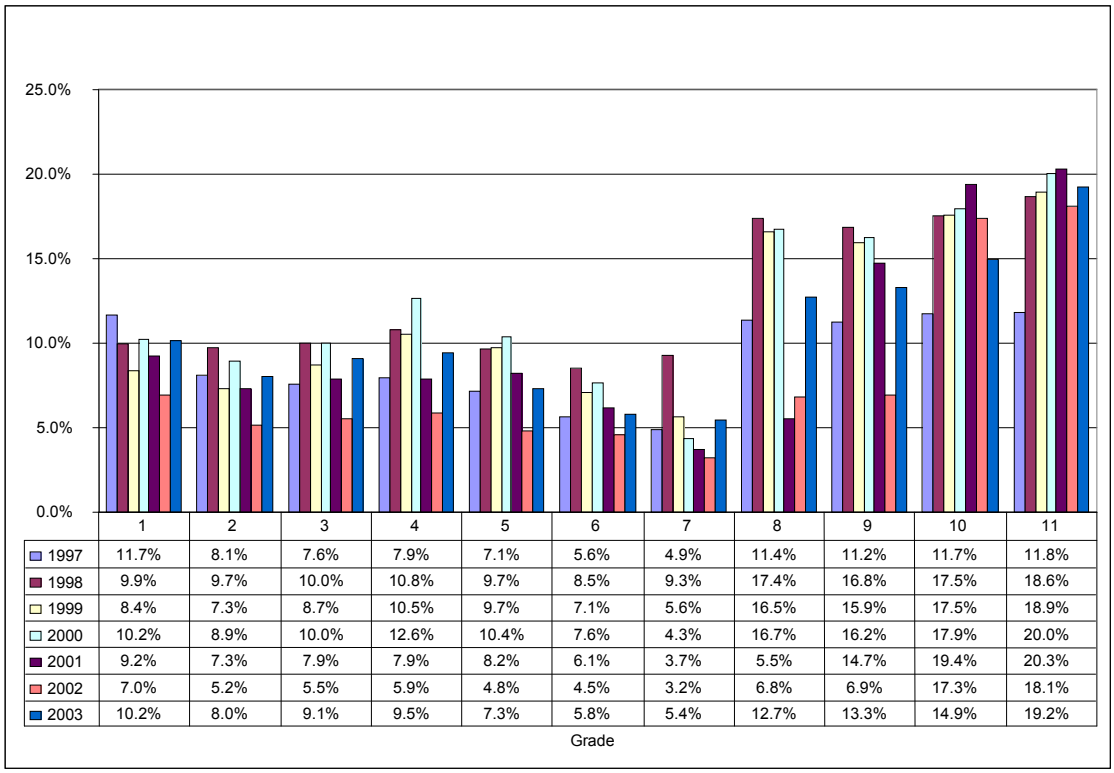
There are many likely explanations for this. One is that a child enrols in Grade 1 at the beginning of the year, stays at school for a few weeks or even months, albeit with desultory attendance, then stops attending altogether, and is not assessed in any way. Parents, principals and teachers make the intuitive decision that the child should simply re-enrol for Grade 1 the next year. In reporting this child's enrolment the second time around, an ambiguity appears: Is the child a repeater or a new enrolee?

From a pedagogical point of view, the child could be considered a new enrolee. But from a planning point of view, that child has, in effect, shown up twice in terms of resource allocation, space nominally occupied, etc. Crouch (2005:2) argues that much of the repetition taking place in Grade 1 is not reported as repetition, as it is not based upon academic failure or even systematic academic assessment. Furthermore, in areas where there is no access to early childhood development facilities or to Grade R, principals face moral pressure to accommodate younger children as early admissions to Grade 1, but with the expectation that the child will be in Grade 1 for two years. (In the past, this was semi-formalised in some provinces as "little Sub A".)

Crouch also maintains that the education system contains (or has contained) incentives to boost enrolment (such as higher post levels for principals of schools with large enrolments), and that it is easier to enrol a real child early in Grade 1, with the expectation that he or she will repeat, rather than to make up a non-existent child in later grades. These children are typically not reported as repeaters, but rather appear each year as part of the new intake (Crouch, 2005:2).

In secondary school, the repetition rate was very high and increased steadily up to Grade 11. Grade 11 recorded the highest repetition rate of all the grades. The most likely explanation for this is that learners, who were considered at risk of failing their Senior Certificate Examination (SCE) in Grade 12, were discouraged from entering Grade 12 (De Souza, 2003:4). This practice of "gate-keeping" (De Souza, 2003:4) became fairly common, as schools tried to improve their SCE results, and it can be observed in the sharp increase in the Grade 11 (and Grade 10) repetition rate after 1997.

Figure 13: Repetition rate by grade: 1997 to 2003 [8]



	1	2	3	4	5	6	7	8	9	10	11
1997	11.7%	8.1%	7.6%	7.9%	7.1%	5.6%	4.9%	11.4%	11.2%	11.7%	11.8%
1998	9.9%	9.7%	10.0%	10.8%	9.7%	8.5%	9.3%	17.4%	16.8%	17.5%	18.6%
1999	8.4%	7.3%	8.7%	10.5%	9.7%	7.1%	5.6%	16.5%	15.9%	17.5%	18.9%
2000	10.2%	8.9%	10.0%	12.6%	10.4%	7.6%	4.3%	16.7%	16.2%	17.9%	20.0%
2001	9.2%	7.3%	7.9%	7.9%	8.2%	6.1%	3.7%	5.5%	14.7%	19.4%	20.3%
2002	7.0%	5.2%	5.5%	5.9%	4.8%	4.5%	3.2%	6.8%	6.9%	17.3%	18.1%
2003	10.2%	8.0%	9.1%	9.5%	7.3%	5.8%	5.4%	12.7%	13.3%	14.9%	19.2%

Source: Data obtained from Department of Education data bases.

The Education for All Global Monitoring Report (UNESCO, 2006), provided comparative data on the average repetition rates in primary and secondary schools in countries around the world.

If one compares the data for South Africa to the average primary and secondary repetition rates of countries that either have a similar GNP per capita to South Africa, or are members of the SADC, and for which information is available, (see Table 35), one can see that the repetition rates vary quite widely. South Africa's primary repetition rate is higher than that of Jamaica, Turkey and the Russian Federation, but similar to that of Panama and Botswana. The South African secondary repetition rate is similar to that of Argentina and Uruguay.

Even though, where South Africa is concerned, these rates suffer from the problems noted, the international comparisons are still valid to a certain extent, and of interest, because most (developing) countries suffer from similar reporting problems. Since the bias exists for the majority of countries and runs in similar directions, it is still of interest to compare South Africa to other countries.

[8] *These indicator values must be used with extreme caution, as they are based upon data from schools that is considered to be unreliable.*

Table 35: Repetition rate in selected countries [9]

Country	Primary	Secondary
Argentina	6.1	11.5
Botswana	5.2	N/A
Brazil	24	17.4
Gabon	34.4	21.7
Jamaica	2.8	1.5
Lesotho	18.2	N/A
Namibia	13.1	N/A
Panama	5.5	4.8
Russian Federation	0.7	0.7
South Africa	**5.2**	**10.9**
Turkey	3.2	0.5
Uruguay	8.3	10.1
Venezuela	7.3	8.4

Source: UNESCO: 2006.
Note: For some countries the latest available information is from 2003 and for others it is from 2004.
N/A: Not available.

3.2.1 An alternative view of repetition rates

It was stated that, while the patterns in the repetition rates are most likely reliable and of interest (higher repetition for males and higher repetition in certain key grades, such as Grades 1 and 11), the overall level of repetition implied by these rates is probably under-estimated for a variety of reasons.

While it is beyond the scope of this report to present a set of full-fledged alternative estimates, it is worthwhile to point out that further research should be done to motivate the existing research, by providing an idea of how high the rates might be, and to propose possible approaches.

Some insight into the issue, but just for Grade 1, could be gained by looking at tables of enrolment by age and grade in sequential years. Unfortunately, the EMIS enrolment data by age and grade, as returned by schools, is not very reliable. However, the General Household Survey does contain some useful pointers. While this survey does not ask individuals (or their parents) about the current grade in which learners are enrolled, it does ask whether the youth are in fact enrolled, and what their highest previous successfully completed grade has been. The possibility of re-entry clouds the issue to some extent, but since the method to be described below relies on comparisons across years, re-entry constitutes a problem only if it were to increase or decrease suddenly.

Table 36 presents data by "grade" (approximately) and by age for 2003, 2004 and 2006. It also indicates total enrolment in the Grades-R-to-12 system and population by age, thus allowing one to calculate total unenrolment.

[9] *These indicator values must be used with extreme caution as they are based on data from schools that is considered to be unreliable.*

Table 36: Total enrolment by grade and age for Grades R to 12: 2003, 2004 and 2005

Enrolment by age, grad, and year			
2003	**6-year-olds**	**7-year-olds**	**8-year-olds**
Learners currently enrolled, never previously enrolled, likely to be enrolled for grade R at most	255 126	74 551	16 749
Learners currently enrolled, whose prior highest grade was Grade 0, likely to be enrolled for Grade 1	399 325	539 381	189 729
Learners currently enrolled, whose prior highest grade was Grade 1, likely to be enrolled for Grade 2	57 729	291 827	476 961
Total enrolment for Grades R to 12	717 461	962 245	963 630
Total population	936 306	1 035 621	989 665
Unenrolled	218 845	73 376	26 035
2004	**6 years old**	**7 years old**	**8 years old**
Learners currently enrolled, never previously enrolled, likely to be enrolled for Grade R at most	247 749	74 698	24 042
Learners currently enrolled, whose prior highest grade was Grade 0, likely to be enrolled for Grade 1	470 435	617 991	199 518
Learners currently enrolled, whose prior highest grade was Grade 1, likely to be enrolled for Grade 2	59 989	323 189	526 710
Total enrolment for Grades R to 12	783 084	1 069 141	1 061 025
Total population	940 917	1 104 197	1 078 577
Unenrolled	157 833	35 056	17 552
7-year-old repeaters in Grade 1 in 2004		253 774	93 185
2005	**6 years old**	**7 years old**	**8 years old**
Learners currently enrolled, never previously enrolled, likely to be enrolled for Grade R at most	299 718	86 178	29 907
Learners currently enrolled, whose prior highest grade was Grade 0, likely to be enrolled for Grade 1	440 609	471 167	177 259
Learners currently enrolled, whose prior highest grade was Grade 1, likely to be enrolled for Grade 2	54 609	294 308	481 686
Total enrolment for Grades R to 12	809 438	937 939	1 040 817
Total population	942 362	976 762	1 065 139
Unenrolled	132 924	38 823	24 322
7-year-old repeaters in Grade 1 in 2005		190 587	121 733

Source: General Household Surveys. Estimates based on Statistics South Africa's 2003, 2004 and 2005 General Household Surveys.
Note: On source: An attempt was made to use the special HSRC "Client Survey" of October 2004, because this survey asked about both current enrolment by grade (not current enrolment in general and highest previous grade achieved, as the General Household Survey does) and the previous year's enrolment. But these data turned out to be unusable because, in declaring the current year's enrolment, respondents appeared to have identified Grade 0 or Grade R rigorously, but in declaring the previous year's enrolment, they appeared to have lumped all pre-Grade 1 learners together as either Grade 0 or R.

The analysis relies on a chain of reasoning that proceeds as follows: One observes that the enrolment of 7-year-olds in Grade was 617 9911 in 2004. Yet, enrolment of 6 year-olds in Grade 0 in 2003 was, optimistically, 255 126. The authors of this report call it "optimistically", because some of these enrolments might have been in "grades" lower than Grades R or 0. So, where does the difference between the 617 991 and the 255 126 come from? It cannot be "over-aged" learners entering Grade 1, since only 7-year-olds are concerned. The data allows one to focus the discussion according to age, thereby allowing one to do away with the idea that the bulking-up could be due to very late entry. (There are some instances involved, but not enough to explain the bulk.)

Some of the new enrolments in Grade 1 evidently constitute direct enrolment in Grade 1 by 7-year-olds (without passing through Grade 0). Yet, where is the pool for these enrolees? There were only 218 845 unenrolled 6-year-olds in 2003, as

Table 36 indicates. Some of them remained unenrolled, because there were 35 056 unenrolled 7-year-olds in 2004, which meant that they were not part of the new influx of 7-year-olds into Grade 1.

Furthermore, some of those 218 846 learners must have enrolled as 7-year-olds for Grades R or 0, and not for Grade 1, since in 2004 there were 74 698 7-year-olds who had been enrolled for grades lower than Grade 1. One then adds up all these factors to establish how many "unforeseen" or "unjustified" 7-year-olds there were in Grade 1 in 2004.

The calculation is as follows: 617 991 - 255 126 - (218 845 - 35 056 - 74 698), which results in 253 774. Therefore, just amongst the 7-year-olds, there might have been as many as 253 774 who were repeating Grade 1. What pool might such repeaters come from? One only needs to note that there were already 399 325 6-year-olds in Grade 1 in 2003. It could be that a good few of these were repeaters. This analysis could merely provide some intuitive insight, as the survey data is not sufficiently robust to allow for a very accurate calculation. It could be that this comparison between 2003 and 2004, yielding an estimated 253 774 7-year-old repeaters in Grade 1, is exaggerated.

The comparison between 2004 and 2005 indicates 190 587 repeaters, aged 7, in Grade 1. The data come from samples after all, and the samples in such small "cells" as those contained in an age-and-grade enrolment table must contain considerable sampling error. Nonetheless, in extrapolating this method to other age groups, one could estimate that in the early 2000s, the repetition rate for Grade 1, for example, was closer to 20% or maybe even a little higher – perhaps twice the estimates derived from EMIS returns.

This heuristic analysis was conducted for the period 2001 to 2006. Because of the heuristic nature of the analysis, this report does not present the findings in detail, i.e. for all ages in Grade 1, or for all grades. The analysis is robust enough, however, to lead to the conclusion that, in the more recent past, the repetition rate in Grade 1 has come down to levels much closer to the officially reported data than was the case in the 1990s or early 2000s. This was most likely due to a decreased need for an artificial bulking-up of Grade 1, as provisioning of Grade R facilities had been improved.

The use of age-grade data is also important in dispelling the widely held belief that there is major "late enrolment" or "over-age entry" in the South African education system. This is simply not the case. As Table 36 indicates, by age 7, only some 35 000 learners remained unenrolled in 2004 – out of a total population of approximately 1 000 000 – i.e. approximately 3.5%. Therefore, there simply could not be much late enrolment after the age of 7, but there is no pool of "never-enrolled" children to draw from. Instead, the system "manufactures" over-age via repetition.

Table 37 indicates the percentage of learners that were appropriately aged by grade. Since the source of data had been a survey undertaken in October 2004, children up to age 8 were considered to be fully appropriate for Grade 1 and 9-year-olds for Grade 2, etc.

Table 37: Percentage of learners that are appropriately aged by grade

Grade	Upper range of appropriate age	Percentage of enrolment that is of appropriate age
1	8	88
2	9	85
3	10	87
4	11	83
5	12	71
6	13	76
7	14	75
8	15	70
9	16	58
10	17	62
11	18	65
12	19	62

Source: HSRC: 2004 "Client Survey".

As noted above, due to the fact that the repetition rates decreased considerably and now tend to match the officially-reported rates, it might seem as though this entire discussion is somewhat academic. But that is not the case, as this issue is relevant to policy. The artificial inflation of Grade 1 via repetition, which was (largely) due to the low availability of Grade R facilities, and its comparison to lower levels of enrolment in Grades 2 and 3, have led analysts to conclude that children disappear from the schooling system early on. Such a position would have important policy implications, if it were based on a correct analysis. Similarly, there is a belief that many children enrol late.

This entire report argues, in a number of instances, that these beliefs are mistaken. This section has attempted to explain, in detail, that the problem historically arose mainly from the unreported repetition in Grade 1, and that the over-age problem was caused by repetition and not late enrolment – particularly in recent years. In reality, real throughput in the primary cycle has been above 90% for at least a decade and perhaps even longer, in spite of the uneven bulking-up of the early grades.

3.3 Drop-out rate

The drop-out rate refers to the percentage of learners who drop out of a given grade in a given school year. Because of the lack of actual data on the number of learners dropping out of school each year, the Department of Education traditionally calculated the dropout rate as a residual figure, after the repetition and promotion rates had been calculated. In other words, the drop-out rate was calculated as the difference between 100% and the sum of the promotion and repetition rates. (See "Drop-out rate" in the section on definitions and explanations of concepts in Appendix A.)

It was stated in the introduction to this section on indicators of internal efficiency (Section 3.1), that the validity and reliability of data constituted a major challenge in calculating the efficiency indicators. The fact that the number of repeaters is considered to be under-reported by schools in the ASS (see the section on repetition rate), has consequences for the accuracy of a drop-out rate that is calculated as a residual after the promotion and repetition rates have been deducted. If the repetition rate is under-reported by schools, which results in a downward bias in repetition rates, this would result in a corresponding upward bias in the drop-out

rate. This is reflected in Table 38, where drop-out rates are calculated, using EMIS data and the methodology described in the preceding paragraph.

From the data provided in Table 38, no evident trend could be discerned, as the drop-out rate in each grade fluctuated so much from one year to the next. However, in the primary grades, the drop-out rate for Grade 1 was extremely high, ranging from 10% to 19.6% during the period under review. This dropping-out phenomenon appeared to have occurred at a greater rate in Grade 1 than it did in any other primary school grade. The drop-out rate in the secondary grades climbed steadily through the grades. There was a marked increase in the drop-out rate from Grade 10, which is the beginning of the FET band, which is no longer part of compulsory schooling. The highest drop-out rate in secondary schools occurred in Grade 11, with approximately one out of every five learners dropping out during this grade.

Table 38: Drop-out rate by grade: 1997 to 2003

Grade	1997	1998	1999	2000	2001	2002	2003
1	14.1%	13.8%	19.6%	11.0%	8.7%	10.7%	10.0%
2	4.2%	3.7%	6.9%	-0.9%	1.3%	1.0%	2.9%
3	3.5%	2.2%	4.1%	0.7%	1.7%	0.8%	1.7%
4	5.6%	3.8%	6.0%	2.4%	2.6%	2.9%	2.2%
5	5.1%	4.5%	4.9%	1.7%	3.0%	3.0%	2.6%
6	5.1%	5.7%	5.8%	2.8%	3.5%	3.3%	3.7%
7	-3.2%	-1.4%	2.5%	-1.9%	2.1%	1.6%	4.9%
8	9.1%	8.6%	11.4%	8.3%	5.2%	5.0%	5.9%
9	5.2%	6.7%	10.4%	5.3%	7.5%	6.4%	-12.5%
10	8.8%	11.1%	15.9%	12.1%	12.6%	13.4%	22.4%
11	9.1%	15.4%	20.4%	19.6%	18.1%	20.7%	20.7%

Source: Calculated from Department of Education data bases.
(The drop-out rates provided in Table 38 must be used with extreme caution, as it is based on data from schools that is considered to be inaccurate.)
Note: Negative drop-out rates are either a result of drop-ins, i.e. learners who dropped out of a grade in previous years and then return to that grade some years later, or a result of the under-reporting of the repetition rate (or a combination of both).

Given the problems experienced with calculating the drop-out rate, using EMIS data and the methodology described above, a ministerial committee, which was established to investigate learner retention in the South African schooling system, conducted an alternative calculation to assess the drop-out rate, using the 2003 to 2006 General Household Survey data. This alternative calculation and analysis are discussed in the next section.

3.3.1 An alternative view of drop-out rates

The Ministerial Committee on Learner Retention in the South African Schooling System was established by the then Minister of Education, Mrs Naledi Pandor, in April 2007, to investigate the extent of retention and dropping out in the schooling system.

The core technique that the Committee used to estimate school retention and dropping out, was a construction of a life table with grade attainment, rather than time, as the independent variable (Department of Education, 2008:25). The drop-out rate was calculated for four groups, defined by year of birth, namely those born during the periods 1970 to 1974, 1975 to 1979, 1980 to 1984, and 1985 to 1989.

The highest education levels achieved that were considered in the analysis were no schooling and then from Grade R up to and including Grade 11.

The analysis also distinguished between those attending school at the time of the survey and those who did not attend school. Those not attending a school were regarded as having left the schooling system at the highest level of education reported (Department of Education, 2008:26).

The drop-out rates, measured at the end of each grade, of those born between 1970 and 1974 (aged 33 to 37 in 2007), between 1975 and 1979 (aged 28 to 32 in 2007), between 1980 and 1984 (aged 23 to 27 in 2007), and between 1985 and 1989 (aged 18 to 22 in 2007), were as follows:

Table 39: Drop-out rate for various birth groups by grade

Grade/ Date of birth	1970-1974	1975-1979	1980-1984	1985-1989
Grade 1	0.5%	0.3%	0.2%	0.3%
Grade 2	0.8%	0.5%	0.4%	0.3%
Grade 3	1.6%	1.1%	0.7%	0.6%
Grade 4	2.4%	1.6%	1.2%	0.7%
Grade 5	2.9%	1.9%	1.7%	1.2%
Grade 6	4.5%	3.1%	2.8%	2.1%
Grade 7	7.0%	5.2%	4.8%	3.4%
Grade 8	8.7%	7.1%	7.0%	4.9%
Grade 9	11.0%	10.5%	11.5%	-*
Grade 10	15.7%	15.5%	16.1%	-*
Grade 11	20.5%	23.9%	24.2%	-*

Source: Department of Education 2008, pp 29-32.
** Too soon to tell*
Note: The group in this table is defined by date of birth and not by enrolment in Grade 1. Therefore, the percentages shown are of those born rather than of those starting Grade 1.

The Committee's analysis indicates that, during the first eight years of school, the drop-out rate is minimal. This is particularly the case for Grade 1 where, in contrast to the situation shown in the conventional analysis (see Table 38), which indicates a Grade 1 drop-out rate of between 10% and 20% between 1997 and 2003, the drop-out rate for every group since the 1970-to-1974 group has been lower than 1%. From Grades 9 upwards, however, the drop-out rate increases sharply. The Grades 9 and 10 drop-out rate is over 10% and the Grade 12 drop-out rate is over 20%.

While each successive group has experienced an improvement in drop-out rates in Grades 1 to 8, the opposite is true from Grade 9 upwards, where the drop-out rate has increased for each successive group. The Grade 11 situation is of particular concern – while 20% of the 1970-to-1974 group dropped out of school at the end of Grade 11, this has increased to 24.2% for the group born 10 years later (between 1980 and 1984).

Although the drop-out rate in primary school is minimal, it was emphasised in the section on completion rates (see Section 2.6) that, unless efforts are stepped up, South Africa is in danger of just missing (by 2 percentage points) the international goal of having 100% primary school completion by 2015.

Also, although education is not compulsory after Grade 9, it is surely desirable to have as many learners as possible remaining in school until they have completed Grade 12 or its equivalent at FET colleges. If the issue of learners dropping out of school without completing their education is to be dealt with, the reasons why this happens need to be identified. The General Household Survey addresses this issue, as may be seen from Table 40 and Figure 14.

In 2002 and 2007, the most common reason cited by children aged 7-to-18, who were not attending an educational institution, was insufficient money for study fees. In 2002, just over 320 000 children had fallen into this category (almost 39% of all children who had not been attending an educational institution), while in 2007, the number dropped to 198 296, representing a decrease of 38%.

The main reason for this decrease could be the implementation of the No-fee Schools Policy in 2007, in terms of Section 39(9) of the South African Schools Act, whereby all Quintile 1 and 2 schools – 40% of the poorest schools in the country – were declared no-fee schools.

Despite this decrease in children not attending an educational institution due to insufficient money for study fees, in 2007 almost one third of all children who were not attending an educational institution cited this as the reason.

In addition to this, in 2007 a further 7.5% of respondents were not attending an educational institution because they had to work (up from 5% in 2002). In total then, four out of every 10 children of school-going age, who were not attending an educational institution, were doing so for economic reasons.

Barring economic reasons, the four most commonly mentioned reasons for not attending an educational institution in 2007 were that education was useless or uninteresting (15.1% of respondents, up from 12.7% in 2002); illness (10% of respondents, up from 8.2% in 2002); family commitments (7.1% of respondents, up from 5.2% in 2002); and pregnancy (5.9% of respondents, up from 5.1% in 2002).

Although pregnancy is the second most often cited reason for females not attending school (35 303 females or 12% of female respondents) in 2007, only 0.4% of male respondents were out of school for this reason.

The distance to school was not commonly mentioned as a reason for not attending an educational institution, although it did affect 10 908 children in 2007 (1.8% of respondents), which was down from 27 744 (3.3% of respondents) in 2002.

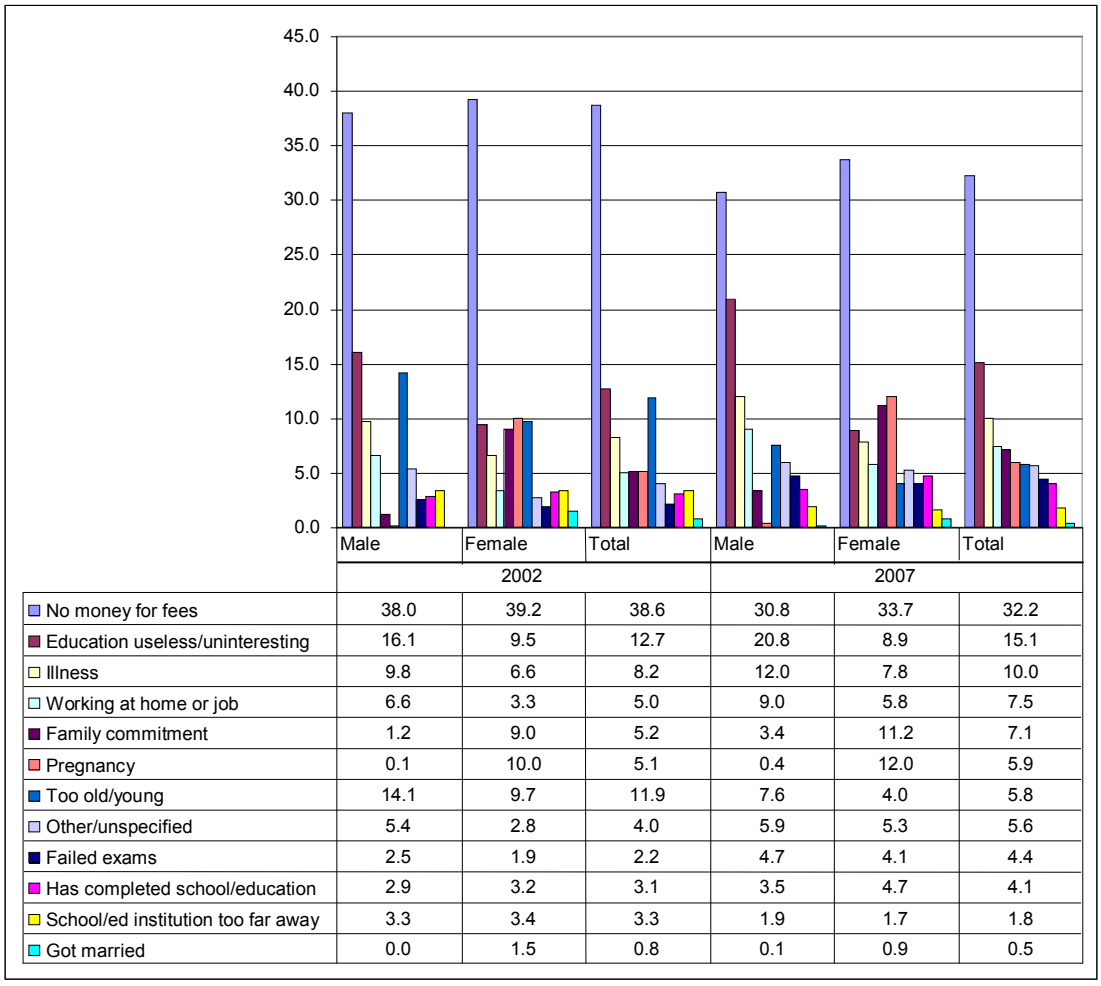
Of the 10 908 children who cited this reason in 2007, 13% were aged 7-to-13, while 87% were aged 14-to-18. This could indicate that, in some areas, the unavailability of secondary schools could be forcing children to drop out of school.

Table 40: Number of 7-to-18-year-olds by main reason for currently not attending an educational institution: 2002 and 2007

	2002			2007		
	Male	Female	Total	Male	Female	Total
No money for study fees	154 659	165 771	320 430	98 835	99 460	198 296
Education useless/uninteresting	65 375	40 082	105 457	66 939	26 356	93 295
Illness	39 746	27 952	67 699	38 659	22 879	61 538
Working at home or holding down a job	26 971	14 158	41 129	28 812	17 247	46 059
Family commitments	4 927	38 072	42 999	10 988	32 980	43 968
Pregnancy	331	42 248	42 579	1 268	35 303	36 572
Too old/young	57 461	41 008	98 469	24 271	11 729	36 000
Other/Unspecified	21 922	11 664	33 586	18 903	15 639	34 542
Failed examinations	10 211	7 949	18 160	15 030	12 003	27 033
Completed school/education	11 777	13 691	25 468	11 224	13 895	25 118
School/educational institution too far away	13 542	14 202	27 744	6 016	4 892	10 908
Got married	0	6 278	6 278	291	2 515	2 805
Total	**406 921**	**423 074**	**829 995**	**321 236**	**294 897**	**616 133**

Source: General Household Survey Interactive Database. Obtained 13 and 17 November 2008: Statistics South Africa, 2002 and 2007.

Figure 14: Percentage of 7-to-18-year-olds by main reason for currently not attending an educational institution: 2002 and 2007



	Male	Female	Total	Male	Female	Total
	2002			2007		
No money for fees	38.0	39.2	38.6	30.8	33.7	32.2
Education useless/uninteresting	16.1	9.5	12.7	20.8	8.9	15.1
Illness	9.8	6.6	8.2	12.0	7.8	10.0
Working at home or job	6.6	3.3	5.0	9.0	5.8	7.5
Family commitment	1.2	9.0	5.2	3.4	11.2	7.1
Pregnancy	0.1	10.0	5.1	0.4	12.0	5.9
Too old/young	14.1	9.7	11.9	7.6	4.0	5.8
Other/unspecified	5.4	2.8	4.0	5.9	5.3	5.6
Failed exams	2.5	1.9	2.2	4.7	4.1	4.4
Has completed school/education	2.9	3.2	3.1	3.5	4.7	4.1
School/ed institution too far away	3.3	3.4	3.3	1.9	1.7	1.8
Got married	0.0	1.5	0.8	0.1	0.9	0.5

Source: Statistics SA: 2002 and 2007 General Household Survey Interactive Data Base. Obtained 13 and 17 November 2008. Note: Excluding 'Other' or 'Unspecified'.

3.4 Survival rates

Survival rate by grade refers to the percentage of a group of learners enrolled for the first grade of a given level or cycle of education in a given school year, who are expected to reach successive grades (Unesco Institute of Statistics, undated). Given the problems experienced with the EMIS data, which was detailed in preceding sections of this report, estimating survival rates by using this data proved to be highly unreliable. Using the 2003 to 2006 General Household Surveys, rather than EMIS data, the Ministerial Committee on Learner Retention in the South African Schooling System (Department of Education, 2008:26), was able to calculate survival rates, but according to date of birth rather than according to numbers enrolling for Grade 1. Survival rates were calculated for four birth groups, namely those born during the periods 1970 to 1974, 1975 to 1979, 1980 to 1984 and 1985 to 1989. The analysis distinguished between those attending school at the time of the survey and those who did not. Those not attending school were regarded as having left the schooling system at the highest level of education reported.

For those learners still attending school, the information was incomplete, with Grade 8 as the highest level, and these learners were "regarded as 'right censored' observations, since one did not know at the time of the survey what their ultimate level of educational attainment would be" (Department of Education, 2008:26). Those learners were included in the calculations as survivors, up to the point reported. However, the Ministerial Report noted that, the more often "right-censored" observations appeared in the data set compared to completed observations, the less reliable the estimates would be. This was particularly the case with FET (Department of Education, 2008:26-27).

Table 41 indicates the survival rate by grade for the four groups. Means are used for the 1970-to-1974, the 1975-to-1979, and the 1980-to-1984 birth groups, in which there were few "right-censored" cases. For the 1985-to-1989 birth group, the "ultimate" or most recent GHS results were used. The table indicates that, over time, there has been an improvement in the survival rate through to the end of Grade 9. While 71.5% of the 1970-to-1974 group completed Grade 9, this applied to 86.2% of the 1985-to-1989 group. With regard to the survival rate to the end of Grade 12, an increase occurred between the two early groups, with 45.3% of the 1975-to-1979 group completing Grade 12, which was up from 42.7% for the 1970-to-1974 group. However, the survival rate to the end of Grade 12 remained static for the 1980-to-1984 group, with 45.6% surviving to the end of Grade 12.

Table 41: School survival rate of various birth groups by grade per 1 000 of birth group

Year of birth	Mean survival rate			Ultimate survival rate
	1970-1974	1975-1979	1980-1984	1985-1989
Birth	1 000	1 000	1 000	1 000
Grade 1	958	976	984	989
Grade 2	954	973	982	986
Grade 3	946	968	979	983
Grade 4	931	958	972	977
Grade 5	909	942	960	970
Grade 6	863	924	944	958
Grade 7	843	895	917	938
Grade 8	783	848	873	906
Grade 9	715	788	811	862
Grade 10	636	705	717*	N/A
Grade 11	536	595	602*	N/A
Grade 12	427	453	456*	N/A

Source: Department of Education 2008, pp 29-32.
**Ultimate survival rate.*
N/A: Not available. Too soon to tell.
Note: The group in this table is defined by date of birth and not by enrolment for Grade 1. Therefore, the survival rates as indicated are of those born, rather than of those starting Grade 1.

It is interesting to compare the results of Table 41 to those of Table 31. Table 31 indicates an improvement in completion rates of 5 percentage points for Grade 7 between 1995 and 2007. By approximation, this would have applied to children born in the 1980-to-1984 and 1990-to-1994 periods respectively.

Table 38 is more or less consistent, also indicating a 5 percentage point decadal improvement (843 to 917 per thousand, or 895 to 938 per thousand). With completion rates at approximately 93% in 2007 (Table 31), the suggestion that, based on trend, completion rates would reach nearly 100% by 2015, is supported by this table, as well as by the analysis done above.

Table 42 reflects the learner survival pattern in the FET phase. It is evident that the percentage of people in each group with a Grade 9 qualification, who actually reached Grade 12, has not changed much over time.

In the three groups for which information is available, approximately 89% of learners with a Grade 9 qualification reached Grade 10, about 75% reached Grade 11, and less than 60% reached Grade 12. In fact, the percentage of the groups with a Grade 9 qualification, actually reaching Grade 12, has declined slightly over the said period, from 59.7% of the 1970-to-1974 birth group, to 56.7% of the 1980-to-1984 group.

Table 42: Percentage of various birth groups who had obtained Grade 9, actually reaching Grades 10, 11 and 12

Date of birth	Age in 2007	Level	Percentage with Grade 9 qualification, reaching the said level
1970-1974	33-37	Grade 10	89.0
		Grade 11	75.0
		Grade 12	59.7
1975-1979	28-32	Grade 10	89.5
		Grade 11	75.6
		Grade 12	57.5
1980-1984	23-27	Grade 10	89.2
		Grade 11	74.9
		Grade 12	56.7
1985-1989	18-22		Too soon to tell

Source: Department of Education, 2008:28.

The Committee found that the overall education attainment of the South African population had increased very strongly amongst groups born after the mid-1940s. The mean educational attainment of the group born in 1981, was approximately 9½ years, compared to approximately 6 years for the group born in 1945. The improvement was mainly as a result of increasing education levels amongst Africans, whose attainment level rose from four years to just over nine years during the same period (Department of Education, 2008:37).

Considering the educational attainment profile of those aged 21-to-25 in each of the censuses conducted since 1970, the Committee found that there had been a substantial upward shift amongst Africans. Out of all the 21-to-25-year-old Africans in the 1970 census, 40% had not enrolled for school and less than 1% passed matric. Come the 2001 census, this had improved to 9% and 36% respectively, for the same age group (Department of Education, 2008:54).

3.5 Conclusion

It is evident from this chapter that it is almost impossible to analyse efficiency indicators or discern any trend in repetition, drop-out and survival rates, using EMIS data. However, by using General Household Survey data and alternative methodologies, this report succeeded in offering some insight into the patterns of repetition, drop-out and survival rates in South Africa.

It is estimated that the actual repetition rates for Grade 1 in the early 2000s was approximately 20%, which is about twice the estimates derived from EMIS returns. On the other hand, the drop-out rate for Grade 1, which is calculated at less than 1%, using General Household Survey data, is substantially lower than the 10%-to-20% estimated, using EMIS data. The drop-out rate in Grades 1-to-8 is low and has improved over time. From Grade 9 upwards, however, the drop-out rate increases sharply and has actually worsened over time.

In conjunction with the decrease in the drop-out rate in the compulsory schooling phase, there has been a corresponding improvement in the survival rate through to the end of Grade 9, with 86% of people born between 1980 and 1984 surviving to the end of Grade 9, compared to just over 71% of those born between 1970 and 1974. With an increase in the drop-out rate in the FET phase, the proportion of people who completed Grade 9 and managed to survive to the end of Grades 10 and

11 has remained unchanged, while it has decreased for Grade 12 in particular. The percentage of people with Grade 9 reaching Grade 12 declined from 59.7% of the 1970-to-1974 birth group to 56.7% of the 1980-to-1984 group.

While the number of children dropping out of school during the primary grades is insignificant, and while education is not compulsory after Grade 9, it is in the interest of the country and the economy that learners remain in school or in other educational institutions, such as FET colleges, until they have completed Grade 12 or an equivalent qualification. Therefore, urgent attention needs to be paid to dealing with the causes of learners dropping out of school, or the obstacles that children are facing and which cause them drop out of school, without completing their education. These causes appear to be largely economic in nature. Attention should also be paid, as the Committee (2008: xix) recommended, "to providing suitable alternative FET programmes, which include a focus on both content and mode of delivery".

CHAPTER 4: INDICATORS OF QUALITY IN EDUCATION

4.1 Introduction

Internationally, there is much debating about what constitutes quality education. Consequently, indicators that are selected to measure quality, are themselves subject to controversy. For example, there is a vast amount of international literature, and some South African literature, on the impact of the learner:educator ratio on learning outcomes. Just taking into account recent South African literature, it has to be admitted that, within reasonable ranges (e.g. lowering the learner:educator ratio from 33 to 28), this indicator has little cost-effective-related impact on children's learning outcomes (even if statistically discernible).

However, two points have to be emphasised in this regard. Firstly, there are classrooms in South Africa that are notoriously overcrowded or where the teachers are overburdened beyond any "reasonable" range, to the point where learning is highly likely to be affected.

Secondly, it could be argued that very high learner:educator ratios definitionally lower the learner-friendly appeal of the learning experience for learners. And thirdly, in policy circles in South Africa, this ratio carries considerable weight. The South African Constitution regards education as a right and states that for rights to be implemented to the full, they must be enjoyed equally by all. The apartheid past provided vastly different learner:educator ratios for different racial groups. Therefore, it has been imperative for the democratic government to try equalising at least the public provision of educators.

To some degree, this equalisation leaned towards the average – i.e. there was an increase in the publicly-provided learner:educator ratio in the erstwhile most privileged segments of the system. However, for political reasons, levelling towards the average is difficult in a democracy as, with increasing democracy and economic growth, comes a reasonable expectation of equalising the system *while* trending towards slightly lower ratios.

The same applies to the issuing of qualifications. There is a lack of general agreement with regard to the impact of measurable "paper" educator qualifications on learning. Indeed, many studies fail to find a connection between the paper qualifications of teachers and the learning outcomes and emotional well-being of the children in their care. There is more widespread agreement on the notion that non-measured, "real" classroom competence is an important determinant of quality. But again, with regard to policy, the issue of formal qualifications carries considerable weight in South Africa where historically, during the apartheid era, different qualifications were acceptable for educators of different racial groups, resulting in a situation where white and Indian educators were much better qualified than their African and Coloured counterparts.

Generally speaking, in South Africa, indicators that carry considerable weight with regard to policy are chosen to measure the quality of education. It is important to note, however, that this report does not purport to duplicate the emerging literature on factors associated with learning, or the "production function" of literature in South

Africa, and much less so world-wide. Such an attempt would be beyond the scope of a report that is essentially an annotated report on indicators. The following quality indicators were chosen on the basis of a combination of their relevance for the country with regard to policy, and their importance from an international point of view:

- Educator qualifications
- Learner:educator ratios
- Learner achievement and outcomes
- Graduation rates in Science, Engineering and Technology in Higher Education

Given the recent concerns about educator supply and demand (Crouch & Perry, 2003; ELRC, 2005), this report included an additional indicator, namely educator attrition, as one of its indicators of quality.

The report also explores the literacy rate as yet another indicator that could be used to measure the quality of the education system. The following two categories of literacy are covered in this report:

- Youth literacy (persons aged 15 to 24)
- Adult literacy (persons aged 20 and above)

Furthermore, the financial resources available for education clearly have an impact on the provision of educators, the physical facilities and equipment, as well as materials for teaching and learning, which ultimately impact on the quality of education provided.

While the connection between these indicators and learning achievement is far from clear, based on international comparisons, financial indicators do carry weight as a barometer of quality in South African policy discussions.

Therefore, for the purposes of this report, the following financial indicators were selected:

- Public expenditure on education as a percentage of GDP.
- Public expenditure on education as a percentage of total government expenditure.
- Public education according to type of expenditure.
- Per capita expenditure.

4.2 Educator qualifications

Educators in South Africa are considered to be appropriately qualified if they have a Senior Certificate and a minimum of three years appropriate training to become an educator[10]. An educator, who either did not obtain a Senior Certificate, three years of training as an educator, or who received training outside the field of education, is considered to be unqualified or under-qualified. Again, this report is agnostic on whether paper qualifications have an impact on quality, where quality is understood as a final outcome, namely the cognitive or affective development of children, or even as an immediate "consumable", namely the enjoyment of the learning experience by children.

The fact that the cognitive performance of children remains low, even though qualifications have increased, casts some doubt on the importance of paper qualifications as a determinant of ultimate impact – at least in the way that the improvement of such qualifications has been implemented up to now. The discussion on qualifications would be much richer if data on teacher adherence to curricular policy, standards and coverage were available, and also if data on actual classroom competence were available. Such data is not available yet, though the system is working on it. And, in any case, as noted above, teacher qualifications constitute an important policy issue in South Africa.

Be as it may, there has been a significant improvement in the qualifications of educators since 1990. In 1990, only 53% of educators had been appropriately qualified, and by 2008 this figure increased to 94.4% of educators (see Table 43). This means that by 2008, only 5.6% of educators were unqualified or under-qualified.

Table 43: Percentage of qualified educators: 1990, 1994 and 2005 to 2008

	% of qualified educators
1990	53.0
1994	64.0
2005	91.6
2006	92.9
2007	93.8
2008	94.4

Source: 1990 data from Arnott & Bot; 1993 and 1994 data from EduSource Data News No. 10/October 1995; 2005 date from Persal, July 2005; 2006 data from Persal, December 2006; 2007 data from Persal, 2007; and 2008 data from Persal, January 2008.

Table 44 provides a breakdown of educator qualifications by race. By 2008, almost all Indian and white educators were fully qualified. However, with regard to African and Coloured educators, there was still a small proportion of unqualified or under-qualified educators. However, the improvement in the qualification levels of African and Coloured educators has been phenomenal. The proportion of African educators who are qualified increased from 37% in 1990 to 54% in 1994, and then to almost 94% in 2008. Similarly, amongst Coloured educators, qualification levels increased from 59% in 1990 to 92% in 2008.

[10] *According to the Criteria for the Recognition and Evaluation of Qualifications for Employment in Education, Based on the Norms and Standards for Educators (DoE 2000:1), a minimum of a REQV 13 (which equates to a minimum of three years professional training) is required in order to be registered with the South African Council for Educators (SACE), as a professionally qualified educator. No person can be employed as an educator unless he/she is registered with SACE.*

One of the main reasons for this huge improvement was the considerable focus of, and the resources that the Department of Education ploughed into upgrading the qualifications of unqualified and under-qualified educators. As a result, the gap in the qualification levels between African and white educators has narrowed considerably. In 1994, there had been a 45 percentage point difference between African and white educator qualification levels, but by 2008 this was reduced to about 6 percentage points.

Table 44: Percentage of qualified educators by race: 1990, 1994 and 2005 to 2008

	1990	1994	2005	2006	2007	2008
African	37	54	90.5	92.1	93.0	93.9
Coloured	59	71	89.9	92.1	93.2	92.2
Indian	98	93	97.5	97.2	96.6	98.1
White	98	99	99.4	99.5	99.5	99.5
Total	53	64	91.6	92.9	93.8	94.4

Sources: 1990 data from Arnott & Bot, 1993; 1994 data from EduSource Data News No. 10/October 1995; 2005 data from Persal, July 2005; 2006 data from Persal, December 2006; 2007 data from Persal, 2007; and 2008 data from Persal, January 2008.

4.3 Learner:educator ratios and class size

One of the legacies of the apartheid education system was the considerable difference in the provision of educators to schools. As a result, in 1994 there were large discrepancies in the learner:educator ratios (LERs), as illustrated by the differences in the LER between the different provinces (see Table 45). In 1994, the LER ranged from a high of 39:1 in KwaZulu-Natal and Limpopo (both poor provinces with considerable "homeland" influences), to a low of 23:1 in the Western Cape (a largely white and Coloured province with a much better endowed system).

In 1995, an agreement on guidelines relating to LERs was reached, and a norm of 40:1 in primary schools and 35:1 in secondary schools was established. There has been considerable improvement since then. The national average LER dropped from 34:1 in 1994, to 31:1 in 2007. Across provinces, this ratio ranged from a high of 33:1 in Mpumalanga, to 29:1 in the Free State in 2007.

A new norm for the learner:educator ratio is currently being considered, so as to reduce class size – in poorer schools in particular.

Table 45: Learner:educator ratio by province in public and independent schools: 1994 to 2007

	1994	1999	2000	2001	2002	2003	2004	2005	2006	2007
Eastern Cape	37.0	36.3	32.0	33.2	31.7	32.6	33.4	32.8	33.4	32.3
Free State	31.0	30.1	32.8	31.2	31.3	30.8	29.8	29.5	29.2	28.9
Gauteng	29.0	29.2	30.9	30.7	30.7	30.9	31.7	29.0	30.7	29.8
KwaZulu-Natal	39.0	37.1	35.7	36.3	36.6	35.8	35.3	33.6	32.3	32.4
Limpopo	39.0	33.9	33.5	31.6	32.7	33.5	35.3	33.9	33.1	32.5
Mpumalanga	35.0	36.0	34.1	36.9	36.4	35.9	35.5	33.0	34.1	32.8
North West	32.0	30.2	30.3	30.6	29.9	29.4	29.7	30.8	29.1	29.1
Northern Cape	29.0	30.2	30.3	31.0	30.3	32.7	33.8	31.6	31.6	31.0
Western Cape	23.0	32.9	30.7	33.7	34.7	35.1	35.7	30.2	29.8	30.3
National	34.0	33.7	32.8	33.1	33.1	33.2	33.6	32.0	31.8	31.4

Source: 1994 data from Bot 2001; 1999 to 2006 data from DoE, Statistics at a Glance, 2001b, 2002, 2003a, 2004, 2005a, 2005b, 2006a, 2006b; and 2007 data from DoE School Realities.

There is a substantial difference between the LER in public schools and the LER in independent schools. In 2007, the national average LER for public schools was 32.3 and for independent schools it was 16.5 (see Table 46 and Table 47). While the inclusion of independent schools in the calculation of the LER has the effect of reducing the average provincial LER (indicated in Table 44), even if one excludes independent schools from the calculation, it is evident that the variation in the LER of public schools between the provinces has been reduced (see Table 45).

In 2000, the average LER in public schools ranged from a high of 37:1 in KwaZulu-Natal to 31:1 in the North West. In 2007, the ratio ranged from 33:1 in Mpumalanga to 29:1 in the Free State.

Table 46: Learner:educator ratio in public schools by province: 2000 to 2007

	2000	2001	2002	2003	2004	2005	2006	2007
Eastern Cape	32.1	33.3	31.8	32.9	33.6	33.0	33.2	32.6
Free State	32.6	31.4	31.6	31.2	30.2	29.7	29.5	29.1
Gauteng	33.2	33	33.2	33.6	34.2	31.6	33.8	32.6
KwaZulu-Natal	36.5	37.2	37.4	39.6	36.3	34.4	33.0	33.1
Limpopo	33.6	31.8	32.9	33.7	35.6	34.1	33.4	32.9
Mpumalanga	34.5	36.9	36.3	36.4	35.7	33.6	34.5	33.2
North West	30.6	30.7	30.1	29.7	30.0	31.1	29.8	29.5
Northern Cape	30.7	31.4	30.6	32.8	34.0	31.9	30.2	31.3
Western Cape	32.1	35.5	36.3	36.9	37.7	31.5	31.2	31.4
National	33.4	33.9	33.8	34.6	34.5	32.8	32.7	32.3

Source: 1994 data from Bot 2001; 1999 to 2006 data from DoE, Statistics at a Glance, 2001b, 2002, 2003a, 2004, 2005a, 2005b, 2006a, 2006b; and 2007 data from DoE School Realities.

Table 47: Learner:educator ratio in independent schools by province: 2000 to 2007

	2000	2001	2002	2003	2004	2005	2006	2007
Eastern Cape	18.7	14.4	18.7	17	20.3	29.9	39.0	20.6
Free State	40.9	21.9	21.3	18.8	18.9	21	21.5	21.6
Gauteng	16.8	16.4	17	16.5	17.2	15.3	15.8	16.0
KwaZulu-Natal	15	14.1	17	6.3	14.3	14.2	16.9	14.8
Limpopo	22.3	22	20.6	20.8	20.4	22.7	21.8	21.1
Mpumalanga	19.9	36.2	39	18	30.3	18.8	21.1	18.7
North West	15.1	19.5	16.6	16.1	17.2	18.3	16.0	14.7
Northern Cape	15.6	15.5	17.8	25.1	22	19.3	20.8	18.1
Western Cape	13.3	13.2	14.7	13.4	12.9	12.9	12.2	12.0
National	17.1	16.5	17.5	12.6	17.1	15.2	17.3	16.5

Source: 2000 to 2006 data from DoE, Statistics at a Glance 2001b, 2002, 2003a, 2004, 2005a, 2005b, 2006a, 2006b; and 2007 data from DoE School Realities.

UNESCO (2006) provided comparative information on the primary and secondary LERs in various countries. Table 48 compares South Africa's estimated primary and secondary LER with that of a few other countries. Relative to other countries depicted in Table 48, South Africa has the third highest primary LER and the highest secondary LER. In all the countries the LERs were higher at primary level than at secondary level.

Table 48: Learner:educator ratio in primary and secondary schools in selected countries

Country	Primary	Secondary
Argentina	17	17
Botswana	26	14
Brazil	22	17
Gabon	36	N/A
Jamaica	28	19
Lesotho	44	26
Namibia	28	24
Panama	24	16
Russian Federation	17	10
South Africa	**34**	**30**
Uruguay	21	15

Source: UNESCO, 2008.
Note: For some countries, the latest available information is 2003 and for others it is 2004.

It is important to note that at least one key reason as to why South Africa has such high learner:educator ratios, is the fact that educator salaries are high relative to GDP per capita. The trade-off between educator salaries and LERs was made by the Department of Education at the end of the apartheid era, when it was decided that the existing pool of teachers had to be divided equitably according to a teacher allocation formula (Patel & Crouch, 2006:6) while, at the same time, equalising educator salaries across race and gender. A comparison carried out by the Department of Education between South Africa and 24 other countries, "chosen on the basis of data availability and regional and developmental spread" (Department of Education 2006c:26), found that in 2001, South African school-based educators earned 2.9 times as much as the GDP per capita figure (see Table 49). This figure was substantially higher than that of other middle-income countries, such as Brazil

(where educators earned 1.4 times as much as GDP per capita), Chile (1.4 times more), Tunisia (2.0 times more) and Malaysia (1.7 times more) (Department of Education 2006:26). At the same time, the report noted that South Africa's LER was high. While South Africa's LER was equal to the sub-Saharan average, it was 20% higher than the average of developing countries, and was only surpassed by those of Zimbabwe, Malawi, India and the Philippines (DoE, 2006d: 27).

Table 49: Factors influencing the level of education expenditure in several countries in 2001

Country	Educ. exp./GNP	Age 7-to-18 in population		Enrolment ratio		Educ. pay over GDP/capita		L/E ratio		%
Zimbabwe	11.1	33%	1	69%	24	7.6	1	35	22	45%
Malaysia	8.5	25%	13	78%	20	1.7	15	19	9	20%
Tunisia	7.2	26%	12	89%	17	2.0	11	21	11	30%
New Zealand	6.9	18%	18	98%	12	1.6	17	15	5	28%
Kenya	6.3	33%	2	70%	23	3.4	5	31	20	41%
Portugal	6.1	14%	24	124%	3	1.7	14	10	1	48%
South Africa	**5.8**	**27%**	**8**	**99%**	**10**	**2.9**	**8**	**34**	**21**	**39%**
France	5.7	15%	22	122%	5	1.1	23	15	3	25%
United States	5.6	17%	19	96%	14	1.2	22	15	4	23%
Mexico	5.3	26%	9	99%	11	1.8	13	23	14	37%
Morocco	5.2	26%	10	75%	21	4.4	3	25	16	66%
United Kingdom	4.5	16%	21	181%	1	1.4	20	18	7	50%
Brazil	4.2	24%	15	133%	2	1.4	18	21	10	52%
Ghana	4.2	31%	5	61%	25	0.8	24	28	18	13%
Malawi	4.2	30%	6	97%	13	3.3	6	63	25	36%
Syria	4.2	31%	3	80%	19	3.6	4	22	12	95%
India	4.1	26%	11	71%	22	6.2	2	37	24	76%
Chile	4.0	22%	16	105%	9	1.4	21	31	19	25%
Bulgaria	3.6	15%	23	124%	4	2.0	12	14	2	73%
Japan	3.6	12%	25	109%	7	1.7	16	17	6	36%
Korea	3.6	17%	20	105%	8	2.7	10	26	17	52%
Mauritius	3.3	20%	17	89%	16	1.4	19	22	13	35%
Philippines	3.1	29%	7	121%	6	2.8	9	36	23	89%
Botswana	2.3	31%	4	92%	15	3.0	7	25	15	148%
Indonesia	1.4	24%	14	84%	18	0.5	25	19	8	43%

Averages for groups of countries

All	5.0	23%	99%	2.5	25	47%
Developed	5.1	16%	119%	1.6	17	36%
Developing	4.9	27%	91%	2.8	28	49%
Sub-Saharan Africa	5.3	29%	82%	3.2	34	43%

Source: Department of Education, 2006d: 26.

While South Africa's LER is high, average class sizes are even higher. An analysis of the Annual School Survey (ASS) data by Gustafsson and Patel (2008:26), found that the average class size was 47.2, with 30% of learners experiencing class sizes of over 50. (For 18% of learners the average class size was 59.) Data on class size for Grade 6 and Grade 8 learners, obtained by Gustafsson and Patel (2008) from the 2004 systemic evaluation and the 2003 TIMSS assessment respectively, also indicated large class sizes, although not as large that indicated by the ASS. The mean class size experienced by Grade 6 learners was 43.4 (with 17% of learners experiencing a mean class size of 54.3), while for Grade 8 the mean class size was

44.7 (with 16% of learners experiencing a class size exceeding 55.9) (Gustafsson and Patel, 2008:25).

4.4 Educator attrition

The term, "educator attrition", generally refers to the attrition of educators from the education profession (Hall et al, 2005:1). In this report, the educator attrition data includes permanent terminations (i.e. those educators who left the system and were never reinstated), as well as long-term terminations (which refers to educators who returned to the system after a break of six months or more) (ELRC, 2005:32). Furthermore, it should be noted that not all those who disappear from the public sector data bases necessarily leave the profession. Some may go on to teach in private schools, or in public schools but in the employ of school governing bodies. Therefore, the estimates of attrition indicated below are upper-limit estimates, at least from this point of view. Real, permanent attrition from the profession altogether is probably lower than the data below indicates.

Table 50 indicates the permanent and long-term attrition rates from 1997/98 to 2002/03. During this period, there was a decrease in the attrition rate of educators from 9.3% in 1997/98 to just lower than 6% in 2002/03. The very high attrition rate in the late 1990s was largely a result of educators leaving the system during the process of rationalisation and redeployment of educators, which took place during that period.

Table 50: Educator attrition rate for permanent and long-term termination: 1997/98 to 2002/03

	Attrition rate in %
1997/98	9.3
1998/90	6.4
1999/00	5.7
2000/01	5.5
2001/02	5.8
2002/03	5.9

Source: ELRC (2005), 36.

Research undertaken in 2003/04, revealed that the largest cause of educator attrition was resignation, which accounted for 53% of all terminations (excluding those who left as a result of contract termination). This was followed by mortality, which accounted for 17.7% of attrition (up from 7% in 1997/98), followed by medical reasons, which accounted for 8.7% of attrition (up from 4.6% in 1997/98) (ELRC 2005, xiv). The increase in the attrition of educators as a result of death and ill health is an indication of the effect that HIV/Aids is having on the teaching profession. In a survey of educators conducted on behalf of the Department of Education (DoE 2005g, 58) to identify the reasons as to why a substantial number of educators resign from teaching, educators cited several factors that contributed to their decision to leave the profession. These included disintegration of discipline; lack of teaching facilities; overcrowding of schools and classrooms; lack of adequate incentives; poor parental participation in school governance and in disciplining their children; policy overload, resulting in dissatisfaction with time allocation and rendering working conditions unbearable due to the increase in administrative work; role conflict; favouritism and nepotism at school governance levels; and the low

status that teaching enjoys, which results in well-qualified educators increasingly seeking alternative employment opportunities in other sectors of the economy.

South Africa's attrition rate of 5.9% in 2002/03 is fairly low when compared to that of other countries. The attrition rate of educators in Botswana amounted to 14% in 2001, in Swaziland it was 12% in 2002, and in the United Kingdom it was 15.3% in 2000. International research indicates that educator attrition rates for various countries range between 5% and 30% (ELRC, 2005, 36).

While South Africa's current attrition rate is fairly low, there is cause for concern regarding the rate at which educators who are leaving the system are being replaced. With an attrition rate of just under 6% per year, it is estimated that between 17 500 and 22 500 newly-qualified educators are required each year to replace those leaving. However, only about 5 000 to 7 000 new educators are produced every year by the tertiary education system (Department of Education 2005e). In order to address the potential shortage of educators that could occur in the medium to long term, bursaries for students studying education are in the process of being introduced. It has also been proposed that a marketing campaign, which "raises the visibility, attraction and challenge of teaching as a career", be undertaken (DoE, 2006c:12).

4.5 Learner achievement and outcomes

The main yardstick of learning achievement in South Africa is the national SCE, which takes place at the end of Grade 12. This examination, which takes place at the end of a learner's school career, has historically been the single mechanism for assessing the quality of the education system.

Since 1995, however, South Africa has conducted two national learner achievement assessments and participated in a number of international learner achievement studies, namely:

- Systemic Evaluation: This is a national learner assessment programme, conducted by the Department of Education, which focuses on Grades 3 and 6. Learners at Grade 3 level were assessed in literacy, numeracy and life skills in 2001, and in 2004 Grade 6 learners were assessed in literacy, Mathematics and Science.

- Monitoring Learning Achievement (MLA): This is a project of the UNESCO/UNICEF Education for All Campaign, which was conducted in South Africa in 1999, in conjunction with other African countries. The MLA Project assessed Grade 4 learners in numeracy, literacy and life skills.

- Southern and Eastern African Consortium for Monitoring Educational Quality (SACMEQ): This is a collaborative network of education ministries in Southern and Eastern Africa. Between 2000 and 2002, SACMEQ assessed the reading and mathematics achievements of Grade 6 learners in 14 East and Southern African countries. This was the second SACMEQ assessment and is referred to SACMEQ II. SACMEQ I was conducted in seven countries in 1995, but did not involve South Africa.

- Trends in International Mathematics and Science Study (TIMSS): This is a project of the International Association for the Evaluation of Educational

Achievement (IEA). It is an international study, which assesses achievement in Mathematics and Science. South Africa participated at Grade 8 level in 1995, 1999 and 2002/03.

- Progress in International Reading Literacy (PIRLS): This is an international study THAT measures reading literacy amongst Grade 4 learners. It was conducted in South Africa for the first time in 2006, when children in both Grades 4 and 5 were assessed in all 11 official languages.

Both the internal systemic evaluation studies and the international assessments involved the testing of a sample of learners in the relevant grade, as opposed to the SCE, which tests all learners who reach Grade 12 and sit for this examination.

These studies provided an invaluable yardstick for learner achievement in the lower grades, and also provided insight into the factors that are associated with higher or lower learner achievement. International achievement studies enabled South Africa to benchmark its learner performance, and thus its education system, against those of other countries.

The following section provides the results of these studies, as well as those of the SCE. While the SCE results show a concerted improvement over time, the achievement of learners in the national systemic evaluations and in international assessment studies is very poor and a considerable cause for concern.

4.5.1 Senior Certificate Examination (SCE)

The Matriculation or Senior Certificate Examination (SCE) is a well-established, internal indicator of education quality and learner achievement, particularly at secondary school level. The number and profile of learners who write and pass the SCE provide an indication of the "contribution of schooling to human resources development and, more especially, to the stock of learners who are eligible to proceed to higher education and training opportunities" (Perry and Arends, 2004: 317).

Table 51 and Figure 15 indicate the number of candidates writing and passing the SCE between 1991 and 2007. There has been a significant increase in the number of candidates writing the SCE during this period. In 1991, a total of 409 076 candidates had written the SCE. By 2007, this number increased to 564 775, which was an increase of 38%. The largest increase in candidate numbers took place between 1991 and 1997, when an increase of 36% was recorded. After peaking at 555 267 in 1997, candidate numbers began to decline, dropping by 15% between 1997 and 2003. However, the number of candidates increased again between 2004 and 2007, resulting in 546 775 candidates writing the examinations in 2007.

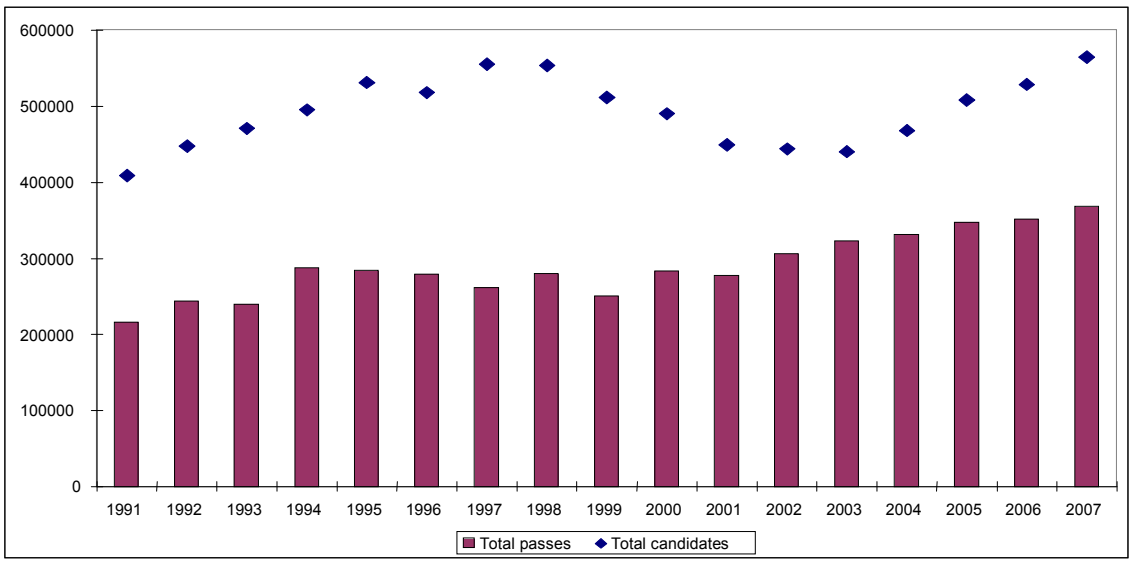
An investigation by the Department of Education attributed the decline in candidate numbers between 1997 and 2003 to four factors, namely a reduction in the number of repeaters sitting for the examination; the discouragement of "at risk" Grade 11 learners from progressing to Grade 12; the failure of registered candidates to write the SCE; and the introduction of age-grade regulations in 1999 (De Souza, 2003).

Table 51: Percentage change in year-on-year in candidates enrolling and passing the SCE: 1991 to 2007

	Total candidates	Percentage change in number of candidates over the previous year	Total passes	Percentage change in total passes over the previous year	Endorsement passes	Percentage change in endorsement passes over the previous year
1991	409 076		216 147		70 318	
1992	447 904	9.5	243 611	12.7	73 328	4.3
1993	470 948	5.1	239 556	-1.7	67 915	-7.4
1994	495 408	5.2	287 343	19.9	88 497	30.3
1995	531 453	7.3	283 742	-1.3	78 821	-10.9
1996	518 032	-2.5	278 958	-1.7	79 768	1.2
1997	555 267	7.2	261 399	-6.3	69 007	-13.5
1998	553 151	-0.4	279 986	7.1	71 808	4.1
1999	511 159	-7.6	249 831	-10.8	63 725	-11.3
2000	489 941	-4.2	283 294	13.4	68 626	7.7
2001	449 371	-8.3	277 206	-2.1	67 707	-1.3
2002	443 821	-1.2	305 774	10.3	75 048	10.8
2003	440 267	-0.8	322 492	5.5	82 010	9.3
2004	467 985	6.3	330 717	2.6	85 117	3.8
2005	508 363	8.6	347 184	5.0	86 531	1.7
2006	528 525	4.0	351 503	1.2	85 830	-0.8
2007	564 775	6.9	368 217	4.5	85 454	-0.44

Source: Department of Education 2003b, 2005c and 2007; EduSource Data News No. 1/September 1992; EduSource Data News No. 2/April 1993; EduSource Data News No. 24/March 1999; EduSource Data News No. 32/March 2001; and information on 1993 examinations, prepared by EduSource and the Education Foundation, 1/11/1994.

Figure 15: Total number of candidates and total number of passes in the Senior Certificate Examinations from 1991 to 2007



Source: Department of Education 2003b, 2005c and 2007; EduSource Data News No. 24/March 1999; EduSource Data News No. 32/March 2001; EduSource Data News No. 1/September 1992; EduSource Data News No. 2/April 1993; and information on 1993 examinations, prepared by EduSource and the Education Foundation, 1/11/1994.

The overall increase in the number of candidates since the early 1990s is primarily owing to the increase in African candidates writing the examinations. Between 1991 and 2003, the number of African candidates increased by 37% (94 227) (calculated from Perry 2003, and Perry and Arends, 2004).

Pass rates in the SCE improved significantly from 53% in 1991 to 65.2% in 2007 (see Table 52). Between 1991 and 1999, the number of learners passing and passing with endorsement, as well as the pass rate, fluctuated. After 1999, the number of passes and the pass rate improved substantially, and there appeared to be a correlation between the decrease in candidate numbers and the increase in the pass rate (Perry and Arends, 2004). Between 1999 and 2003, while candidate numbers decreased by 14%, the pass rate increased from 49% to 73%, and the endorsement pass rate increased from 13% to 19%. After 2003, as candidate numbers increased, the pass rate and the pass rate with endorsement decreased.

An indicator of the quality of the passes obtained in the SCE, is the number and percentage of endorsement passes, which is the minimum qualification for entry into tertiary education. Despite the improvement in the pass rate and the increase in the number of passes with endorsement since 2000, the number of endorsement passes has never exceeded 90 000 and the endorsement pass rate has remained below 20% – a signal that much more focus needs to be placed on improving the quality of learning achievement.

Table 52: SCE candidates, numbers passing and pass rate: 1991 to 2007

	Total candidates	Total passes	% Total passes	Endorsement passes	% Endorse-ment passes	Total failures	%
1991	409 076	216 147	52.8	70 318	17.2	192 929	47.2
1992	447 904	243 611	54.4	73 328	16.4	204 293	45.6
1993	470 948	239 556	50.9	67 915	14.4	231 392	49.1
1994	495 408	287 343	58.0	88 497	17.9	208 065	42.0
1995	531 453	283 742	53.4	78 821	14.8	247 711	46.6
1996	518 032	278 958	53.8	79 768	15.4	239 074	46.2
1997	555 267	261 399	47.1	69 007	12.4	293 867	52.9
1998	553 151	279 986	50.6	71 808	13.0	273 165	49.4
1999	511 159	249 831	48.9	63 725	12.5	261 328	51.1
2000	489 941	283 294	57.8	68 626	14.0	206 004	42.0
2001	449 371	277 206	61.7	67 707	15.1	172 126	38.3
2002	443 821	305 774	68.9	75 048	16.9	137 991	31.1
2003	440 267	322 492	73.2	82 010	18.6	117 604	26.7
2004	467 985	330 717	70.7	85 117	18.2	137 173	29.3
2005	508 363	347 184	68.3	86 531	17.0	160 996	31.7
2006	528 525	351 503	66.5	85 830	16.2	177 022	33.5
2007	564 775	368 217	65.2	85 454	15.1	196 558	34.8

Source: Department of Education 2003b, 2005c and 2007; EduSource Data News No. 24/March 1999; EduSource Data News No. 32/March 2001; EduSource Data News No. 1/September 1992; EduSource Data News No. 2/April 1993; and information on 1993 examinations, prepared by EduSource and the Education Foundation, 1/11/1994.

Research by Bhorat and Oosthuizen (2006) into the determinants of the Grade 12 pass rate found that the provision of libraries, and at least one computer for teaching purposes and one computer for administrative purposes, played a significant role in shaping Grade 12 pass rates. These variables may be proxies for the relative advantage or disadvantage of schools or the personal circumstances of learners.

Bhorat and Oosthuizen state that in the case of libraries, the mean pass rate for schools without a library was 47.3%, while for those with a library it was 66%. They also point out that the role of computers for administrative purposes indicates that increasing administrative efficiency plays a positive role in shaping success rates within schools. In an analysis of school performance in the 2000 SCE, Oosthuizen and Bhorat (2006) also found that better performing schools were more likely to be found in areas where the adult population had completed a secondary or tertiary education, while poorly performing schools drew learners from areas with higher proportions of adults with no education or with an incomplete primary education.

With regard to SCE performance by gender, Table 53 indicates that, since 1996, when SCE data was first aggregated by gender, females have constituted the majority of SCE candidates, as well as the majority of passes. Despite the greater number of females passing compared to males, the male pass rate is higher than the female pass rate. However, the gap between the male and female pass rates is narrowing. In 2007, the difference was 1.6 percentage points, down from 8.3 percentage points in 1996.

Table 53: Percentage of SCE candidates, pass rate and endorsement pass rate by gender: 1996 to 2007

	Males as a % of total candidates	Females as a % of total candidates	Female passes as a % of total passes	% male cand-idates passing	% female cand-idates passing	Female endorse-ment passes as a % of total endorse-ment passes	% male candidates passing with endorse-ment	% female cand-idates passing with endorse-ment
1996	44.0	56.0	52.2	58.5	50.2	51.1	17.1	14.0
1997	43.6	56.4	52.5	51.3	43.8	51.4	13.8	11.3
1998	44.1	55.9	52.8	54.2	47.8	51.4	14.3	11.9
1999	48.3	51.7	52.6	44.5	46.1	52.4	11.4	11.7
2000	44.9	55.1	52.5	61.3	55.2	52.0	15.0	13.2
2001	45.0	55.0	53.6	63.6	60.1	53.4	15.6	14.6
2002	45.7	54.3	53.1	70.7	67.4	52.8	17.5	16.4
2003	45.7	54.3	53.1	75.0	71.7	52.3	19.4	18.0
2004	45.9	54.1	53.2	72.0	69.5	51.3	18.9	16.9
2005	45.9	54.1	53.2	69.6	67.2	52.0	17.8	16.4
2006	45.8	54.2	53.3	67.8	65.4	51.8	17.1	15.5
2007	45.0	55.0	54.4	66.1	64.5	53.6	15.6	14.8

Source: Department of Education 2003b, 2005c and 2007; EduSource Data News No. 24/March 1999; EduSource Data News No. 32/March 2001; EduSource Data News No. 1 /September 1992; EduSource Data News No. 2/April 1993; and Information on 1993 examinations prepared by EduSource and the Education Foundation, 1/11/1994.

One impediment in the analysis of the SCE results, is the inconsistency in the quality of examination papers over the years. Research by Umalusi, the Council responsible for Quality Assurance in General and Further Education and Training, which investigated the standard of key examination papers between 1992 and 2003, found that the standard of the papers had varied over the years and across subjects (Umalusi, 2004). In order to ensure greater consistency in the standards and quality of the examination papers, national examinations have, since 2001, replaced provincially-set examinations in a growing number of subjects.

Partially as a result of such inconsistencies, the system, as well as the persons who ultimately set the parameters that implicitly or explicitly determine the number of

passes, follow procedures that determine the *number* of passes, rather than the pass *rate*. Table 52, upon analysis, indicates some interesting phenomena that have been under-analysed in South Africa up to now. A simple correlation between the number of candidates and the time trend is as low as 0.28. In other words, there is a correlation of only 27% between the passage of time and the number of candidates – i.e. a very weak trend. The number of candidates seems to change in a rather chaotic and uncontrolled manner.

On the other hand, the correlation between the time trend and the number of ***passes*** is a very high 0.89. This means that the number of passes is almost entirely determined by a simple time trend. It is as though the persons who, and systems that determined the parameters, which ultimately determine the number of passes, were simply adding a certain number of passes every year. Therefore, this is, explicitly or implicitly, a highly invariant and controlled process. The pass rate, therefore, is simply the *residual* of a chaotic and highly fluctuating number of candidates and a number of passes that increase most predictably with a simple time trend. The "driver" in all this is really just the chaotic (rising, then falling, then rising again) number of candidates.

In this sense, the system pays far too much attention to the pass rate, which is, as noted, merely a residual between something that varies with considerable randomness (no trend), namely the number of candidates, and something that hardly varies (strong, simple, predictable trend), namely the number of passes. In that sense, the system and the public would be better off if the indicator that captured the public's imagination was the number of passes itself or, alternatively, the number of passes divided by the population of 18-year-olds. This would show a more logical, predictable and somewhat optimistic trend. The trends in the pass rate are anxiety-inducing without reason, since they tend to reflect changes in the number of candidates more than anything else.

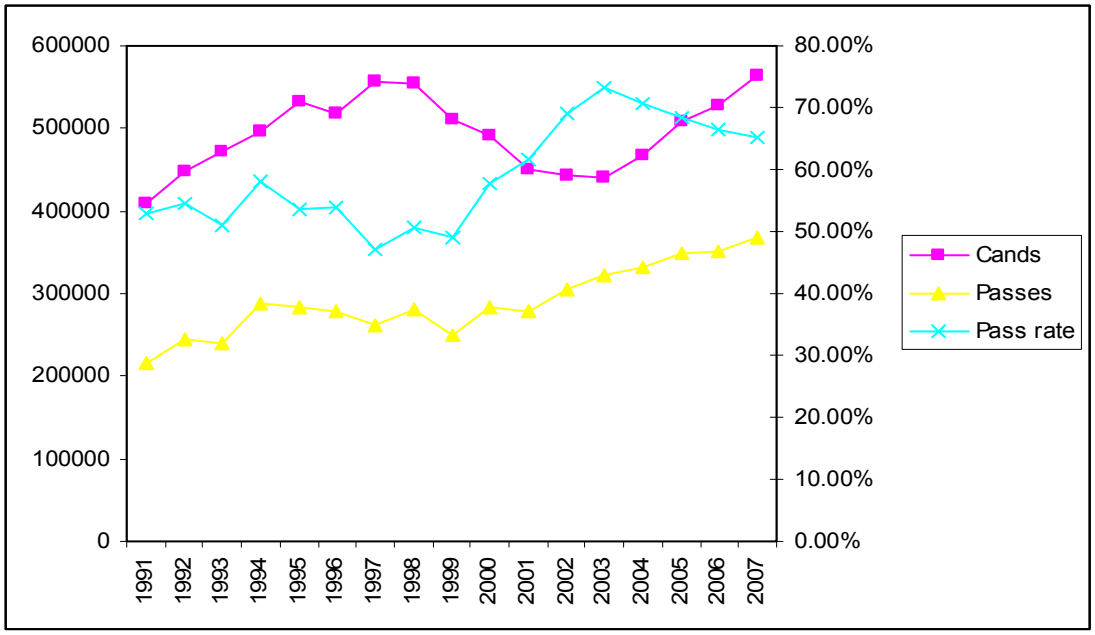
Figure 16 carries the same data as Table 52, but indicates the number of candidates, the number of passes and the pass rate in the same graphic. The graph dramatically illustrates the fact that the pass rate is, to a large degree, merely a mirror image of the number of candidates. In fact, the following exercise shows the influence of the number of candidates on the pass rate. A trend for the number of candidates was calculated, and the data were then detrended, so that only the annual oscillations from the trends remained.

The same was done with the pass rate. The correlation between the two sets of oscillations was calculated, and this turned out to be -0.76. If one squares this correlation, you get the "coefficient of determination" of one factor (oscillations in the number of candidates) on another (oscillations in the pass rate). This turns out to be 0.58, and informs us that 58% of the year-on-year oscillation in the pass rate is simply determined by the year-on-year oscillation in the number of candidates. That is remarkable indeed, and should result in the questioning of the value of the pass rate as an indicator.

As noted above, a much better indicator would be the number of passes in absolute terms or, better still, the number of passes divided by the population of 18-year-olds. It does not matter that many of the candidates are younger or older than 18, since they can only pass once. This ratio still provides a fairly good indicator (much better than the pass rate) of the human capital that the youth is bringing into the labour market. However, it still ignores the fact that the examinations vary year-on-year

with regard to the level of difficulty or cognitive demand. If one considers that factor, then the trends in the pass rate are even less meaningful.

Figure 16: Total number of candidates, total number of passes and the pass rate in the Senior Certificate Examinations from 1991 to 2007



Source: Department of Education 2003b, 2005c and 2007; EduSource Data News No. 24/March 1999; EduSource Data News No. 32/March 2001; EduSource Data News No. 1/September 1992; EduSource Data News No. 2/April 1993; and Information on 1993 examinations prepared by EduSource and the Education Foundation, 1/11/1994.

In conclusion: While the SCE results show a definite improvement over time, as the number of learners passing the SCE increases and as the gap between male and female achievement narrows, there is still some concern over the quality and quantity of SCE passes. The social consensus is that the system still does not produce the human resources that the nation needs.

4.5.2 Systemic evaluation

In 2001 and 2007, South Africa conducted a systemic evaluation at the end of the Foundation Phase of schooling, by assessing almost 54 000 randomly selected Grade 3 learners in literacy, numeracy and life skills for both years. In 2004, a systemic evaluation of the Intermediate Phase of schooling was conducted, with approximately 34 000 Grade 6 learners being assessed in the language of learning and teaching, Mathematics and Natural Sciences.

The results from all three systemic evaluations were poor. The results for the Grade 3 and 6 systemic evaluations are reflected in Table 54 Although the results for the Grade 3 systemic evaluation indicated an improvement of 6 percentage points in reading and 5 percentage points in numeracy between 2001 and 2007, they remained extremely low in 2007, with an average score in reading of 36% and 35% in numeracy (Department of Education, undated). Clearly, as Fleisch states, the average Foundation Phase learner struggles with numeracy and can barely cope with the demands of learning to read and write (Fleisch 2008:7).
The achievement rates of learners in the Grade 6 evaluation were even poorer than those for Grade 3, with learners obtaining an average of 38% for language (the

language of learning and teaching), 27% for Mathematics and 41% for Natural Sciences (Department of Education, 2005d).

Table 54: Average percentage scores attained in the Grade 3 and Grade 6 systemic evaluations

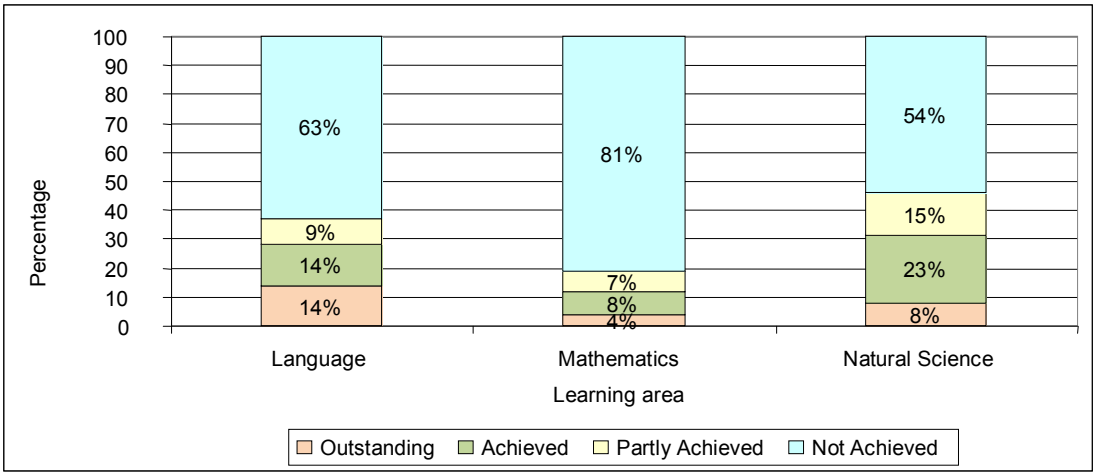
Grade 3: 2001	Percentage
Literacy (reading only)	30%
Numeracy	30%
Life skills	54%
Grade 3: 2007	
Literacy (reading only)	36%
Numeracy	35%
Grade 6: 2004	
Language (LOLT)	38%
Mathematics	27%
Natural Sciences	41%

Source: Department of Education, 2003c, 2005d and undated.

The Grade 6 systemic evaluation scores for the three learning areas were further broken down into achievement levels, namely: Outstanding Achievement (learners scoring between 70% and 100%); Achieved (those scoring between 50% and 69%); Partially Achieved (those scoring between 40% and 49%); and Not Achieved (those scoring between 1% and 39%).

As indicated in Figure 17, the majority of Grade 6 learners failed to reach the standard required by the National Curriculum of a Grade 6 learner in the three learning areas. Only 28% of learners reached the Achieved or Outstanding level in language and only 31% did so in Natural Sciences. For Mathematics, the situation was particularly concerning, as only 12% of Grade 6 learners managed to reach the Achieved or Outstanding level.

Figure 17: Percentage of learners in the Grade 6 systemic evaluation at each achievement level in language, Mathematics and Natural Science



Source: Department of Education, 2005:77, 82 and 86.

An analysis of the results by province indicates a wide variation in the level of achievement between the provinces in both Grade 3 evaluations, as well as in the

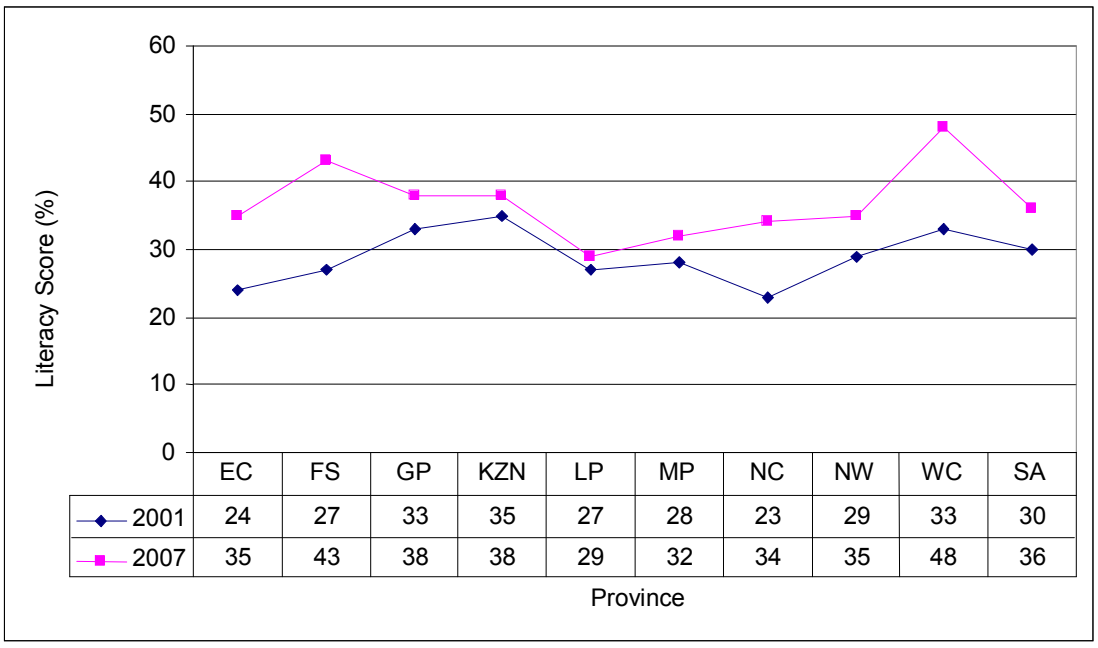
Grade 6 evaluation (see Figures 18, 19 and 20). The difference in average scores between the best and the worst performing provinces (the Western Cape and Limpopo respectively) in the Grade 6 evaluation, ranged from 19 to 34 percentage points in the three learning areas (see Figure 20).

In the Grade 3 systemic evaluation, the gap between the best and the worst performing provinces widened between 2001 and 2007 (see Figures 18 and 19). In 2001, the gap between the best and the worst performing provinces in literacy and numeracy was 10 and 9 percentage points respectively. By 2007, this gap had increased to 19 percentage points for literacy and 25 percentage points for numeracy.

Despite the widening gap between the provinces, most provinces experienced an improvement in the Grade 3 systemic evaluation between 2001 and 2007. In literacy, the improvement ranged from 2 percentage points in Limpopo to 15 percentage points in the Western Cape.

In numeracy, Limpopo experienced a 2 percentage point decrease, but amongst the other provinces, the improvement ranged from 2 percentage points in the Eastern Cape and Mpumalanga to 17 percentage points in the Western Cape.

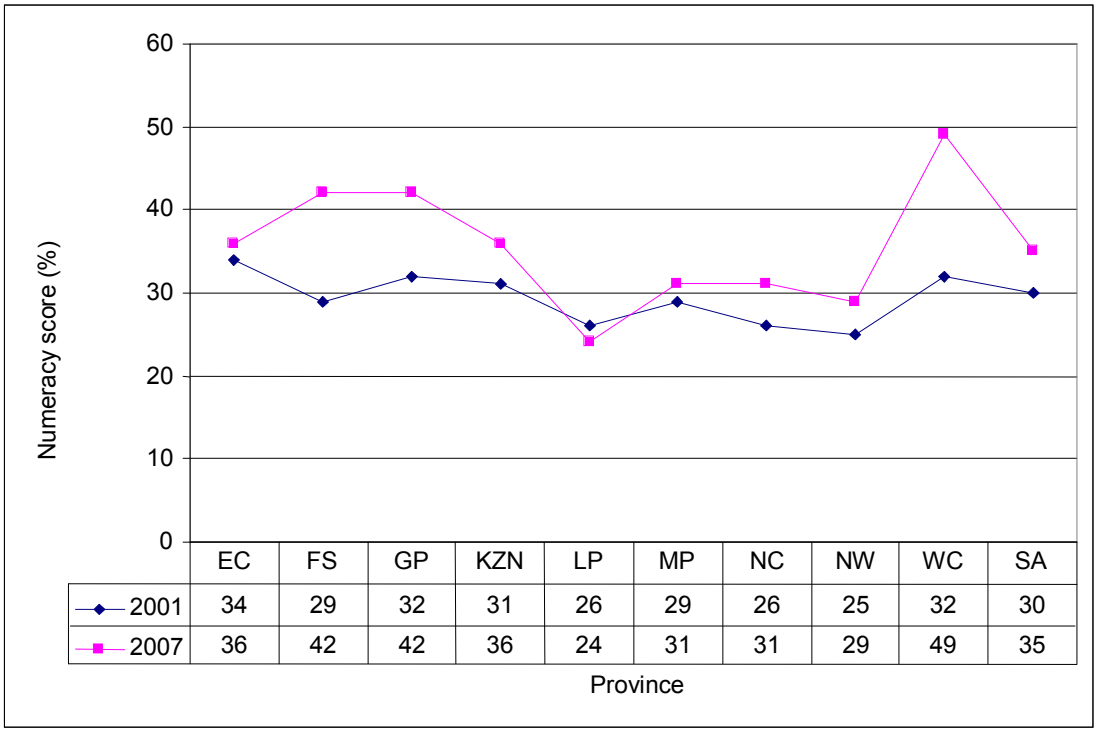
Figure 18: Mean literacy scores by province in the Grade 3 systemic evaluation: 2001 and 2007



	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA
2001	24	27	33	35	27	28	23	29	33	30
2007	35	43	38	38	29	32	34	35	48	36

Source: Department of Education, undated

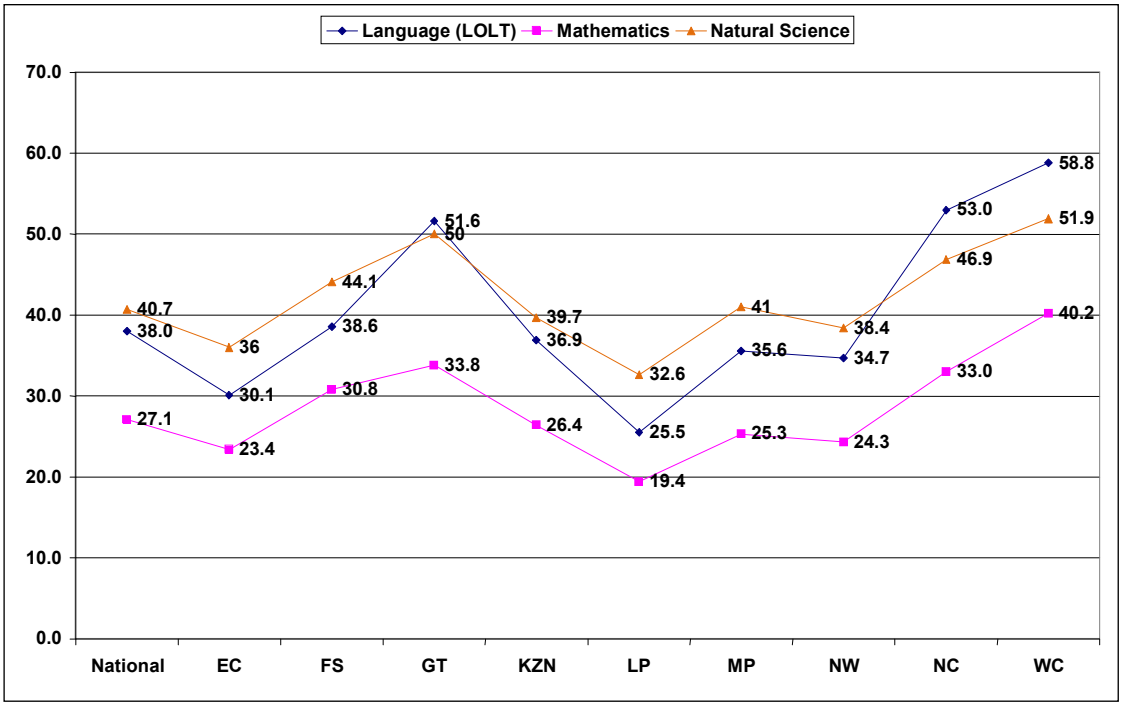
Figure 19: Mean numeracy scores by province in the Grade 3 systemic evaluation: 2001 and 2007



	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA
2001	34	29	32	31	26	29	26	25	32	30
2007	36	42	42	36	24	31	31	29	49	35

Source: Department of Education, undated

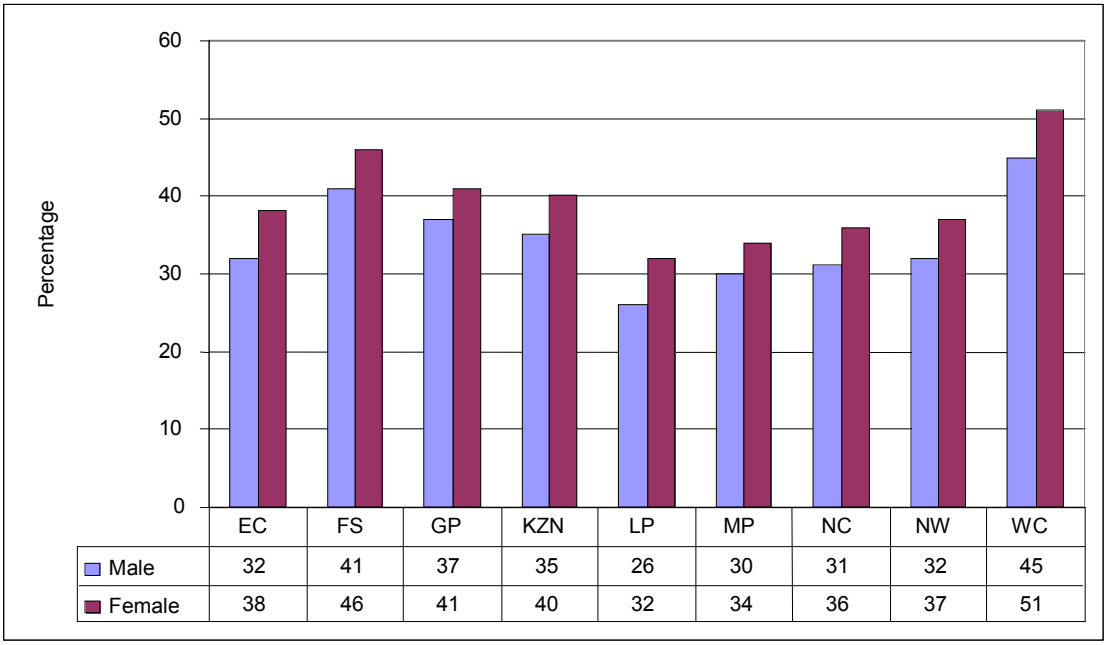
Figure 20: Average learner scores by learning area and province in the Grade 6 systemic evaluation: 2004



Source: Department of Education, 2005d: 205.

In both the Grade 3 (2007) and Grade 6 systemic evaluations, the average was slightly higher for female learners than for male learners (Figures 21, 22 and 23). (DoE, 2003c, p61; 2005d, pp 206, 210 & 213).

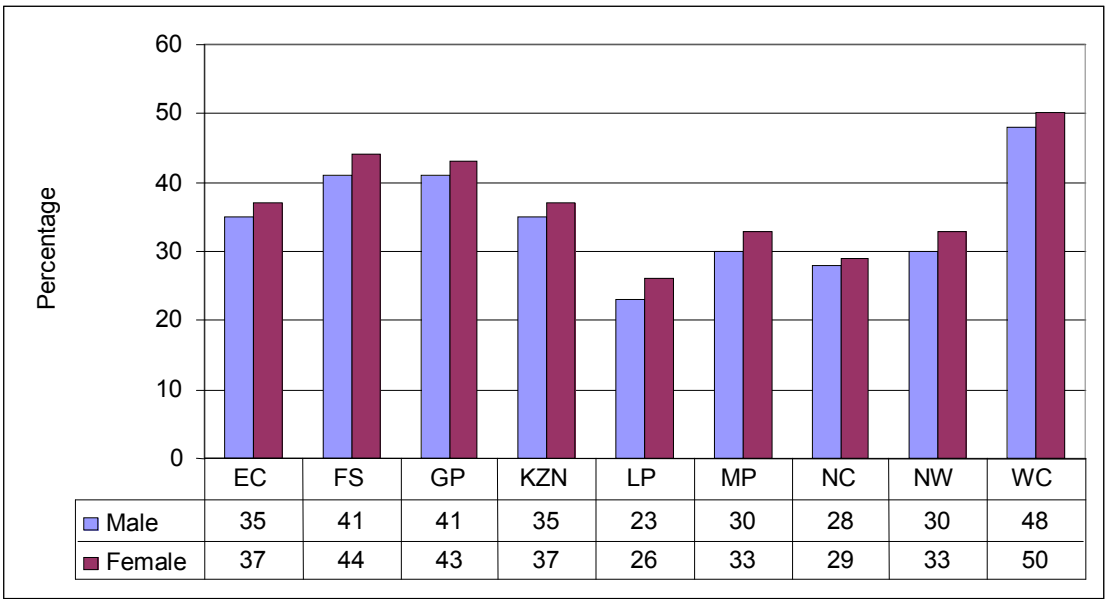
Figure 21: Average literacy score by gender in the Grade 3 systemic evaluation: 2007



	EC	FS	GP	KZN	LP	MP	NC	NW	WC
Male	32	41	37	35	26	30	31	32	45
Female	38	46	41	40	32	34	36	37	51

Source: Department of Education, undated

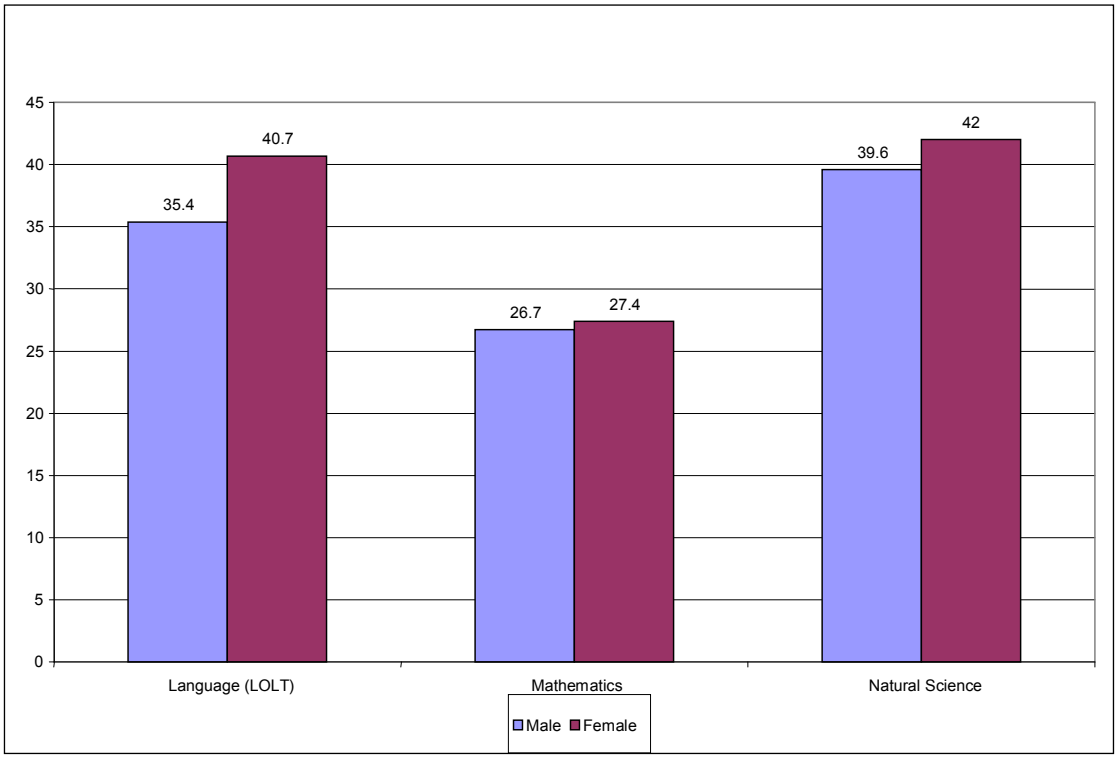
Figure 22: Average numeracy score by gender in the Grade 3 systemic evaluation: 2007



	EC	FS	GP	KZN	LP	MP	NC	NW	WC
Male	35	41	41	35	23	30	28	30	48
Female	37	44	43	37	26	33	29	33	50

Source: Department of Education, undated

Figure 23: Average score by gender in the Grade 6 systemic evaluation: 2004



Source: Department of Education, 2005d, pp 206, 210 & 213.

The systemic evaluations, which provide a basis for assessing the quality of education that is provided in primary schools, indicate that levels of achievement are low in the Primary Education Phase. If learners are failing to master the basics in primary school, this will have an impact on the quality of achievement in later grades in the education system.

4.5.3 Monitoring Learning Achievement (MLA) Project

The Monitoring Learning Achievement (MLA) Project was conducted in several African countries in 1999, and measured the competencies of Grade 4 learners in numeracy, literacy and life skills.

South Africa's performance in all three areas indicated serious shortcomings and South Africa did not fare well when compared to the other participating countries. Out of the 12 participating countries, South Africa scored the lowest average in numeracy, the fifth lowest in literacy and the third lowest in life skills (see Table 55).

Table 55: MLA percentages of average scores for numeracy, literacy and life skills: 1999

	% Numeracy average	% Literacy average	% Life skills average
Botswana	51.0	48.0	56.0
Madagascar	43.7	54.7	72.1
Malawi	43.0	35.0	77.0
Mali	43.6	51.8	56.9
Mauritius	58.5	61.0	58.0
Morocco	56.4	67.6	62.3
Niger	37.3	41.1	44.7
Senegal	39.7	48.9	45.7
South Africa	**30.2**	**48.1**	**47.1**
Tunisia	60.4	77.9	74.7
Uganda	49.3	58.7	66.8
Zambia	36.0	43.0	51.0

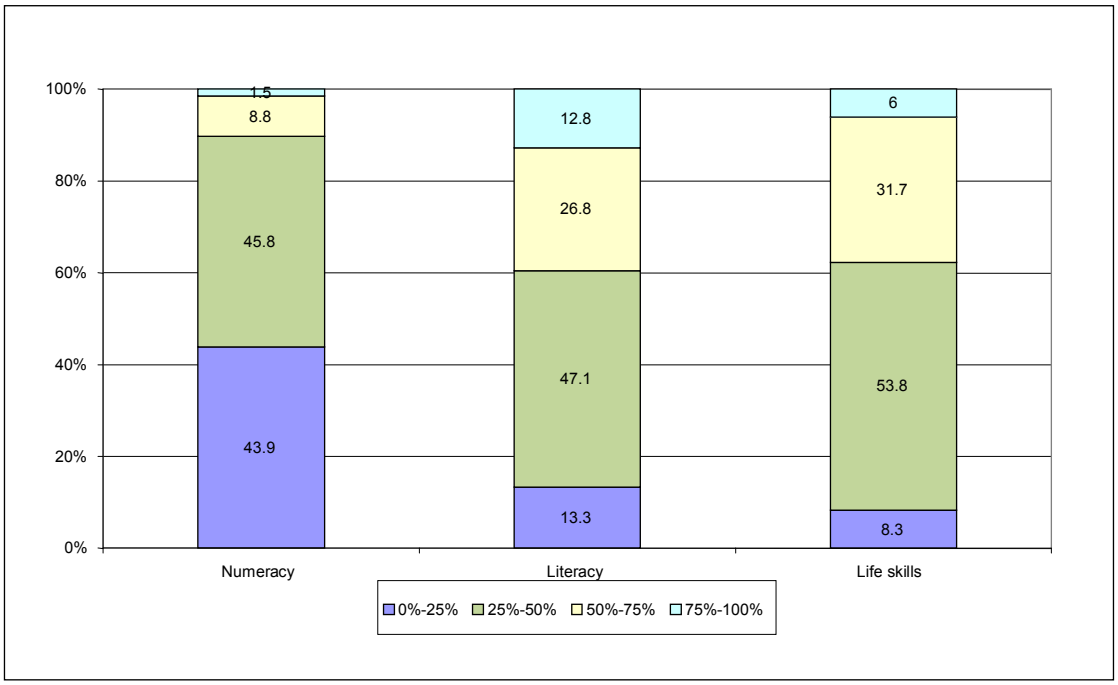
Source: Strauss, 1999; Chinapah et al., 2000.

The average score achieved by South African participants in the numeracy task was 30.2%, with a large proportion of learners (44%), scoring below 25%. A small proportion of learners demonstrated a high level of competency – only 1.5% of learners scored 75% or higher in numeracy (see Figure 24).

Although learners performed better in literacy and life skills than they did in numeracy, the achievement rates in these areas were still low. The average score achieved for literacy was 48.1%, with the largest proportion of learners (47%) obtaining scores of between 25% and 50%. Only 13% achieved a score of 72% or higher.

A similar level of achievement was obtained in the life skills task, with learners obtaining an average score of 47.1%. More than half the learners (54%) obtained scores of between 25% and 50% and only 6% obtained 75% or more.

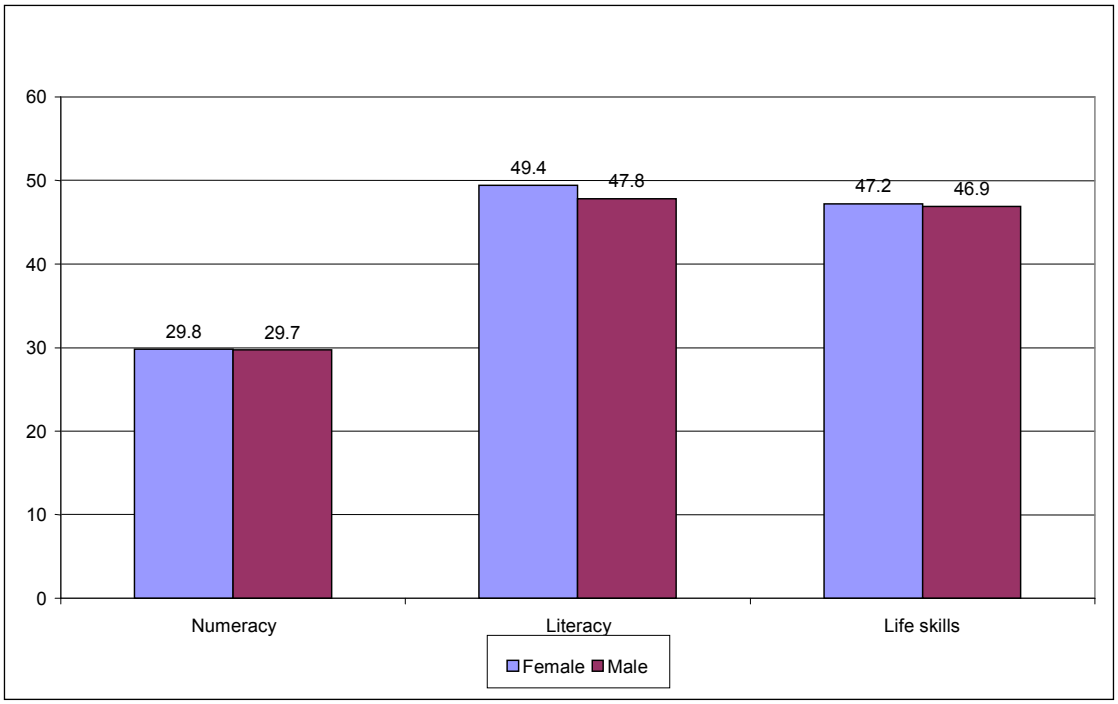
Figure 24: Distribution of percentage correct answers in numeracy, literacy and life skills in the MLA survey: 1999



Source: Strauss, 1999.

As Figure 25 indicates, there were no significant gender differences in performance.

Figure 25: MLA percentage of correct answers by gender in numeracy, literacy and life skills: 1999



Source: Strauss, 1999.

Performance levels varied by province (see Table 56), with Gauteng and the Western Cape having the highest proportion of learners obtaining 75% or more in numeracy, literacy and life skills, while Limpopo showed the worst performance in numeracy, Mpumalanga in literacy and the Free State in life skills.

Table 56: Percentage distribution of the percent correct answers by province of Grade 4 learners in numeracy, literacy and life skills in the MLA Survey: 1999

	Province	0% to 25%	25% to 50%	50% to 75%	75 to 100%
Numeracy	Eastern Cape	38.9	48.6	10.9	1.7
	Free State	54.4	44.6	1	0
	Gauteng	33.2	47.7	16	3.2
	KwaZulu-Natal	41	48.2	9.1	1.6
	Limpopo	64.1	35.8	0.1	0
	Mpumalanga	42.4	40.5	7.1	0
	North West	43.2	49.4	6.8	0.6
	Northern Cape	54.8	39.9	4.7	0.7
	Western Cape	28.3	47.7	20	3.9
Literacy	Eastern Cape	9.4	48.3	32.6	9.7
	Free State	17.2	64.6	15.6	2.6
	Gauteng	4.8	32.5	32.7	30
	KwaZulu-Natal	11.8	42.2	26.2	19.8
	Limpopo	17.6	53.8	23.7	4.9
	Mpumalanga	31.5	58.7	8.3	1.5
	North West	14	52.6	25.8	7.6
	Northern Cape	11.2	44.4	31.6	12.8
	Western Cape	6.4	28.1	36.6	28.9
Life skills	Eastern Cape	8.6	47.8	37.4	5.7
	Free State	18.6	75	6.4	0
	Gauteng	5.7	40.7	38.1	15.6
	KwaZulu-Natal	6.4	44.6	41	8
	Limpopo	9.1	67.7	20.5	2.7
	Mpumalanga	13.1	70.6	16	0.4
	North West	7.8	62.8	24.8	4.7
	Northern Cape	5.1	61.5	30.8	2.6
	Western Cape	3.7	36.2	48.8	11.3

Source: Strauss, 1999.

4.5.4 Southern African Consortium for Monitoring Educational Quality (SACMEQ)

The second Southern African Consortium for Monitoring Educational Quality (SACMEQ) II Project, which was conducted between 2000 and 2002, assessed the reading and Mathematics competencies of Grade 6 learners in 14 countries in east and southern Africa, including South Africa. Reported learner test scores for both reading and Mathematics were based on a scale with a pre-determined mean score of 500 and a standard deviation of 100 across all countries.

South Africa's achievement in these areas was poor. South Africa achieved just under the mean SACMEQ score in both reading and Mathematics and ranked eighth in reading and ninth in Mathematics (see Table 57).

Table 57: Mean reading and Mathematics scores of all participating countries in the SACMEQ II Project

	Reading	Mathematics
Botswana	521.1	512.9
Kenya	546.5	563.3
Lesotho	451.2	447.2
Malawi	428.9	432.9
Mauritius	536.4	584.6
Mozambique	516.7	530.0
Namibia	448.8	430.9
Seychelles	582.0	554.3
South Africa	**492.3**	**486.1**
Swaziland	529.6	516.5
Tanzania	545.9	522.4
Uganda	482.4	506.3
Zambia	440.1	435.2
Zanzibar	478.2	478.1
SACMEQ	500.0	500.0

Source: SACMEQ 2005.

Table 58 reflects the mean reading and Mathematics scores by province and indicates that the performance levels of the provinces varied. Only three provinces (the Western Cape, Gauteng and KwaZulu-Natal) achieved mean scores that were above the mean for the region as a whole. Mpumalanga, followed by the North West, obtained the lowest average scores of all the provinces.

Table 58: Mean reading and Mathematics scores by province in the SACMEQ II Project

	Reading	Mathematics
Eastern Cape	444.1	449.3
Free State	446.2	447.5
Gauteng	576.4	552.4
KwaZulu-Natal	517.5	510.3
Limpopo	436.7	446.0
Mpumalanga	428.1	433.4
North West	427.7	419.6
Northern Cape	470.3	460.9
Western Cape	629.3	591.1
National Average	492.3	486.1

Source: SACMEQ 2005.

Table 59 reflects the mean score for reading and Mathematics by gender. In both reading and Mathematics, female learners performed better than their male counterparts. The mean reading score achieved by female learners was, in fact, slightly higher than the overall mean score of 500 for all participating countries.

Table 59: Mean reading and Mathematics scores by gender in the SACMEQ II Project

	Reading	Mathematics
Male	478.3	482.1
Female	504.8	489.8

Source: SACMEQ 2005.

As with the MLA Project and the systemic evaluations, the SACMEQ Project found that South African learners in the Primary Phase performed poorly, especially when compared to learners in other African countries.

4.5.5 Trends in the International Mathematics and Science Study (TIMSS)

The TIMSS study measured Grade 8 learning achievement in Mathematics and Science in 41 countries in 1995, in 38 countries in 1999 and in 50 countries in 2003[11].

In both the 1999 and 2003 TIMSS studies, South Africa's performance was disappointing. Learners attained the lowest average test scores in both Mathematics and Science when compared to all the other participating countries, including the other African countries that participated, namely, Morocco and Tunisia that participated in 1999; and Botswana, Ghana, Morocco, Tunisia and Egypt that participated in 2003 (Howie, undated; Reddy, 2006). In both years South Africa's mean scores for Mathematics and Science were significantly lower than the international average scores for those two subjects (see Table 60).

Out of an imputed maximum score of 800, the average South African Mathematics score was 275 for TIMSS 1999 and 264 for TIMSS 2003. The average Science score was even lower than the average Mathematics score, namely 243 for TIMSS 1999 and 244 for TIMSS 2003 (both out of an imputed maximum score of 800).

Although South Africa's Mathematics score decreased by 11 points and its Science score increased by 1 point between 1999 and 2003, these differences were not statistically significant (Reddy, 2006).

Table 60: Average score in the TIMSS 1999 and TIMSS 2003 Grade 8 Mathematics and Science achievement tests

	Mathematics	Science
TIMSS 1999		
SA's average score	275	243
International average score	487	488
TIMSS 2003		
SA's average score	264	244
International average score	*467*	*474*

Source: Human Sciences Research Council, 2005.

Measured against international benchmarks, South Africa's performance was particularly poor. In both 1999 and 2003, only the most proficient learners in South

[11] *Although South Africa participated in the 1995 TIMSS study, the data from this study was not included in the international data set, as the study did not meet the required methodological criteria. (Information supplied telephonically by Dr Vijay Reddy, HSRC, on 25 October 2006.) Consequently, no data is available for 1995.*

Africa were able to attain the level of the average learner in Singapore, the country that achieved the highest average score (Howie, undated, 9 & 12; Reddy, 2006, 18 & 32). Of all the countries that participated, South Africa showed the largest variation in scores, "ranging from a preponderance of very low scores to a few very high scores" (Reddy, 2006, p112).

In TIMSS 2003, only 10% of South Africans achieved a score of higher than 400 (i.e. above the low international benchmark (LIB)) in Mathematics and only 13% in Science. Of the 10% whose achievement was higher than the LIB in Mathematics, only 0.3% scored at the Advanced International Benchmark (AIB) level (above 625); 1.5% scored at the high international benchmark (HIB) level (between 550 and 625); 3.2% scored at the intermediate international benchmark (IIB) level (between 475 and 550); and 5.3% scored at the LIB level (between 400 and 475) (Reddy, 2006, 25). Similarly, in Science, only 1% scored above the AIB level, 2% at the HIB level, 3% at the IIB level and 7% at the LIB level (Reddy, 2006, 39).

In terms of gender, the superior performance by male learners, as compared to female learners, which had been evident in 1999, no longer held true in 2003. In 1999, the average Mathematics and Science scores for males were higher than for females – by 16 and 19 points respectively. In 2003, the gap in favour of males (2 points in both Mathematics and Science) was insignificant (see Table 61) (Reddy, 2006).

Table 61: Results of the TIMSS 1999 and TIMSS 2003 Grade 8 Mathematics and Science scores for South Africa by gender

	Mathematics	Science
TIMSS 1999		
Female	267	234
Male	283	253
TIMSS 2003		
Female	262	242
Male	264	244

Source: Reddy, 2006, pp 54 & 67.

There were, however, significant variations in achievement between provinces, with learners in the top performing provinces scoring almost double when compared to those in the lowest performing provinces. The Western Cape scored the highest average score in Mathematics and Science in both 1999 and 2003, while Limpopo scored the lowest (see Table 62).

According to an analysis by the HSRC of the TIMSS 2003 data set (Reddy, 2006, 48 & 61), there appears to be a correlation between the socio-economic conditions of a province, as measured by the Human Development Index (HDI), and the provincial Mathematics and Science achievement score. The HDI includes the GDP per capita, the literacy rate (measured by the adult literacy and combined primary, secondary and tertiary gross enrolment rate), and life expectancy at birth. Provinces with a higher HDI attained a higher achievement score than provinces with a lower HDI.

Table 62: Results of the TIMSS 1999 and TIMSS 2003 Grade 8 Mathematics and Science scores by province

	Mathematics		Science	
	1999	2003	1999	2003
Eastern Cape	256	233	206	190
Free State	276	265	255	245
Gauteng	318	304	312	309
KwaZulu-Natal	292	246	258	227
Limpopo	226	217	169	191
Mpumalanga	253	261	232	239
North West	267	251	235	231
Northern Cape	318	333	283	334
Western Cape	381	389	393	386
South Africa	275	264	243	244

Source: Howie, undated; Reddy, 2006.

The 1999 and 2003 TIMSS studies were conducted during a period of curriculum change and restructuring. According to both Howie (undated) and Reddy (2006), at the time when the two TIMSS studies were conducted, the curriculum in place (Curriculum 2005) was characterised by a lack of emphasis on basic knowledge and skills, Mathematics and Science included. Furthermore, with regard to TIMSS 2003, the South African curriculum, when compared internationally, showed the least overlapping with the TIMSS assessment framework, which might have affected South Africa's achievement scores.

However, even in topics that had been covered by the South African curriculum, the learners' performance was still very poor – achieving only an approximate 20% correctness in those items. An aspect which was found to have had an effect on the achievement scores, was the language of testing (English or Afrikaans) and the learners' proficiency in those languages. The majority of learners were not fluent in either of the languages of testing and this contributed to the achievement scores attained (Howie: undated: 21; Reddy 2006, 114).

4.5.6 Progress in the International Reading Literacy Study (PIRLS) 2006

Progress in the International Reading Literacy Study (PIRLS) is an international study, which measures reading literacy amongst Grade 4 learners. The 2006 PIRLS study was the third one of its kind, conducted by the IEA. It was preceded by PIRLS 1991, in which 32 countries participated, and PIRLS 2001, in which 35 countries participated. PIRLS 2006 saw the participation of 40 countries and 45 education systems. (For example, there were two Belgium systems, namely Flemish and French.)

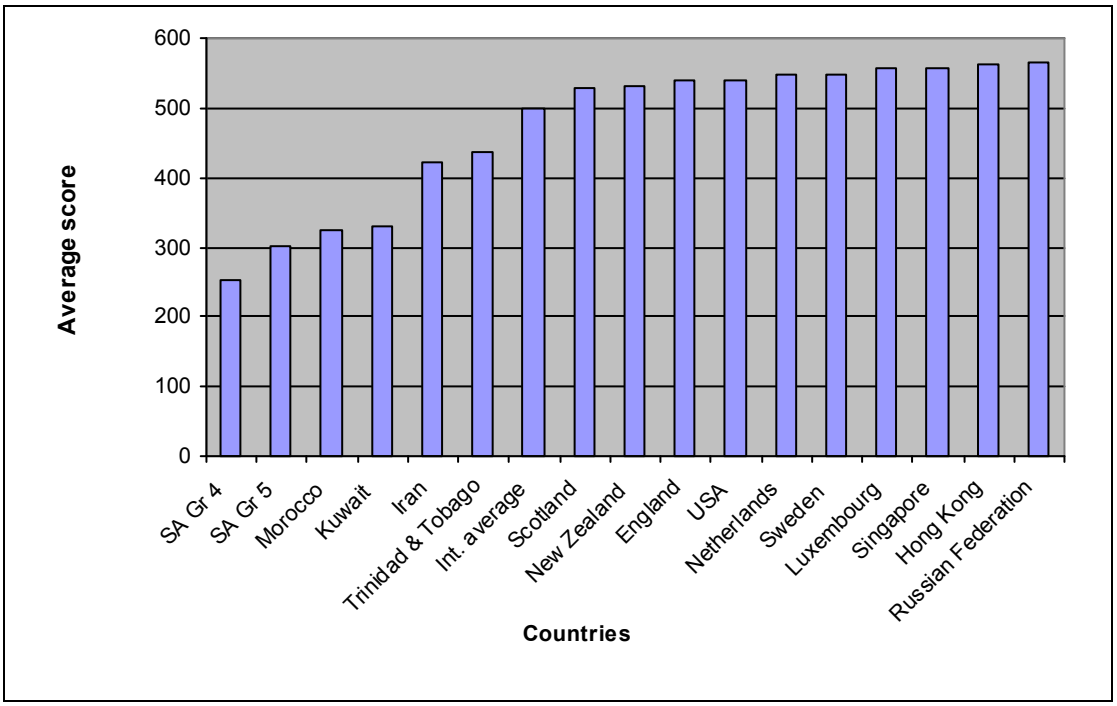
The 2006 PIRLS study was the first PIRLS study that South Africa participated in. In South Africa, the assessment was carried out on Grade 4 and 5 learners (although the assessment was aimed at a Grade 4 level) in more than 400 schools in all 11 official languages.
Learners in Grades 1 to 3 were assessed in their language of tuition. The rationale for including Grade 5 learners was to study the progression in reading ability from

Grade 4 to Grade 5, given the transition of learners in the languages of learning in Grade 4[12].

As was the case with the other international achievement studies that South Africa had participated in, South Africa's performance in the PIRLS study was very poor. South Africa achieved the lowest score out of all 45 education systems. The Russian Federation, followed by Hong Kong were the top performing countries.

Figure 26, compiled by Howie et al. (2007:24), indicates South Africa's average achievement in reading literacy at the Grade 4 and 5 levels, relative to that of specific comparator countries. South African Grade 4 learners achieved an average score of 253 and the Grade 5 learners an average score of 302. While the difference between the Grade 4 and 5 scores indicates some progression in reading achievement from one grade to the next, these scores are significantly below "the international average score of 500, fixed for the reading literacy of Grade 4 learners internationally" (Howie et al, 2007:60).

Figure 26: South African learners' overall performance, comparator countries



Source: Howie et al., 2007:24.

As was the case with the TIMSS study, South Africa's performance in PIRLS, measured against international benchmarks, constituted particular cause for concern. The LIB (between 400 and 475 points) indicated that learners had achieved basic reading skills and strategies. The IIB (between 475 and 550 points) described learners with some reading proficiency, while the HIB (550 to 625 points) described learners who were considered to be competent readers, and the AIB (625 points and above) referred to learners who were able to integrate information across relatively

[12] *In the first three years of schooling, South African children are taught in an "approved language" which, in optimal circumstances, is their home language. From Grade 4, however, the language of tuition changes in the majority of schools, resulting in more than 80% of South African children being taught in their second language (Howie et al. 2007:12).*

challenging texts and who could provide full text-based support in their answers (Howie, 2007:30-33).

In South Africa, the vast majority of learners were unable to reach even the lowest international benchmark of 400 points. Only 13% of Grade 4 learners and 22% of Grade 5 learners achieved scores at LIB level. Internationally, the median for learners who reached the LIB was 94% (Howie et al., 2007:30). A breakdown of those Grade 4 and 5 learners who achieved above the LIB level, revealed that only 7% of Grade 4 and 13% of Grade 5 learners reached the IIB level, 3% of Grade 4 learners and 6% of Grade 5 learners reached the HIB level, and a minuscule 1% of Grade 4 learners and 2% of Grade 5 learners reached the AIB level. In comparison, the median percentage of learners internationally, who reached the IIB, was 76%, for the HIB it 41% and for the AIB it was 7% (Howie et al, 2007:32-33).

Performance in every single one of the 11 languages was below the international mean. Learners who were tested in the African languages scored very low, with between 86% and 99% of learners failing to reach the LIB. Only 1% of isiNdebele, Siswati and isiXhosa learners reached this benchmark in Grade 4, although this figure increased slightly to 4%, 5% and 4% respectively in Grade 5 (Howie et al, 2007:31).

Learners who were assessed in Afrikaans achieved the highest average score, followed by those assessed in English (Howie et al, 2007:25). In Grade 4, a total of 37% of Afrikaans learners and 36% of English learners reached the LIB level, increasing to 55% and 52% respectively for Grade 5 learners (Howie et al, 2007:31). Only a small proportion of learners in South Africa could be considered competent readers. None of the learners who were assessed in an African language was able to reach the HIB or AIB level, while only 17% of Afrikaans learners and 18% of English learners reached the HIB level in Grade 5 (up from 8% and 10% respectively in Grade 4).

An analysis of the PIRLS results by gender, indicates that both internationally and in South Africa, female learners outperformed male learners. In South Africa, Grade 4 female learners achieved an average score of 271, while male learners achieved an average score of 235 and, in Grade 5, the average scores achieved by male learners and female learners were 319 and 283 respectively.

In both Grades 4 and 5 the difference in the average achievement between female and male learners was 36 points, which was the highest gender differences recorded amongst all the participating countries. Internationally, the average achievement for female learners was 509 points, while for male learners it was 492 points (Howie et al, 2007:24).

4.5.7 Conclusion

The analysis of learning achievement in this section indicates that an improvement in the quality of learning output remains one of the biggest challenges facing the South African education system. The achievement of learners in both national and international assessment studies is very poor, and it is a cause for great concern that South Africa performs so disappointingly when compared to its neighbours and to other developing countries.

While the SCE results show a definite improvement over time, with the number of learners passing the SCE increasing and the gap in achievement between males and females narrowing, there is still some cause for concern with regard to the quality of the SCE passes, with the number of endorsement passes increasing at a very slow rate.

While access to education is high (see section on Access) and South Africa's education expenditure, relative to GNP is also fairly high when compared to that of other countries (see section on Finance), it would seem that, in terms of the quality of learning outcomes, the return on investment in education at school level has been poor.

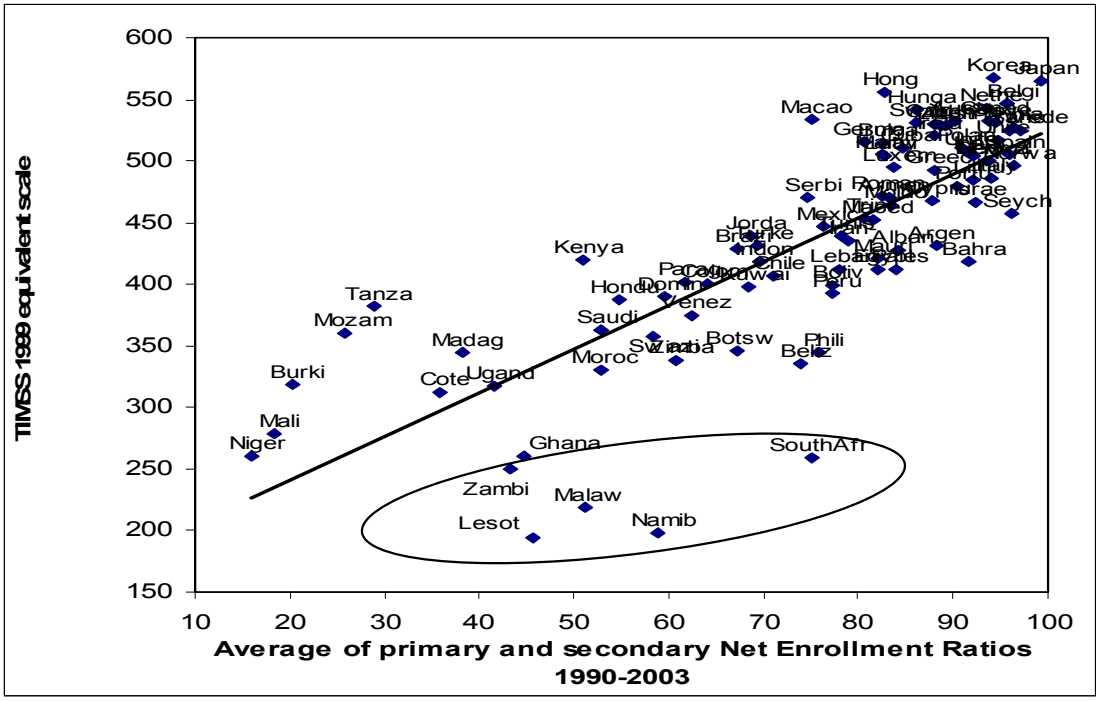
The imbalance between access and quality in South Africa's education system was pointed out by Crouch and Vinjevold (2006). Crouch and Vinjevold (2006:6) developed an achievement index (based on the international assessments that South Africa had participated in since 1990), and correlated it with an index of access (the average of the net enrolment rates in primary and secondary schools during the 1990s and early 2000s).

The authors found that, while the majority of countries had managed to find a balance between enrolment and quality, South Africa was under-performing in terms of the quality provided by its schooling system (see Figure 27).

On the other hand, in a study on the impact of participation on levels of academic performance in SACMEQ II, Fleisch and Perry (2005, 18) found that the "relative levels of participation and internal efficiency" were critical factors that needed to be taken into account when comparing countries' achievements in international assessment studies.

Their analysis indicated that "the greater the overall proportion of the child population enrolled in school, the lower the average achievement levels tend to be" (Fleisch and Perry 2005, 8). Put in another way, the more "elitist" an education systems tends to be, with poor performing learners dropping out, the better the results in achievement tests.

Figure 27: Correlation between learning outcomes and enrolment rates: primary and secondary combined



Source: Crouch & Vinjevold, 2006:7.

In addition to measuring levels of achievement, many of the national and international assessments are accompanied by surveys that provide contextual information on the learning and teaching process and on the home background variables, which can be linked to levels of achievement. Several factors were identified as influencing the performance level of learners. These include socio-economic status (DoE, 2005d:2 & 96-98, Moloi & Strauss, 2005:180 and Taylor. 2007); educational background of parents (DoE, 2003c:24, Oosthuizen and Bhorat, 2006, Strauss, 1999:58 and Reddy, 2006); access to books in the home (Strauss, 1999, DoE 2003c:14 & 33 & 2005d:100 & 115 and Reddy, 2006); the provision of school resources and facilities (Reddy, 2006:107, DoE, 2003c:40 & 52, DoE, 2005d:116 and Bhorat and Oosthuizen, 2006); the utilisation of unqualified and under-qualified educators (Strauss, 1999 and Reddy 2006); and school management (Taylor, 2007, Strauss, 1999:61, DoE, 2003c:41 & 43, and Gustafsson, 2005:21-22).

In light of the findings on learner achievement levels, several initiatives were put in place, with a view to improving the quality of education. These include:

- the introduction of a new curriculum from Grade 10 that raises the cognitive demand of subjects;
- the expansion of the Dinaledi Programme, which is aimed at improving the performance of students in Mathematics and Science in 400 schools;
- the National Learner Attainment Strategy, which requires provinces to develop interventions, so as to support poorly performing schools;
- the provision of a reading programme, which includes the provision of books to schools for reading in all official languages, as well as a campaign designed to encourage schools to set aside a specific reading period;
- the Quality Improvement, Development, Support and Upliftment Programme (QIDS-UP), which provides schools with the basic minimum resources required to make quality learning feasible; and

- the Accelerated Certificate in Education in School Leadership for teachers and principals.

This increased focus on improving the quality of education is expected to improve the quality of performance.

4.6 Post-school attainment rates

While literacy rates are improving as access to schooling and completion rates improve, South Africa's developing economy requires increasing numbers of higher education graduates with the high-level skills and knowledge that are essential to help the economy expand.

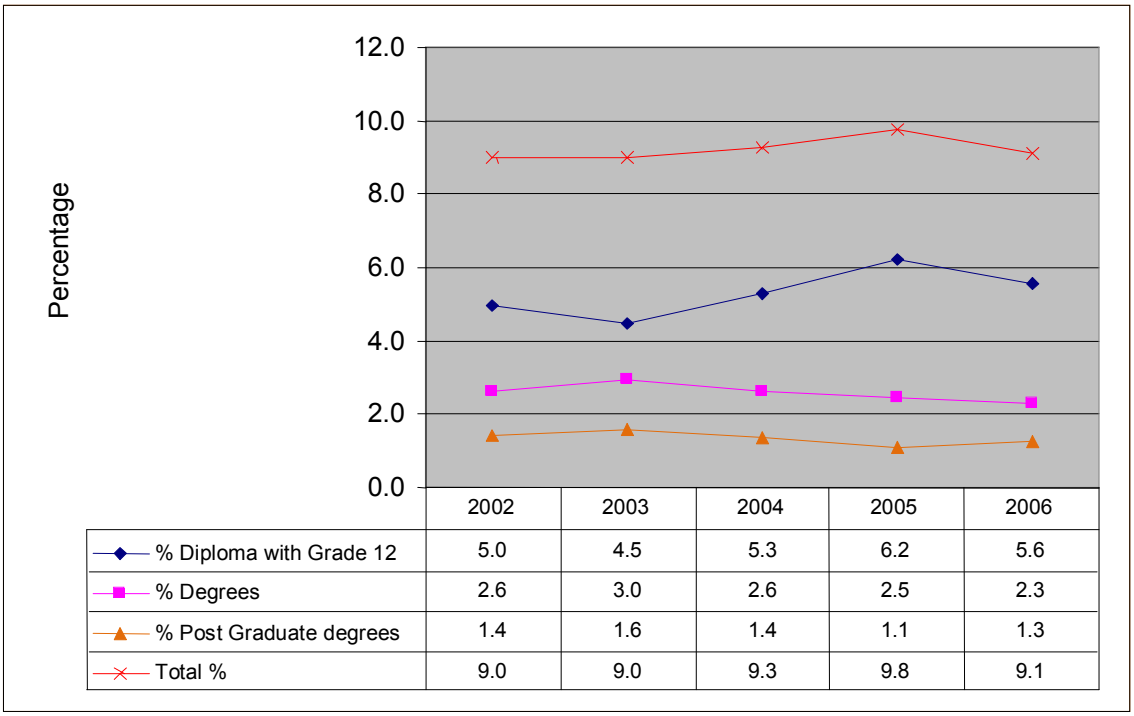
According to the General Household Survey, in 2006, just over 9% of South Africa's adult population (those aged 20 and above) had obtained some post-Grade 12 qualification (see Figure 28). This is not high enough to meet the existing economic need for skilled graduates and South Africa is currently experiencing "an endemic shortage … of high-level professional and managerial skills, particularly in science, information technology, engineering, technological and technical occupations, economic and financial occupations, and accountancy and related occupations" (Ministry of Education, 2001:15).

There has not been much change in the proportion of the population aged 20 and above with post-Grade 12 qualifications. It remained fairly stable during the period 2002 to 2006, although there was a slight increase in 2005 (to 9.8%), which again dropped back to 9.1% in 2006.

While the proportion of the population with a post-Grade 12 qualification has remained more or less stable, the total number of people with such a qualification increased by 8.1% between 2002 and 2006, from almost 2.3 million people to just under 2.5 million. While the number of people in the population, aged 20 and above, who had completed Grade 12 and a diploma increased from almost 1.3 million in 2002 to 1.5 million in 2006 (although the figure fluctuated year-on year), the decline in the number of people boasting degrees and postgraduate degrees is cause for concern.

After increasing to 769 093 in 2003, the number of people aged 20 and above, boasting a degree, then declined steadily to 625 121 in 2006 – a decline of 18.7%. Similarly, the number of people with postgraduate degrees dropped from 417 152 in 2003 to 297 086 in 2005, but then increased again in 2006, although the number of people with postgraduate degrees in 2006 was still lower than was the case in 2002.

Figure 28: Percentage of the population, aged 20 and above, who achieved a post-Grade 12 qualification: 2002 to 2006



	2002	2003	2004	2005	2006
% Diploma with Grade 12	5.0	4.5	5.3	6.2	5.6
% Degrees	2.6	3.0	2.6	2.5	2.3
% Post Graduate degrees	1.4	1.6	1.4	1.1	1.3
Total %	9.0	9.0	9.3	9.8	9.1

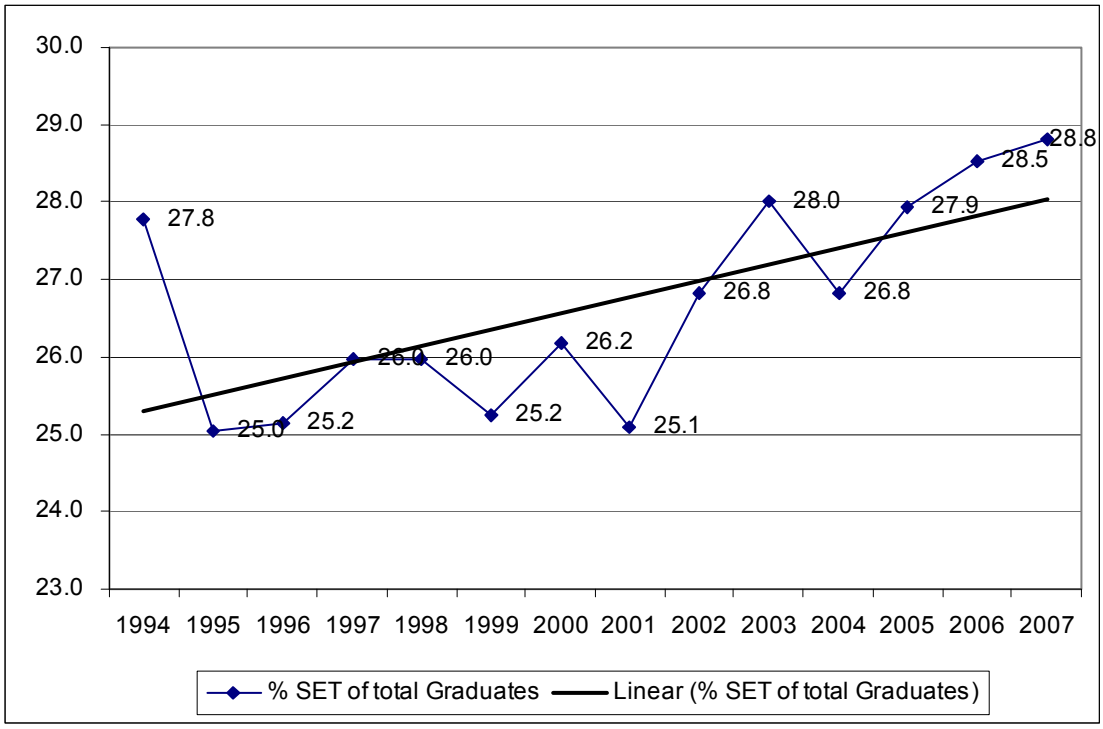
Source: Calculated from Statistics South Africa, General Household Survey Interactive Database, http://interactive.statssa.gov.za:8282/webview/

4.7 Graduation rates in Science, Engineering and Technology (SET) in higher education

Figure 29 below represents the percentage of students enrolled in the higher education sector who graduated in the Science, Engineering and Technology (SET) fields. Graduates, particularly in the SET fields, contribute to a skills base that supports economic growth and investment in social infrastructure. Government's Joint Initiative on Priority Skills Acquisition (JIPSA) emphasises that, as from 2007, the target is to increase the number of engineering graduates by 1 000 per year.

Between 1994 and 2007, SET graduates constituted between 25% and 29% of total higher education graduates (see Figure 29). While this percentage fluctuated year-on-year during the 1990s and early 2000s, from 2001 there has been an upward trend in the proportion of these graduates. This upward trend has also been evident in the number of SET graduates since 2000. Between 2000 and 2007, the SET graduates increased every year, growing by a total of 45% over this period. Even between 2003 and 2004, when the proportion of SET graduates in the total of higher education graduates dropped from 28% to 26.8%, the number of SET graduates continued to rise and, in fact, experienced the biggest annual increase recorded during the 2000 to 2006 period (see Table 63).

Figure 29: Graduating Science, Engineering and Technology (SET) students as a percentage of the total of higher education graduates: 1994 to 2007



Source: Higher Education Management Information System, DoE (2007).

Table 63: Number and percentage growth in Science, Engineering and Technology (SET) graduates from higher education institutions: 2000 to 2006

	Number of SET graduates	% change over previous year
2000	85 986	
2001	95 329	10.9
2002	100 242	5.2
2003	105 155	4.9
2004	116 797	11.1
2005	120 063	2.8
2006	124 671	3.8

Source: Higher Education Management Information System, DoE, (2007).

4.8 Literacy

In its simplest form, literacy refers to the ability to read, write and conduct basic numerical operations. While this definition focuses on basic cognitive skills, it does not adequately take into account the "broader social contexts in which literacy is encouraged, acquired, developed and sustained" (UNESCO, 2005, 159). As a result, UNESCO defined functional literacy as follows (UNESCO, 2005, 22):

> *"A person who is functionally literate can engage in all those activities in which literacy is required for effective functioning of his [or her] group and community and also for enabling him [or her] to continue to use reading, writing and calculations for his [or her] own and the community's development."*

In a report to the Minister of Education in 2006, the Ministerial Committee on Literacy argued that a definition of literacy that was "only functional and meaningful within a schooling environment" was inadequate, and that literacy skills had to be viewed in terms of their "contextual relevance and meaningfulness" (Ministerial Committee on Literacy, 2006:3).

In light of this argument, the Committee put forward the following definition of literacy, adopted from the Global Campaign for Education:

> *"Literacy is about the acquisition and use of reading, writing and numeracy skills, and thereby the development of active citizenship, improved health and livelihoods, and gender equality"* (Ministerial Committee on Literacy, 2006:3).

Measuring literacy levels is very resource-intensive and therefore literacy statistics are seldom based on assessments of actual ability. In order to measure literacy rates in South Africa, it is usually assumed that functional literacy is reached with the attainment of a minimum level of formal education. Censuses or surveys are then used to obtain such information, which is in line with the Ministerial Report on Literacy (2006, xi and 8).

In this report, a person is defined as functionally literate if he/she achieved at least seven years of education (i.e. completed primary school). A person is defined as functionally illiterate if he/she left school before completing grade 7. A person is defined as totally illiterate if he/she received no education at all. This, however, is not to say that the education system thereby accepts that it requires seven grades of education to achieve basic, functional literacy.

If it took seven grades to achieve functional literacy, this would be a sign of great inefficiency. Lacking actual literacy skills data, though, the assumption is made that, even in highly disadvantaged communities, or even for the majority of children with learning difficulties, seven grades of education should be sufficient to guarantee that almost anyone would be functionally literate.

4.8.1 Literacy amongst the youth

As a result of the expansion of the education system and improved access to education, there has been a substantial improvement in the literacy rates of young South Africans, aged between 15 and 24.

The functional literacy rate, which is based on educational achievement of up to and including Grade 7, increased steadily from 86% in 2002 to 90% in 2007 (Table 64). This represents a 4 percentage point improvement in the functional literacy rate of the youth in a space of four years. Conversely, the number of 15-to-24-year-olds, who are not functionally literate, has been decreasing steadily from 14% in 2002 to 10% in 2007.

Table 64: Functional literacy rates amongst the youth: 2002 to 2007

	2002	2003	2004	2005	2006	2007
Male	83.3	84.6	84.8	86.9	87.7	87.6
Female	88.5	89.7	90.7	91.0	91.6	92.4
Total	85.9	87.1	87.7	88.9	89.6	90.0
GPI	1.06	1.06	1.07	1.05	1.05	1.05

Source: General Household Survey: Statistics South Africa.

In terms of comparisons to other countries, South Africa's youth literacy rate is higher than the average rate in other developing countries (80.9%) and is significantly higher than the average rate in sub-Saharan countries (72%) (UNESCO, 2005:287).

Note that, according to this definition of literacy, which requires completion of seven grades of education, there could not have been a major drop-out rate in the recent past. If essentially 90% of the youth, aged 15 to 24, boasted seven years of education in 2006, there could not have been the high drop-out and low survival rates that were discussed in the media during the past few years. Furthermore, there could not have been as serious a drop-out problem as has been discussed in the media since the group, who was 15-to-24 years old in 2006, has entered school, approximately somewhere between 1988 and 1997.

4.8.2 Adult literacy

Literacy rates amongst adults, aged 20 and older, are substantially lower than those for the 15-to-24 age group. This indicates that younger people had greater access to basic education than did their older counterparts. Using the definition of functional literacy provided in the section on youth literacy above (i.e. educational achievement of up to and including Grade 7) then, according to the General Household Survey, a total of 74.2% of adults was literate in 2005, compared to 69.6% in 1995.

South Africa's adult literacy rate is substantially higher than the average rate for sub-Saharan countries (59.7%), but slightly lower than the average rate for other developing countries (76.4%) (UNESCO, 2005, 286).

Since 1994, the democratically elected government introduced various policies and structures to meet the challenges of adult illiteracy. In 1996, an Adult Basic Education and Training (ABET) Directorate was established at the Department of Education. This Directorate is responsible for the development of an ABET policy framework and for planning and mobilising resources in support of the large-scale provision of ABET. In 2000, the Adult Basic Education and Training Act (Act 52, 2000) was passed, which provided the basis for the provision of adult education and training. In 2000, the DoE also launched the South African National Literacy Initiative (SANLI). SANLI's main priority was to "break the back" of illiteracy in five years (Ministerial Committee on Literacy, 2006:19), and it was to target an estimated 3.3 million illiterate adults during that period.

According to the Ministerial Committee on Literacy (2006:19), soon after its launch, SANLI started facing funding and organisational difficulties that prevented it from going to scale. Despite these problems, the decline in the total literacy rate that was evident between 1995 and 1998 was halted and the rate increased from 68.7% in 1998 to 70.7% in 2002. Since 2002, there has been a small but steady annual increase in the literacy rate, increasing to 72.6 % in 2003, to 73.3% in 2004 and to 74.2% in 2005.

In 2006, a total of 10.5% of the adult population was totally illiterate (i.e. had received no education at all), and a further 14.6% were, to varying degrees, functionally illiterate, as they had dropped out of school before completing Grade 7.[13] This means that 6.7 million adults were either totally or functionally illiterate in 2006 (see Table 65).

As the literacy rate in this instance is based on the completion of seven years of education, the improvement in the literacy rate has been more a function of the ongoing improvement in the number of learners completing primary school, rather than the effectiveness of SANLI, which has reached only about 343 000 learners since 1994 (Ministry Committee on Literacy, 2006:6). From the section on survival rates above, it is clear that there has been a substantial improvement in the survival rate to the end of Grade 7. While 84.3% of those born between 1970 and 1974 (i.e. who were between the ages of 33 and 37 in 2007) survived to the end of Grade 7,

this applied to 91.7% of those born between 1980 and 1984 (aged 23-to-27 in 2007).

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[13] The data on adult literacy in this report was obtained from the October Household Surveys (from 1995 to 1999) and the General Household Surveys (from 2002 to 2005). The Ministerial Report on Literacy obtained adult literacy data from the 1996 and 2001 censuses. The census data on the number and percentage of the population aged 20 and older, by level of education, is reflected in Table 65.

Table 65: Number and percentage of the population, aged 20 and older, by level of education, according to the 1996 and 2001 General Population Census data

	1996 General Population Census		*2001 General Population Census*	
	Number	***% of total***	***Number***	***% of total***
No schooling	*404 410 5*	*19.4*	*456 749 8*	*17.9*
Some form of primary schooling	*349 1753*	*16.7*	*408 3742*	*16.0*
Grade 7 completed and higher	*133 4144 9*	*63.9*	*168 2153 1*	*66.0*
Total	*208 7730 7*	*100*	*254 7277 1*	*100*

A comparison between literacy figures collected via the 1996 and 2001 censuses, and via the General Household Surveys in, for example, 2003 and 2005, indicates some inconsistencies in the data collected by the two different sources. While the census data gives South Africa's functional literacy rates in 1996 and 2001 as 64% and 66% respectively, the October and General Household Survey data for 1999 and 2002 indicates levels of functional literacy of 69% and 71% for those two years. Averaging out those two numbers to get an approximation for 2002, yields 70%. The difference of about 4 percentage points between the census data of 2001 and the General Household Survey data of 1999 and 2002, is rather puzzling, but not a major cause for concern. The difference in the nature and methodology of a population census and a survey is the most likely reason for the discrepancy between the functional literacy rates indicated by the census data and those indicated by the Household Survey data.

Table 66: Number and percentage of the population aged 20 and older, by level of education: 1995 to 2006 – from General Household Survey data

		No schooling	Some form of primary schooling	Grade 7 completed and higher	Total
1995	Number ('000)	2 864	3 789	15 219	21 872
	% of total	13.1	17.3	69.6	100
1997	Number ('000)	3 196	3 822	15 813	22 831
	% of total	14.0	16.7	69.3	100
1998	Number ('000)	3 261	3 973	15 880	23 114
	% of total	14.1	17.2	68.7	100
1999	Number ('000)	2 792	4 410	16 068	23 271
	% of total	12.0	19.0	69.0	100
2002	Number ('000)	3 016	4 487	18 140	25 643
	% of total	11.8	17.5	70.7	100
2003	Number ('000)	2 958	4 262	19 110	26 330
	% of total	11.2	16.2	72.6	100
2004	Number ('000)	2 820	4 178	19 215	26 213
	% of total	10.8	15.9	73.3	100
2005	Number ('000)	2 774	4 091	19 732	26 597
	% of total	10.4	15.4	74.2	100
2006	Number ('000)	2 816	3 921	20 201	26 938
	% of total	10.5	14.6	75.0	100

Sources: Central Statistical Services (undated); and Statistics South Africa (1999, 2000a, 2000b, 2003b, 2004b, 2005, 2006).
Note: Excludes unspecified or "other" educational level.

4.8.3 Gender parity pertaining to literacy

The GPI pertaining to literacy amongst the youth (Table 67) indicates that, throughout the period under review, a significantly higher number of females were functionally literate, compared to their male counterparts.

A far higher proportion of adult men (20 years and older) than women, are literate. Gender parity, in terms of literacy, has not been achieved amongst South African adults. In 2006, a total of 73.3% of women was functionally literate, compared to 78% of men, resulting in a GPI of 0.95.

The highest disparity between men and women is to be found amongst those who are totally illiterate. While only 8.4% of men are totally illiterate, 12.3% of women are totally illiterate, reflecting a very high gender disparity of 1.47. Unfortunately, there is no significant time trend towards an improvement in GPI pertaining to literacy.

Table 67: Percentage of the population aged 20 and older, by gender and by level of education: 1995 to 2006

		No schooling	Some form of primary schooling	Grade 7 completed and higher	Total
Male	1995	10.8	17.1	72.2	100
	1997	11.9	17.0	71.2	100
	1998	12.1	17.5	70.4	100
	1999	10.1	19.0	70.9	100
	2002	9.5	18.1	72.4	100
	2003	8.8	15.8	75.3	100
	2004	8.8	16.1	75.0	100
	2005	8.3	15.1	76.6	100
	2006	8.4	14.7	78.0	100
Female	1995	15.2	17.5	67.2	100
	1997	15.9	16.6	67.6	100
	1998	15.9	16.9	67.2	100
	1999	13.7	18.9	67.4	100
	2002	13.6	17.0	69.4	100
	2003	13.2	16.5	70.3	100
	2004	12.4	15.8	71.8	100
	2005	12.3	15.6	72.1	100
	2006	12.3	14.5	73.3	100
Gender parity	1995	1.41	1.03	0.93	
	1997	1.34	0.98	0.95	
	1998	1.32	0.96	0.96	
	1999	1.36	1.00	0.95	
	2002	1.43	0.94	0.96	
	2003	1.50	1.04	0.93	
	2004	1.41	0.98	0.96	
	2005	1.49	1.03	0.94	
	2006	1.47	0.99	0.95	

Sources: Central Statistical Services (undated); and Statistics South Africa (1999, 2000a, 2000b, 2003b, 2004b, 2005, 2006.
Note: Excludes unspecified or "other" educational level. No data is available for 1996, 2000 and 2001.

4.8.4 Literacy according to race

The implications of the historically inequitable provision of education to the different population groups in South Africa, are clearly reflected in the difference in literacy levels amongst the different race groups (see Table 68). The proportion of African adults who received no schooling whatsoever, is significantly higher than the proportion of Coloured, Indian and white adults in the same situation. In 2006, a total of 13.1% of African adults was totally illiterate, compared to 4.4% of Coloureds, 2.9% of Indians and almost no whites.

Functional literacy rates were much higher amongst Indian and white adults than amongst African and Coloured adults. While almost 100% of white and 92% of Indian adults had received a sufficient education to be considered functionally literate, the corresponding figures for African and Coloured adults were 70% and 79.7% respectively. The time trend for improvement amongst African and Coloured adults though is significant, showing an 8 and 10 percentage point improvement respectively, in just one decade. However, at that rate it would still take the African

population another three decades to reach 100% – the level at which the white population finds itself today. Therefore, the rate of improvement, while significant, is grossly insufficient if one is aiming for an essentially 100% literate society.

Table 68: Percentage of the population aged 20 and older, by race and by level of education: 1995 to 2006

	Year	None	Some form of primary schooling	Grade 7 completed and higher	Total
African	1995	17.1	21.1	61.9	100
	1997	17.5	19.8	62.7	100
	1998	17.8	20.5	61.7	100
	1999	15.0	22.4	62.6	100
	2002	14.4	20.4	65.3	100
	2003	13.6	19.3	67.1	100
	2004	13.3	18.7	68.0	100
	2005	13.0	18.1	68.9	100
	2006	13.1	16.9	70.0	100
Coloured	1995	8.8	21.9	69.3	100
	1997	8.7	19.0	72.3	100
	1998	7.9	18.2	73.9	100
	1999	7.6	20.3	72.0	100
	2002	7.5	18.5	73.9	100
	2003	7.1	16.8	76.1	100
	2004	6.8	16.5	76.8	100
	2005	5.0	15.0	80.0	100
	2006	4.4	15.9	79.7	100
Indian	1995	5.3	7.8	86.9	100
	1997	5.5	4.6	89.9	100
	1998	4.1	4.7	91.2	100
	1999	3.4	4.7	91.9	100
	2002	3.7	8.0	88.3	100
	2003	2.9	5.5	91.6	100
	2004	2.4	6.3	91.3	100
	2005	2.6	6.6	90.9	100
	2006	2.9	5.1	92.0	100
White	1995	0.2	0.6	99.2	100
	1997	0.6	0.0	99.4	100
	1998	0.5	0.0	99.5	100
	1999	0.2	0.0	99.8	100
	2002	0.2	0.4	99.5	100
	2003	0.0	0.0	100.0	100
	2004	0.0	0.0	100.0	100
	2005	0.0	0.0	100.0	100
	2006	0.1	0.6	99.2	100

Sources: Central Statistical Services (undated); and Statistics South Africa (1999, 2000a, 2000b, 2003b, 2004b, 2005, 2006).
Note: Excludes unspecified or "other" educational level. No data is available for 1996, 2000 and 2001.

4.8.5 Literacy rate in provinces

There is a major difference between the literacy rates found amongst provinces, although the gap between them is closing. In 2006, the literacy rates ranged from a low of 66.1% to a high of 86.3% – a gap of just under 20 percentage points. In comparison, in 2003, the literacy rates ranged from a low of 61% to a high of 86% – a gap of 25 percentage points.

Table 69 below indicates that Gauteng and the Western Cape, boasting literacy rates of 86.3% and 84.4% respectively in 2006, have the highest proportions of literate adults, while Limpopo, the Eastern Cape and the Northern Cape have the lowest proportions (66.1%, 66.2% and 66.7% respectively). Limpopo has the highest proportion of adults with no education – 18.9% – down from 22.7% in 2003.

Table 69: Percentage of the population aged 20 and older, by province and by level of education: 1995 to 2006

		None	Some form of primary schooling	Grade 7 completed and higher	Total
Eastern Cape	1995	13.6	23.3	63.1	100
	2002	13.9	23.7	62.4	100
	2003	13.8	23.6	62.6	100
	2004	13.1	23.0	63.8	100
	2005	13.3	21.4	65.3	100
	2006	12.5	21.3	66.2	100
Free State	1995	11.3	26.1	62.6	100
	2002	11.0	21.8	67.3	100
	2003	10.4	20.2	69.5	100
	2004	9.9	19.6	70.5	100
	2005	9.3	18.8	72.0	100
	2006	7.9	16.6	75.4	100
Gauteng	1995	4.6	9.6	85.9	100
	2002	4.7	11.0	84.3	100
	2003	4.3	9.7	86.0	100
	2004	3.9	8.6	87.4	100
	2005	4.5	11.1	84.3	100
	2006	5.0	8.6	86.3	100
KwaZulu-Natal	1995	15.2	17.5	67.3	100
	2002	12.8	19.8	67.4	100
	2003	12.1	18.7	69.2	100
	2004	11.3	18.3	70.4	100
	2005	11.5	17.3	71.2	100
	2006	12.1	15.6	72.3	100
Limpopo	1995	27.4	13.9	58.8	100
	2002	22.7	17.4	59.9	100
	2003	22.7	16.3	61.0	100
	2004	19.6	15.7	64.7	100
	2005	19.5	15.5	65.0	100
	2006	18.9	14.9	66.1	100

(Table 69 continues on next page)

Table 69: Percentage of the population aged 20 and older, by province and by level of education: 1995 to 2006 (continues)

Mpumalanga	1995	22.3	18.7	59.0	100
	2002	19.3	19.1	61.7	100
	2003	18.3	16.5	65.3	100
	2004	17.8	16.4	65.8	100
	2005	11.9	10.2	77.9	100
	2006	18.0	14.2	67.8	100
North West	1995	15.1	21.5	63.3	100
	2002	15.2	19.5	65.3	100
	2003	14.4	20.4	65.2	100
	2004	15.0	18.8	66.2	100
	2005	14.2	18.3	67.5	100
	2006	12.8	18.1	69.1	100
Northern Cape	1995	18.1	23.4	58.5	100
	2002	17.7	20.6	61.7	100
	2003	16.4	20.9	62.8	100
	2004	16.3	19.4	64.3	100
	2005	12.7	20.5	66.7	100
	2006	12.5	17.5	69.9	100
Western Cape	1995	5.4	17.4	77.2	100
	2002	4.5	13.9	81.6	100
	2003	4.5	13.5	82.0	100
	2004	4.3	12.9	82.8	100
	2005	3.4	11.7	84.9	100
	2006	3.2	12.3	84.4	100

Sources: Central Statistical Services (undated) and Statistics South Africa (1999, 2000a, 2000b, 2003, 2004, 2005, 2006)
Note: Excludes unspecified or "other" educational level. No data is available for 1996, 2000 and 2001.

In conclusion, improved access to schooling since 1994 has had an impact on literacy levels, particularly on literacy levels amongst the youth, since the youth groups are smaller and closer in time to their educational experience.

However, South Africa still has 6.7 million adult citizens who are either totally or functionally illiterate. Thus far, the provision of adult basic education has been insufficient to further reduce these numbers. With only about 343 000 persons reached via the SANLI initiative (Ministry Committee on Literacy, 2006:6), little impact was made on literacy levels via adult education.

South Africa is committed to eradicating illiteracy. In order to do this, the Ministerial Committee on Literacy (2006) put forward a plan for a campaign of mass literacy for South Africa, which takes into account the literacy campaign experiences of Cuba, Venezuela, Brazil, New Zealand, as well as South Africa itself.

Once implemented, the plan is expected to reach 4.7 million illiterate people by the end of 2012, thereby enabling South Africa to meet its commitment, made at Dakar in 2000, to reduce illiteracy by at least 50% by 2015.

4.9 Financial indicators

Prior to 1994, the education system in South Africa was highly inequitable in terms of provisioning, resources, access and quality. Since the democratic elections of 1994, redressing the "legacy of disparities and inequalities" in education has been a priority for government (Ministry of Education, 2000:7). This section looks at the issue of funding and funding equity in education.

One of the new democratic government's main imperatives was the equalisation of education expenditure between the provinces and for learners of different income levels.

4.9.1 Public expenditure on education as a percentage of GDP

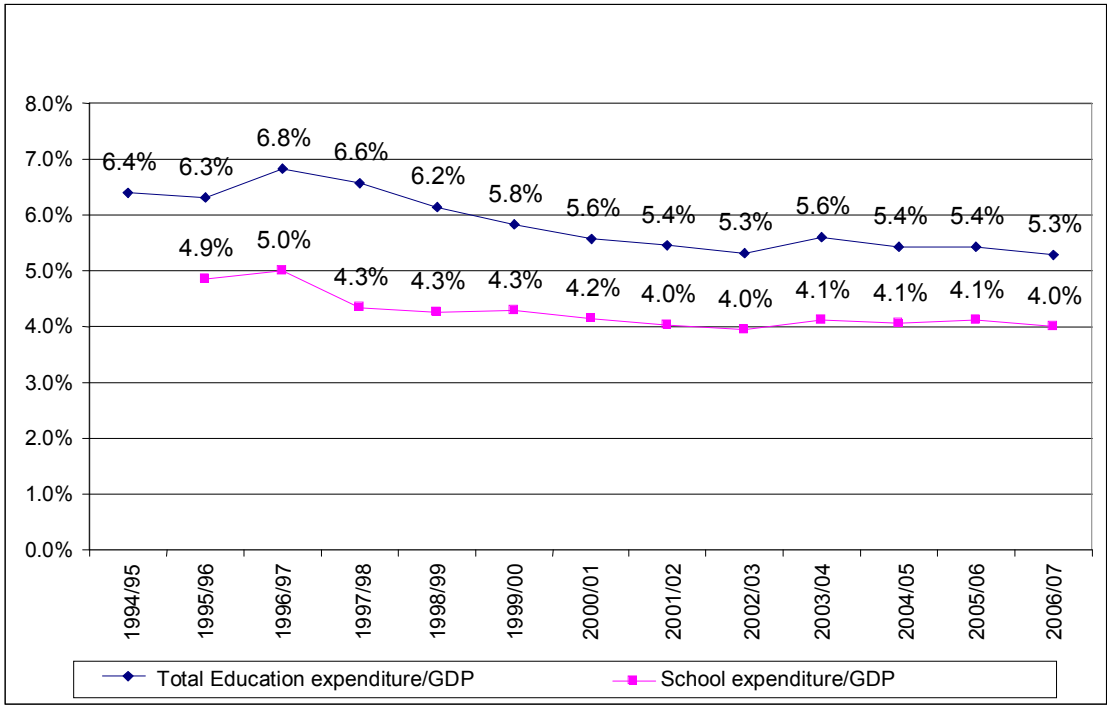
Figure 30 indicates total public expenditure on education as a percentage of the GDP. The data includes only expenditure by the State and excludes all private expenditure on education. In 2006, total public expenditure on education, as a percentage of the GDP, constituted 5.3%.

While there are no international benchmarks, the majority of countries with advanced education systems typically spend between 5% and 6% of their GNP on education (UNESCO, 2006:76). South Africa is in line with this level of expenditure, spending 5.59% of its GNP on education in 2005 (DoE, 2006c: 16). (See Appendix A for the definitions of GNP and GDP.)

According to Figure 30, total public education expenditure as a percentage of GDP shows an overall decline from 1994 to 2006, from 6.4% to 5.3%. Total education expenditure as a percentage of GDP peaked in 1996 at 6.8% – a result of the post-apartheid salary equalisation process and, to some extent, the equalisation of class sizes (Department of Education, 2006c).

After 1996, the proportion of GDP spent by the State on education dropped steadily, reaching 5.3% in 2006. This decline can be attributed to several factors, including the rationalisation of educators that was implemented in the late 1990s and early 2000s, and the strong increase in expenditure in other public sectors, such as social welfare and local government (Department of Education, 2006c).

Figure 30: Public total education and school expenditure over GDP: 1994/95 to 2006/07



Source: National education expenditure data from the National Treasury, Budget Review, Annexure B: 2008, 2007, 2006, 2005, 2004, 2003, 2002, 2001 and 2000; School expenditure data from the National Treasury, Inter-governmental Fiscal Review 1999, 2001, 2003, 2004, 2005, and 2006; and GDP data from the National Treasury, Budget Review, Annexure B: 2008, 2007, 2006, 2005, 2004, 2003, 2002 and 2001.

Figure 30 also indicates total *school* expenditure (public, independent and special schools) as a percentage of GDP. The percentage of GDP spent on education as a whole is naturally higher than that spent on schools, as the former includes expenditure on higher education, further education and training, adult basic education and training and early childhood development, in addition to schools. The data on school expenditure as a percentage of GDP includes only expenditure by the State and excludes all private expenditure on schools.

Public school expenditure as a percentage of GDP shows a similar trend to total public education expenditure as a percentage of GDP. Figure 30 indicates that there has been an overall decline in school expenditure as a percentage of GDP from 4.9% in 1995 to 4% in 2006. School expenditure as a percentage of GDP also peaked at 5% in 1996, and then decreased steadily to 2001, when it reached 4%. From 2000, school expenditure as a percentage of GDP appears to have stabilised at between 4% and 4.1%.

While public total education and school expenditure in relation to GDP both decreased, it is important to note that actual public expenditure on schools and total education has, in fact, increased and at a fairly substantial rate. As can be seen from Table 70, public expenditure on education increased by 241% between 1994 and 2007 (an average annual increase of 9.9%), and public school expenditure increased by 187% between 1995 and 2007 (an annual increase of 9%). However, GDP experienced an increase of 315% between 1994 and 2007 (an average annual increase of 11.6%). As a result, the decline in the percentage of public school and

total education expenditure as a percentage of GDP can be attributed to the lower growth pattern in the education budget, relative to the growth in the economy.

Table 70: Public expenditure on total education and school expenditure (public, private and special), total gross domestic product and percentage change: 1994/95 to 2007/08 in nominal Rand value

	Total national education expenditure (R'000)	% change over previous year	Total school spending (R'000)	% change over previous year	Total GDP (R'000)	% change over previous year
1994/95	30849 800		N/A		482 120 000	
1995/96	34 594 000	12.1	26 640 593		548 100 000	13.7
1996/97	42 139 600	21.8	30 958 499	16.2	617 954 000	12.7
1997/98	44 996 900	6.8	29 749 097	-3.9	685 730 000	11.0
1998/99	45 661 000	1.5	31 623 204	6.3	742 424 000	8.3
1999/00	47 323 400	3.6	34 944 990	10.5	813 683 000	9.6
2000/01	51 256 100	8.3	38 312 139	9.6	922 148 000	13.3
2001/02	55 565 800	8.4	41 095 393	7.3	1020 007 000	10.6
2002/03	62 012 200	11.6	46 221 937	12.5	1 168 699 000	14.6
2003/04	70 763 500	14.1	51 925 490	12.3	1 260 693 000	7.9
2004/05	75 571 400	6.8	56 563 592	8.9	1 395 369 000	10.7
2005/06	83 711 100	10.8	63 655 214	12.5	1 543 976 000	10.7
2006/07	92 128 000	10.1	69 874 789	9.8	1 745 217 000	13.0
2007/08	105 249 400	14.2	76 437 931	9.4	1 999 086 000	14.5
% increase 2007/08 over base year		241%		187%		315%
Average annual change		9.9%		9.2%		11.6%

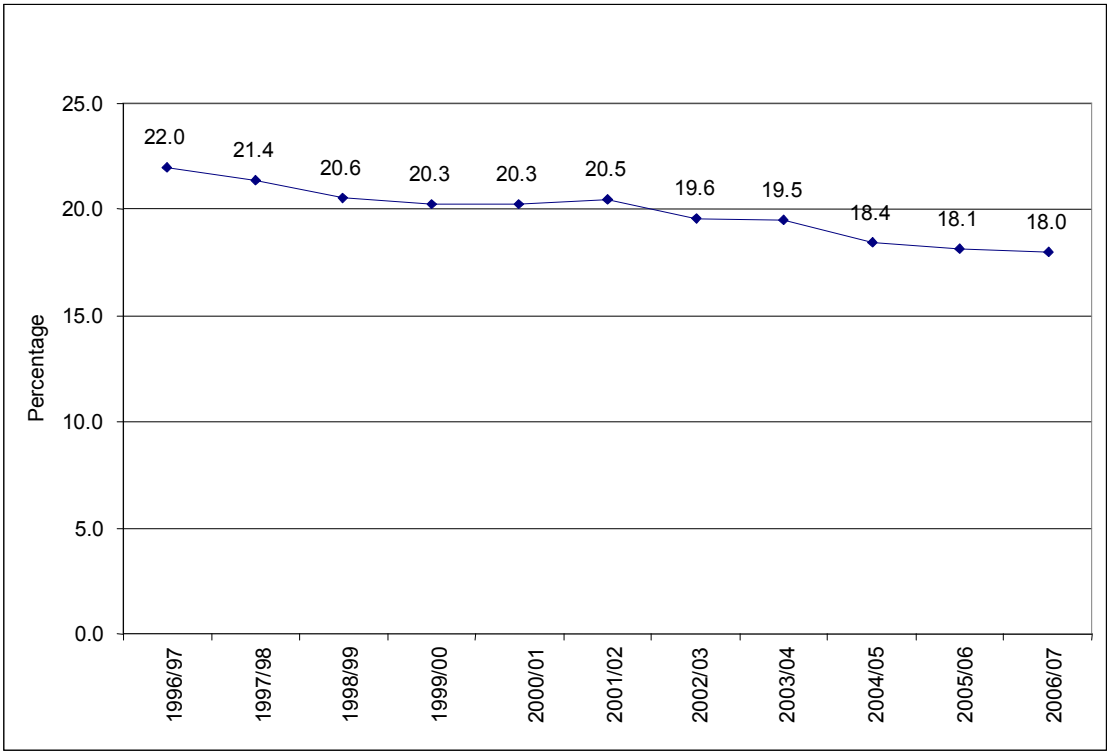
Source: National education expenditure data from the National Treasury, Budget Review, Annexure B: 2008, 2007, 2006 2005, 2004, 2003, 2002, 2001 and 2000; School expenditure data from the National Treasury, Inter-governmental Fiscal Review 1999, 2001, 2003, 2004, 2005 and 2006; and GDP data from the National Treasury, Budget Review, Annexure B: 2008, 2007, 2006, 2005, 2004, 2003, 2002 and 2001.

** Preliminary*

4.9.2 Public expenditure on education as a percentage of total government expenditure

Figure 31, which shows public education expenditure as a percentage of total government expenditure, indicates that education's share of government expenditure has declined from almost 22% in 1996 to 18% in 2006.

Figure 31: Public education expenditure as a percentage of total government expenditure: 1996/97 to 2006/07



Source: Statistics South Africa 2007, 2006b, 2005b, 2004c, 2003c, 2002b, 2001b, 1999b.
** The general government sector in SA comprises the national and provincial governments (including national and provincial extra-budgetary accounts and funds) and the non-trading services of local government.*

4.9.3 Public education expenditure by type of expenditure

Public expenditure on education can be broken down into three types. Firstly, expenditure on personnel, which is expenditure on all staff and educators employed by the provincial education departments; secondly, capital expenditure, which is expenditure on physical infrastructure; and finally, non-personnel/non-capital expenditure, such as learner support materials, stationery, maintenance and utilities.

As can be seen from Table 71, personnel expenditure has decreased mainly as a result of the rationalisation and redeployment of educators through the system and the more equitable distribution of learner:educator ratios across different racial groups and provinces. Personnel expenditure decreased from 91% of total expenditure in 1998 to 81% in 2005.

Concurrently, there was a substantial increase in capital and non-personnel/non-capital expenditure between 1998 and 2005, enabling education departments to build and maintain schools and improve the provision of critical supplies and resources. By 2005, the ratio of personnel to non-personnel expenditure almost reached the desired 80:20 ratio (Government Notice 869 of 2006), in comparison to the 91:9 ratio in 2000.

Table 71: Provincial school expenditure by type of expenditure: 1998/99 to 2005/06

Expenditure	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Personnel	91.0	90.7	90.0	88.0	85.7	82.4	82.7	80.8
Capital	1.2	1.2	1.3	2.0	3.3	4.3	3.9	3.9
Non-personnel/ Non-capital	7.7	8.2	8.7	10.0	11.1	13.3	13.5	15.3
Total	100	100	100	100	100	100	100	100

Source: National Treasury, Intergovernmental Fiscal Review 2001: p 28; 2004: p 42; 2005: p 17; 2006 IGFR: p18; 2007: p16.

4.9.4 Per capita expenditure

Table 72 and Table 73 indicate the expenditure per learner in public ordinary schools. It is calculated by dividing public ordinary school expenditure by the learners enrolled in Grades 1 to 12 in public ordinary schools. Table 70 indicates the nominal per capita expenditure, while Table 71 indicates real per capita expenditure in 2000 prices.

Both tables indicate that there has been an increase in per capita expenditure in public ordinary schools nationally and in all provinces, in both nominal and real terms. Between 2000 and 2007, the national per learner expenditure in public ordinary schools increased by 37% in real terms (see Figure 32). The real increases in the provincial per capita expenditure ranged from a high of 49% in KwaZulu-Natal and 47% in Mpumalanga to 11% in the Northern Cape. The variation in increases in per capita expenditure is partially a result of the equalisation of education expenditure that took place during the post-apartheid period. This equalisation resulted in a gap between the provinces, with the highest and lowest per capita expenditure narrowing. In 2000, the gap between the province with the highest per capita expenditure in real terms (Northern Cape: R4 403) and the province with the lowest per capita expenditure in real terms (KwaZulu-Natal: R2 820) had been 56.2%. By 2007, the gap between the provinces with the highest and lowest per capita expenditure in real terms (the Northern Cape and KwaZulu-Natal respectively) narrowed to 16.9%.

Table 72: Public per capita expenditure on public ordinary school education in nominal Rand value: 2000 to 2007

Province	2000	2001	2002	2003	2004	2005	2006	2007
EC	3 019	3 533	3 859	4 258	4 549	4 853	5 484	6 258
FS	3 515	3 828	4 308	4 997	5 369	6 069	6 436	6 762
GP	3 986	3 825	4 441	4 905	5 034	5 296	5 768	6 935
KZN	2 820	3 036	3 492	3 937	4 438	5 030	5 524	6 124
LP	2 980	3 272	1 863	4 022	4 486	4 832	5 513	6 189
MP	3 030	3 267	3 854	4 419	4 645	5 563	5 867	6 505
NW	3 594	3 843	4 234	4 794	5 079	6 244	6 492	6 931
NC	4 403	4 603	4 894	5 162	5 502	6 190	6 481	7 156
WC	3 805	4 044	4 538	4 935	5 208	5 821	6 127	6 859
Total	**3 250**	**3 496**	**3 673**	**4 398**	**4 743**	**5 273**	**5 765**	**6 474**

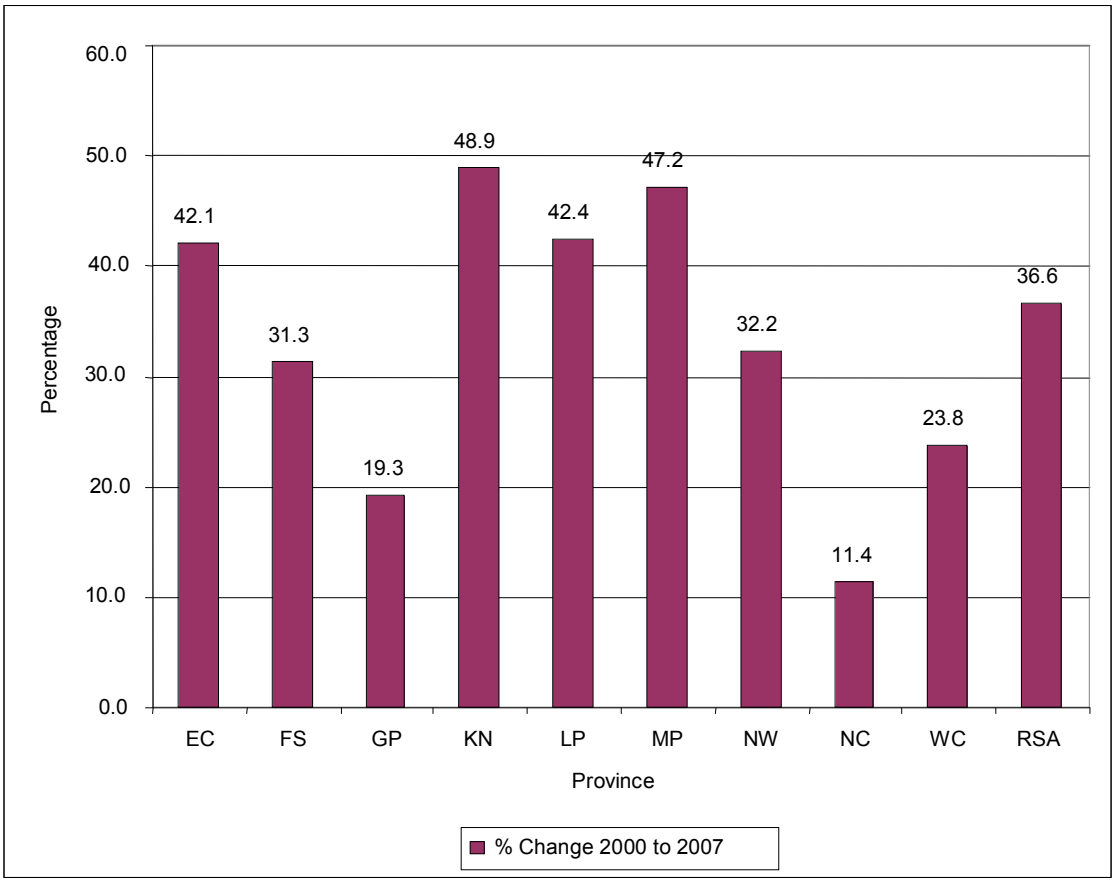
Source: Department of Education: 2001b, 2002, 2003a, 2004, 2005a 2005b, 2006a, 2007; and Provincial Budget Statements.

Table 73: Public per capita expenditure on public ordinary school education in real terms (based on 2000 prices): 2000 to 2007

Province	2000	2001	2002	2003	2004	2005	2006	2007
EC	3019	3318	3300	3451	3539	3623	4054	4290
FS	3531	3595	3684	4050	4176	4531	4613	4636
GP	3986	3592	3798	3976	3916	3954	3925	4755
KZN	2820	2851	2986	3191	3453	3755	3872	4199
LP	2980	3073	1593	3260	3490	3607	4318	4243
MP	3030	3068	3296	3582	3614	4153	3639	4460
NW	3594	3609	3621	3886	3951	4661	5469	4752
NC	4403	4322	4185	4184	4280	4621	3711	4906
WC	3800	3798	3881	4000	4052	4345	4387	4703
Total	**3250**	**3282**	**3141**	**3565**	**3689**	**3937**	**4137**	**4439**

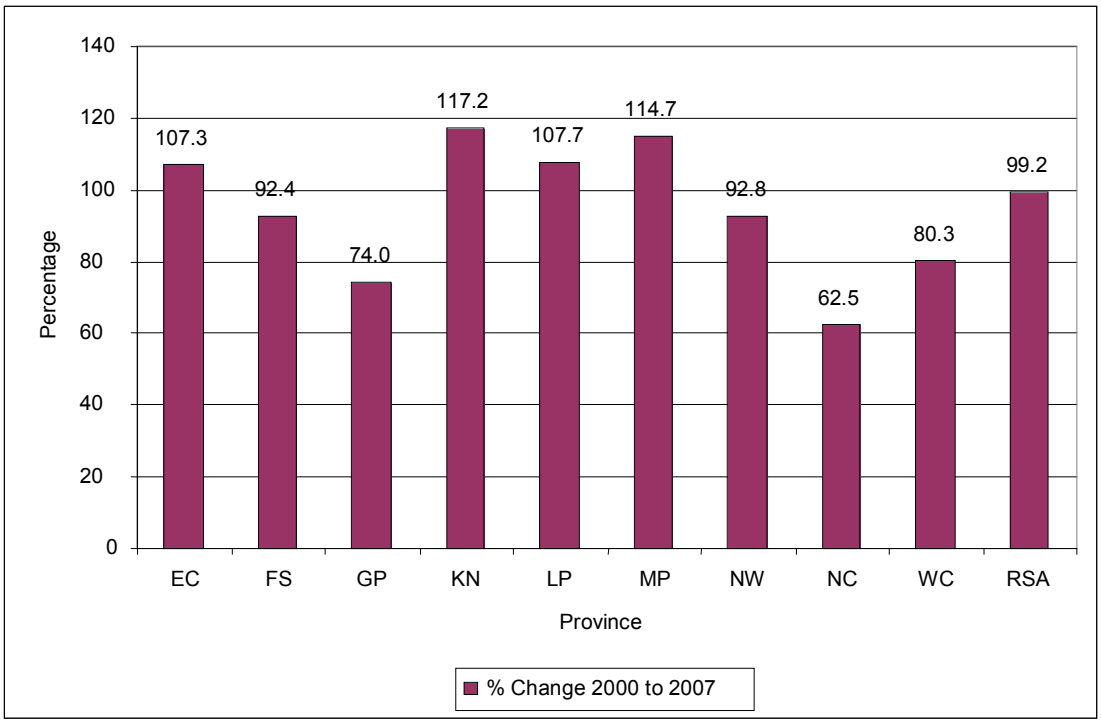
Source: Department of Education, 2001b, 2002, 2003a, 2004 2005a 2005b and 2006a, 2007; and Provincial Budget Statements.

Figure 32: Percentage change in real per learner expenditure by province: 2000 to 2007



Source: Department of Education, 2001b, 2002, 2003a, 2004 2005a 2005b, 2006a, 2007; and Provincial Budget Statements.

Figure 33: Percentage change in nominal per learner expenditure by province: 2000 to 2007



Source: Department of Education, 2001b, 2002, 2003a, 2004 2005a 2005b, 2006a, 2007; and Provincial Budget Statements.

5. CONCLUSION

This report provides extensive information on South Africa's education system in the form of (mostly) internationally-comparable macro-indicators. To the knowledge of the Department of Education, it is thus far the most comprehensive statistical or indicator report on trends in education since the advent of democracy. The information makes it possible for education policy-makers, planners and researchers to evaluate trends, identify areas of concern and facilitate planning. Special attention is paid to issues of access, efficiency, quality and equity in monitoring progress towards redressing the legacy of disparities and inequalities in education that characterised apartheid South Africa. The report shows that substantial progress has been made since 1994, but that there are still many areas that are cause for of concern.

It must be emphasised that accurate and reliable information is an essential requirement for monitoring education indicators. A problem that was encountered in compiling this report, was the validity and reliability of the data. Considerable progress has been made with regard to the provision of education data since the establishment of the national integrated Education Management Information System (EMIS) in 1997, and improvements will continue to be made, but data problems still remain; for example in the accuracy of repetition and drop-out data. Developments in the education system will continue to be monitored and this will be made much easier by the provision of reliable, accurate and consistent data.

6. APPENDICES

Appendix A: Definitions and explanations of concepts

Age-specific enrolment rate (ASER) indicates the percentage of the population of a specific age enrolled in education, irrespective of the level of education they are enrolled in. It is calculated by dividing the number of learners of a specific age enrolled in educational institutions at all levels by the population of the same age, and then multiplying the result by 100.

$ASER^t_a = E^t_a/P^t_a * 100$

where:
$ASER^t_a$ = Age-specific enrolment rate of an age **a** in school year **t**
E^t_a **=** Enrolment of the population of a specific age **a** in school year **t**
P^t_a **=** Population in age **a** in school year **t**

The ASER value cannot exceed 100%. The closer the ASER is to 100%, the higher the participation rate of that age group of the population. If the ASER is below 100%, then the balance reflects the proportion of children of a specific age who are not enrolled in any level of education.
(Source: UNESCO Institute of Statistics, undated.)

Annual School Survey (ASS) is conducted in all nine provinces in March each year and collects detailed information on the numbers of learners enrolled and staff employed in every primary and secondary school in the country. ASS is a self-reporting instrument, completed by the principal or another staff member of the school.

Apparent intake rate (AIR) measures the total number of new entrants in the first grade of primary education, regardless of age, expressed as a percentage of the population at the appropriate school entrance age. For the purposes of this report, 7 is used as the appropriate school entrance age, as a child is expected to be turning 7 between 1 January and 31 December in the year in which the child enrols in the first grade for the first time. AIR is calculated by dividing the number of all new entrants to Grade 1, regardless of age, by the population of the official school entrance age, and multiplying the result by 100.

$AIR^t = N^t/P^t_a * 100$

where:
AIR^t = Apparent intake rate in school year **t**
N^t = Number of new entrants in the first grade of primary education in school year **t**
P^t_a = Population of official primary school entrance age **a**, in school year **t**

An AIR of more than 100% is due to a large number of over and under-aged children entering primary school for the first time. The figure could be distorted if repeaters in Grade 1 are included in the data.

(Source: UNESCO Institute of Statistics, undated.)

Appropriate school age: This refers to the age that a child is expected to be in a particular grade or phase of education. From 1996 to 2003, the appropriate age for primary schooling was 7 to 13 years and for secondary schooling 14 to 18 years. In 2004, the age of entry into primary school was dropped to 6 years, making the appropriate age group for primary and secondary schooling a year younger than previously[14]. For the purposes of this report, 7 to 13 years, 7 to 15 years and 14 to 18 years are used as the appropriate age for primary, basic or compulsory, and secondary education for all years referred to in this report, including 2004. The appropriate ages per grade in this report are as follows: Grade R: age 6; Grade 1: age 7; Grade 2: age 8; Grade 3: age 9; Grade 4: age 10; Grade 5: age 11; Grade 6: age 12; Grade 7: age 13; Grade 8: age 14; Grade 9: age 15; Grade 10: age 16; Grade 11: age 17; and Grade 12: age 18.

Basic education refers to nine years of schooling from Grades 1 to 9.

Coefficient of determination: In regression analysis, the coefficient of determination is a measure of goodness-of-fit (i.e. how well or tightly the data fit the estimated model). The coefficient is defined as the ratio of two sums of squares:

$$r2 = \frac{SSR}{SST}$$

where SSR is the sum of squares due to regression, and SST is the total sum of squares. "Sum of squares" means the sum of squared deviations between actual values and the mean (SST), or between predicted values and the mean (SSR). The coefficient of determination takes on values of between 0 and 1, with values closer to 1 implying a better fit.

Source: http://www.statistics.com/resources/glossary/c/coeffdeterm.php. Accessed 17 July 2008.

Completion rate (CR) refers to the number of learners who successfully completed the last grade of a given level of education, expressed as a percentage of the population of the relevant age group for that particular grade. It is calculated by dividing the number of learners, regardless of age, who were promoted from the last grade of a given level by the population of the age group that officially corresponds with the given grade, and multiplying the result by 100.

$CR^t_h = Pr^t_h / P^t_{h,a} * 100$

where:

[14] *In 1996, the South African Schools Act (RSA, 1996b) stated that schooling was compulsory from the first school day of the year that the child turned 7. As a result, the practice of admitting learners in Grade 1 in the year they turned 7 became fairly common as from 1996. This was confirmed when the Age Requirements for Admission to a Public Ordinary School (Department of Education, 1998a) was implemented in 2000, which stated that the statistical norm per grade was the grade number plus 6, making for example 7 years the appropriate age for Grade 1; 15 years the appropriate age for Grade 9; and 18 years the appropriate age for Grade 12. This regulation was, however, subsequently amended (RSA, 2002), and as from January 2004, children who are 5 turning 6 before 30 June, may be admitted to Grade 1.*

CR^t_h = Completion rate at level of education **h** in school year **t**
Pr^t_h = Number of learners promoted from level of education **h** in school year **t**
$P^t_{h,a}$ = Population in age group **a**, which officially corresponds with the level of education **h** in school year **t**

A high CR indicates a large number of learners completing a certain level of education. A low CR could indicate a problem in the quality of the education provided.

Compulsory education: In terms of the South African Schools Act (RSA, 1996b), schooling is compulsory for all children from the first school day in the year that they turn 7, until the last school day of the year that they turn 15, or until Grade 9, whichever comes first. This makes schooling compulsory for nine years. Nine years of compulsory schooling includes seven years of primary schooling and two of the five years of secondary schooling. The remaining three years of secondary schooling are not compulsory and form part of the Further Education and Training band. Although compulsory schooling starts at the age of 7, parents may, in terms of legislation (RSA, 2002), send their children to school at a younger age (see *Appropriate school age*).

Countries with similar GNP per capita to South Africa: According to the Education Global Monitoring Report for 2007 (UNESCO 2006), South Africa's GNP per capita amounted to US$ 3 630 in 2004. For the purposes of comparison in this report, South Africa has been compared to countries with a similar GNP per capita. These countries are (with their GNP per capita in brackets): Argentina (US $3 580); Brazil (US$ 3 000); Gabon (US$ 4 080); Jamaica (US$ 3 300); Panama (US$ 4 210); Russian Federation (US$ 3 400); Turkey (US$ 3 750); Uruguay (US$ 3 900); and Venezuela (US$ 4 030).

Drop-out rate refers to learners who leave the education system without completing a given grade. In this report, the drop-out rate is calculated as a residual figure, which is derived at after the repetition and promotion rates have been calculated. The drop-out rate in a particular grade for a particular year is calculated by simply deducting the repetition and promotion rate for that particular grade and year from 100%.

$DoR^t_g = 1-RR^t_g - PR^t_g$
where:
DoR^t_g = Drop-out rate at grade **g** in school year **t**
RR^t_h **=** Repetition rate at grade **g** in school year **t**
PR^t_h **=** Promotion rate at a grade **g** in school year **t**

Because the drop-out rate is derived at after the repetition and promotion rates have been calculated, if either of these are over or under-reported or estimated, it could affect the accuracy or reliability of the drop-out rate.

Foundation Phase refers to Grades R to 3.

Full-time equivalent (FTE) enrolment of students at higher education institutions, is calculated (a) by assigning to each course a fraction representing the weighting it has in the curriculum of a qualification, and (b) by multiplying the

headcount enrolment of that course by this fraction (Source: Department of Education 2006a: 37).

Further Education and Training Band/Phase refers to the last three years of the secondary school system (i.e. Grades 10, 11 and 12). This is distinguished from Further Education and Training colleges that offer specialised vocational education and training.

Further Education and Training colleges offer specialised vocational education and training.

Gender Parity Index (GPI) refers to the ratio of female to male values of a specified indicator. A GPI of 1 indicates that parity between females and males has been achieved. A GPI between 0 and 1 indicates a disparity in favour of males, while a GPI of greater than 1 indicates a disparity in favour of females. However, according to UNESCO, a GPI of between 0.97 and 1.03 is considered as reflecting gender parity (UNESCO, 2004, 93).

Gross enrolment rate (GER) measures enrolment, regardless of age, in a specific level of education as a proportion of the appropriately-aged population for the given level of education. It is calculated by dividing the number of learners enrolled in a given level of education, regardless of age, by the population of the age group that officially corresponds to the given level of education, and multiplying the result by 100.

$GER^t_h = E^t_h / P^t_{h,a} * 100$

where:

GER^t_h = Gross enrolment rate at level of education **h** in school year **t**

E^t_h = Enrolment at the level of education **h** in school year **t**

$P^t_{h,a}$ = Population in age group **a**, which officially corresponds with the level of education **h** in school year **t**

A GER of over 100% can be recorded. A GER that is greater than 100% or one that is greater than the net enrolment rate is usually due to the inclusion of over-aged and under-aged learners in the system, either as a result of early or late entrance into the education system, or as a result of repetition.
(Source: UNESCO Institute of Statistics, undated.)

Gross Domestic Product (GDP) is the value of all final goods and services produced in a country in one year. GDP can be measured by adding up all of an economy's (a) income (wages, interest, profits and rent) or (b) expenditure (consumption, investment, government purchases) plus net exports (exports minus imports). Both results should be the same, because one person's expenditure is always another person's income, so the sum of all income must equal the sum of all expenditure.
(Source: UNESCO, 2006:349.)

Gross National Product (GNP) is the value of all final goods and services produced in a country in one year, plus the income that residents have received from abroad, minus the income claimed by non-residents. GNP may be less than GDP if much of the income from a country's production flows to foreign persons or firms. But if the people or firms of a country hold large amounts of the stocks and bonds of

firms or governments of other countries, and receive income from them, then GNP may be greater than GDP.

(Source: UNESCO, 2006:349.)

Intermediate Phase refers to Grades 4 to 6.

Learner:educator ratio (LER) measures the average number of learners per educator in a given school year. The indicator is used to measure the number of educators in relation to the size of the learner population. It is calculated by dividing the total number of learners enrolled, by the total number of educators.

$LER^t = E^t/T^t$

where:
LER^t = Learner:educator ratio in school year **t**
E^t = Enrolment of learners in school year **t**
T^t = Number of educators in school year **t**

(Source: UNESCO Institute of Statistics, undated.)

Net enrolment rate (NER) reflects the number of appropriately-aged learners in a specified level of education, as a proportion of the corresponding age group in the population. It excludes all learners above and below the appropriate school age, who might be enrolled in the education system. It is calculated by dividing the number of learners enrolled, who are of the appropriate age group for a given level of education, by the population for the same age group, and multiplying the result by 100.

$NER^t_h = E^t_{h,a}/P^t_{h,a} *100$

where:
NER^t_h = Net enrolment rate at level of education **h** in school year **t**
$E^t_{h,a}$ **=** Enrolment of the population of age group **a** at a level of education **h** in school year **t**
$P^t_{h,a}$ **=** Population in age group **a** that officially corresponds to the level of education **h** in school year **t**

The NER cannot exceed 100%. If the NER is below 100%, then the balance reflects the proportion of appropriately-aged children who are not enrolled in the specified level of education.

Also see the definition of *Total primary net enrolment rate.*

(Source: UNESCO Institute of Statistics, undated.)

Net intake rate (NIR) measures new entrants into the first grade of primary education, who are of the official primary school entrance age, as a proportion of the population of the same age. It is calculated by dividing the number of children of official school entrance age, who enter the first grade of primary education, by the population of the same age, and multiplying the result by 100.

$NIRt = N_{ta}/P_{ta} *100$

where:

NIR_t = Net intake rate in school year **t**
N_{ta} = Number of new entrants of official primary school entrance age who enter the first grade of primary education, in school year **t**
P_{ta} = Population of official primary school entrance age **a**, in school year **t**

A high NIR indicates a high degree of access to primary education for children of the official primary school entrance age. However, the indicator could be distorted if repeaters in Grade 1 are not distinguished from new entrants. The will be the case especially with regard to under-aged learners who repeat Grade 1 at the official entrance age.

(Source: UNESCO Institute of Statistics, undated.)

Primary school refers to Grades 1 to 7.

Promotion rate (PR) refers to those learners who proceed from a given grade in a given year to the next grade in the next year. The actual number of learners promoted is calculated by taking the number of learners enrolled in a grade and subtracting the number of learners repeating that grade. This gives the number of learners who were promoted from one grade to the next. The promotion rate is calculated by dividing the number of learners who were promoted to the next grade by the number of learners enrolled in the previous grade and then multiplying the result by 100.

$PR^t_g = (E^{t+1}_{g+1} - R^{t+1}_{g+1}) / E^t_g * 100$
where:
PR^t_g = Promotion rate in grade **g** in school year **t**
E^{t+1}_{g+1} = Enrolment at the grade **g+1** in school year **t+1**
R^{t+1}_{g+1} = Number of learners repeating grade **g+1** in school year **t+1**
E^t_g = Number of learners enrolled in grade **g** in school year **t**

Repetition rate (RR) reflects the proportion of learners from a given group repeating a grade. It is calculated by dividing the number of repeaters in a given grade in school year **t+1** by the number of learners from the same group enrolled in that same grade in the previous school year **t** and multiplying the result by 100.

$RR^t_g = R^{t+1}_g / E^t_g$
where:
RR^t_g = Repetition rate in grade **g** in school year **t**
R^{t+1}_g = Number of repeaters in grade **g** in school year **t+1**
E^t_g = Number of learners enrolled in grade **g** in school year **t**

(Source: UNESCO Institute of Statistics, undated.)

Secondary school refers to Grades 8 to 12.

A Snap Survey is conducted every year on the 10th day of the school year in all nine provinces. It collects basic information on the number of learners and educators. The information collected during this survey is not as detailed as that collected by the Annual School Survey. The Snap Survey is a self-reporting instrument, completed by the principal or another staff member at the school.

Southern African Development Community (SADC): The member states of the SADC are Angola, Botswana, the Democratic Republic of the Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, the United Republic of Tanzania, Zambia and Zimbabwe. For the purposes of comparison in this report, South Africa is compared to some of the SADC member countries, namely Botswana, Lesotho and Namibia.

Total primary age net enrolment rate (TNER) is the enrolment of children of the official primary school age group in either primary or secondary school, expressed as a percentage of the population in that age group.

Appendix B: Enrolment and population data

Table 74: Total enrolment by grade: 1997 to 2006

Grades	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1	1534498	1444015	1345845	1080335	1150638	1286591	1277499	1303016	1233581	1185198
2	1248116	1240508	1222504	1057630	944961	1012892	1111858	1109201	1118690	1081652
3	1189093	1185343	1192615	1152649	1087674	949721	1003331	1081956	1078001	1099319
4	1140971	1147735	1163785	1162120	1175857	1076107	952465	985139	1061770	1072780
5	1059128	1061836	1083480	1076898	1098862	1142806	1035707	916911	951372	1026031
6	993966	985762	994526	995805	1023270	1038679	1101740	997365	898493	919487
7	925523	932746	932466	919365	932152	958932	987876	1050554	972542	872051
Total primary	8091295	7997945	7935221	7444802	7413414	7465728	7470476	7444142	7314449	7256518
8	1005249	1023980	1037358	1028485	1068479	936392	976750	1010710	1052499	1020734
9	886989	898695	908865	891819	916281	1089404	902129	914729	930797	970946
10	807277	836213	833500	816286	846651	876175	1096214	1057935	1069494	1093297
11	679563	722068	731529	692860	709510	719952	736720	829137	839009	890564
12	556288	603108	567321	514168	488351	486786	475069	505392	538909	568664
Total second-ary	3935366	4084064	4078573	3943618	4029272	4108709	4186882	4317903	4430708	4544205
Total	12026661	12082009	12013794	11388420	11442686	11574437	11657358	11762045	11745157	11800723

Table 75: Female enrolment by grade: 1997 to 2006

Grades	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1	737729	694697	656557	513283	555939	626071	616490	626780	590193	567021
2	603291	600066	586043	507463	450838	493022	545337	539732	543240	523232
3	576709	576268	577368	548692	523859	452199	488653	531318	524926	534970
4	555797	560363	565196	558543	563180	519159	452776	477169	520364	521283
5	526223	526356	536763	529439	541437	554770	505124	438881	467428	509440
6	504926	498094	500145	497763	514268	519990	541568	491841	434931	454605
7	474112	478373	473795	460859	473908	487067	498540	521910	483850	424580
Total primary	3978787	3934217	3895867	3616042	3623429	3652278	3648488	3627631	3564932	3535131
8	520534	524709	532193	522916	540614	479321	496428	512410	526282	507366
9	469434	472713	476698	465287	478035	553892	464063	471137	477017	493613
10	437570	449196	446303	435107	451380	464741	567690	550320	555731	565247
11	376334	396855	399612	378741	386101	389228	398200	448085	450923	480577
12	312776	337820	316466	285360	269154	265184	258872	274900	293470	310010
Total secondary	2116648	2181293	2171272	2087411	2125284	2152366	2185253	2256852	2303423	2356813
Total	6095435	6115510	6067139	5703453	5748713	5804644	5833741	5884483	5868355	5891944

Table 76: Male enrolment by grade: 1997 to 2006

Grades	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1	796769	749318	689288	567052	594699	660520	661009	676236	643388	618177
2	644825	640442	636461	550167	494123	519870	566521	569469	575450	558420
3	612384	609075	615247	603957	563815	497522	514678	550638	553075	564349
4	585174	587372	598589	603577	612677	556948	499689	507970	541406	551497
5	532905	535480	546717	547459	557425	588036	530583	478030	483944	516591
6	489040	487668	494381	498042	509002	518689	560172	505524	463562	464882
7	451411	454373	458671	458506	458244	471865	489336	528644	488692	447471
Total primary	4112508	4063728	4039354	3828760	3789985	3813450	3821988	3816511	3749517	3721387
8	484715	499271	505165	505569	527865	457071	480322	498300	526217	513368
9	417555	425982	432167	426532	438246	535512	438066	443592	453780	477333
10	369707	387017	387197	381179	395271	411434	528524	507615	513763	528050
11	303229	325213	331917	314119	323409	330724	338520	381052	388086	409987
12	243512	265288	250855	228808	219197	221602	216197	230492	245439	258654
Total secondary	1818718	1902771	1907301	1856207	1903988	1956343	2001629	2061051	2127285	2187392
Total	5931226	5966499	5946655	5684967	5693973	5769793	5823617	5877562	5876802	5908779

Table 77: Mid-year population estimates for total population, aged 5 to 29, taking into account the effects of HIV/Aids: 1997 to 2006

Age	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
5	1025555	1033179	1036864	1035517	1034738	1029705	1021449	1011909	1000285	1000643
6	1016960	1025238	1030625	1032703	1034089	1030865	1023581	1014210	1002148	999331
7	1007696	1015792	1022375	1027891	1031122	1030012	1024581	1016524	1005412	1000596
8	998021	1005318	1012659	1021431	1026178	1027334	1024383	1018518	1009485	1003701
9	988192	994294	1002020	1013671	1019597	1023018	1022919	1019862	1013773	1007911
10	977807	982105	989850	1004456	1011380	1017302	1020638	1021061	1018586	1013382
11	966469	968137	975541	993631	1001526	1010425	1017987	1022619	1024234	1020270
12	957718	958330	965395	984064	992083	1002324	1012330	1020026	1025614	1023381
13	953126	955347	962262	977109	984073	993088	1002570	1011281	1020330	1020196
14	950980	956388	963227	971606	976814	983054	990184	998560	1010496	1012655
15	947280	955765	962640	965041	968548	972201	977254	985536	1000529	1005269
16	941970	954345	961758	957925	959568	960211	962775	970869	989437	997200
17	936873	950660	957547	949798	950465	949809	951370	959274	978630	988227
18	932213	943315	947968	940179	941339	942252	945364	953274	969220	978710
19	926651	932866	934558	929400	932039	936251	942390	950348	960314	968497
20	919859	921508	920321	917302	921336	928647	937637	945673	950058	957159
21	913381	909107	903967	902752	908302	919325	931921	940486	939003	944880
22	897084	892658	888300	890477	897574	910281	923848	931637	926251	931671
23	866360	870983	874791	882435	890955	901944	912190	917159	911223	917527
24	826338	845288	861501	875705	885613	892993	897564	898740	894557	902588
25	787082	819225	846984	867627	878843	882870	882102	879579	876670	886165
26	746976	793584	833889	861398	873504	873126	865728	858490	856531	867393
27	709824	763070	809614	841075	855000	854389	845885	838379	838753	850919
28	678668	725907	768501	799309	816535	822399	821624	820837	825372	838668
29	652029	685389	717600	744700	765858	781994	794065	804044	813713	827962

Table 78: Mid-year population estimates for the female population, aged 5 to 29, taking into account the effects of HIV/Aids: 1997 to 2006

Age	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
5	511,318	515,085	516,841	516,014	515720	513002	508693	503762	497821	496707
6	507,115	511,239	513,890	514,843	515625	513821	510001	505150	498980	496177
7	502,539	506,599	509,897	512,650	514323	513597	510718	506534	500840	496962
8	497,734	501,419	505,142	509,610	511992	512428	510813	507744	503100	498687
9	492,845	495,950	499,907	505,897	508808	510411	510252	508614	505461	500981
10	487,665	489,880	493,888	501,444	504770	507657	509244	509371	508043	503919
11	481,986	482,899	486,780	496,186	499879	504279	507998	510246	510966	507578
12	477,714	478,082	481,788	491,494	495195	500295	505269	509086	511832	509337
13	475,698	476,811	480,361	488,021	491248	495771	500538	504931	509503	507924
14	475,028	477,646	481,026	485,221	487683	490850	494501	498804	504938	504314
15	473,557	477,635	480,912	481,903	483609	485503	488157	492472	500231	500740
16	471,257	477,218	480,655	478,312	479194	479605	481053	485324	494964	496739
17	469,150	475,720	478,762	474,266	474655	474355	475259	479411	489441	492389
18	467,378	472,459	474,219	469,558	470007	470306	471828	475846	484025	487946
19	465,208	467,679	467,787	464,334	465225	466908	469705	473530	478472	483218
20	462,400	462,431	460,936	458,446	459770	462758	466760	470420	472334	477907
21	459,767	456,655	453,007	451,317	453147	457772	463388	467134	465888	472264
22	452,000	448,782	445,472	445,431	447820	453040	458871	461954	458461	465506
23	436,676	438,182	439,093	441,812	444767	448848	452628	453886	449736	457276
24	416,472	425,482	432,856	438,937	442501	444500	445003	443885	440187	448075
25	396,675	412,604	425,999	435,389	439522	439581	437001	433582	430119	438301
26	376,449	399,959	419,894	432,812	437288	434854	428517	422275	418890	427324
27	357,676	384,731	407,992	423,021	428460	425863	418810	412194	409711	418211
28	341,900	365,970	387,351	402,235	409607	410562	407643	404494	404021	412349
29	328,398	345,415	361,625	374,865	384624	391259	395306	397882	400052	408049

Table 79: Mid-year population estimates for the male population, aged 5 to 29, taking into account the effects of HIV/Aids: 1997 to 2006

Age	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
5	514,237	518,095	520,023	519,503	519018	516703	512756	508147	502464	503936
6	509,845	513,999	516,735	517,860	518465	517045	513581	509060	503168	503154
7	505,157	509,193	512,478	515,241	516799	516415	513863	509990	504573	503635
8	500,287	503,899	507,517	511,821	514186	514906	513570	510774	506385	505014
9	495,346	498,344	502,113	507,774	510790	512607	512667	511248	508311	506930
10	490,142	492,225	495,963	503,012	506610	509646	511394	511690	510543	509463
11	484,483	485,239	488,760	497,445	501647	506146	509990	512373	513268	512692
12	480,004	480,249	483,607	492,569	496888	502029	507061	510940	513782	514044
13	477,428	478,536	481,900	489,089	492825	497317	502032	506350	510827	512273
14	475,952	478,742	482,201	486,385	489130	492204	495684	499756	505558	508341
15	473,722	478,130	481,727	483,138	484939	486699	489097	493064	500298	504529
16	470,713	477,127	481,103	479,614	480374	480606	481722	485544	494473	500462
17	467,723	474,939	478,786	475,532	475810	475454	476111	479863	489189	495838
18	464,835	470,856	473,749	470,622	471332	471946	473536	477428	485195	490763
19	461,444	465,187	466,771	465,066	466813	469343	472686	476817	481841	485280
20	457,459	459,077	459,385	458,856	461566	465888	470877	475253	477724	479251
21	453,614	452,451	450,961	451,435	455156	461554	468534	473352	473116	472616
22	445,084	443,876	442,828	445,046	449754	457240	464977	469683	467790	466165
23	429,684	432,801	435,698	440,623	446188	453096	459563	463273	461487	460251
24	409,865	419,806	428,645	436,768	443112	448494	452562	454855	454370	454514
25	390,406	406,621	420,985	432,238	439321	443289	445101	445997	446551	447865
26	370,527	393,625	413,995	428,586	436217	438271	437211	436215	437640	440068
27	352,148	378,339	401,622	418,054	426540	428526	427074	426184	429043	432709
28	336,768	359,937	381,150	397,073	406928	411836	413981	416343	421351	426318
29	323,631	339,974	355,974	369,835	381234	390735	398759	406162	413660	419912

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