

The SACMEQ IV Project in South Africa: A Study of the Conditions of Schooling and the Quality of Education

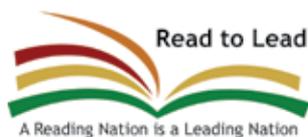


Southern and Eastern Africa Consortium for Monitoring Educational Quality



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA



The SACMEQ IV Project in South Africa: A Study of the Conditions of Schooling and the Quality of Education

SHORT REPORT
AUGUST 2017

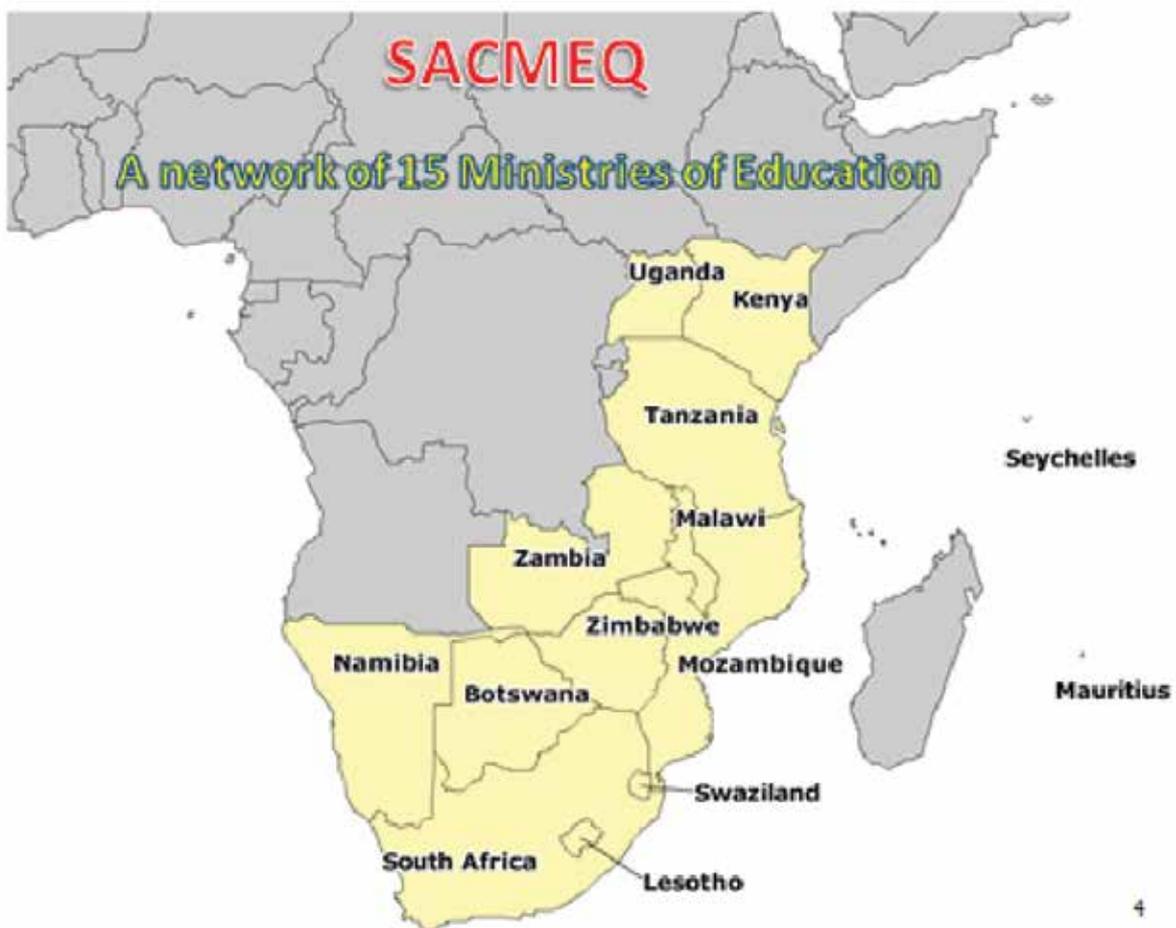


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Preface

The official release of the fourth Southern and Eastern African Consortium for Monitoring Educational Quality SACMEQ IV study took place at a special meeting of national research coordinators and experts at the University of Botswana, in Gaborone from 29-31 May 2017. The results were endorsed by participating Ministers of Education at the eleventh session of the SACMEQ Assembly of Ministers held in Ezulwini, Swaziland on 21 June 2017.

The administration of SACMEQ in South Africa enables the Department of Basic Education (DBE) to undertake integrated research and training and to develop the capacities of educational planners to monitor and evaluate the conditions of schooling and the quality of its education systems against national and international targets. SACMEQ also provides research based information that can be used by decision-makers to plan for improvements in the quality of education in South Africa.

The DBE plans to use the SACMEQ results as part of its monitoring of sector goals identified in the National Development Plan where the directive is to “Advance Radical Socioeconomic Transformation” through:

- a) Increased performance in Literacy and Numeracy to 60%; and
- b) Increased participation and success rate in MST subjects.
- c) Promote Reading: Reading Across the Curriculum
- d) Ensure consequences for underperformance
- e) Reduce Failure, Repetition and Drop-Out Rates
- f) Implement a diversified curriculum (Three Stream Model): Inclusive Education for an Inclusive Society and Inclusive Economy.

In the SACMEQ IV study, the learners scored an average of 538 points in Reading and 552 points in Mathematics. This represented an increase of 43 points in Reading and 57 points in Mathematics from the respective achievement scores of the SACMEQ III study. It is noteworthy that South Africa had the best improvement rates in Reading and Mathematics among 13 countries that had concluded the study. The results further confirmed the upward trends observed in the latest Trends in International Mathematics and Science Study (TIMSS 2015) study, which showed significant improvements in the Mathematics and Science scores of South African learners. These studies point towards notable signs of a “system on the rise”.

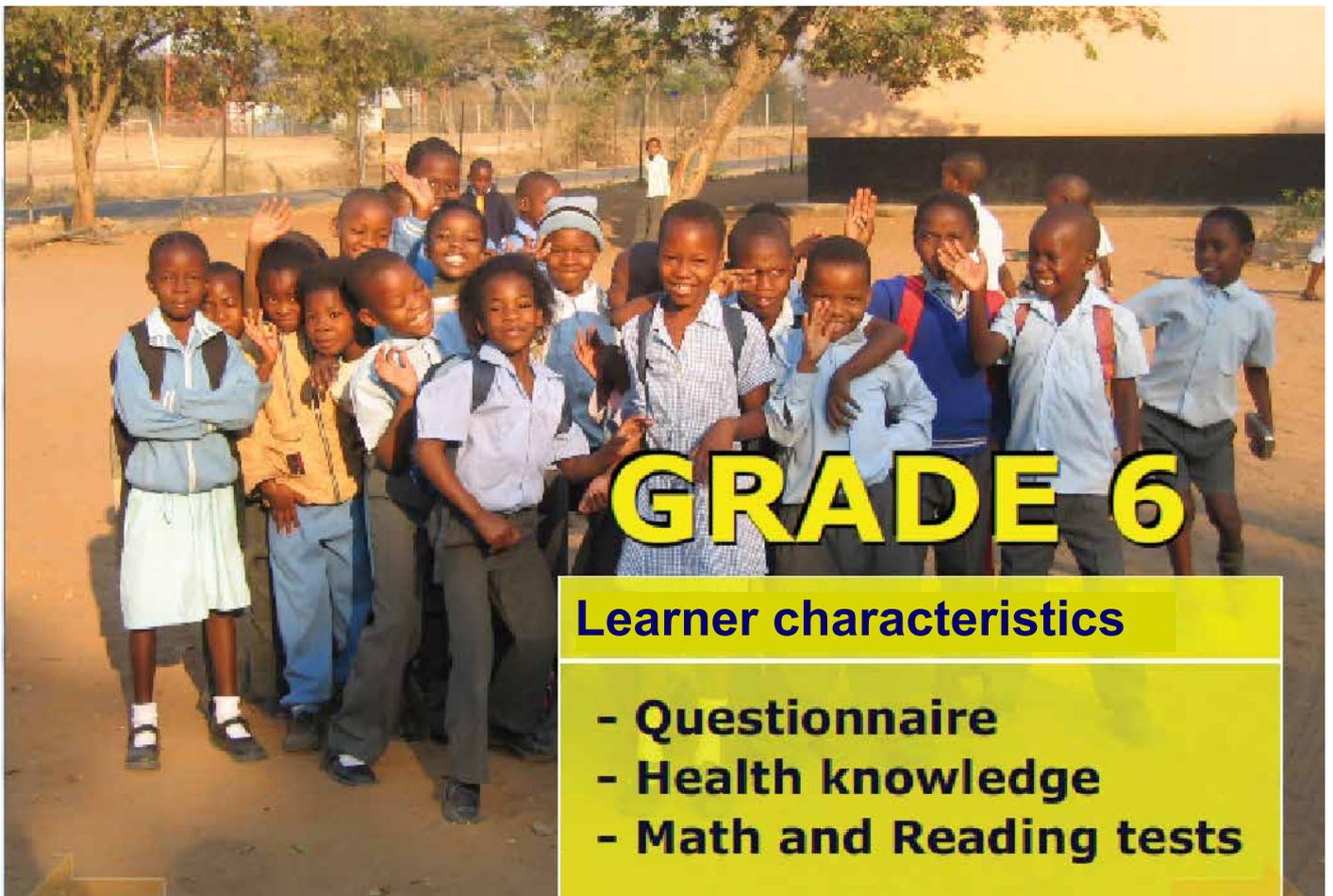
An analysis of the South African achievement results also point towards:

- a) A narrowing of the gap between urban and rural provinces (i.e. reduced provincial inequality);
- b) A need to enable more learners to achieve higher Reading and Mathematics competency levels with a greater focus on higher cognitive demand; and,
- c) A strengthening of in-service and pre-service training of teachers with respect to pedagogical and subject content knowledge on the teaching of higher cognitive demand questions.

Across the nine provinces the performance of girls was better than boys and learners from urban areas with high socio-economic conditions did better than learners from rural parts of the country with low socio-economic status.

The HIV-AIDS knowledge results of learners which showed a drop SACMEQ III scores will be used as an integral part in the Department’s Care and Support programme to foster greater awareness on the need to improve teaching and learning strategies on sexuality education and reducing risk. The HIV-AID results ties in with the recent reports of the HIV-AIDS council confirming higher infection rates among South Africans. The DBE will embark on roadshows to further highlight the seriousness of the matter to all relevant stakeholders.

The information contained in this report represents a condensed version of the full country report that will be published by the Department. The report was compiled by the SACMEQ South African National Research Team comprising Dr M Chetty, Dr MQ Moloi, Dr RR Poliah, and Mr J Tshikororo. The contributions of Dr M Gustafsson and Dr N Claassen at key stages of the study are also acknowledged.



1. THE SETTING OF THE STUDY

Introduction

The primary and original purpose of the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) is to expand opportunities for educational planners to gain technical skills required to monitor and evaluate the general conditions of schooling and the quality of basic education in their respective systems. In addition, SACMEQ generate information that can be used by decision-makers to plan and implement improvements in their education systems. In this report a number of policy suggestions were made to address the key findings of the SACMEQ IV survey in South Africa.

The SACMEQ IV survey was conducted in August 2013 in a representative sample of schools (n=298) and learners (n=7 117) across all nine provinces of South Africa. The survey involved testing of Grade 6 learners and their teachers in Reading and Mathematics and the collection of contextual data, through administration of specially-designed self-completed questionnaires, on the conditions that might influence teaching and learning in schools. The report presents information that responds to specific policy concerns that were identified as of interest to SACMEQ Ministries of Education. Appropriate recommendations for improvement are presented with projected timeframes and estimated costs.

South Africa as a nation

South Africa occupies the southern tip of the African continent. The population¹ of the country grew from 51,621,594 to 54,978,907 between 2010 and beginning of 2016, an average growth rate of nearly 6.5 percent. In 2015 there were 12 814 473 registered learners and 416 093 educators distributed among 25 691 ordinary public and independent schools in South Africa².

The structure of the school system

The basic education sector of South Africa services learners from R to 12 (roughly ages 6 to 18) and is arranged in two bands: the General Education and Training (GET) and the Further Education and Training (FET) Bands. The GET Band is further organized into three phases: the Foundation Phase (s 1-3), the Intermediate Phase (s 4-6) and the Senior Phase (s 7-9). Basic education is delivered, managed and administered in either public or independent mainstream schools and in special schools all under the auspices of each of nine Provincial Departments of Education. The national DBE is charged with the responsibility of developing policy, monitoring and evaluating of education. Within the broad policy framework provided by the DBE, each province can initiate and adapt programmes that are meant to enhance delivery of education.

The administration of school education

Education is delivered and administered in nine provinces, each of which is allocated a full budget for education. The National Department of Basic Education (DBE) is responsible for developing policies and monitoring the delivery of education in the provinces. For strategic coordination and in recognition of the notion of a unitary state that South Africa subscribes to, there are three critical structures that are charged with oversight responsibilities, viz. national parliament, the Council of Education Ministers (CEM) and the Heads of Education Department Committee (HEDCOM). The national parliament passes laws that regulate the provision and delivery of education. The CEM, chaired by the Minister of Basic Education, comprises Members of the Education Council (MECs), each overseeing education in the respective provinces, exercises political oversight. HEDCOM, chaired by the Director-General at the DBE level, comprises Heads of Education from the nine provinces and coordinates programmes that run in the respective provinces. HEDCOM establishes various subcommittees to focus on critical programmes which include, among others, curriculum implementation, budgets and financial allocations, assessments and public examinations.

1 Source: <http://www.worldometers.info/world-population/south-africa-population/> accessed on 30 March 2016.

2 Source: <http://www.education.gov.za/LinkClick.aspx?fileticket=EO8ijVuXSE8%3d&tabid=462&mid=1327> accessed on 30 March 2016.

The National Development Plan

The Government of the Republic of South Africa has adopted long-term planning as a strategy to address the country's socio-economic needs and to transform the lives of its populace. The National Development Plan 2030 (NDP) is the Government's strategy to eliminate poverty and reduce obstinate historical inequalities among the peoples of South Africa. Specifically with regard to basic education, the NDP acknowledges that South Africa has done well in terms of opening access, almost 100% access, to schooling to all children of school-going age. However, the NDP recognizes that the major shortcoming in education was in the quality of school educational outcomes and ascribed it to capacity weaknesses in teaching, school management and district support. The NDP points to lack of accountability at different levels of the education system as one explanation for unsuccessful measures to address poor quality of educational outcomes. Hence, the NDP directs that meaningful information about learner performance should be reported to parents to assist them hold schools accountable.

The Basic Education Sector Plan

In keeping with the Government's long-term planning strategy, the Basic Education Sector has developed and adopted a long-term plan for delivery of basic education of a high quality known as *Action Plan to 2019 – Towards the Realisation of Schooling 2030*. The Sector Plan, first developed in 2010 and revised in 2014, identifies performance indicators and milestones towards achievement of clearly defined outcomes and outputs. Most of the performance indicators that are related to educational outcomes are measured through aggregated learner scores from either national or international assessments. In particular, the Action Plan stipulates milestones, based on aggregated results of annual national assessments (ANA), which are used to monitor performance.

Curriculum implementation developments

A critical thrust in the post-apartheid changes has been in the transformation of education in general and the transformation of the national curriculum in particular. Typically, the national curriculum has been evolving over time since 1994. By 2010 and in response to teachers' concerns about various challenges in the implementation of the then Revised National Curriculum Statement (RNCS), the Minister of Basic Education appointed a Task Team to identify the challenges and pressure points that negatively impacted on the quality of teaching in schools and to propose mechanisms that could help resolve the challenges. The Ministerial Task Team recommended decisive strategies to a) strengthen the curriculum, b) specify the knowledge and skills that learners in each subject must acquire and c) make assessment clear and easy to manage. The review process culminated in a single, comprehensive and concise policy document – the Curriculum and Assessment Policy Statement (CAPS) - which provides teachers with curriculum and assessment statements that are clear, succinct and unambiguous to enable them to improve learners' knowledge and skills effectively (DBE, 2011).

By 2013 the implementation of CAPS had gained appreciable traction, there was stability in education and teachers had gained sufficient familiarity with the curriculum. To further bolster confidence in the national curriculum, the DBE introduced the National Strategy for Learner Attainment (NSLA) whose objectives were, among others, to bring about sustained improvement in learner outcomes, enhance accountability at all levels of the education system, deepen the basic functionality of schools, protect teaching and learning time and improve support for teaching and learning.

The DBE also introduced and drove an aggressive rollout of the provision of language and mathematics Workbooks to all schools. The Workbooks provided practice exercises that learners are expected to complete on a daily basis covering work that has been taught at a given period in each of the languages and Mathematics. Teachers were directed to use the exercises to diagnose learning needs and also to consolidated knowledge and skills that had already been taught.

To monitor performance, in 2010 the Department expanded and intensified ANA which involved testing Grades 1-6 and 9 learners' knowledge and skills in the foundational competencies of language and mathematics. All learners in the affected schools responded to short tests of average duration of one hour to assess the levels of their knowledge and skills in the key aspects of the prescribed curriculum for each. The results of ANA, which included a diagnosis of what learners were able or not able to demonstrate in the tests, were then disseminated to all schools and schools were expected to develop appropriate interventions to address identified deficiencies in teaching and learning.

Teacher development and support

Teacher education in South Africa is a national competence that is funded and regulated through the Department of Higher Education and Training (DHET). There are currently only two (2) pathways to become a fully qualified teacher:

- a) Complete a Bachelor of Education degree (NQF exit level 7; 480 credits; 4-year full-time); or
- b) Complete a general undergraduate degree or approved diploma, and thereafter complete a Post-Graduate Certificate in Education (NQF exit level 7; 120 credits; 1-year full-time).

The DBE is responsible for developing understanding of teacher demand and supply and to ensure proper planning thereof, to recruit appropriate candidates into the teaching profession, to ensure proper utilisation and placement of teachers and to offer induction programmes for newly appointed teachers. South Africa has followed a multi-pronged strategy to improve the quality of teaching and of the teachers who serve at the basic education level. Part of the strategy includes efforts to promote teaching as a career of choice among young and competent people. The DBE's flagship in this regard has been the Funza Lushaka Teacher Education Bursary Scheme which targets learners who aspire to follow teaching as a profession, with teaching language and mathematics as priority subjects, and awards them full bursaries to complete initial professional training. Upon graduation the bursars are allocated to schools that have shortages of the two subjects and must teach for a period that is at least equal to the duration of the training for which they received the bursaries.

Since 2010 the DBE has made observable strides to making continuing professional teacher development responsive to what data from both national and international assessments reveals about the levels and quality of learner competencies in the system. In collaboration with competent Non-governmental Organizations (NGOs) that specialize in education, the DBE undertakes comprehensive diagnostic analyses of learners were able to do and know in each completed national and international study and then develop interventions to help teachers address the identified gaps in learning.

Despite conscious measures that have been taken to integrate schools, redress past inequities and address current inequalities, the South African education system continues to experience challenges related to diversity and discrepant modes of education delivery. One area in which these phenomena manifest is in the existence of a significant number of schools where there is multi-teaching. Many of these are small schools in rural and farming communities. This group of schools demands different approaches to teacher training and support. The DBE has embarked on various initiatives to empower teachers in multi-teaching settings so that they are able to deliver the curriculum effectively and efficiently. Alongside the training of teachers, the Department trains district officials on how to support multi-schools to improve learner performance. A total of 775 teachers participated in the SACMEQ IV study, of which 59% were female.

Health promotion and social welfare of learners

In the CAPS document (DBE, 2011) issues of learner health and social welfare of learners are dealt with through the vehicle of Life Skills in the Foundation and Intermediate Phases (s 1-6). According to the CAPS, one of the objectives of offering Life Skills is to guide learners to make informed and responsible decisions about their health and environment (DBE, 2011:10).

The main policy concerns of the Ministry of Education in 2013 and beyond

The main policy concerns of the DBE in the period of the SACMEQ IV study and beyond centred around quality and efficiency in basic education - quality as measured through learning outcomes and efficiency in terms of the volume and the rate of educational throughputs. Evidence of the existence and persistence of these concerns has been observed in the results of the National Senior Certificate (NSC), ANA and other regional and international benchmarking studies³ in which South Africa participates. Combating under-performance and high repetition rates has been the focus of many an initiative of the DBE because these are misdemeanors that tend to compromise the remarkable gains that the country has made in the areas of access to education and overall transformation of the education system.

3 In addition to SACMEQ, South Africa also participates in the IEA-led studies such as TIMSS, TIMSS-Numeracy, PIRLS and Pre-PIRLS

The value of South Africa's participation in SACMEQ

South Africa has been part of the SACMEQ family since the SACMEQ II project and has participated in the subsequent projects – SACMEQ III and SACMEQ IV. The results of the SACMEQ studies have been held in very high esteem in South Africa both for monitoring the state of the education system and also in informing policy decisions. In the Sector Plan learner scores from SACMEQ studies are used as indicators of improvement that the Sector has set for itself. SACMEQ scores as pointers to achievement of specific milestones also feature prominently in the NDP where the country has specified that it targets to hit the 600 SACMEQ mean score points in both language and mathematics by 2022. It is, therefore, evident that South Africa openly values participation in SACMEQ and derives immense value out of the studies.



2. THE CONDUCT OF THE STUDY

The SACMEQ IV Project

Over the years since the first project in 1995, SACMEQ has developed research instruments and collected useful information using advanced research methods. An important principle in the studies is to ensure that SACMEQ is able to generate valid measures of levels and changes in achievement: (a) across countries at single time points, and (b) across time points for individual countries. To achieve this goal SACMEQ follows virtually the same methodologies across studies and uses the same instruments which must be kept confidential to remain valid. The methodology and instruments that were used in the SACMEQ IV project in 2013 were, therefore, the same as in SACMEQ III. A unique feature of the SACMEQ III project was the inclusion of a HIV and AIDS knowledge test (HAKT) of Grade 6 learners and their teachers. In the SACMEQ IV project, South Africa chose as part of the national options to test the TB knowledge levels of Grade 6 learners and their teachers in addition to the HAKT. This was in keeping with the Country's focus on improving societal awareness on TB symptoms and risks and provides unique opportunities to correlate HIV/AIDS knowledge levels with TB knowledge levels of Grade 6 learners and their teachers.

The SACMEQ IV project maintained the scale and complexity of SACMEQ's research and training programmes. The focus of the project was on conditions of schooling and the quality of education in fifteen school systems: Botswana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania (Mainland), Tanzania, (Zanzibar), Uganda, Zambia, and Zimbabwe. The purpose of the project was to gather information on a) the general conditions of schooling, b) the reading and mathematics achievement levels of Grade 6 learners and their teachers, and c) the knowledge that learners and their teachers have about HIV and AIDS and TB. In South Africa, the main data collection covered a total of 7046 learners, 775 teachers and 298 school heads.

Interpretation of the results

In interpreting the results throughout this report, it is important to note that the percentages and means (averages) have been presented in terms of learners. That is, learners are the units of analysis - even though some variables referred to teachers or schools. Where a percentage for a variable that describes teachers has been presented, this percentage should be interpreted as 'the stated percentage of Grade 6 learners was in schools with teachers having the particular characteristic'. Similarly, a percentage for a variable that describes schools should be interpreted as 'the stated percentage of learners was in schools with the particular characteristic.'

The sample was drawn in order to yield standard errors of sampling for learners in Grade 6 such that a sample estimate such as a 'mean' of a population percentage would have a standard error (SE) of $\pm 2,5$ percent. It is very important, therefore, that each statistic such as the 'mean' is interpreted in association with its sampling error. For this level of sampling accuracy we can be sure 19 times out of 20 that the population value of a given percentage lies within ± 5 percent ($\pm 2 \times 2,5\% = \pm 5\%$) of the estimate derived from the sample. For example, if the sample estimate of female learners in Grade 6 is 49%, then it can be claimed with 95% confidence that the mean percentage of female Grade 6 learners in the population will be $49\% \pm 5\%$ which ranges between 47.8% and 50.3%.

The Study Design

SACMEQ surveys are sample-based. The definition of the study population in each survey includes the "Desired", the "Defined" and the "Excluded" populations and each population is described in fair detail.

a) "Desired" Target Population

The SACMEQ "Desired" target population comprises all Grade 6 learners attending registered public and independent mainstream schools. The "Desired" target population definition for the SACMEQ IV Project was exactly the same (except for the year) as was employed in previous SACMEQ studies. This is important to maintain in order to be able to make valid cross-national and cross-time estimates of "change" in the conditions of schooling and the quality of education.

The “Desired” target population definition for the SACMEQ IV Project was as follows:

“All learners at Grade 6 level in 2013 (at the first week of the eighth month of the school year) who were attending registered mainstream (primary) schools.”

b) “Excluded” Target Population

One of the rules followed by SACMEQ for ensuring valid data in large-scale studies is that no more than 5 percent of learners in the “Desired” target population may be excluded from the “Defined” target population. These schools constitute the “Excluded” population. Like in previous SACMEQ studies, special schools which provide education to learners with severe educational needs were excluded from the SACMEQ IV sample. Also, “small” mainstream schools which had less than 15 learners enrolled in Grade 6 in 2013 were also allocated to the “Excluded” population to reduce data collection costs, without the risk of leading to major distortions in the study population.

c) “Defined” Target Population

The “Defined” target population was constructed by removing the “Excluded” population from the “Desired” target population. In the Table below the numbers of schools and learners in the “Desired”, “Defined” and “Excluded” populations for the SACMEQ IV study in South Africa are presented.

Table 2.1: Desired, Defined, and Excluded Populations for South Africa

South Africa	“Desired”		“Defined”		“Excluded”		
	Schools	Learners	Schools	Learners	Schools	Learners	Learner %
	17 280	929 341	13 156	886 073	4 124	43 268	4.7

From the last column of the above Table, it can be observed that the “Excluded” population of learners was 4.7 percent which was slightly less than the stipulated 5 percent to meet the SACMEQ criteria for accuracy in large-scale assessment data. A spatial distribution of schools in the “Defined” population is also presented in Figure 1.



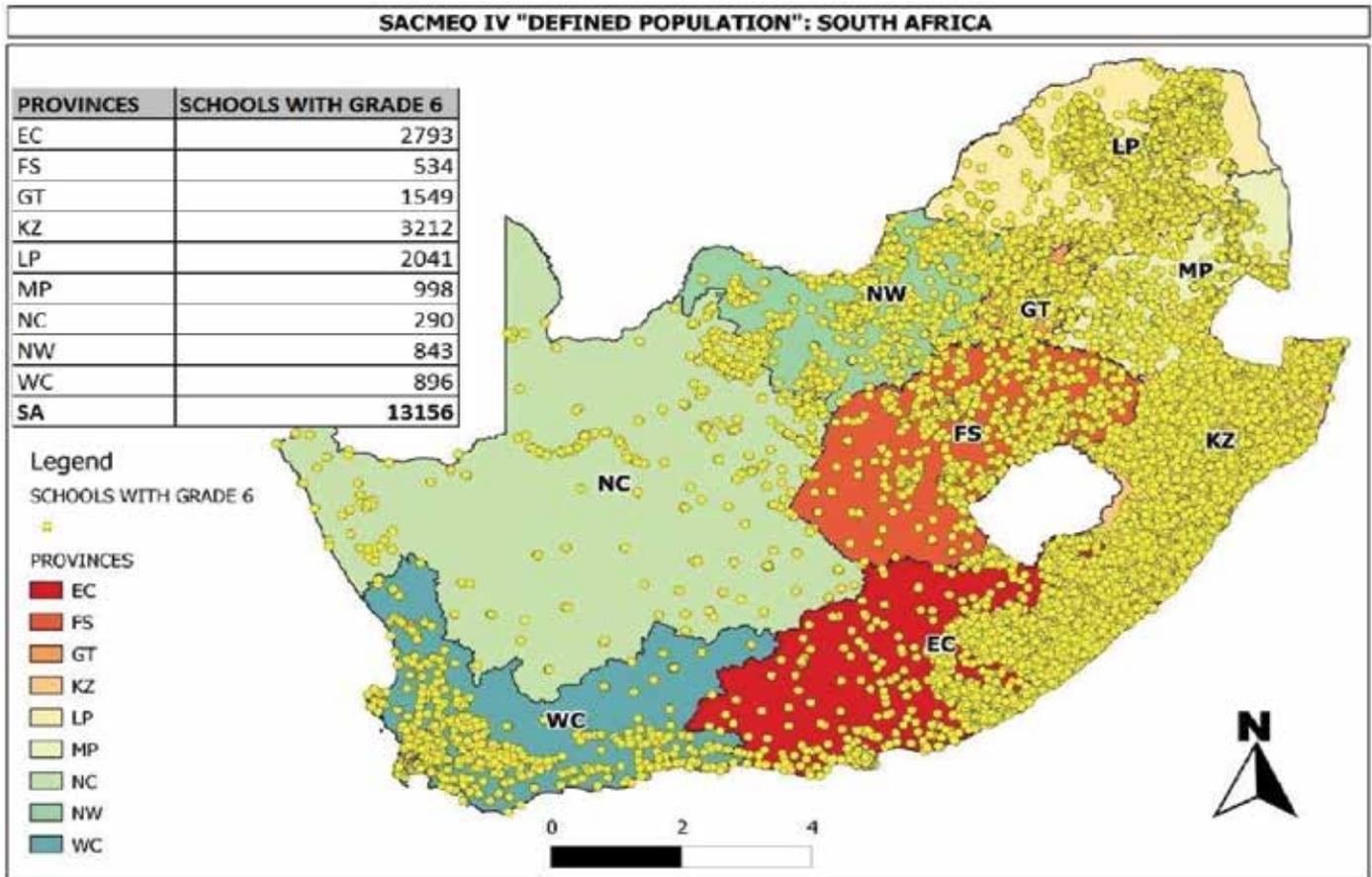


Figure 1: Distribution of the SACMEQ IV “Defined” population” in South Africa

From Figure 1 the distribution of schools in the “Defined” population was the densest in the eastern side of the country which includes Eastern Cape (n=2 793), KwaZulu-Natal (n=3 212), Limpopo (n=2 041) and also in the heavily urbanized Gauteng province (n=1 549) at the centre of the country. The population was very sparse in the western side, particularly in Northern Cape (n=290). The total number of schools in the “Defined population” for the SACMEQ IV study was 13 156 schools and 886 073 learners drawn from the nine provinces of South Africa.

Sampling and sample characteristics

The sampling frame for the study was obtained from the EMIS database in 2013 and submitted to the SACMEQ Coordinating Centre (SCC). The SCC engaged the services of expert statisticians to train national research coordinators and their deputies to draw samples for each of the member countries. A two-stage sampling design was employed. In the first stage schools in the “Defined” target population were sampled on a “probability-proportional-to-size” (PPS) basis. The PPS sampling technique meant that relatively large schools had a higher probability of being selected than smaller schools. In the second stage learners were sampled from all the Grade 6 classes in each of the sampled schools using the SAMDEM computer programme (IIEPSAMP_V1.3). Twenty five (25) learners (minimum cluster size) were sampled where the total number of all enrolled Grade 6 learners at the time of data collection was greater than 25. Where the number of Grade 6 learners was 25 or less than 25 in a school, all the Grade 6 learners were included in the sample, except where the number of registered Grade 6 learners was less than 15.

a) Response rates

The value of the “Achieved” sample size as a percentage of the “Planned” sample size represents the “response rate”. The response rate for schools and learners in the South African SACMEQ IV study are shown in the Table below. The technical requirement for the SACMEQ research programme is that all countries should seek to achieve overall response rates of at least 90% for schools and 80% for learners. The numbers of schools and learners in the “Planned” and “Achieved” samples in the South African SACMEQ IV study are presented in the Table below.

b) Design effect

Table 2.2: “Planned” and “Achieved” samples for SACMEQ IV in South Africa

SACMEQ IV				
South Africa	Schools		Learners	
	Planned	Achieved	Planned	Achieved
		305	298	7 625

From the above Table, the “Achieved” sample of schools (n=298) was 93.4% of the “Planned” sample. For learners the “Achieved” sample (n=7 117) was 93.3% of the “Planned” learner sample. A spatial distribution of the “Achieved” sample is shown in Figure 2.

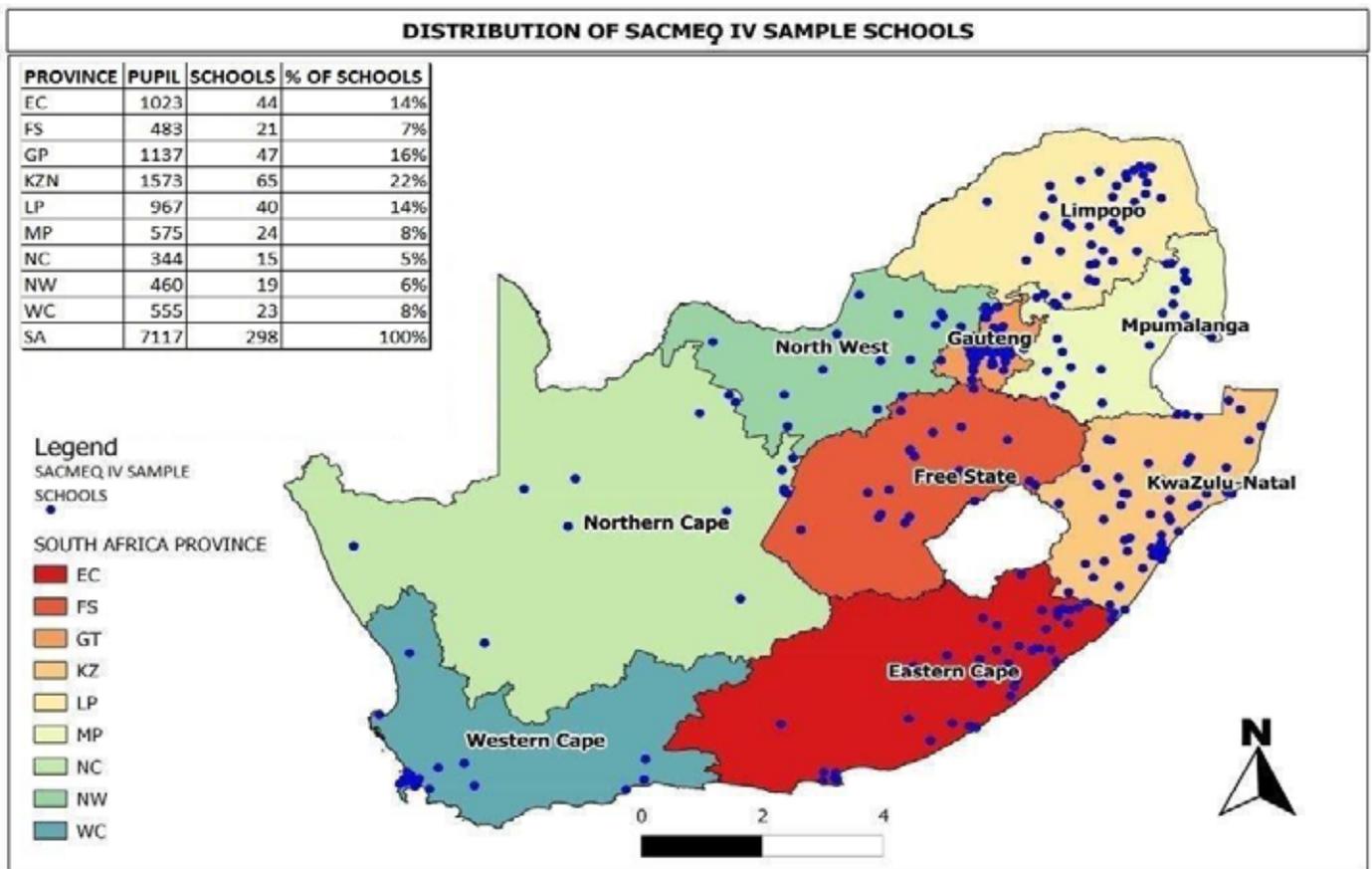


Figure 2: Distribution of the SACMEQ IV “Achieved” sample for South Africa

From Figure 2, The realized SACMEQ IV sample for South Africa comprised of 298 schools and 7 046 Grade 6 learners. The distribution of the “Achieved” sample of schools matches the distribution of the “Defined” population with the highest numbers of sampled schools in KwaZulu-Natal, Eastern Cape and Gauteng and the lowest in Northern Cape. The inserted table also shows the percentage distribution of the sampled learners. The top three highest numbers of learners were sampled from KwaZulu-Natal (n=1 504), Gauteng (n=1 088) and Limpopo (n=967) while the lowest three sets were sampled from Free State (n=456), Northwest (n=413) and Northern Cape (n=344), respectively.



3. LEARNERS AND THEIR LEARNING ENVIRONMENT

In this section the characteristics of the sampled learners as well as the learning environment in which a Grade 6 learner in South Africa attended school are presented for the SACMEQ IV as well as the SACMEQ III studies.

3.1 What was the age distribution of learners?

The mean learner age distribution (in months) of Grade 6 female learners as well as the percentage of the sampled learners who were females is shown for each province and for South Africa in the Table below. The mean age and percentage female learners in the SACMEQ III study are shown in the second and third columns of the Table, respectively. Corresponding statistics for the SACMEQ IV study are reflected in the third and fourth columns, respectively. The percentage of male learners in each case can be inferred from the difference between 100% and the percentage of female learners.

Table 3.1: Average age and gender distribution of learners in SACMEQ III and SACMEQ IV

Province	SACMEQ III		SACMEQ IV	
	Learner age (months)	Female learner	Learner age (months)	Female learner
	Mean	%	Mean	%
Eastern Cape	160.5	50.9	148.0	46.9
Free State	155.5	50.7	142.3	52.3
Gauteng	150.1	51.3	138.5	48.5
Kwazulu-Natal	152.6	51.3	142.0	50.3
Limpopo	155.6	50.1	142.2	47.3
Mpumalanga	158.5	48.2	144.5	47.7
Northern Cape	155.1	49.0	142.5	48.8
North West	154.9	51.1	143.6	51.3
Western Cape	150.7	52.0	140.8	50.9
South Africa	154.6	50.8	142.5	49.1

From the fourth column of the above Table the average Grade 6 learner during the SACMEQ IV study in South Africa was 142.5 months old, roughly 12 years. From the second column, the corresponding age in SACMEQ III was 154.6 months old, roughly 13 years. The youngest Grade 6 learner in SACMEQ IV was in Gauteng with mean age of 138.5 months or just under 12 years and the oldest was in the Eastern Cape with mean age of 148 months or just over 12 years. In terms of the admission policy in South Africa an average learner who did not repeat a Grade should be 144 months old, i.e. 12 years, at the end of the year that they complete Grade 6. The findings show that between SACMEQ III and SACMEQ IV there was an observable improvement either in admitting learners of the correct age or in the reduction of learners who had repeated a by the time they were in Grade 6 or in both.

From the fifth column of the Table in SACMEQ IV the average Grade 6 learner was in a school where 49.1% of Grade 6 learners were females and 50.9% were males. This was an almost complete reversal of the situation in SACMEQ III where, from the third column of the Table, the average Grade 6 learner was in a school where 50.8% of Grade 6 learners were females and 49.2% were males. However, both differences were not statistically significant and, therefore, it can be concluded that in both SACMEQ III and SACMEQ IV the average Grade 6 learner was in a school where there was an even split between the numbers of female and male Grade 6 learners.

At provincial level the average Grade 6 learner in the Eastern Cape was in a school where the mean Grade 6 learner age was 148.0 months or 12.3 years old which was the oldest among the provinces. The youngest Grade 6 learner was likely to be in Gauteng at average age of 138.5 months or 11.5 years.

In summary, South Africa seems to have improved in implementing policies related to the admission age of learners. The country is also keeping consistent gender ratios in terms of learner population.

3.2 How far did learners stay from the school they attended?

The distances that learners walk to and from school may affect access to quality schooling. In Table below, the findings related to the distances that learners in the SACMEQ IV study walked to and from school are reported per province and by ranges of distances (in kilometres).

Table 3.2: Distribution of learners by distance away from school

Province	Percentage learners by distance range			
	0 - 2 km	2 - 4 km	4 - 5 km	> 5 km
Eastern Cape	37.5	22.9	10.8	18.7
Free State	56.3	13.5	4.8	17.3
Gauteng	56.4	16.7	8.5	18.4
Kwazulu-Natal	44.7	22.3	8.9	14.2
Limpopo	56.5	18.9	5.9	8.8
Mpumalanga	48.4	17.7	6.8	14.2
Northern Cape	66.4	19.4	4.1	10.0
North West	55.1	20.9	8.5	15.5
Western Cape	57	13	5.2	24.9
South Africa	57	19.6	7.8	15.7

From the above Table, for South Africa the average learner was in a school where 57% of Grade 6 learners stayed within a range of 0 to 2 km away from the school that they attended, 19.6% stayed within a range of 2 to 4 km, 7.8% stayed within a range of 4 to 5 km and 15.7% stayed more than 5 km away from the school. Northern Cape had the highest percentage of learners (66.4%) who stayed closest to the school that they attended while Eastern Cape had the lowest (37.5%). For South Africa the average learner was in a school where 15.7% of Grade 6 learners stayed more than 5 km away from the school they attended. Western Cape had the highest percentage of learners (24.9%) who stayed more than 5 km away from the school they attended while Limpopo had the lowest (8.8%).

The Norms and Standards for Infrastructure (DBE, 2013:12) specify where schools may be sited and stipulate that the siting of a (new) school should recognize the need for appropriate topography and location related to access to roads, basic services and other demographic realities. To ensure that distance and other topographical factors do not compromise learner access to schools, the South African Government has instituted the Scholar Transport Policy with the objective of regulating and subsidizing transportation of learners in s R to 12.

3.3 What percentage of learners repeated Grade 6?

Learners were asked to indicate if they were repeating Grade 6 at the time of the survey. Making learners repeat s involves increased costs to the state but the practice has not been found to improve learning among the repeaters. The percentage of learners who were repeating Grade 6 during the SACMEQ IV study is shown in the Table. The policy in South Africa stipulates that a learner may not fail more than once in a phase. This ensures that, as much as is possible, learners must progress in cohorts.

Table 3.3: Distribution of Learners Repeating Grade 6

Province	Repeating Grade 6 (%)
Eastern Cape	16.2
Free State	7.5
Gauteng	5.3
Kwazulu-Natal	9.6
Limpopo	10.2
Mpumalanga	12.2
Northern Cape	14.1
North West	8.2
Western Cape	9.1
South Africa	9.9

From the above Table, an average Grade 6 learner in South Africa was in a school where nearly 10% (9.9%) of learners were repeating Grade 6 during the SACMEQ IV study. Provinces with the highest learner repetition rates were Eastern Cape (16.2%), Northern Cape (14.1%), Mpumalanga (12.2%) and Limpopo (10.2%) and the lowest repetition rates were in North West (8.2%), Free State (7.5%) and Gauteng (5.3%).

The DBE, in collaboration with each of the provinces of Eastern Cape (16.2%), Northern Cape (14.1%), Mpumalanga (12.2%) and Limpopo (10.2%), need to investigate the reasons and factors that could explain the relatively high repetition rates. Otherwise this phenomenon could compromise the provision and utilization of already over-stretched resources in these provinces.

3.4 School fee payment

South Africa introduced a policy of no-fee schools to open access to schooling to a large sector of learners who otherwise, due to poverty, would not be able to access education. The percentages of learners who either paid or did not pay school fees as well as an indication of the method of payment are shown in the Table below. The methods of paying school fees were specified to be either monetary or “another kind” of payment where “other kind” included parents rendering service to a school in lieu of money.

Table 3.4: Distribution of Learners- method of tuition payment

Province	Method of tuition payment (%)			
	No Payment	Money	Other kind	Money and other kind
Eastern Cape	46.5	29.9	14.4	9.3
Free State	78.4	12.5	7.7	1.5
Gauteng	51.5	28.8	9.3	10.3
Kwazulu-Natal	62.0	24.3	10.6	3.1
Limpopo	66.2	16.3	14.8	2.7
Mpumalanga	72.7	14.3	8.3	4.7
Northern Cape	59.4	29.5	8.5	2.6
North West	72.9	8.2	11.7	7.2
Western Cape	69.3	25.4	3.4	1.9

Province	Method of tuition payment (%)			
	No Payment	Money	Other kind	Money and other kind
Rural	66.6	17.6	11.3	4.5
Urban	59.5	25.1	8.5	7.0
South Africa	62.8	21.6	9.8	5.8

From the above Table, the average Grade 6 learner in South Africa was in a school where 62.8% of learners paid no school fees and the majority of them were in rural schools (66.6%). The top five provinces in which learners paid no school fees were Free State (78.4%), North West (72.9%), Mpumalanga (72.7%), Western Cape (69.3%) and Limpopo (66.2%). It is curious that Eastern Cape, which is not one of the highly-resourced provinces, had the lowest percentage of learners who did not pay school fees (46.5%). This finding would require further investigation to assess the extent to which Eastern Cape implements Government's policy of no-fee schools.

Regarding methods of paying school fees, the average Grade 6 learner in South Africa was in a school where 21.6% of learners paid fees in money, nearly 10% (9.8%) paid in "other kind" and nearly six percent paid in either money or in "other kind". The provinces with the highest percentages of learners who paid fees in "other kind" were Limpopo (14.8%), Eastern Cape (14.4%), North West (11.7%) and KwaZulu-Natal (10.6%) which provide largely rural settings.

The DBE needs to investigate what is involved in the "other kind" of payment method that seems to be prevalent in the provinces of Limpopo, Eastern Cape, North West and KwaZulu-Natal to establish whether these methods are in the interest of learners and learning.

3.5 What was the distribution of learner's extra tuition?

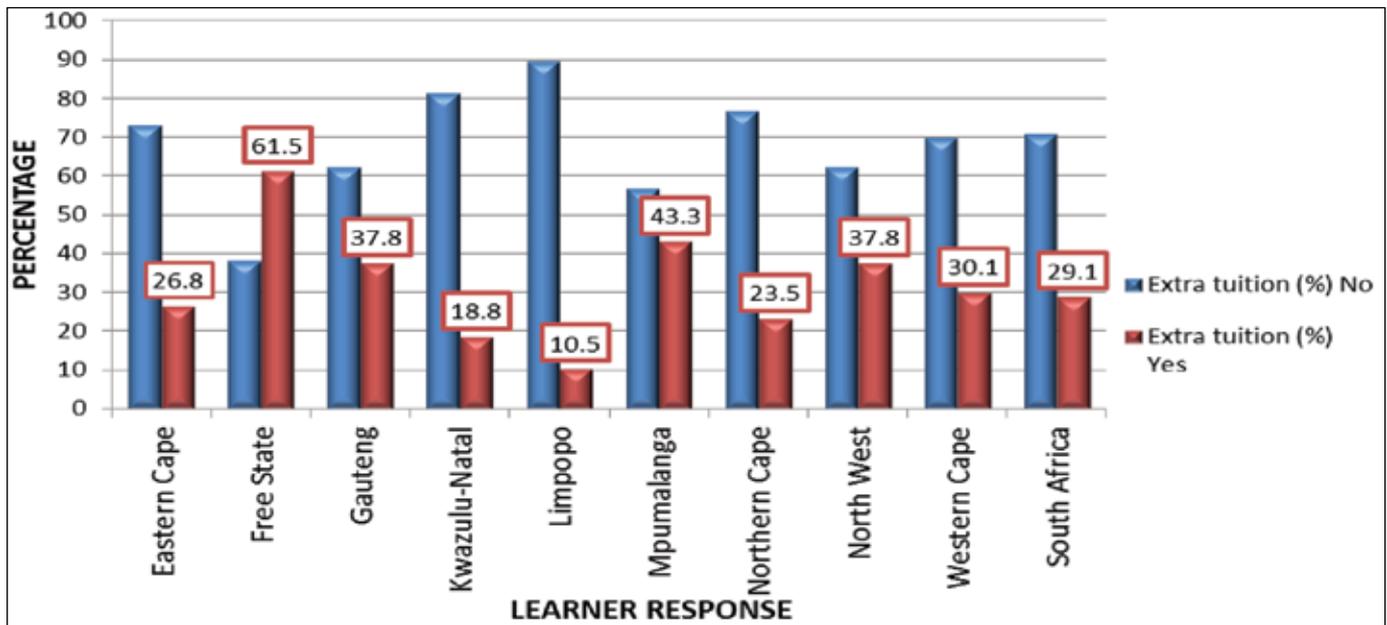
Previous SACMEQ studies showed that the phenomenon of extra tuition, which involves parents paying for their children to receive tuition outside school hours, was on the rise in many SACMEQ countries, including South Africa. Although there has been no empirical evidence to support the reasons for this practice, anecdotal claims are that the practice predisposes learners to improve perform better. The percentage of learners of Grade 6 learners who were in schools where parents paid extra tuition for their children is shown in the Table below.

Table 3.5: Distribution of learners by payment for extra tuition

Province	Extra tuition (%)	
	No	Yes
Eastern Cape	73.2	26.8
Free State	38.5	61.5
Gauteng	62.2	37.8
Kwazulu-Natal	81.2	18.8
Limpopo	89.5	10.5
Mpumalanga	56.7	43.3
Northern Cape	76.5	23.5
North West	62.2	37.8
Western Cape	69.9	30.1
South Africa	70.9	29.1

From the above Table, an average Grade 6 learner was in a school where 29.1% of parents paid extra tuition for their children. The highest percentage of parents who paid extra tuition for their children was in Free State (61.5%). Other provinces with notably high percentages of parents who paid extra tuition for their children were Mpumalanga (43.3%), Gauteng and North West (37.8% each) and Western Cape (30.1%). Limpopo had the lowest percentage of extra tuition payments (10.5%).

The figure below illustrates the provincial response of Grade 6 learners on extra-tuition.



3.6 How often is learner’s homework corrected by the teacher?

Homework plays an important role in assisting learners consolidate what is taught during lessons, get assistance from family members on tasks that they may not be ready to tackle and in developing independent learning skills. Where teachers correct the homework and provide necessary feedback to learners learning is likely to be enhanced. The frequency of correction of homework by teachers in the sampled schools in the SACMEQ IV study is shown in the Table below.

Table 3.6: Distribution of learners according to how often homework is corrected by the teacher

Province	How often homework is corrected by the teacher (%)				
	No Homework	Never Corrected	Sometimes Corrected	Mostly Corrected	Always Corrected
Eastern Cape	12.9	2.2	22.8	25.4	36.6
Free State	3.7	2.3	24.0	28.0	42.0
Gauteng	4.3	2.8	30.5	25.1	37.3
Kwazulu-Natal	6.8	2.0	24.3	28.4	38.5
Limpopo	5.2	2.8	28.6	28.6	34.8
Mpumalanga	3.4	0.9	16.7	34.1	45.0
Northern Cape	1.6	1.2	36.3	18.2	42.7
North West	5.0	2.3	26.0	21.1	45.6
Western Cape	2.2	2.7	28.0	24.3	42.8
South Africa	5.8	2.3	25.9	26.8	39.3

From the above Table, in South Africa during the SACMEQ IV study a Grade 6 learner was in a school where nearly six percent (5.8%) of learners were given no homework, just over two percent (2.3%) were given homework that was never corrected, 25.9% had their homework corrected only “sometimes”, 26.8% had their homework “mostly” corrected and only 39.3% had their homework “always” corrected. Provinces where the phenomenon of no homework given to learners was most prevalent were Eastern Cape (12.9%), KwaZulu-Natal (6.8%) and Limpopo (5.2%).

Given the known impact of homework on enhancing learning opportunities, district officials and curriculum specialists in the provinces of Eastern Cape, KwaZulu-Natal and Limpopo need to monitor and support schools to introduce and increase the practice of giving regular homework to learners.

3.7 What was the distribution of learners that speak English at home?

The South African Schools Act (1996) gives powers to School Governing Bodies (SGBs) to determine the language policy of the school that will accommodate the majority of learners in the school catchment area. Although there are 11 official languages from which a Language of Learning and Teaching (LOLT) can be selected, the majority of schools in South Africa use English as a LOLT from Grade 4 onwards. The distribution of learners according to the frequency of speaking English at home per province and for South Africa is shown in the Table below.

Table 3.7: Distribution of learners according to the frequency of speaking English at home

Province	How often learners speak English at home (%)			
	Never	Sometimes	Most of the time	All the time
Eastern Cape	18.2	61.0	10.4	10.4
Free State	7.3	82.1	6.3	4.3
Gauteng	7.4	62.5	15.7	14.4
Kwazulu-Natal	13.4	67.3	7.7	11.5
Limpopo	17.8	71.4	7.4	3.4
Mpumalanga	10.9	76.0	8.4	4.6
Northern Cape	7.0	27.3	11.0	54.7
North West	12.2	72.3	7.8	7.7
Western Cape	1.9	30.7	22.2	45.3
South Africa	11.8	64.0	10.7	13.4

From the above Table, the average Grade 6 learner in South Africa was in a school where 11.8% of learners never spoke English at home, 64.0% spoke English at home sometimes, 10.7% spoke English at home most of the time and only 13.4% spoke English at home all the time. The provinces with the highest percentages of learners who never spoke English at home were Eastern Cape (18.2%), Limpopo (17.8%), KwaZulu-Natal (13.4%) and North West (12.2%). The provinces with the highest percentages of learners who spoke English at home all the time were Northern Cape (54.7%), Western Cape (45.3%) and Gauteng (14.4%).

The DBE has introduced English First Additional Language (FAL) as a subject in Grade 1 in order to equip learners who will learn in English from Grade 4 onwards. It will be important that the DBE initiates an impact study, through “controlled-trial-designs”, to be conducted within the first years of the implementation of this initiative in order to assess whether the introduction of English FAL at the Grade 1 level will help make up for the deficiencies resulting from absence of necessary English vocabulary and skills among learners who do not speak English at home. Otherwise DBE will need to find alternative ways in which schools could support these learners and promote their effective and sustained learning.

3.8 What was the distribution of learner's access to learning materials?

The DBE has prioritized the provision of learning and teaching support materials (LTSM) to all schools ensuring that each learner has access to appropriate learning materials for each subject that they learn in school. The LTSM includes Workbooks for languages and mathematics which have been distributed to all schools with Grades 1 to 6. In the Table below the percentage of learners who had access to sitting and writing places (desks, tables, chairs, etc.) and to LTSM are shown per province and for South Africa.

Table 3.8: Distribution of learners according to access to learning materials

Province	Percentage learner access to learning materials				
	Sitting and Writing Place	Exercise Book, Pen, Ruler	Own Reading Textbook	Own Math Textbook	Notebooks or Workbooks
Eastern Cape	99.5	90.1	56.2	57.2	82.5
Free State	98.8	88.0	81.2	77.1	82.1
Gauteng	99.2	90.1	73.0	64.8	68.4
Kwazulu-Natal	98.9	90.1	45.4	50.1	78.9
Limpopo	99.4	90.0	58.9	62.4	85.9
Mpumalanga	99.0	89.5	81.4	86.7	71.4
Northern Cape	98.0	77.7	84.2	79.8	64.7
North West	98.5	92.6	80.3	80.0	79.5
Western Cape	98.9	91.4	85.6	87.0	71.4
South Africa	99.1	89.9	65.6	66.1	77.0

From the Table, the average Grade 6 learner in South Africa was in a school where 99.1% of learners had adequate spaces for sitting and writing, 89.9% owned at least one exercise book, a pen and a ruler, 65.6% had access to own textbook for Reading (Language), 66.1% had access to own textbook for mathematics and 77% owned a notebook or Workbook. Generally learner access to learning materials was very high in all the provinces, over 70%, except in KwaZulu-Natal and Eastern Cape where access to own textbook in Reading (Language) and Mathematics ranged between 45.4% (KwaZulu-Natal) and 57.2% (Eastern Cape). The relatively low levels of access to learner own textbooks in KwaZulu-Natal and Eastern Cape are of concern given that between them these two provinces make up for more than 45.6% of the Grade 6 learner population.

The Heads of Departments (HoDs) in the provinces of KwaZulu-Natal and Eastern Cape need to investigate reasons and factors that could explain the unacceptably low levels of learner access to Reading and Mathematics textbooks and ensure that this situation is improved within one financial period so that learners are not disadvantaged by absence of relevant learning materials.

3.9 What was the distribution of learner's access to a school library?

Historically, the majority of South African schools, which are mainly in the vast rural provinces, have never been provided with facilities such as libraries. Since 1994 the DBE has taken wide strides to provide schools with either mobile libraries or books that are available to learners in school book corners. The DBE's Accelerated School Infrastructure Development (ASIDI) includes providing comprehensive schools that include facilities such as libraries to increase access to reading materials particularly in the previously under-privileged rural schools. The percentage of learners who were in schools that had a library and where learners were either allowed or not allowed to borrow books out of the libraries is shown in the Table below for each province and for South Africa as a whole.

Table 3.9: Distribution of learners according to access to a school library

Province	Percentage learner access to a school library		
	No School Library	Not Allowed to Borrow Books	Allowed to Borrow Books
Eastern Cape	77.6	5.0	17.4
Free State	42.4	7.7	50.0
Gauteng	34.0	4.5	61.5
Kwazulu-Natal	47.2	4.0	48.8
Limpopo	85.3	-	14.7
Mpumalanga	78.2	-	21.8
Northern Cape	72.1	-	27.9
North West	59.0	-	41.0
Western Cape	34.6	10.5	54.9
South Africa	57.0	3.7	39.3

From the above Table, the average Grade 6 learner in South Africa was in a school where 57.0% of schools had no school library. In around four percent (3.7%) of the sampled schools that had a school library learners were not allowed to borrow books out of the school library. Otherwise in four provinces, viz. Limpopo, Mpumalanga, Northern Cape and North West, the sampled learners did not endorse the statement that they were not allowed to borrow books out of the school library. One possible explanation for this non-response could be that learners were not aware that they could borrow books out of the library and therefore were not aware of the school policies that regulate this service. However, in 39.3% of the schools in South Africa learners indicated that they were allowed to borrow books out of the school library.

The provision and utilization of school libraries in South Africa remains unacceptably low. In the short term the DBE needs to increase the provision of reading materials in the form of book corners to schools that do not have school libraries. In the medium- to long-term the DBE needs to either provide traditional school libraries to all schools or explore the option of using Information and Communication Technologies (ICTs) in general or the internet in particular, to ensure that learners have access to appropriate reading and reference materials.

3.10 What was the distribution of learner's source of lighting at their homes?

Part of the supportive role that homes play is to ensure that learners have adequate lighting to help them read and complete their homework. The distribution of sources of lighting at learners' homes for each province and for South Africa is presented in the Table below.

Table 3.10: Distribution of sources of lighting at learners' homes

Province	Percentage learners using different sources of lighting at home					
	Fire	Candle	Paraffin / Oil	Gas Lamp	Electricity	None
Eastern Cape	0.7	8.2	4.4	2.8	82.4	1.5
Free State	0.6	1.4	1.2	2.1	94.3	0.4
Gauteng	0.2	4.1	1.4	1.3	92.2	0.7
Kwazulu-Natal	1.3	12.1	1.4	2.1	82.1	1.1
Limpopo	0.8	3.6	1.6	2.1	91.1	1.0
Mpumalanga	0.2	2.5	1.3	2.5	92.7	0.9
Northern Cape	-	1.9	1.6	0.3	95.5	0.7
North West	0.6	5.0	1.0	1.2	92.0	0.2
Western Cape	1.0	1.3	1.0	0.8	95.9	-
South Africa	0.7	5.9	1.5	1.9	89.0	0.84

From the above Table, the average Grade 6 learner in South Africa was in a school where 89.0% of learners used electricity as a source of lighting at home. Other sources of lighting that are worth mentioning were candles (5.9%), gas lamps (1.9%) and paraffin/oil (1.5%). By 2013 the supply of electricity to households, including free basic electricity to indigent households, in South Africa had covered more than 85% of the target households (Stats South Africa: 2013). Evidently the education sector has benefitted significantly from the government programme of providing electricity to households.

3.11 What was the status of essential classroom materials?

Learners were asked to indicate whether their schools had essential classroom materials and equipment and facilities. Essential classroom materials included a dictionary, an exercise book, a pen or pencil to write with and a ruler as well as a Reading and a mathematics textbook that was exclusively assigned to individual learners. Essential equipment and facilities included a writing board, learner sitting and writing places, a table and a chair for the teacher or whether the school had a library or not. The percentages of learners who were in schools with particular essential classroom materials and equipment and facilities are shown in the Table below. For each category or item the estimates (percentages) from both SACMEQ III (S3) and SACMEQ IV (S4) are shown to reflect whether the estimate has remained the same, declined or increased in the period between the two studies.

Table 3.11: Percentages for Essential Classroom Resources for South Africa (S3 and S4)

Province	Teaching & learning materials										Equipment & facilities					
	Dictionary		Exercise Book & Pen/ Pencil & Ruler		Own Textbooks Reading		Own Textbooks Math		Writing Board		Learner Sitting & Writing Place		Teacher Table & Chair		Library (Class/School)	
	S3	S4	S3	S4	S3	S4	S3	S4	S3	S4	S3	S4	S3	S4	S3	S4
EC	55.6	82.2	66.6	90.1	43.2	56.2	33.3	57.2	83.2	100	94.0	99.5	44.1	84.3	42.4	66.9
FS	79.7	95.4	80.0	88.0	39.7	81.2	36.9	77.1	93.5	100	98.5	98.8	85.3	88.5	76.0	68.0
GP	87.6	100	84.5	90.1	44.6	73.0	33.3	64.8	92.3	100	99.3	99.2	91.4	99.2	86.2	92.7
KZN	84.5	94.9	90.6	90.1	32.1	45.4	24.9	50.1	92.7	100	99.4	98.9	87.3	93.4	58.7	91.4
LP	68.4	87.1	93.0	90.0	51.7	58.9	46.7	62.4	97.8	100	99.8	99.4	70.6	77.1	35.2	50.4
MPU	86.2	84.0	79.2	89.5	62.2	81.4	53.0	86.7	92.8	100	99.4	99.0	52.0	60.4	59.2	61.1
NC	70.4	96.9	79.8	77.7	38.7	84.2	30.9	79.8	87.5	100	99.5	98.0	80.7	90.5	77.6	43.9
NW	92.5	84.0	82.3	92.6	39.4	80.3	40.8	80.0	96.8	100	99.6	98.5	91.2	81.0	60.1	62.1
WC	84.9	97.8	73.5	91.4	67.8	85.6	46.4	87.0	83.1	100	99.6	98.9	81.4	100	99.5	93.8
SA	78.6	91.2	82.4	89.9	45.0	65.6	36.4	66.1	91.3	100	98.5	99.1	75.7	86.4	62.4	74.8

From the above Table relating to essential classroom resources, the average Grade 6 learner in South Africa was in a school where, between SACMEQ III (S3) and SACMEQ IV (S4), the percentage of learners who:

- had dictionaries increased from 78.6% to 91.2%;
- had an exercise book, a pencil and a ruler increased from 82.4% to 89.9%;
- owned a Reading (Language) textbook increased from 45% to 65.6%; and
- owned a Mathematics textbook increased from 36.4% to 66.1%.

In terms of essential school equipment and facilities, the average Grade 6 learner was, in the same period, in a school where the percentage of learners in schools that have:

- writing boards increased from 91.3% to 100%;
- learner sitting and writing places increased from 98.5% to 99.1%;

- a teacher table and chair increased from 75.7% to 86.4%; and
- a library (school/classroom) increased from 62.4% to 74.8%.

Whilst there was overall increase in essential classroom resources and equipment and facilities between the two SACMEQ studies, S3 and S4, there were individual provinces where the trends were reversed such as:

- Mpumalanga and North West where the percentage of learners who owned a dictionary dropped from 86.2% to 84.0% and 92.5% to 84.0%, respectively;
- KwaZulu-Natal, Limpopo and Northern Cape where the percentage of learners who owned an exercise book, a pencil and a ruler dropped from 90.6% to 90.1%, from 93.0% to 90.0% and from 79.8% to 77.7%, respectively;
- Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, Northern Cape, North West and Western Cape where the percentages of learners who had access to sitting and writing places (i.e. school furniture) dropped from 99.3% to 99.2%, from 99.4% to 98.9%, from 99.8% to 99.4%, from 99.4% to 99.0%, from 99.5% to 98.0% and from 99.6% to 98.9%, respectively; and
- Free State, Northern Cape and Western Cape where the percentages of learners who had access to school libraries dropped from 76.0% to 68.0%, from 77.6% to 43.9% and from 99.5% to 93.8%, respectively.

3.12 What was the status of the desirable physical and human resources?

A minimum level of physical and human resources are 'desirable' to make learning environments conducive to effective teaching and learning. 'Desirable' in this context was used to mean that the facilities/resources were in good and usable condition. The distribution of learners across schools where an average Grade 6 learner was in a school with infrastructure in good condition and physical resources that were functional is shown in the Table below. To track trends over time, the estimates are given for SACMEQ III in the top part of Table and in the bottom part for SACMEQ IV.



Table 3.12: Percentage of learners in schools with desirable physical resources in South Africa (SACMEQ III and SACMEQ IV)

Buildings in good condition											
SACMEQ III	School buildings	School Head Office	Staff Room	Meeting Hall	Class Cupboard	Class Bookshelf	School Fence	Electricity	Television	Photocopier	Computer
	%	%	%	%	%	%	%	%	%	%	%
EC	42.6	55.9	57.8	16.4	47.7	4.9	76.2	65.6	30.7	43.9	29.8
FS	80.2	84.0	88.1	37.9	84.4	36.8	100.0	100.0	94.8	100.0	100.0
GP	82.3	91.7	88.6	44.0	86.8	65.1	92.9	97.8	95.0	97.8	97.8
KZN	56.8	75.6	59.1	36.8	78.3	32.4	87.0	84.8	66.6	77.1	77.9
LP	43.0	49.0	22.8	13.3	85.8	33.4	85.2	88.8	48.8	70.1	67.0
MPU	37.0	53.5	53.1	17.6	62.8	31.3	79.8	93.2	52.0	85.4	84.7
NC	62.4	89.4	84.0	44.5	89.6	51.7	92.0	97.5	93.4	97.5	97.5
NW	62.0	83.5	66.3	45.5	82.0	57.2	91.6	95.4	72.1	93.0	95.4
WC	71.1	100.0	95.3	49.3	82.3	52.1	100.0	100.0	95.4	95.3	100.0
SA	58.0	72.8	63.8	31.6	75.9	37.7	87.4	88.0	66.5	78.9	76.9
Buildings in good condition											
SACMEQ IV	School buildings	School Head Office	Staff Room	Meeting Hall	Class Cupboard	Class Bookshelf	School Fence	Electricity	Television	Photocopier	Computer
	%	%	%	%	%	%	%	%	%	%	%
EC	48.9	55.4	52.0	24.0	87.4	42.6	86.2	100.0	81.2	98.2	93.5
FS	66.8	81.9	85.5	49.8	93.4	61.5	100.0	100.0	91.0	100.0	100.0
GP	81.8	89.6	86.0	42.2	93.3	72.7	98.1	100.0	90.7	100.0	100.0
KZN	56.6	88.6	67.5	30.2	89.7	57.0	95.2	100.0	82.7	99.1	96.7
LP	46.6	56.7	50.0	18.8	78.8	35.2	93.0	100.0	96.2	100.0	98.0
MPU	51.7	63.0	58.3	12.0	51.0	46.9	100.0	100.0	84.1	100.0	94.2
NC	64.1	86.7	75.6	28.6	95.0	52.5	96.2	100.0	89.1	100.0	100.0
NW	58.0	71.1	51.2	36.9	80.5	67.9	88.2	100.0	78.1	100.0	100.0
WC	82.1	96.8	90.7	68.2	100.0	90.7	100.0	100.0	92.3	100.0	100.0
SA	61.3	76.9	67.7	33.2	84.9	56.7	94.9	100.0	87.0	99.5	97.6

Infrastructure: From Table YAG, the average Grade 6 learner in South Africa was in a school where, between SACMEQ III (top part) and SACMEQ IV (bottom part), the percentages of learners who were accessing education in schools where:

- school buildings in good usable condition had increased from 58.0% to 61.3%;
- School Head (principal's) offices in good usable condition had increased from 72.8% to 76.9%;
- staffrooms in good usable condition had increased from 63.8% to 67.7%; and
- A Meeting Hall in good condition had increased from 31.6% to 33.2%.

Resources: From Table YAG, the average Grade 6 learner in South Africa was in a school where, between SACMEQ III (top part) and SACMEQ IV (bottom part), the percentages of learners who were accessing education in schools where:

- there was a usable class cupboard had increased from 75.9% to 84.9%;
- there was a usable class bookshelf had increased from 37.7% to 56.7%;
- the school fence was in good condition had increased from 87.4% to 94.9%;
- there was functional electricity had increased from 88.0% to 100%;
- there was a functioning television had increased from 66.5% to 87.0%; and
- there was a computer in usable condition had increased from 76.9% to 97.6%.

Despite overall improvements in **infrastructure** in good condition, in the following provinces the average Grade 6 learner was in a school where the percentage of learners who experienced the indicated item fell below the national level:

- buildings in the Eastern Cape (48.9%), KwaZulu-Natal (56.6%), Limpopo (46.6%) and Mpumalanga (51.7%);
- School Head's (principal's) office in the Eastern Cape (55.4%), Limpopo (56.7%), Mpumalanga (63.0%) and North West (71.1%);
- Staffrooms in the Eastern Cape (52.0%), Limpopo (50.0%), Mpumalanga (58.3%) and North West (51.2%);
- Meeting Halls in the Eastern Cape (24.0%), KwaZulu-Natal (30.2%), Limpopo (18.8%), Mpumalanga (12.0%) and Northern Cape (28.6%).

Also, despite overall improvements in usable school **resources**, in the following provinces the average Grade 6 learner was in a school where the percentage of learners who experienced the indicated item fell below the national level:

- Class cupboards in Limpopo (78.8%) and Mpumalanga (51.0%);
- Class bookshelves in the Eastern Cape (42.6%), Limpopo (35.2%), Mpumalanga (46.9%) and Northern Cape (52.5%);
- School fence in the Eastern Cape (86.2%), Limpopo (93.0%) and North West (88.2%);
- Television in the Eastern Cape (81.2%), KwaZulu-Natal (82.7%), Mpumalanga (84.1%) and North West (78.1%);
- Photocopiers in Eastern Cape (98.2%) and KwaZulu-Natal (99.1%); and
- Computers (at least one computer for administration) in the Eastern Cape (93.5%), KwaZulu-Natal (96.7%) and Mpumalanga (94.2%).

3.13 What was the status of pre-school attendance?

The tracking of pre-school attendance is a priority focus area of the DBE and the results of SACMEQ III showed a high correlation between pre-school attendance and high achievement scores. The table below shows the pre-school exposure of Grade 6 learners across the different provinces.



The regional spread suggests that more than 20% of Grade 6 learners in Eastern Cape, Kwazulu-Natal, Limpopo, Northern Cape, and North West and the Northern Cape had no preschool exposure. In Gauteng and the Western Cape regions that have a more urban makeup, more than 80% of learners have preschool exposure of at least 1 year. The Free State also had more than 80% of learners that had pre-school exposure.



4. READING AND MATHEMATICS ACHIEVEMENT AND TRENDS

In this chapter the achievement of learners and teachers in Reading, Mathematics and the HIV and Aids test are presented in SACMEQ Scale Scores and in percentages of participants who achieved various levels of performance. The results are reported to show trends since the SACMEQ II (2000) through the SACMEQ III (2007) to the SACMEQ IV (2013) study. The achievement levels must be considered within the findings on learning conditions indicated in the previous section.

4.1 Overall achievement trends

The overall mean Rasch scores of Grade 6 learners and their teachers in the Reading and Mathematics tests for South Africa between 2000 and 2013 are summarised in Table 4.1.

Table 4.1: Overall achievement trends

Learners	READING			MATHEMATICS		
	SACMEQ II	SACMEQ III	SACMEQ IV	SACMEQ II	SACMEQ III	SACMEQ IV
South Africa	492	495	538	486	495	552

From Table 4.1, South Africa's overall performance in Rasch Scores in SACMEQ IV was 538 in Reading and 552 in mathematics. In both Reading and mathematics South Africa has, for the first time, achieved above the Mean SACMEQ score of 500. Between 2000 (SACMEQ II) and 2013 (SACMEQ IV) South Africa's achievement has been on an upward trend with higher improvements in Mathematics than in Reading (Language). The improvements can be ascribed to, among others, a) the streamlining and strengthening of the national curriculum between SACMEQ III and SACMEQ IV, b) the focus on monitoring teaching and learning through the National Strategy for Learner Attainment and c) regular exposure to standardised assessments through the Annual National Assessment (ANA).

4.2 Overall Reading and Mathematics achievement of learners and teachers

In Table 4.2, the overall achievement in SACMEQ IV for learners and teachers is presented for each province and for South Africa.

Table 4.2: Overall mean scores of Grade 6 learners and teachers in Reading and Mathematics in SACMEQ IV

Provinces	Learners		Teachers	
	Reading	Mathematics	Reading	Mathematics
	Mean	Mean	Mean	Mean
Eastern Cape	502.6	525.4	701.2	780.6
Free State	543.5	551.2	700.6	791.0
Gauteng	579.9	576.9	734.3	832.9
Kwazulu-Natal	529.3	541.8	722.2	758.6
Limpopo	487.3	513.4	726.7	746.5
Mpumalanga	535.5	538.8	716.3	792.7
Northern Cape	538.3	544.0	730.7	782.5
North West	522.1	539.9	747.7	730.7
Western Cape	627.6	654.4	789.9	843.5
South Africa	538.3	551.5	726.6	780.5

From Table 4.2, the overall score for learners in Reading was 538 and the corresponding score for teachers was 727. In Mathematics the scores were 552 for learners and 781 for teachers. All the provinces, except Limpopo scored above the SACMEQ benchmark of 500. The lowest learner score in Reading was in Limpopo (487) and the highest was in Western Cape (627). In Mathematics the lowest learner score was also in Limpopo (513) and again the highest was in Western Cape (654).

In SACMEQ III, only three of our provinces - Western Cape, Gauteng and the North West province achieved scores in reading and mathematics above the SACMEQ mean score of 500, but in SACMEQ IV all provinces had scores above 500. Provinces such as Mpumalanga and Limpopo which had low scores in SACMEQ III had the biggest improvement margins in SACMEQ IV. The Western Cape also showed a significant increase in mathematics performance. The figure below shows the change in Reading scores from SACMEQ 3 to SACMEQ 4.

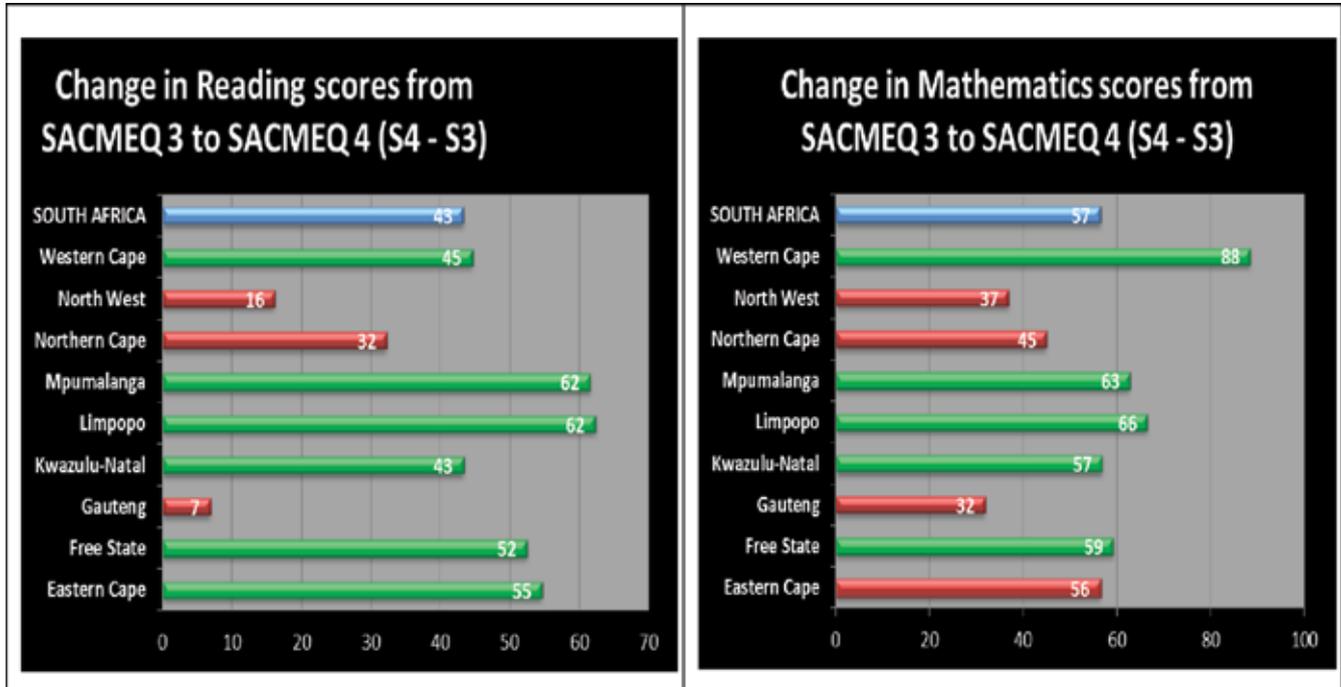


Figure 4.1: Change in Reading scores from SACMEQ 3 to SACMEQ 4

South African Grade 6 teachers participated for the first time in SACMEQ III in 2007. Their participation in the SACMEQ IV allows for comparisons to be made. Grade 6 Language and Mathematics teachers responded to the same test items as learners with a few items pitched at a higher level of difficulty than those of learners. The SACMEQ IV study showed that Teacher scores were reduced from the mean scores achieved by their counterparts in SACMEQ III. The lowest Reading score was in Free State (701) and the highest in Western Cape (789). The lowest teacher Mathematics score was in North West (731) and the highest was in Western Cape (843). Table 4.3 below shows the comparison of teacher scores across the two studies.

Table 4.3: Teacher scores in Reading and Mathematics

Provinces	Teachers			
	READING		MATHEMATICS	
	SACMEQ III	SACMEQ IV	SACMEQ III	SACMEQ IV
Eastern Cape	724	701.2	730	780.6
Free State	757	700.6	782	791.0
Gauteng	776	734.3	788	832.9
Kwazulu-Natal	758	722.2	765	758.6
Limpopo	745	726.7	748	746.5
Mpumalanga	754	716.3	700	792.7
Northern Cape	756	730.7	796	782.5

Provinces	Teachers			
	READING		MATHEMATICS	
	SACMEQ III	SACMEQ IV	SACMEQ III	SACMEQ IV
North West	758	747.7	767	730.7
Western Cape	813	789.9	852	843.5
South Africa	758	726.6	764	780.5

For teachers the lowest provincial Reading score was Free State (700.6) and the highest was the Western Cape (789). The lowest teacher mathematics provincial score was North West (703) and the highest was in Western Cape (843). There were significant improvements in Teachers Mathematics scores in Eastern Cape, Mpumalanga and Gauteng.

4.3 Learners reaching various Reading competency levels by Province between SACMEQ III and SACMEQ IV

Through the use of the Rasch model, SACMEQ reports performance in hierarchies of skills and knowledge that learners and teachers demonstrated in the tests. Eight levels of achievement are used where learners who perform at a higher level demonstrate more understanding and competency than those at a lower level. The SACMEQ Reading competency levels and their descriptions are summarized in Table 4.4.

Table 4.4: SACMEQ Reading competency levels and their descriptions

	Level	Descriptor	Competencies
BASIC READING SKILLS	1	Pre-reading	Matches words and pictures involving concrete concepts and everyday objects
	2	Emergent Reading	Matches words and pictures involving prepositions and abstract concepts.
	3	Basic Reading	Interprets meaning (by matching words and phrases, completing sentences).
	4	Reading for Meaning	Reads to link and interpret information located in various parts of the text.
	5	Interpretive Reading	Interprets information from various parts of the text in association with external information.
ADVANCED READING SKILLS	6	Inferential Reading	Reads to combine information from various parts of the text so as to infer the writer's purpose.
	7	Analytical Reading	Locates information in longer texts (narrative, document or expository) in order to combine information from various parts of the text so as to infer the writer's personal beliefs (value systems, prejudices and biases).
	8	Critical Reading	Reads from various parts of the text so as to infer and evaluate what the writer has assumed about both the topic and the characteristics of the reader

As suggested in the Level Descriptions in Table XB, learners at the lowest Reading competency levels, viz. the Pre-Reading and Emergent Reading levels, are hardly literate while those at the highest Reading competency levels, viz. Analytical Reading and Critical Reading levels demonstrate high and complicated reading competencies.

The percentages of South African learners who achieved various SACMEQ levels of achievement in Reading are presented in Table 4.5 for the SACMEQ III (top part) and SACMEQ IV (bottom part) studies and for each province and South Africa overall. The juxtaposing of the two sets of results is meant to show trends over time.

Table 4.5: Percentage of learners reaching various Reading competence levels by Province (SACMEQ III and SACMEQ IV)

SACMEQ III	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
	%	%	%	%	%	%	%	%
EC	14.1	24.5	25.8	16.7	9.7	3.9	3.7	1.7
FS	6.9	15.4	24.7	18.5	11.2	10.2	9	4
GP	4	7.6	10.5	10.2	12.6	16.2	23.8	15.1
KZN	9	19.4	26.1	14.7	8.9	7.9	7.5	6.7
MPU	9.4	19	24.1	19	12	8.8	5	2.7
NC	7.7	13.7	19.4	16	14.6	12.1	11.1	5.4
LP	22.5	26.5	25.4	13.1	6.8	3.3	1.7	0.7
NW	6.9	15	19.4	17.4	12.3	11.4	10.8	6.7
WC	1.2	3.9	8.1	13.7	16	20.7	22.3	14.1
South Africa	9.9	17.3	21.1	14.7	10.6	9.6	10.2	6.6
SACMEQ IV	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
	%	%	%	%	%	%	%	%
EC	5.2	10.5	21.6	19.6	19.2	10.2	10.9	2.8
FS	1.7	3.6	10.1	21.0	26.0	19.8	13.4	4.4
GP	1.3	3.1	7.3	14.6	19.6	18.8	23.1	12.1
KZN	3.1	6.4	18.6	19.7	21.1	12.0	11.4	7.7
LP	5.4	11.1	27.4	22.2	16.7	8.0	7.1	2.1
MPU	1.7	3.9	13.7	19.7	28.4	15.1	14.4	3.1
NC	1.7	5.4	11.8	16.2	27.9	18.9	16.9	1.3
NW	2.3	4.7	18.0	22.0	27.2	11.1	11.4	3.3
WC	0.7	1.0	3.9	5.3	16.4	16.7	34.9	21.1
South Africa	2.9	6.0	15.8	18.1	21.1	13.7	15.3	7.1

Overall there has been a significant decrease in the percentages of learners who achieve at the lower Reading levels of the SACMEQ hierarchies and a remarkable increase in the percentages that achieve higher levels. For example, the percentage of learners who achieved the lowest levels (Pre-Reading and Emergent Reading levels) in Reading has gone down from 27.2% in 2007 to 8.9% in 2013 while the percent of those who achieved the highest levels (Analytical Reading and Critical Reading levels) increased from 16.8% to 22.4% in the same period.

At provincial level Limpopo (16.5%) and Eastern Cape (15.7%) had the highest percentages of learners functioning at Levels 1 and 2 in Reading. Limpopo (9.2%) also had the lowest percentage of learners functioning at Levels 7 and 8 in Reading. The highest percentages of learners who were functioning at Levels 7 and 8 in Reading were in Gauteng (35.2%) and Western Cape (56%).

4.4 Learners reaching various mathematics competency levels by Province between SACMEQ III & SACMEQ IV

The SACMEQ mathematics competency levels and their descriptions are summarized in Table 4.6.

Table 4.6: SACMEQ mathematics competency levels and their descriptions

	Level	Descriptor	Competencies
BASIC MATH SKILLS	1	Pre- Numeracy	Applies single step addition and subtraction.
	2	Emergent Numeracy	Applies a two-step addition and subtraction involving carrying.
	3	Basic Numeracy	Translates verbal information into arithmetic operations.
	4	Beginning Numeracy	Translates verbal or graphic information into simple arithmetic problems.
	5	Competent Numeracy	Translates verbal, graphic, or tabular information into an arithmetic form in order to solve a given problem.
ADVANCED MATH SKILLS	6	Mathematically Skilled	Solves multiple-operation problems (using the correct order) involving fractions, ratios, and decimals.
	7	Concrete Problem Solving	Extracts and converts information from tables, charts and other symbolic Presentations in order to identify, and then solve multi-step problems
	8	Abstract Problem Solving	Identifies the nature of an unstated mathematical problem embedded within verbal or graphic information and then translate this into symbolic, algebraic or equation form in order to solve a problem.

As suggested in the Level Descriptions in Table 4.6, learners at the lowest mathematics competency levels, viz. the Pre-Numeracy and Emergent Numeracy levels, are hardly numerate while those at the highest mathematics competency levels, viz. Concrete Problem Solving and Abstract Problem Solving mathematics levels demonstrate high and complex mathematics competencies.

The percentages of South African learners who achieved various SACMEQ levels of achievement in Mathematics are presented in Table 4.7 for the SACMEQ III (top part) and SACMEQ IV (bottom part) studies and for each province and South Africa overall. The juxtaposing of the two sets of results is meant to show trends over time.

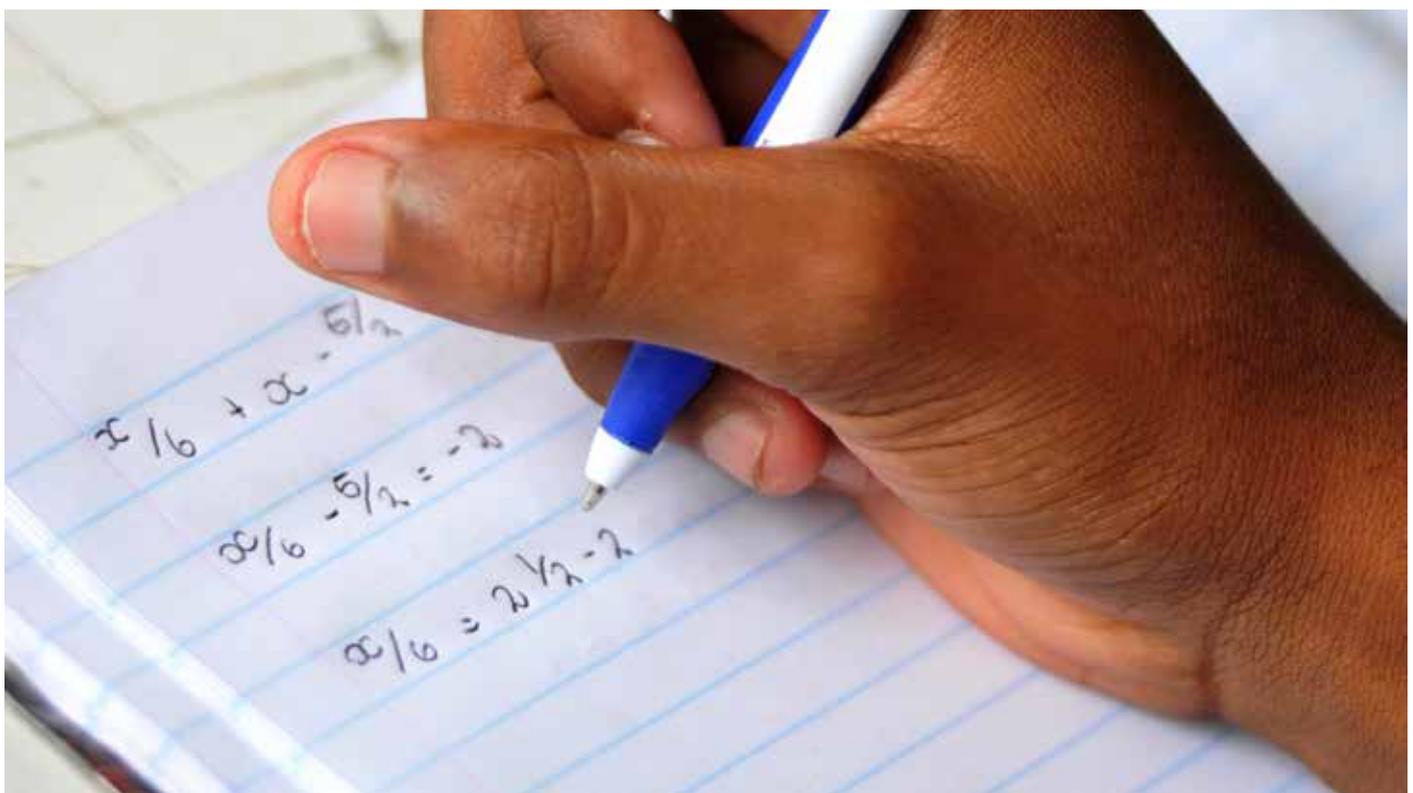
Table 4.7: Percentage of learners reaching various mathematics competence levels by Province (SACMEQ III and SACMEQ IV)

SACMEQ III	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
	%	%	%	%	%	%	%	%
EC	7.9	42.4	30.3	11.7	3.5	1.8	2.3	0
FS	3.8	34.3	34.7	14.4	7.2	4.3	1.1	0.1
GP	3.1	17.4	24.6	21.4	16.1	13.5	3.1	0.7
KZN	5.7	38.3	29.6	14.5	5.1	5.1	1.3	0.4
MPU	5.4	38.4	34.9	13.9	4.2	2.3	0.5	0.3
NC	4.6	32.5	31.7	16.5	6.2	5.7	2	0.7
LP	9.6	51	28.2	8.6	1.7	0.9	0	0
NW	3.6	34.5	30.2	15.3	6	6.7	2.3	1.3
WC	0.9	14.1	23.4	26.2	14.1	13.3	4.6	3.2
South Africa	5.5	34.7	29	15.4	7.1	5.9	1.9	0.6

SACMEQ IV	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
	%	%	%	%	%	%	%	%
EC	1.5	19.0	39.5	18.1	13.7	4.4	3.3	0.6
FS	0.6	9.3	36.8	24.6	18.6	5.5	3.1	1.4
GP	0.3	8.9	29.4	22.2	17.8	10.8	6.5	4.1
KZN	0.3	15.6	38.3	20.6	13.7	6.0	3.5	1.9
LP	1.9	22.0	42.1	18.4	9.0	3.9	2.1	0.6
MPU	1.0	15.0	38.2	20.0	14.5	8.7	1.9	0.7
NC	0.3	12.5	37.5	24.5	15.3	7.7	0.6	1.6
NW	1.2	14.2	38.9	20.3	14.7	7.0	2.4	1.4
WC	0.0	2.7	12.3	17.7	20.0	17.9	17.0	12.4
South Africa	0.8	14.1	35.1	20.3	14.8	7.7	4.6	2.6

Overall there has been a significant decrease in the percentages of learners who achieve at the lower mathematics levels of the SACMEQ hierarchies and a remarkable increase in the percentages that achieve higher levels. For example, the percentage of learners who achieved the lowest levels (Pre-Numeracy and Emergent Numeracy levels) in mathematics has gone down from 40.2% in SACMEQ III to 14.9% in SACMEQ IV while the percent of those who achieved the highest levels (Concrete Problem Solving and Abstract Problem Solving levels) have increased from 2.5% to 7.2% in the same period.

At provincial level only Western Cape had no learners who were functioning at the Pre-Numeracy level. Otherwise in all the provinces the highest density of learners was functioning between Levels 3 and 5, i.e. at the Basic Numeracy, Beginning Numeracy and Competent Numeracy levels. Limpopo, Eastern Cape and Mpumalanga had the lowest percentage of learners who were functioning at the highest level of the mathematics scale. The highest percentages of learners who were functioning at the highest mathematics competency levels (Concrete Problem Solving and Abstract Problem Solving levels) were in Gauteng (10.6%) and Western Cape (29.4%).



4.5 Levels and distribution of students classified as 'non-numerate' and 'non-readers' in SACMEQ III and SACMEQ IV

Table 4.8 below shows the percentage of Grade 6 learners who fall into levels 1 and 2 that are considered Non-readers and Non-numerate per Province

Table 4.8: Percentage of Students who are Non-numerate and Non-readers per Province

Province	% Non-readers in S3	% Non-readers in S4	% Non-numerate in S3	% Non-numerate in S4
Eastern Cape	38.6	15.7	50.3	20.6
Free State	22.3	5.3	38.1	10.0
Gauteng	11.6	4.4	20.5	9.2
KwaZulu-Natal	28.4	9.5	44	16.0
Limpopo	49.0	16.4	60.6	23.9
Mpumalanga	28.4	5.5	43.8	16.0
Northern Cape	21.4	7.0	37.1	12.8
North West	21.9	7.0	38.1	15.3
Western Cape	5.1	1.7	15	2.7
South Africa	27.2	8.9	40.2	14.9

What is particularly striking about student performance levels is the significant reduction in both non-readers and non-numerate learners per province and overall. Between SACMEQ III and SACMEQ IV, the percentage of non-readers dropped dramatically from 27.2% to 8.9% and in Mathematics, the percentage of non-numerate learners was significantly lower, shifting from 40.2% in SACMEQ III to 14.9% in SACMEQ IV. This represents a significant turnaround in the number of students failing to acquire even the most basic numeracy and literacy skills that was strikingly observed in the SACMEQ III study. The drop in non-readers and non-numerate learners across provinces is shown in the table above. While Limpopo and Eastern Cape has the highest number of non-readers and non-numerate learners in SACMEQ III and SACMEQ IV studies, they also had the biggest reduction rates. For example, the number of non-numerate learners in Limpopo dropped from 60.6% in SACMEQ III to 23.9% in SACMEQ IV.

The table below shows how South African Grade 6 learners have improved on the advanced levels (levels 6-8).

Table 4.9: Percentage of Students who are performing at the advanced level

Provinces	S III Reading	S IV Reading	S III Maths	S IV Maths
	Level 6 - 8 (%)			
EC	9.3	23.9	4.1	8.2
FS	23.2	37.6	5.5	10.0
GP	55.1	54.0	17.3	21.4
KZN	22.1	31.1	6.8	11.4
LP	5.7	17.2	0.9	6.6
MPU	16.5	32.6	3.1	11.3
NC	28.6	37.0	8.4	9.9

Provinces	S III Reading	S IV Reading	S III Maths	S IV Maths
	Level 6 - 8 (%)			
NW	28.9	25.8	10.3	10.8
WC	57.1	72.7	21.1	47.3
SOUTH AFRICA	26.4	36.1	8.4	14.9

The table above shows that in the SACMEQ IV study, Grade 6 learners have made great strides in achieving at the higher Grade 6 levels. In Reading, the advanced reading skills (L6 - L8) was 36% up from 26.4% and in Mathematics, performance in the advanced skills rose by 6.5% points from 8.4% in SACMEQ III to 14,9% in SACMEQ IV.

4.6 Teachers reaching various competency levels by Province in SACMEQ III & SACMEQ IV

The percentages of teachers who achieved various levels of Reading competency in SACMEQ III (top part) and SACMEQ IV (bottom part) are shown in Table 4.10.

Table 4.10: Percentage of teachers reaching various Reading competence levels by Province (SACMEQ III & SACMEQ IV)

SACMEQ III	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
	%	%	%	%	%	%	%	%
Eastern Cape	0	0	0	0	1.1	0	36.4	62.5
Free State	0	0	0	0	0	0	20.5	79.5
Gauteng	0.7	0	1.7	0	0	0	10	87.6
Kwazulu-Natal	0	0	0	0	0	3.6	22.4	73.9
Mpumalanga	0	0	0	0	0	0	37.8	62.2
Northern Cape	0	0	0	0	2.3	0	10.5	87.1
Limpopo	0	0	0	0	0	2	11	87.1
North West	0	0	0	0	0	0	19.4	80.6
Western Cape	0	0	0	0	0	0	6.1	93.9
South Africa	0.1	0	0.3	0	0.2	1.2	20.5	77.8

SACMEQ IV	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
	%	%	%	%	%	%	%	%
Eastern Cape	0	0	0	1.8	2.0	14.0	30.2	52.0
Free State	0	0	0	0.0	0.0	15.8	20.2	64.0
Gauteng	0	0	0	2.2	0.0	7.4	23.9	66.5
Kwazulu-Natal	0	0	2	0.0	1.9	6.5	35.7	55.9
Limpopo	0	0	0	0.0	0.0	2.0	37.3	60.7
Mpumalanga	0	0	0	0.0	0.0	5.3	30.0	64.6
Northern Cape	0	0	0	0.0	0.0	9.2	16.7	74.1
North West	0	0	0	0.0	0.0	0.0	6.0	94.0
Western Cape	0	0	0	0.0	0.0	0.0	12.7	87.3
South Africa	0	0	0.5	0.6	0.8	6.7	27.8	64.0

From Table 4.10, an average Grade 6 learner was in a school where teacher Reading competencies ranged between Inferential Reading and Critical Reading skills. The overall percentage of teachers reaching reading levels 3 and below in South Africa was less than one percent, while those reaching advanced reading levels (level 6 and above) was a significant 98.5%, of which 64% reached level 8. The Western Cape had the highest percentage (87.3%) of teachers reaching level 8 in the reading test. All regions had above 95% of teachers reaching levels 6-8 in the reading test.

The percentages of teachers who achieved various levels of Mathematics competency in SACMEQ III (top part) and SACMEQ IV (bottom part) are shown in Table 4.11.

Table 4.11: Percentage of teachers reaching various mathematics competence levels by Province (SACMEQ III and SACMEQ IV)

2007	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
	%	%	%	%	%	%	%	%
Eastern Cape	0	0	0	3	8.4	37.6	39.5	11.5
Free State	0	0	0	2.5	1.6	33.9	31.2	30.9
Gauteng	0	0	0	4.8	6.7	6.6	42.9	39
Kwazulu-Natal	0	0	0.7	4.5	11.6	21.1	29.5	32.5
Mpumalanga	0	0	0	2.9	26.4	31.5	34.8	4.5
Northern Cape	0	0	0	0	6.7	15.6	40.1	37.6
Limpopo	0	0	0	3	8.1	22.2	50.6	16.2
North West	0	0	0	0	11.2	23.9	30.2	34.7
Western Cape	0	0	0	0	2.1	5.4	33.5	59
SOUTH AFRICA	0	0	0.2	3.2	9.8	21.8	37.2	27.8

2013	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
	%	%	%	%	%	%	%	%
Eastern Cape	0	0	0	0.0	4.7	22.9	39.5	32.9
Free State	0	0	0	0.0	13.8	17.7	31.2	37.3
Gauteng	0	0	0	3.4	9.9	7.7	16.2	62.8
Kwazulu-Natal	0	0	0	1.8	8.5	35.1	23.5	31.1
Limpopo	0	0	0	3.1	5.5	26.0	47.5	18.0
Mpumalanga	0	0	0	0.0	0.0	14.3	56.3	29.4
Northern Cape	0	0	4.9	0.0	0.0	24.5	29.0	41.6
North West	0	0	0	0.0	17.3	32.5	39.8	10.3
Western Cape	0	0	0	0.0	4.0	16.5	14.8	64.7
SOUTH AFRICA	0	0	0	1.4	7.2	23.4	32.4	35.4

From Table 4.11, an average Grade 6 learner was in a school where teacher Mathematics competencies ranged between Competent Numeracy and Abstract Problem Solving skills. Across all provinces, there were no teachers who fell into levels 1 to 3 (pre-numerate), while those reaching the advanced mathematics levels (level 6 and above) was a significant 91.3%, of which 35.4% reached level 8. As in Reading, the Western Cape had the highest percentage (64.7%) of teachers reaching level 8 in the Mathematics test. All regions had above 80% of teachers reaching levels 6-8 in the reading test, with North West teachers having the lowest percentage (10.3%) of scores in the advanced mathematics skills category.

4.7 What were the Reading and Mathematics achievement levels of important subgroups (gender, school location and socioeconomic status (SES)) of Grade 6 learners?

In Table 4.12 the achievement scores Grade 6 learners in the Reading and Mathematics tests in SACMEQ III and SACMEQ IV have been presented according to their gender, school location and SES.

Table 4.12: Means for the Reading and Mathematics test scores of learners by subgroups in SACMEQ III and SACMEQ IV Studies

	SACMEQ III (S3)		SACMEQ IV (S4)	
	Reading	Mathematics	Reading	Mathematics
	Mean	Mean	Mean	Mean
<i>Pupil gender</i>				
Boys	483.5	491.2	528.2	549.7
Girls	506.0	498.4	548.7	553.4
<i>School location</i>				
Rural	440.8	456.7	490.9	512.4
Urban	549.2	533.1	585.8	590.7

	SACMEQ III (S3)		SACMEQ IV (S4)	
<i>Socioeconomic level</i>				
Low SES (Bottom 25%)	423.2	446.2	511.7	526.8
High SES (Top 25%)	605.6	578.6	569.3	580.1
SOUTH AFRICA	494.9	494.8	538.3	551.5

From Table 4.12 the achievement scores of both boys and girls increased significantly between S3 and S4 in both Reading and Mathematics. In S3 and S4, the Reading scores of girls were about 20 points better than the boys, and marginally better (4 points) in Mathematics. In terms of school location, the mean score for urban Grade 6 learners in both Reading and Mathematics in S3 and S4 was higher than the corresponding mean score of rural learners. The analysis of achievement in both S3 and S4 was conducted in the top and the bottom 25% of the SES category. From Table XF the achievement score of the top 25% SES category of Grade 6 learners in both Reading and Mathematics in S3 and S4 was substantially higher than the corresponding score of the bottom category. However, the achievement score of the top 25% SES category of Grade 6 learners in Reading dropped from S3 to S4 by 36.3 points. It is significant to note that the gap between low SES learners and high SES learners narrowed in SACMEQ IV comparatively to the gap observed in SACMEQ III. For example the gap reading scores between low and high SES scores was 183 points but this narrowed to just 57.6 points.

The figure below summarises the performance of Grade 6 learners by sub-groups for Reading and Mathematics across the two studies.

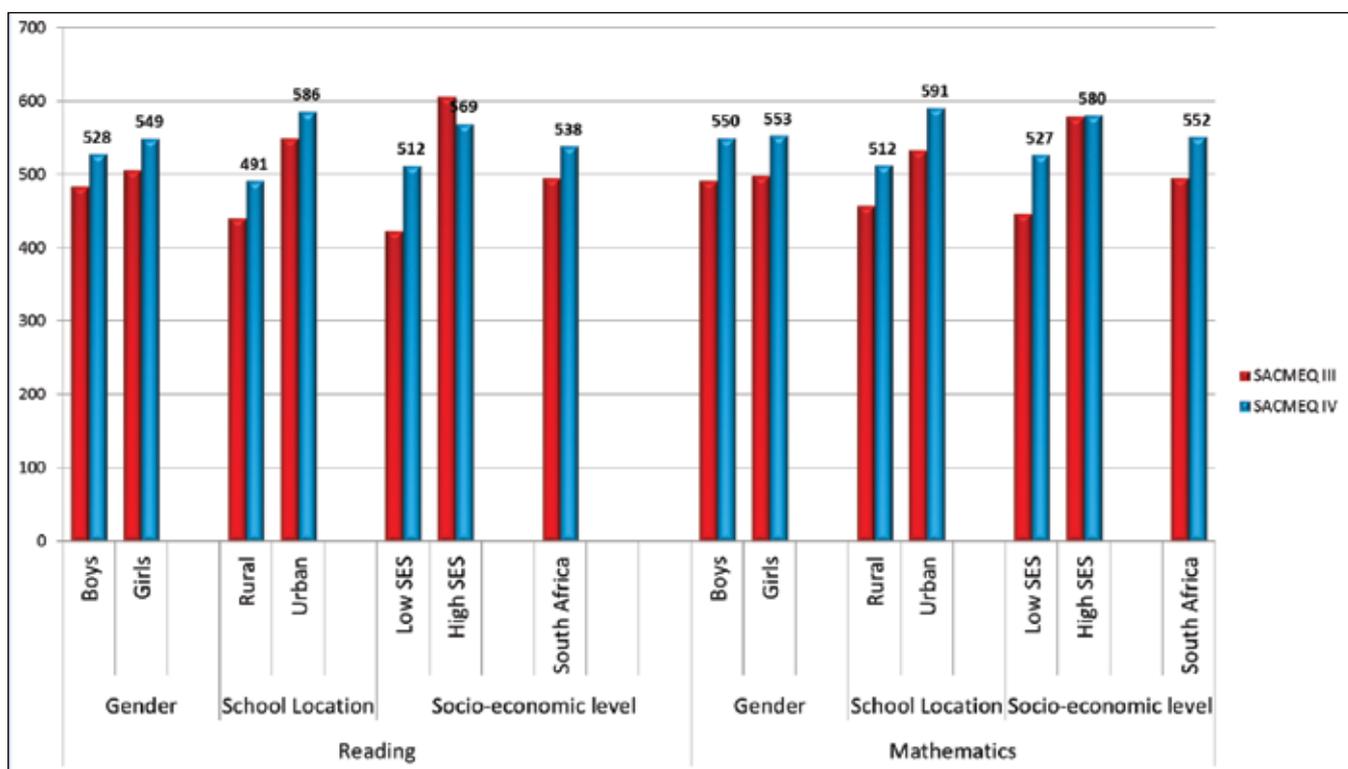


Figure 4.2: Performance of Grade 6 learners by sub-groups for Reading and Mathematics

In Tables 4.13 and 4.14 the percentage of Grade 6 learners reaching various Reading and Mathematics competence levels in SACMEQ III and SACMEQ IV have been presented according to their gender, school location and SES. The columns in the tables represent the eight competency levels for Reading and Mathematics respectively for the two studies. For example the percentage of boys in reaching competency level 1 in reading in S3 was 11.2 while in S4, the percentage of boys reaching competency level 1 was 3.9.

Table 4.13: Percentage of learners reaching various reading competence levels by subgroups (SACMEQ III and SACMEQ IV)

S3	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
	%	%	%	%	%	%	%	%
<i>Learner gender</i>								
Boys	11.2	19.9	22.1	14.3	9.6	8.5	8.9	5.4
Girls	8.7	14.8	20	15.1	11.7	10.6	11.4	7.7
<i>School location</i>								
Rural	15.3	25.8	27.5	16.2	7.7	3.5	2.5	1.5
Urban	4.6	8.8	14.6	13.2	13.6	15.6	17.9	11.7
<i>Socioeconomic level</i>								
Low SES (Bottom 25%)	17.4	28.3	32.4	14.4	4.9	1.9	0.6	0.2
High SES (Top 25%)	2.5	4.2	7.4	8.7	10.2	17.5	27.9	21.7
SOUTH AFRICA	9.9	17.3	21.1	14.7	10.6	9.6	10.2	6.6
<i>S4</i>								
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
	%	%	%	%	%	%	%	%
<i>Learner gender</i>								
Boys	3.9	7.7	18.0	17.5	20.3	12.3	14.2	6.0
Girls	1.8	4.3	13.6	18.7	22.0	15.1	16.4	8.2
<i>School location</i>								
Rural	4.5	9.1	23.9	23.8	22.3	9.8	5.8	0.8
Urban	1.3	2.9	7.8	12.3	19.9	17.5	24.9	13.4
<i>Socioeconomic level</i>								
Low SES (Bottom 25%)	3.6	7.2	19.1	21.7	22.6	13.1	10.5	2.2
High SES (Top 25%)	1.8	4.1	11.7	14.4	20.0	14.9	20.8	12.2
SOUTH AFRICA	2.9	6.0	15.8	18.1	21.1	13.7	15.3	7.1

Table 4.14: Percentage of learners reaching various mathematics competence levels by subgroups (SACMEQ III and SACMEQ IV)

S3	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
	%	%	%	%	%	%	%	%
<i>Learner gender</i>								
Boys	6.4	36	27.6	14.7	6.7	6	2	0.5
Girls	4.6	33.3	30.3	16.1	7.5	5.8	1.7	0.7
<i>School location</i>								
Rural	8.1	47.1	30.7	10.1	2.3	0.9	0.9	0
Urban	2.9	22.2	27.3	20.7	11.9	11	2.9	1.2
<i>Socioeconomic level</i>								
Low SES (Bottom 25%)	10.1	50	29.3	8.4	1.3	0.5	0.4	0
High SES (Top 25%)	1.1	13.1	18.4	22.6	18.1	18.9	5.6	2.2
SOUTH AFRICA	5.5	34.7	29	15.4	7.1	5.9	1.9	0.6
<i>S4</i>								
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
	%	%	%	%	%	%	%	%
<i>Learner gender</i>								
Boys	1.0	14.4	36.0	19.4	14.2	7.7	4.5	2.7
Girls	0.6	13.8	34.3	21.0	15.4	7.7	4.7	2.5
<i>School location</i>								
Rural	1.2	20.8	43.7	19.7	10.1	3.7	0.7	0.0
Urban	0.4	7.4	26.5	20.8	19.5	11.6	8.5	5.3
<i>Socioeconomic level</i>								
Low SES (Bottom 25%)	1.2	16.9	40.3	21.5	12.8	5.2	1.9	0.3
High SES (Top 25%)	0.4	10.2	29.1	19.6	17.5	10.5	7.6	5.1
SOUTH AFRICA	0.8	14.1	35.1	20.3	14.8	7.7	4.6	2.6

From **Tables 4.13 and 4.14**, the overall the percentage of girls in Reading, reaching levels 6 and above in SACMEQ III and SACMEQ IV was higher than the percentage of boys reaching these levels. The percentage of girls achieving levels 6 and above in mathematics was higher in S4 (39.7) than in S3 (29.7). A similar trend was observed for mathematics. The percentage of learners from both the top and bottom SES categories reaching levels 6 and above increased in both Reading and Mathematics between S3 and S4. Similarly, the percentage of learners in the top 25% SES category of grade 6 learner reaching levels 6 and above in both Reading and Mathematics in 2000 and 2007 was higher than the percentage of learners in the bottom 25% SES category reaching these levels. A notable observation was that the percentage of high SES learners reaching levels 6 and above in SACMEQ III was 19 points less than the scores achieved by high SES learners in SACMEQ III.



5. HEALTH KNOWLEDGE ACHIEVEMENT AND TRENDS

5.1 Introduction

South Africa has one of the highest HIV and TB prevalence rates in the world but it also has a detailed multi-sectoral approach in place to ensure that Comprehensive Sexuality Education (CSE) is systematically implemented. The policy environment is informed by a sophisticated, interconnected network of policies and strategies, many of which deal with school-based life skills programs and enhancement of teacher training to deliver these. Most relevant are the DBE's Integrated Strategy on HIV, STIs and TB and the draft HIV, STI and TB Policy (2012–2016) which provides a detailed context on implementation. The DBE is re-focusing its Life Skills education program to address unsafe sexual behaviour and ensure that learners are capacitated to make informed choices and decisions. However, the 2007 SACMEQ study showed low levels of HIV knowledge (37%) amongst Grade 6 learners, while educators had 100% knowledge of HIV. This raises questions about the Life Skills/Orientation program and its core mandate of strengthening sexuality education in the curriculum. This trend was also observed in the SACMEQ IV study.

5.2 HIV and AIDS knowledge levels

Overall performance of learners and their teachers

The overall performance of Grade 6 learners on the HIV and AIDS Knowledge Test (HAKT) revealed a decline of 32 points in the average performance between 2007 and 2013. Over the same period, the scores of their South teachers and also declined, leaving the gap between average pupil and teacher performance unchanged. The scores of Grade 6 learners and their teachers across SACMEQ III and SACMEQ IV studies are indicated in the table below.

Table 5.1: HIV and AIDS Knowledge: Grade 6 Learners and Teachers

Average HAKT	2007	2013
Grade 6 learners	503	471
Grade 6 Health Teachers	799	773

Although average performance of Grade 6 teachers fell by 26 points between 2007 and 2013, the difference in average scores were not statistically significant. The figure below shows the trend in teacher scores over the two SACMEQ periods.

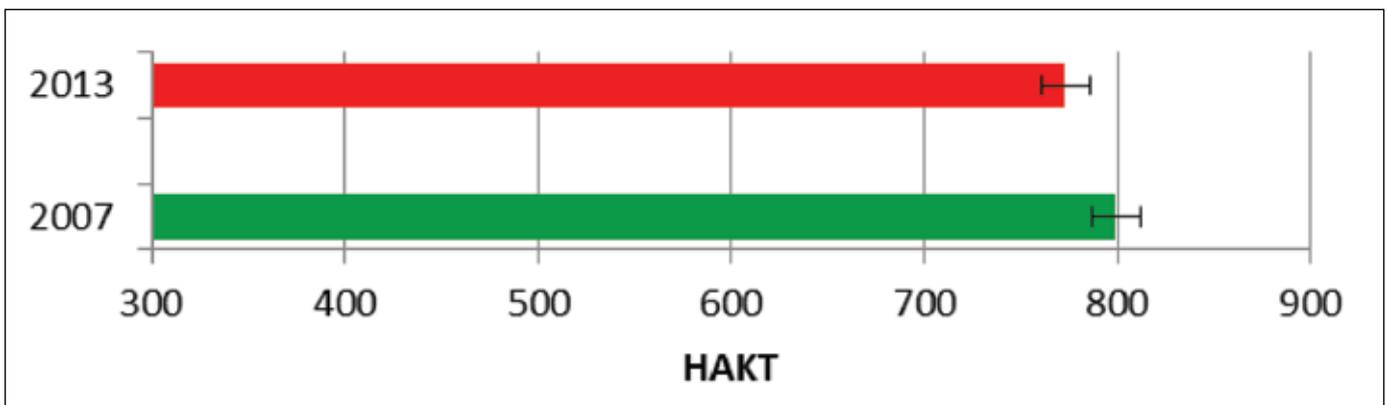


Figure 5.1: Teacher scores in 2007 and 2013

* Error bars denote the 95% confidence interval for the sample.

HIV and AIDS knowledge levels by province

The Rasch scores (hereafter referred to as scores) on the knowledge levels of learners and teachers on HIV and AIDS knowledge test (HAKT) by province have been summarised in Table 5.2. Also shown in Table are the percentages of learners who reached minimum and desirable levels on the knowledge of HIV and AIDS. Mean scores have been shown for the nine provinces and South Africa.

Table 5.2: HIV and AIDS knowledge levels of learners by province

Province	Scores	Reaching Minimum Level	Reaching Desired Level
	Mean	%	%
Eastern Cape	461.5	17.1	1.7
Free State	453.3	9.8	0.7
Gauteng	482.2	22.1	1.1
Kwazulu-Natal	478.6	21.9	2.8
Limpopo	442.2	8.8	0.5
Mpumalanga	471.1	16.9	0.8
North West	456.8	12.8	0.7
Northern Cape	468.7	19.9	7.0
Western Cape	513.4	37.2	5.6
South Africa	471.1	19.0	2.0

The highest knowledge levels were observed in the Western Cape and it was the only province with a mean score above the 500 centre point. It was observed that only 19% of learners reached the minimum level on the HAKT test and only 2% of Grade 6 learners had the desired knowledge. Free State and Limpopo had the lowest scores with less than 10% of their learners achieving the minimum levels on knowledge on HIV and AIDS.



HIV and AIDS knowledge levels by sub-groups

In Table 5.3 the achievement scores Grade 6 learners in the HAKT in SACMEQ IV have been presented according to their gender, school location and SES.

Table 5.3: achievement scores Grade 6 learners in the HAKT by sub-groups

SACMEQ IV (S4)			
	Mean	Reaching Minimum Level	Reaching Desired Level
<i>Pupil gender</i>			
Boys	466.1	17.4	2.0
Girls	476.3	20.6	2.0
<i>School location</i>			
Rural	449.8	11.1	1.2
Urban	492.4	26.9	2.7
<i>Socioeconomic level</i>			
Low SES (Bottom 25%)	459.2	13.5	1.2
High SES (Top 25%)	485.2	25.4	2.8
SOUTH AFRICA	471.1	19.0	2.0

The information in the above table shows that girls have a higher mean score than boys. The health knowledge level of rural learners is significantly lower than their urban counterparts and only 11% of them display the minimum knowledge level. Learners from high SES know more about HIV and AIDS than low SES learners. Across all sub-groups, the percentage of learners reaching the desired knowledge levels is low.

The figure below shows the trend in the overall results of Grade 6 learners in South Africa and by sub-groups on the HAKT over the two SACMEQ periods.

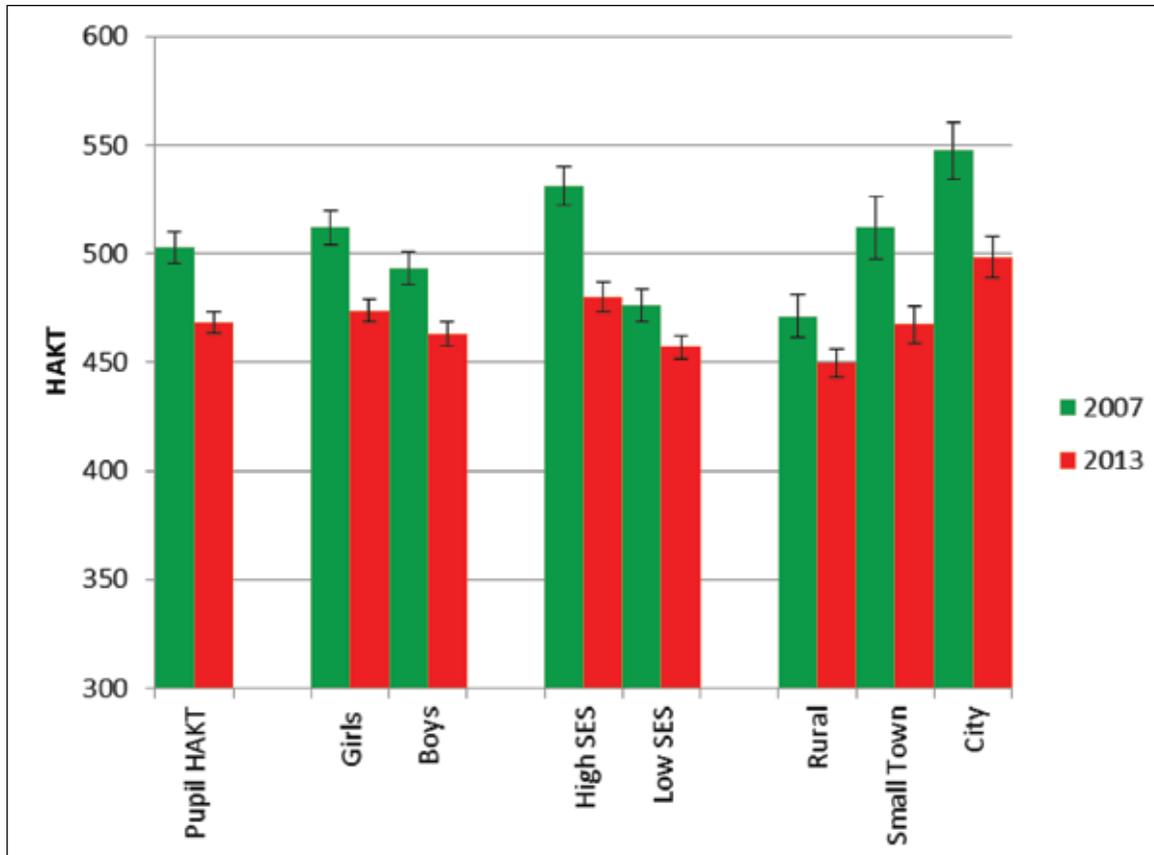


Figure 5.2: the overall results of Grade 6 learners in South Africa and by sub-groups on the HAKT

Error bars denote the 95% confidence interval for the sample.

Figure 5.2 shows that in South Africa, girls and boys achieved similar results in both 2007 (SACMEQ III) and 2013 (SACMEQ IV). Although high socioeconomic status pupils achieved better results than low socioeconomic status pupils, the SES gap had narrowed in 2013. Average performance of Grade 6 pupils attending schools in cities was significantly higher than in small towns and isolated/rural areas. The gap between average performance of Grade 6 pupils in small towns and isolated/rural areas had narrowed in 2013.

The table below illustrates the spread of learner knowledge on the HAKT by province and gender. For example, the percentage of boys in the Eastern Cape who reached the minimum level of knowledge was 13.5% while only 2.2% of the learners reached the desirable level.

Table 5.4: Mean Performance on the HAKT of learners by province and gender

SACMEQ IV 2013	LEARNERS					
	Transformed score		Reaching minimum level		Reaching desirable level	
	Boys	Girls	Boys	Girls	Boys	Girls
	Mean	Mean	%	%	%	%
EC	449.9	474.9	13.5	21.3	1.3	2.2
FS	455.3	451.5	10.8	8.8	1.1	0.4
GP	476.0	488.6	21.3	22.8	1.0	1.2
KZN	474.4	482.6	20.1	23.6	3.4	2.3

SACMEQ IV 2013	LEARNERS					
	Transformed score		Reaching minimum level		Reaching desirable level	
	Boys	Girls	Boys	Girls	Boys	Girls
	Mean	Mean	%	%	%	%
MPU	437.0	448.0	7.2	10.5	0.2	0.9
NC	471.5	470.7	16.2	17.6	0.7	1.0
LP	456.5	457.1	14.0	11.5	1.3	0.0
NW	470.7	466.6	19.7	20.1	8.5	5.4
WC	507.5	519.6	33.3	41.1	4.7	6.4
SA	466.1	476.3	17.4	20.6	2.0	2.0

The knowledge levels of Grade 6 boys and girls on HIV and AIDS in South Africa were found to be inadequate and corrective actions are urgently needed. Overall, only two percent of boys and girls in South Africa reached the desirable level of knowledge.

Availability of Textbooks

In SACMEQ IV health questionnaire, Grade 6 learners were asked about access to textbooks on life skills and health education. Over half of Grade 6 pupils in South Africa reported that they had their own life skills textbook. The responses of learners are indicated in the figure below.

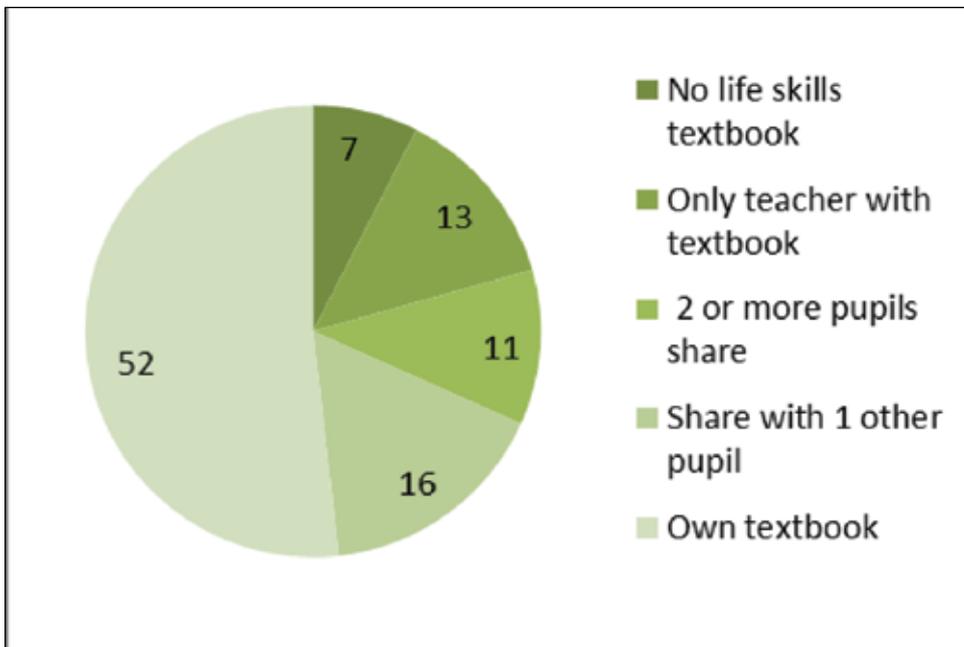


Figure 5.3: Access to a life-skills textbook

The above figure shows that 27% of pupils shared a textbook with either one or more pupils and 7% of pupils did not have access to a Life-Skills textbook. Learner access to textbooks could be a possible reason for the decline in scores.

Attitudes about HIV and AIDS relating to stigma and discrimination

There was drop in positive attitudes about HIV infected individuals. In 2007, over 50% of Grade 6 pupils agreed that an HIV infected teacher should be allowed to teach. In 2013, only 40% agreed. Similarly, the percentage of pupils who expressed a willingness to take care of an infected

relative fell by 10 percentage points across the two studies. The figure below shows the percentage spread of learner responses to questions on attitude on HIV infections.

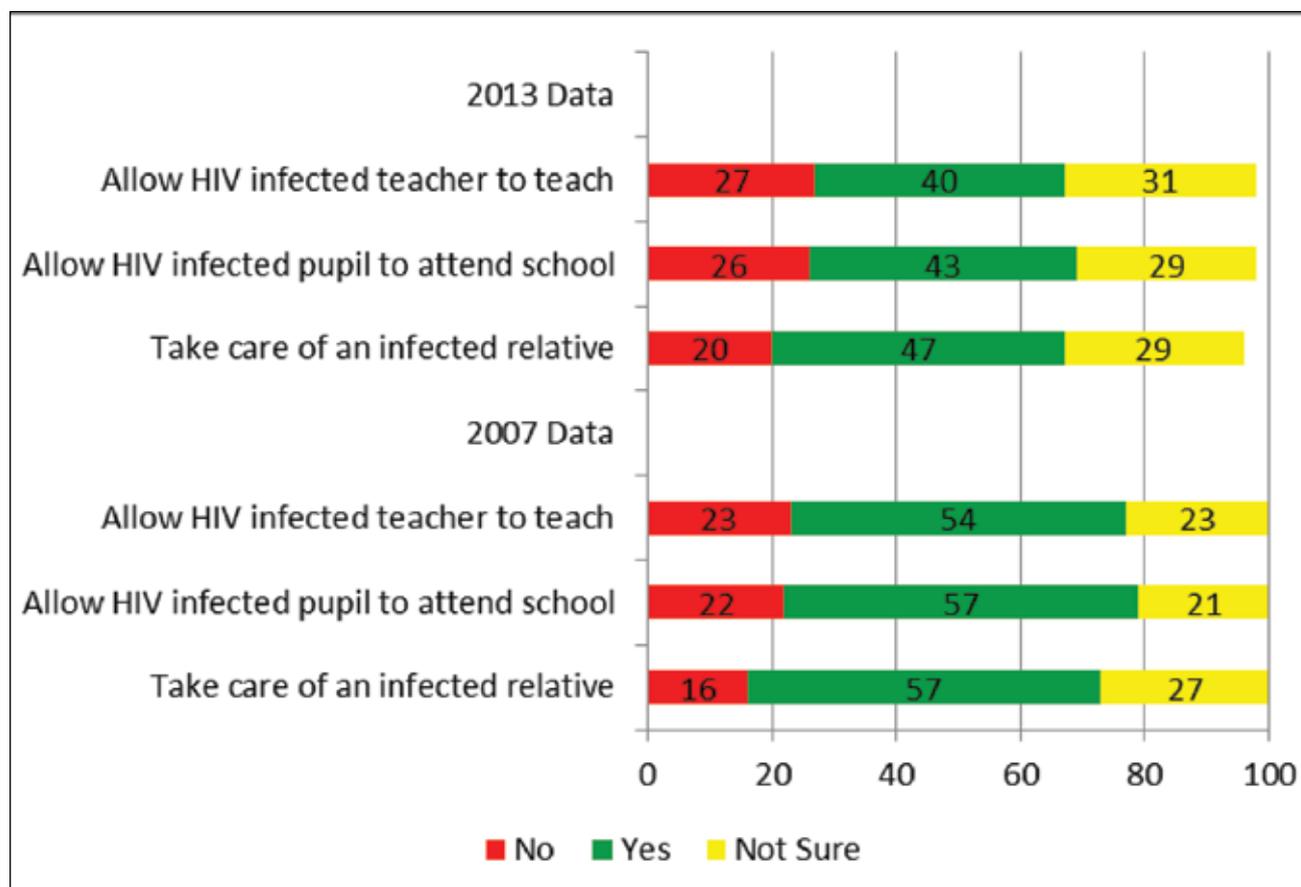


Figure 5.4: Learner attitude on HIV infections

* Some responses to the survey were incomplete, resulting in less than 100% for some of the 2013 data.

Attitudes about HIV and AIDS relating to risks

Nearly 50% of Grade 6 pupils in South Africa were comfortable with talking about HIV&AIDS related issues with a teacher. Moreover, Grade 6 pupils who were more comfortable communicating with their teacher tended to achieve higher average HAKT scores. The table below shows the responses of Grade 6 learners on their comfort levels about discussing HIV/AIDS with their class teachers, and their respective scores on the HAKT.

Table 5.5: Comfort levels in discussing with teacher

	Percentage	Average Pupil HAKT
Very comfortable talking about HIV/AIDS with teacher	28	476
Somewhat comfortable talking about HIV/AIDS with teacher	21	477
Somewhat uncomfortable talking about HIV/AIDS with teacher	20	460
Very uncomfortable talking about HIV/AIDS with teacher	31	462

Teacher knowledge levels

The Grade 6 Reading, Mathematics and Life-Skills teachers answered the HAKT. The table below shows that achievement levels by gender for each of the subject groupings

Table 5.6: Teacher knowledge levels by gender and subject

Gender	Reading Teachers			Mathematics Teachers			Life-Skills Teachers		
	Scores	Reaching Minimum Level	Reaching Desired Level	Scores	Reaching Minimum Level	Reaching Desired Level	Scores	Reaching Minimum Level	Reaching Desired Level
	Mean	%	%						
Male	777.6	100.0	90.7	754.2	98.0	85.8	779.7	100	86.5
Female	748.4	95.5	90.3	772.5	98.2	90.3	746.4	97.7	90.2
South Africa	759.2	97.2	90.5	765.4	98.1	88.5	758.5	98.5	88.8

The Grade 6 teachers were also asked in the Health questionnaire to indicate the number of days they spent attending in-service training on HIV and AIDS. The table below shows the average number of days in a province that teachers attended in-service training sessions.

Table 5.7: Number of days teachers spent attending in-service training

Province ID	Number of days spent attending in-service training
Eastern Cape	9.44
Free State	15.31
Gauteng	8.77
Kwazulu-Natal	7.17
Limpopo	18.79
Mpumalanga	32.12
Northern Cape	12.87
North West	7.36
Western Cape	14.55
Total	13.23

In Table 5.7, the teachers in Mpumalanga spent the most number of days attending in-service training and teachers in Kwa-Zulu-Natal and North West attended fewer days than other provinces.

5.3 TB knowledge levels

Overview

The Department of Basic Education (DBE) has developed an Integrated Strategy on HIV, STIs and TB (2012-2016) that presents a holistic response for learners, educators and officials in the schooling system aligned to the country's vision, and to new global thinking on the twin epidemics of HIV and TB. The Department's Strategy aims to support a coordinated, sustainable and comprehensive national response to HIV and TB that is informed at minimum by knowledge of HIV and TB amongst learners and educators¹.

Four indicators on TB knowledge were included in the Monitoring and Evaluation Framework of the DBE Strategy:

- Percentage of Grade 6 learners who demonstrated knowledge of TB
- Percentage of Grade 6 educators who demonstrated knowledge of TB
- Percentage of Grade 6 learners who indicated a negative response to learners diagnosed with TB continuing to attend school
- Percentage of Grade 6 educators who indicated a negative response to learners diagnosed with TB continuing to attend school

In order to measure these indicators, the Department pioneered the development and inclusion of a TB module in a regional survey. Similar to third round of the regional survey that included a module on HIV, SA opted to include a module on TB in the 2013 study.

Methods

The TB module, known as the Tuberculosis Knowledge Test (TBKT), for both Grade 6 learners and Grade 6 teachers was jointly developed by DBE and UNAIDS. Two sets of instruments (A and B) for learners and one questionnaire for educators were developed. It assessed knowledge levels on:

- TB disease
- who is at risk
- how to prevent TB
- signs of TB disease
- treatment of TB.

In June 2013, the instruments were piloted in 10 schools in Gauteng province amongst 500 Grade 6 learners and 20 Grade 6 educators. Schools were randomly selected to participate in the pilot phase. The results of the pilot study were used to revise the TBKT. In July 2013, the main survey was conducted amongst a randomly selected stratified sample of 298 schools (305), learners (4 843) and teachers (420) from the nine provinces as the primary strata.

Overall pupil and teacher knowledge mean scores

Overall knowledge of TB amongst learners and teachers was measured on three dimensions:

- Dimension 1: Knowledge of TB-related risks
- Dimension 2: Knowledge of measures for prevention of TB
- Dimension 3: Knowledge of signs and treatment of TB

Table 5.8 indicates **minimum** (mean score equal to or greater than 50% but less than 75%) and **desirable** (mean raw scores equal to or greater than 75%) levels of knowledge about TB amongst learners and teachers at national and provincial levels.

Table 5.8: Teachers and Learners at Minimum and Desirable levels of TB Knowledge

Prov	Learners				Teachers			
	Mean Score	% Below Minimum Level (at RISK)	% Reaching Minimum level	% Reaching Desirable level	Mean Score	%Below Minimum Level (at RISK)	%Reaching Minimum level	% Reaching Desirable level
EC	560	14.1	71.4	14.5	673	0	27.8	72.2
FS	566	6.3	78.9	14.8	694	0	9.5	90.5
GP	565	10.7	69.8	19.5	666	1.8	28.6	69.6
KZN	555	13.5	75.0	11.5	667	0.0	30.1	69.9
LP	523	35.4	61.7	2.9	660	0	37.1	62.9
MP	549	11.6	88.4	0.0	668	0	23.1	76.9
NC	576	4.6	73.4	22.0	658	0	8.3	91.7
NW	553	13.2	75.2	11.6	654	0	37.9	62.1
WC	581	1.5	74.2	24.3	662	0	39.4	60.6
SA	559	12.5	73.5	14.0	666	0.5	31.0	68.5

Overall 68.5% of teachers had minimum levels of knowledge on TB, while just under a third (31.0%) achieved desirable levels of knowledge. A negligible percentage of teachers (0.5%) had below the minimum level of knowledge on TB. Provincially, Free State and Northern Cape provinces reported high levels of knowledge (above 90%) on TB amongst teachers. Amongst learners, 73.5% achieved minimum levels of knowledge on TB while 14% achieved desirable levels of knowledge. A small but significant percentage of learners (12.5%) were below the minimum level of knowledge on TB. Provincially, while Mpumalanga province reported a significant proportion of learners (88%) achieving a minimum level of knowledge on TB, none of the participants achieved a desirable level of knowledge. What is more, only 2.9% of learners in Limpopo province achieved a desirable level of knowledge, while 35.4% of learners had lower than the minimum level of knowledge.

Dimensions of TB knowledge

Table 5.9 includes learner and teacher mean scores across the three dimensions of TB.

Table 5.9: Teacher and learner knowledge across the 3 dimensions of TB

TB-Knowledge Dimension	Description of Dimension	Mean Score	
		Teachers	Learners
Dimension 1	Knowledge of TB-related risks	773	567
Dimension 2	Knowledge of measures for prevention of TB	630	554
Dimension 3	Knowledge of signs and treatment of TB	617	552
Overall Knowledge of TB		666	559

Table 5.9 indicates that South African teachers and learners know most about TB-related risks (dimension 1), less about prevention of TB (dimension 2) and they know least about signs and treatment for TB (dimension 3). In addition, teachers knew more than learners on all three dimensions of TB knowledge.

Sources of knowledge on TB

Table 5.10 indicates sources of knowledge on TB amongst educators.

Table 5.10: Sources of knowledge on TB amongst teachers

Have you received information about TB from the following (24) sources?		
Source of information	% Teachers Saying YES	Rank Order out of 24
Magazine(s)/Newspaper(s)	83	1
TV	83	1
Book(s)	83	1
Poster(s)/Billboard(s)	82	2
Radio	81	3
Hospital/Clinic	75	4
Friend(s)	68	5
Doctor(s)	68	5
Family/Relatives	65	6
Community health worker(s)	64	6
Peer educator(s)	63	8
A person infected with TB	60	9
Teacher(s)/Principal	56	10
Drama(s)/Play(s)/Concert(s)	56	10
Person(s) from church, mosque, temple, etc.	53	11
Counsellor(s)	53	11
In-service teacher training	52	12
Pre-service teacher training	50	13
Internet	49	14
Computer(s)	47	15
Recreational activities	44	16
Video player (VCR, DVD, etc)	41	17
School club	37	18
Cinema (in-door, outdoor, or mobile)	36	19

The primary source of information about TB amongst teachers was through individual efforts rather than formal instruction. In-service and pre-service teacher training was ranked as the 12th and 13th source of information, respectively.

Discussion

A substantive proportion of learners (73.5%) and teachers (68.5%) achieved a minimum level of knowledge on TB. However, while 31.0% of educators achieved a desirable level of knowledge, only 14.0% of learners did so. Of concern is that 12.0% of learners reported lower than the minimum level of knowledge on TB. Given the responsibility of teachers to develop the knowledge and skills levels of learners to prevent and

mitigate the impact of TB, the relatively low levels of teachers achieving a desirable level of knowledge on TB is of concern. Learner and teacher knowledge on the dimensions of TB are uneven. While both teachers and learners are more knowledgeable on the risk factors for TB, they knew less on how to prevent the spread of TB and reported the lowest levels of knowledge on the signs of, and treatment for TB. This has important implications for the focus of pre- and in-service teacher training and the emphasis placed in the life orientation curriculum.

A surprising finding was that while knowledge on HIV and TB did not differ significantly amongst educators, learners knew more about TB than HIV. While HIV has been integrated into the school curriculum since 2000, TB has only begun to feature significantly in the curriculum since 2012, following the focus by SANAC on the twin epidemics of HIV and TB. Teacher's primary source of information on TB was not via pre-service and in-service training. This is expected as TB is a relatively new focus within the Department of Basic Education.

Conclusions on Health Knowledge

As the first study of its kind in South Africa and the region, the survey shows that there are already high levels of knowledge on TB among educators and learners. However, knowledge levels are incomplete, in particular with respect to the signs of, and treatment for TB. The relatively limited transfer of knowledge from teachers to learners on TB is also of concern. Opportunities do exist within the Life Orientation Curriculum Assessment and Policy Statement (CAPS) to address communicable diseases such as TB as well as its link to HIV. These must be optimised through both standardised pre-service and in-service teacher training that focuses on addressing teacher's personal risk for TB, knowledge on all aspects of TB, as well as associated pedagogy to transmit knowledge and skills to learners to prevent and treat TB.

A repeat of this survey amongst teachers and learners will allow for an assessment of the impact of interventions with respect to TB.



6. CONCLUSION

In many instances the SACMEQ IV report has confirmed, in a scientific way, some of the improvements and growth points that showcase a determination within the sector to transform the lives of our people. There are several noteworthy take-away points for the sector to be further armed with, in the efforts to advance quality basic education irrespective of where learners are located in the country.

Systemic growth patterns are evident when compared to previous rounds of SACMEQ, underlying an observed trend that conditions of schooling for the South African learner is improving. The observations in the Report affirm the on-going success of programmes targeted at the provision of basic school resources (such as ASIDI), essential learning materials through the supply of Workbooks, and improved health care and support through the National School Nutrition Programme (NSNP). The study also showed that girls are performing better than boys but there are equitable proportion of boys and girls attending schools at the Grade 6 level.

The Department is currently expanding its pro-poor interventions, so that in areas of need, more schools are built, more learners are fed and every learner has access to a workbook. As a further pushback of resources to the most needy, the DBE is strengthening public-private partnerships in the sector through the National Education Collaboration Trust (NECT) and international cooperation agreements with the education ministries and agencies of Cuba, Japan, South Korea, and Finland.

Notwithstanding the granular strides made in improving efficiency and equity in the sector, the overarching “bugbear” of improving quality in the sector to desired levels still remains. To improve the quality of education offered to learners and to empower them with a higher skill set and values, the DBE is increasingly prioritising interventions, policies and strategies that target an improved quality of learning and teaching, and implementing accountability systems to ensure that quality outcomes in the basic education sector are achieved.

As part of the strategic realignment and repositioning of the basic education sector the Department has endeavored to measure the quality of learning outcomes at regular intervals through our participation in international assessment studies, local systemic evaluation studies, and the national senior certificate. Recent results from the assessment programmes suggest the system is moving in the right direction – up!

The SACMEQ IV study follows closely after the release of the Trends in International Mathematics and Science Study (TIMSS) 2015 study and the 2016 National Senior Certificate (NSC) results, collectively pointing towards notable improvements in learner achievement at the Grade 5, Grade 9 and Grade 12 levels.

This latest round of the SACMEQ Grade 6 results showcases an exciting milestone for the sector. Our Grade 6 learners for the first time scored an average in Reading and Mathematics that was above the 500 centre point. The levels and quality of educational outcomes achieved by our learners represent a remarkable achievement with significant growth points observed in Reading and Mathematics. This implies that South Africa has moved beyond a critical threshold set out in the SACMEQ achievement scale. The SACMEQ IV study results point towards the following key gains:

- I. The highest improvement margins among participating countries in the region.
- II. A narrowing of the gap between urban and rural provinces (reduced provincial inequality), with 8 out of 9 provinces scoring above the 500 centre point.
- III. A significant reduction in the number of non-numerate and non-literate learners at the Grade 6 level, confirming that the early acquisition of the foundational skills of reading and numeracy is a critical goal that requires focused attention in our schools and sustained support from parents.

At the same time further improvement is possible if the sector:

- I. Enables more learners to achieve higher Reading and Mathematics competency levels with a greater focus on learners coping with questions of higher cognitive demand.
- II. Strengthens in-service and pre-service training of teachers with respect to pedagogical and subject content knowledge with respect to teaching of higher cognitive demand questions to learners.
- III. Improves the teaching of HIV-AIDS content knowledge and aspects relating to safe sex in the Life Orientation curriculum.

It is of great concern that the report shows that learners' knowledge of basic concepts and awareness of potentially life-threatening issues related to the ravaging scourge of the HIV and Aids pandemic is far below the desirable levels. Given the stubbornness of the pandemic and the vital decisions that our adolescent children have to make, it is important that society joins hands with the Ministry of Education in ensuring that our schools become centres of holistic development which stimulate intellectual, social and emotional development.

Finally, the fourth SACMEQ Study provides South Africa with high quality data that is internationally recognised and benchmarked, to better position its examination of existing and planned programmes. The trends in performance generated through our participation in three rounds of SACMEQ studies allows for the Department not only to evaluate the quality of our education system over time but also to plan for the improvement of future programmes.

To this end, the Report finds a useful place for educational planners and policy makers in the continuous endeavour to bring about excellence in the education system. Properly implemented, the findings and suggestions that have been made in this report could take South Africa way forward in improving the conditions of schooling and the quality of education in advancing the goals and targets set out in the NDP and in Action Plan 2019.

(Endnotes)

4 Department of Basic Education Integrated Strategy on HIV, STI and TB 2012-2016 Full Report. Pretoria: Department of Basic Education; 2010.







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