Highlights from TIMSS 2011

The South African perspective

The Trends in International Mathematics and Science Study (TIMSS) is cross-national assessment of the mathematics and science knowledge of fourth Grade and eighth Grade learners. TIMSS was developed by the International Association for the Evaluation of Educational Achievement (IEA) to allow participating nations to compare learner educational achievement across borders.

TIMSS was first administered in South Africa in 1995, and has continued to be administered in 1999, 2002 and 2011. This publication reports on South Africa's performance in TIMSS 2011 relative to other countries and examines the trends in mathematics and science achievement from 1995 to 2011.

Related Publications

Martin, M.O, Mullis, I.V.S., Foy, P and Stanco, G M. (2012). *TIMSS 2011 International Results in Science*. Chestnut Hill, MA: Boston College

Mullis, I.V.S., Martin, M.O., Foy, P and Arora, A. (2012). *TIMSS 2011 International Results in Mathematics*. Chestnut Hill, MA: Boston College

Reddy, V; Prinsloo, C; Visser, M; Arends, F; Winnaar, L; Rogers, S; Janse van Rensburg, D; Juan, A; Feza, N and Mthethwa, M. Mathematics and Science Achievement at South African Schools in TIMSS 2011. (forthcoming)

Reddy, V (Ed). (2006). Mathematics and Science Achievement at South African Schools in TIMSS 2003.Cape Town: HSRC Press.

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Cover image: A section of the representation of the Square Kilometre Array (SKA) layout on the ground. SKA represents the global heights of scientific achievement to which South African learners can aspire given the opportunity to realise their academic potential. Reproduced courtesy of SKA Organisation/Swinburne Astronomy Productions, skatelescope.org

Towards Equity and Excellence

Highlights from TIMSS 2011

The South African perspective

What is TIMSS?

The Trends in International Mathematics and Science Study (TIMSS) is a cross-national assessment of the mathematics and science knowledge of fourth and eighth Grade learners, conducted by the International Association for the Evaluation of Educational Achievement (IEA) since 1995. It uses results from achievement tests and questionnaires conducted with principals, teachers and learners to ascertain achievement scores and contextual factors relevant to achievement. A stratified sampling methodology is used in which schools are selected on the basis of province, the language of teaching and learning and public or private status.

TIMSS was designed to align broadly with mathematics and science curricula in the participating countries. The results, therefore, can be used to determine the degree to which learners have acquired the mathematics and science concepts and skills likely to have been taught in school. The tests are constructed to measure achievement to help inform governments, policy makers and educators about the proficiency of their learners at key points in the educational process. The findings from TIMSS provide an indication of the health of an education system.

TIMSS Conceptual Framework

TIMSS uses the curriculum as the organising principle of how educational opportunities are provided to learners. The curriculum model has three aspects: (i) the intended curriculum, (ii) the implemented curriculum and (iii) the attained curriculum. The intended curriculum refers to the mathematics and science knowledge that society intends learners to learn (the 2002 Revised National Curriculum Statement in South Africa); the implemented curriculum refers to how the educational system is organised (curriculum coverage) and the attained curriculum refers to what learners have learnt (learner achievement scores).

TIMSS in South Africa

TIMSS was first administered in South Africa in 1995, and subsequently in 1999 to Grade 8 learners. In 2002 it was administered to Grade 8 and 9 learners, and in 2011 to Grade 9 learners. Together, the assessments provide data to analyse trends over almost a decade. For TIMSS 2011 in South Africa, the Human Sciences Research Council (HSRC) conducted the study in 285 schools among 11969 learners.

Why TIMSS in South Africa?

Mathematics and science are key areas of knowledge for the development of individuals and the society. Public and private sector, families and households have made major investments in mathematics and science. Performance in these areas is one of the key indicators to assess the performance of our schooling system. TIMSS allows participating nations to compare learner educational achievement across borders and offers South Africa an opportunity to benchmark itself against other countries.

Trends in South African mathematics & science achievement: 1995 to 2011

Figure 1 opposite illustrates the trends in mathematics and science achievement distributions between the bottom and upper ends at the 5th and 95th percentile for TIMSS 1995, 1999 and 2002 at the Grade 8 level and for TIMSS 2002 and 2011 at the Grade 9 level. It shows an overall improvement in achievement scores.

Towards Equity and Excellence

Equity

South African mathematics and science achievement are still low but have improved from TIMSS 2002 to TIMSS 2011. The greatest improvement was among learners who can be described as the 'most disadvantaged' and who scored the lowest initially. This finding coincides with data on the learners and schools receiving the highest number of interventions aimed at improving the quality of education, from both public and private sector service providers. Figure 7 illustrates the level of achievement and the profile of learners that underpins the achievement by the Quintile rank of a school.

The results suggest the value of the continued investments in low-income households (to improve educational levels of the household and encourage the channelling of more resources to education) and in less-resourced schools (to improve school climate, resources and quality of teaching). It is through the multiple investments and effort of learners and teachers, with support from households and the departments of education that South Africa will continue to increase the mathematics and science achievement scores of lower-performing learners.

	Math Score	Science Score	% None or few books	% Always speak language of test at home	% Maternal Education above Gr12 (Completed)	% Bullied Often	% At or above 475 Science	% At or above 475 Math
Quintile 1	315,6	279,0	48,5	6,5	16,5	35,5	1,8	1,1
Quintile 2	318,3	285,0	46,6	8,9	16,6	34,2	1,6	0,6
Quintile 3	335,9	314,1	46,4	7,8	21,3	27,3	3,2	1,6
Quintile 4	360,2	348,1	42,8	14,3	28,1	22,5	7,6	4,3
Quintile 5	438,0	445,1	27,5	41,6	50,0	16,1	43,5	36,3
Independent	473,5	479,0	21,0	32,8	68,1	17,3	54,7	51,3

Figure 7: South African mathematics and science achievement and its context, by Quintile ranking of school

Excellence

The quantity and quality of performance at the higher ends provides an indicator of the pool of learners who could progress to tertiary education and who could participate in science and technology-based careers.

Though performing at the top level in South Africa, the ex-House of Assembly, Quintile 5 and Independent schools are not globally competitive. The average scale scores for these groups are at or below the centrepoint of 500.

The performance of the top end performers was analysed using the TIMSS international performance benchmarks and the changes tracked over time. Table 4 below describes the proportion of learners who performed at scores of 400 and above.

From 2002 to 2011, the number of learners scoring above the low benchmark of 400 more than doubled, from 10.5% to 24%. Nevertheless, the number of those performing at the top end must improve to compare to international achievement profiles. Schools that have been traditionally well resourced need to be challenged and supported to improve the performance of learners in their schools. South Africa needs to re-affirm the agenda for excellence in educational outcomes.

		Advanced	High	Intermediate	Low
	Total >400	>625	625-550	550-475	475-400
TIMSS 2002	10,50%	0,6	1,5	2,8	5,6
TIMSS 2011	24%	1	2	6	15

Table 4: Trends in mathematics performance for Grade 9 learners in South Africa at the international benchmarks in 2002 and 2011

Learners, mathematics and science

Information provided by learners is used to report on achievement by age and gender and on learners' attitudes to mathematics and science, and their educational aspirations.

Age

The average age of Grade 9 learners overall, at the time of administration of the study, was 16.0 years. The average age of the girls was 15.8 years and the average age of the boys was 16.3 years. There is a relationship between age and achievement. Mathematics and science achievement is highest for age-grade appropriate learners. For younger and over-age learners the achievement scores decreases.

Gender

Nationally, in both mathematics and science, girls outperform boys but this difference is not statistically significant. In eight of the nine provinces, there is no significant gender difference in the performance of boys and girls in mathematics or science, while in the Western Cape boys outperform girls in both mathematics and science.

Gender and Age

The patterns of performance by gender and age are the same for mathematics and science achievement: (i) at younger ages, girls outperform boys, (ii) at age-grade appropriate levels boys outperform girls and (iii) for over-age learners there is no gender difference in mathematics and science achievement scores.

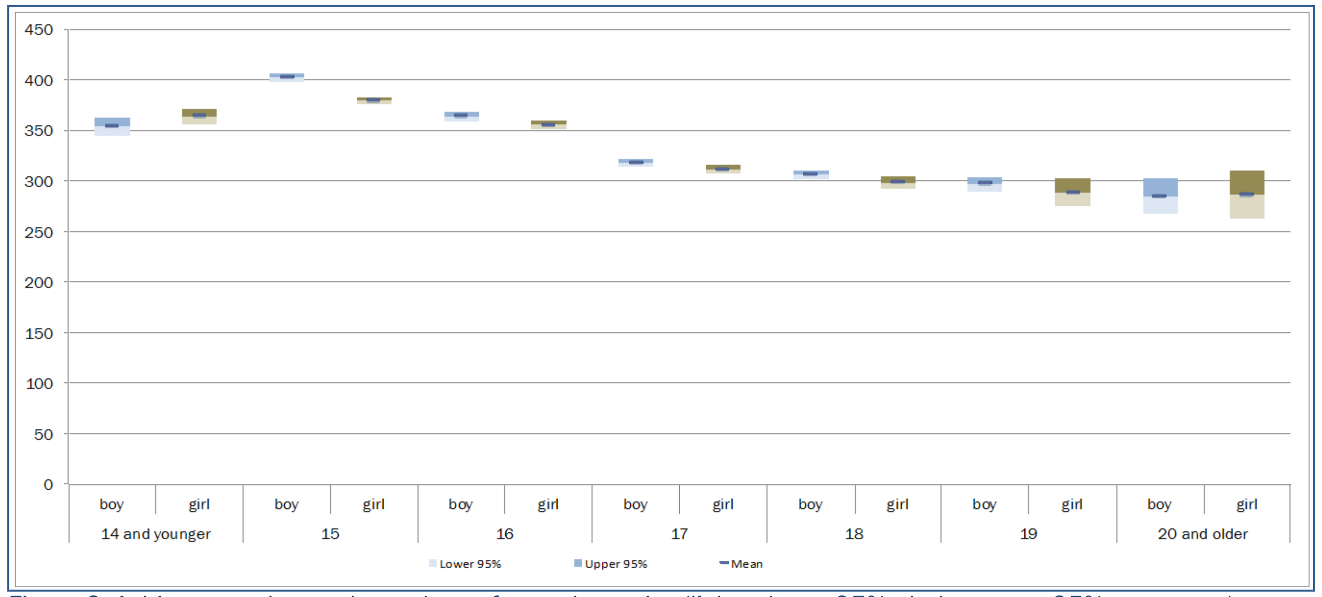


Figure 6: Achievement by gender and age, for mathematics (light = lower 95%; dark = upper 95%; – = mean)

Learner attitudes to mathematics and science

South African learners reported they valued and enjoyed learning mathematics and science. However their confidence in learning these subjects was low and it decreased between 2002 and 2011. In 2002, 10% of learners reported 'low confidence' in learning mathematics and science, and in 2011 this increased to 24%.

Learner aspirations

South African learners have high aspirations. The majority of Grade 9 learners (54%, compared to 56% of the International group) aspired to proceed to a university education after school, while 14% (compared to 15% internationally) aspired to a post-secondary education and 25% (compared to 15% internationally) aspired to a senior secondary or less education.

MATHEMATICS	Ave scale score (SE)	Achievement distribution
Grade 9 TIMSS 2011	352 (2.5)	
Grade 9 TIMSS 2002	285 (4.2)	
Grade 8 TIMSS 2002	264 (5.5)	
Grade 8 TIMSS 1999	275 (6.8)	
Grade 8 TIMSS 1995	276 (6.7)	
SCIENCE		
Grade 9 TIMSS 2011	332 (3.7)	
Grade 9 TIMSS 2002	268 (5.5)	
Grade 8 TIMSS 2002	244 (6.7)	
Grade 8 TIMSS 1999	243 (7.8)	
Grade 8 TIMSS 1995	260 (7.9)	

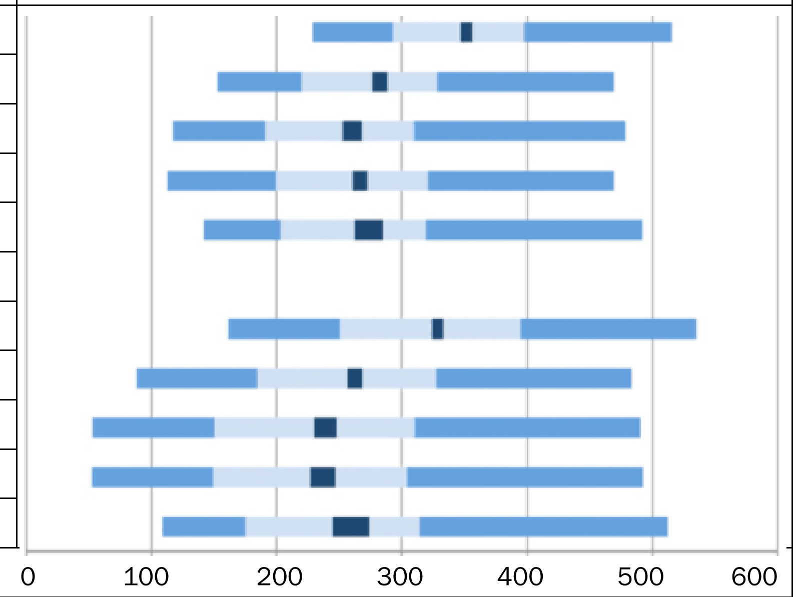
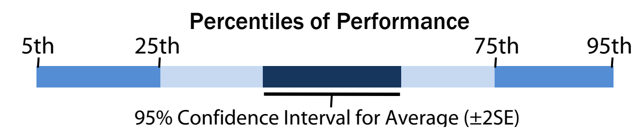


Figure 1: Trends in South African Mathematics and Science Achievement: 1995 to 2011



The average national scale score for mathematics and science remained static over the years 1995, 1999 and 2002. This is likely attributable to the structural and educational changes made as the country moved from apartheid to a democratic state after 1994.

In contrast, from 2002 to 2011, in the public school sector the national average mathematics score increased by 63 points and the national average science score by 60 points. TIMSS estimates that within a 4-year testing cycle a country could improve by a maximum of up to 40 points (i.e. one grade level). The increases over the two cycles of TIMSS in South Africa mean that learner performance has improved by one and a half grade levels.

For the period 1995 to 2002, the South African score distribution for both mathematics and science, from the 5th to 95th percentile, was one of the widest of all countries participating in TIMSS. This reflects the wide disparities in society and in schools, and is evident in the educational outcomes of the learners. In 2011, the variance in the range of mathematics and science scores in South Africa decreases, suggesting that the country is moving towards more equitable educational outcomes.

The achievement scores at the 5thpercentile, generally those of learners from low-income households and the most disadvantaged schools, have increased between 2002 and 2011.

Country	Average Scale Score	SE
Korea, Rep. of	613	2,9
Singapore	611	3,8
Chinese Taipei	609	3,2
Hong Kong SAR	586	3,8
Japan	570	2,6
Russian Federation	539	3,6
Israel	516	4,1
Finland	514	2,5
United States	509	2,6
England	507	5,5
Hungary	505	3,5
Australia	505	5,1
Slovenia	505	2,2
Lithuania	502	2,5
TIMSS Scale Centerpoint 500		
Italy	498	2,4
New Zealand	488	5,5
Kazakhstan	487	4
Sweden	484	1,9
Ukraine	479	3,9
Norway	475	2,4
Armenia	467	2,7
Romania	458	4
United Arab Emirates	456	2,1
Turkey	452	3,9
Lebanon	449	3,7
Malaysia	440	5,4
Georgia	431	3,8
Thailand	427	4,3
Macedonia, Rep. of	426	5,2
Tunisia	425	2,8
Chile	416	2,6
Iran, Islamic Rep. of	415	4,3
Qatar	410	3,1
Bahrain	409	2
Jordan	406	3,7
Palestinian Nat'l Auth.	404	3,5
Saudi Arabia	394	4,6
Indonesia	386	4,3
Syrian Arab Republic	380	4,5
Morocco	371	2
Oman	366	2,8
Ghana	331	4,3
Ninth Grade Participants		
Botswana	397	2,5
South Africa	352	2,5
Honduras	338	3,7

Table 1: Mathematics Achievement

International Mathematics and Science Achievement

Forty-two countries participated in TIMSS 2011 at the Grade 8 level.

The average mathematics country scale scores (Table 1 on the left) and the average science country scale scores (table 2 on the right) are ranked from highest to lowest.

For mathematics, five Asian countries – Korea, Singapore, Chinese Taipei, Hong Kong SAR and Japan – have the highest achievement score at the Grade 8 level.

For science, Singapore, Chinese Taipei, Republic of Korea, Japan and Finland are the five countries with the highest achievement score at the Grade 8 level.

The top five countries have average achievement scores above the high international benchmark of 550, for both mathematics and science.

Fourteen countries performed above the centrepoint of 500 points in mathematics and 18 did so in science. While there were small differences from country to country, there was a substantial range of performance from the top-performing to the lower-performing countries.

At the Grade 8 level, the six lowest performing countries for mathematics who perform below the low benchmark score (less than 400) are Saudi Arabia, Indonesia, Syrian Arab Republic, Morocco, Oman and Ghana. The six lowest performing countries, for science, are Qatar, Republic of Macedonia, Lebanon, Indonesia, Morocco and Ghana. Morocco and Ghana are two countries that have average scale scores below the low benchmark score (less than 400).

Three countries, South Africa, Botswana and Honduras, administered the assessments at the Grade 9 level. All three continued to demonstrate low performances at this level, for both mathematics and science. Their national scores were among the bottom six countries at the Grade 8 level and below the low-performance benchmark. For mathematics, Botswana achieved an average scale score of 397 (2.5); South Africa achieved at 352 (2.5) and Honduras achieved at 338 (3.7). For science Botswana achieved a score of 404 (3.6); Honduras achieved 369 (4.0) and South Africa achieved 332 (3.7).

Schools in South Africa

For TIMSS 2011, the sample was drawn from public ordinary schools (256 schools) and independent schools (29 schools) to assess if there were differences in how they performed. Additional variables on the basis of each school's quintile ranking and former racial categorisation were also included as these normally serve as a proxy for privilege and resourcing.

Public and independent

Table 3 compares the Mathematics and Science achievement averages for the different types of schools. Independent schools achieved higher average scores, in both mathematics and science, than public schools (close to 1.5 standard deviation). For mathematics, the public schools score was 348 (2.5) and the independent schools score was 474 (17.1); for science the public scores score was 327 (3.7) and the independent schools score was 479 (19.0).

School Type	Math	Science
Independent	474 (17.1)	479 (19.0)
Public	348 (2.5)	327 (3.7)
South Africa	352 (2.5)	332 (3.7)
Quintile 1	316 (5.7)	279 (7.9)
Quintile 2	318 (3.6)	285 (6.4)
Quintile 3	336 (4.0)	314 (5.9)
Quintile 4	360 (5.6)	348 (7.6)
Quintile 5	438 (9.7)	445 (12.6)

Table 3: Achievement (SE) by school type

Poverty index of the school

As expected, there was a relationship between the poverty index of the school and achievement in mathematics and science. Quintile 1 and 2 schools performed at similar achievement levels, lower than the achievement levels of the better-resourced Quintile 3, 4 and 5 schools. Quintile 5 schools achieved a much higher average achievement score than the other quintiles.

Independent schools are generally better resourced and as a group would be categorised closer to the Quintile 5 ranked public schools. The independent and Quintile 5 public schools scored 479 and 445 respectively in science, and 474 and 438 for mathematics.

Former racial categorisation of schools

Analysis of the average achievement scores of learners in schools described according to their pre-1994 racial categorisation provides insights into the changes pertaining to each historically different group. The average achievement scores for the former House of Assembly (HOA - White) administered schools show that they were the highest performing group and the former House of Representatives (HOR – Coloured) and ex-African administered schools were the lowest performing.

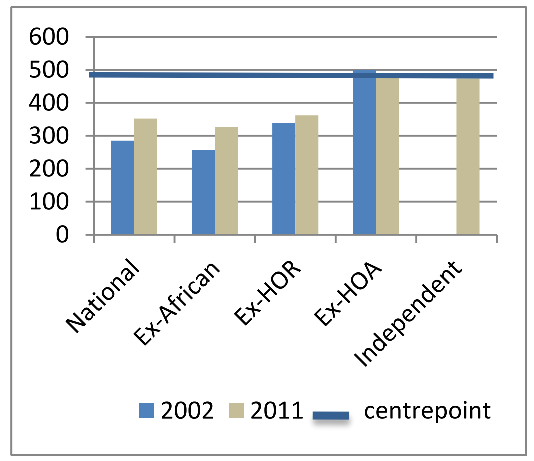


Figure 5: Mathematics achievement by former School Department

Though learners from the former African administered schools achieved the lowest scores in the 2011 study, they also demonstrated the greatest improvement between 2002 and 2011, by 63 points for science and 70 point for mathematics.

By contrast, the average achievement scores, for mathematics and science, for learners in former HoA administered schools do not show improvement over the TIMSS 2002 and TIMSS 2011 periods. These are schools that, in general, are better resourced, generate higher school fees and generally serve learners from middle class homes.

The public former HOA-administered schools and the private independent schools achieved at similar levels in mathematics and science and both performed at or below the centrepoint score of 500 points.

Mathematics and Science Provincial Performance

The increase in the national average mathematics and science scale score from TIMSS 2002 to TIMSS 2011 is reflected by a similar increase in the scores of most provinces over the same time period.

Mathematics

In TIMSS 2011, the top three performing provinces are Western Cape, Gauteng and Northern Cape. The three lowest performing provinces are KwaZulu-Natal, Limpopo and the Eastern Cape.

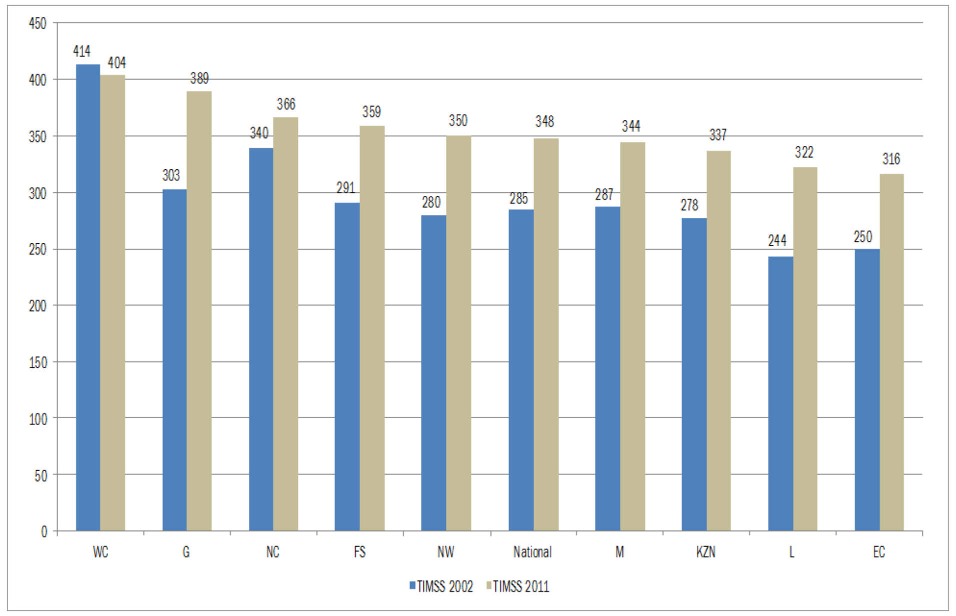


Figure 3: Provincial Mathematics performance

In the majority of provinces, the average score has increased since 2002, with the highest increases in Gauteng (86 points), Limpopo (78 points), North West (70 points), Free State (68 points) and Eastern Cape (66 points). The average score for the Western Cape decreased from 2002 to 2011, although it is not a statistically significant drop.

Science

As for mathematics, the top three performing provinces in science are Western Cape, Gauteng and Northern Cape, and the lowest performing provinces are KwaZulu-Natal, Limpopo and the Eastern Cape.

In the majority of the provinces, the average scale score has increased since 2002, with the highest increases in Gauteng (86 points), North West (74), Limpopo (68) and Eastern Cape (60). The average scale score in the Western Cape dropped by 12 points and in Northern Cape increased by 11 points. These changes are not statistically significant.

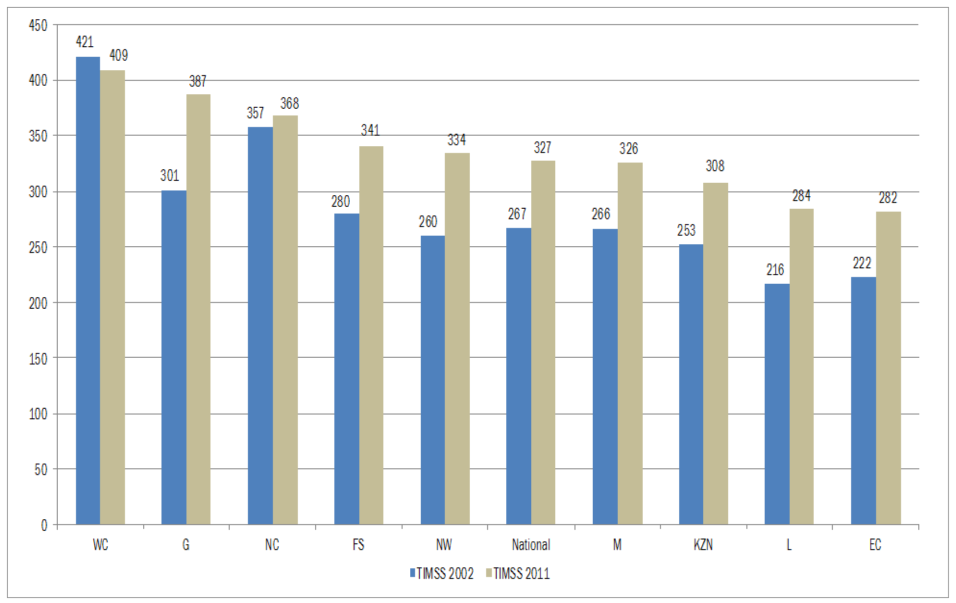


Figure 4: Provincial science performance

In 2002, the difference in performance between the highest and lowest performing provinces was 170 points for mathematics and 205 points for science. This difference decreases in 2011, with an 88-point difference for mathematics and 127 points difference for science. This suggests a move towards more equitable educational outcomes.

A striking feature of the mathematics and science scores is that the average scale score of the top seven countries exceeds South African performance at the 95th percentile. This means that the most proficient learners in South Africa approached the average performance in Singapore, Chinese Taipei, Republic of Korea Japan, Finland, Slovenia and Russian Federation.

Five African countries, Tunisia, Morocco, Ghana, Botswana and South Africa, participated in TIMSS 2002 and TIMSS 2011. It is therefore possible to track the change in mathematics and science performance for these countries. Ghana and South Africa show the greatest improvement in average scores with Ghana improving by 51 scale score points and South Africa improving by 65 scale score points, for mathematics between 2002 and 2011. Both countries started with very low scores in 2002 and have high levels of disadvantage and inequality.

The context of mathematics and science learning in South Africa

Education and learning is shaped by learners' school, home and community environments. This section reports on South African home and school dynamics, and contrasts these with international findings. In addition it provides information on public schools by province and on the independent school sector, comparing the changes that occurred between 2002 and 2011. Figure 2 on the following page illustrates the change in provincial mathematics and science achievement in the nine years from 2002 to 2011. It also illustrates the provincial variation in the contextual dynamics underpinning achievement.

Improvement in achievement scores

Between TIMSS 2002 to TIMSS 2011, there has been an improvement in the Grade 9 mathematics achievement scores in the public school sector, with the average scale score increasing 63 points, from 285 to 348. For Grade 9 science, the average scale score increased by 60 points, from 267 to a score of 327.

Country	Average Scale Score	SE
Singapore	590	4,3
Chinese Taipei	**564**	**2,3**
Korea, Rep. of	560	2
Japan	**558**	**2,4**
Finland	552	2,5
Slovenia	**543**	**2,7**
Russian Federation	542	3,2
Hong Kong SAR	**535**	**3,4**
England	533	4,9
United States	**525**	**2,6**
Hungary	522	3,1
Australia	**519**	**4,8**
Israel	516	4
Lithuania	**514**	**2,6**
New Zealand	512	4,6
Sweden	**509**	**2,5**
Italy	501	2,5
Ukraine	**501**	**3,4**
TIMSS Scale Centrepoint 500		
Norway	**494**	**2,6**
Kazakhstan	490	4,3
Turkey	**483**	**3,4**
Iran, Islamic Rep. of	474	4
Romania	**465**	**3,5**
United Arab Emirates	465	2,4
Chile	**461**	**2,5**
Bahrain	452	2
Thailand	**451**	**3,9**
Jordan	449	4
Tunisia	**439**	**2,5**
Armenia	437	3,1
Saudi Arabia	**436**	**3,9**
Malaysia	426	6,3
Syrian Arab Republic	**426**	**3,9**
Palestinian Nat'l Auth.	420	3,2
Georgia	**420**	**3**
Oman	420	3,2
Qatar	**419**	**3,4**
Macedonia, Rep. of	407	5,4
Lebanon	**406**	**4,9**
Indonesia	406	4,5
Morocco	**376**	**2,2**
Ghana	306	5,2
Ninth Grade Participants		
Botswana	404	3,6
Honduras	**369**	**4**
South Africa	332	3,7

Table 2: Science Achievement

South African mathematics and science curriculum

For mathematics, TIMSS 2011 assessed the content areas of numbers (30%), algebra (30%), geometry (20%) and data and chance (20%) at cognitive levels of knowing (35%), applying (40%)and reasoning (25%). For science, TIMSS 2011 assessed the content areas of biology (35%), chemistry (20%), physics (25%) and earth sciences (20%), at cognitive levels of knowing (35%), applying (35%) and reasoning (30%).

During the period 2002 to 2011, the Revised National Curriculum Statement (RNCS) guided the instruction and learning of mathematics and science. A comparison of the TIMSS assessment framework and the South African intended curriculum reveals 94% mathematics coverage and 90% science coverage. Mathematics and science teachers reported that they had implemented 72% and 62%, respectively, of the RNCS. More than 85% of learners were taught by teachers who reported they were 'well-prepared' to teach mathematics or science.

Schools and School Climate

There is growing evidence that learners' perceived lack of school safety adversely affects academic performance. In TIMSS 2011, teachers and learners reported on the perceived level of school safety, the degree of order at schools as well as the incidence of bullying.

The self-reported data indicates that 41% of Grade 9 learners attended schools where principals rated discipline and safety as a 'moderate' problem - the lowest category in the index. By contrast, internationally, 18% of the TIMSS learners attended schools where principals rated discipline and safety as a 'moderate problem'. Only 21% of Grade 9 learners were taught by mathematics teachers who rated their schools as 'safe and orderly' and 55% by teachers who rated their schools as 'somewhat safe and orderly'. By contrast, internationally, 45% of learners were taught by mathematics teachers who rated their schools as 'safe and orderly' and 49% as 'somewhat safe and orderly'.

Globally, there is evidence that bullying in schools is on the rise and has a negative impact on educational achievement. In South Africa, 75% of learners reported experiencing some form of bullying, compared to the international average of 41%.

Teachers

Mathematics and Science teachers' responses in the questionnaires are indicative of the situation of teachers sampled in the study. In terms of gender, 42% of TIMSS mathematics learners and 57% of science learners were taught by female teachers. In terms of qualifications, 60% of mathematics learners and 53% of science learners were taught by teachers who had completed a degree.

Internationally, 87% of mathematics learners and 90% of science learners are taught by teachers who have completed a degree. Only 20% of South African learners were taught by teachers with less than five years of teaching experience. This is the same as for the international learners.

Professional satisfaction of South African teachers was reported as slightly lower than international averages with 42% of mathematics learners and 38% of science learners being taught by teachers who are satisfied with their profession. Internationally, 47% of mathematics learners and 47% of science learners are taught by teachers who are satisfied with their profession.

Classrooms and Resources for Mathematics and Science teaching

Key to an environment conducive to learning in schools is the availability of resources. Principals were asked about the adequacy of school resources as well as resources to support mathematics and science teaching. According to the principals surveyed in South Africa in TIMSS 2011, 87% were 'somewhat affected' and 9% 'affected a lot' by shortages of science resources. For mathematics, similarly, 85% were 'somewhat affected' and 10% 'affected a lot' by shortages of mathematics resources.

In 2002, principals reported that 39% of both mathematics and science learners, were affected by a 'low' availability of mathematics and science resources. Internationally, in 2011, 7% of learners were affected 'a lot' by lack of resources for science instruction.

Home environment

Parental education: There is a strong positive relationship between achievement and parental education. TIMSS 2011 reports that 19% of learners had at least one parent/ caregiver who had completed a university degree or higher qualification. This is an increase on 2002, when 11% of the learners had reported at least one parent with a university degree or higher. Internationally 32% of learners have at least one parent with a university degree or higher qualification.

Language of testing and language at home: In countries where a large proportion of learners are from homes where the language of the test (and thus the language of instruction) is not spoken at home, the mathematics and science scores were generally lower. In South Africa, 26% of learners reported that they 'always or almost always' spoke the language of the test at home, while 9% reported they 'never' did so. Internationally, 79% of learners reported they 'almost always or always' spoke the language of the test at home while only 4% 'never' did so.

Figure 2: A decade of South African mathematics and science education

	Math Score		Science Score		% with None or few books at home		% with maternal education above Gr 12 (completed)		% Attending Q5 Schools		Always or almost always speak language of test at home		% at 475 Intermediate & above Mathematics		% at 475 Intermediate and above Science		% Who reported being bullied often	
	2002	2011	2002	2011	2002	2011	2002	2011	2002	2011	2002	2011	2002	2011	2002	2011	2002	2011
WC	414	404	421	409	31.0%	32.3%	29.8%	24.4%		39.5%	74.0%	68.3%	30.4%	21.8%	34.3%	26.5%	3.5%	18.1%
GT	303	389	301	387	36.9%	34.5%	21.0%	26.1%		20.1%	27.4%	36.0%	1.6%	16.3%	3.2%	21.4%	8.2%	20.9%
NC	340	366	357	368	45.1%	42.5%	15.3%	20.4%		23.6%	77.4%	68.5%	11.1%	11.1%	12.4%	15.1%	1.6%	18.8%
FS	291	359	280	341	47.0%	43.5%	18.2%	18.3%		11.3%	22.7%	25.1%	3.5%	8.0%	4.6%	9.4%	6.5%	34.8%
NW	280	350	260	334	43.0%	35.7%	18.6%	18.8%		5.4%	14.5%	20.4%	1.9%	4.9%	3.6%	7.7%	6.9%	31.6%
MP	287	344	266	326	47.2%	38.1%	20.9%	15.8%		11.0%	16.3%	16.5%	5.0%	2.4%	5.2%	4.6%	10.4%	32.0%
KZ	278	337	253	308	48.9%	49.3%	17.3%	18.4%		13.4%	22.7%	16.5%	4.5%	2.6%	5.6%	4.4%	19.8%	31.4%
LP	244	322	216	284	49.2%	42.3%	17.0%	18.8%		7.7%	11.2%	13.5%	0.1%	3.2%	0.4%	3.8%	22.9%	32.5%
EC	250	316	222	282	53.4%	55.8%	11.4%	15.3%		11.5%	17.7%	16.3%	2.9%	3.2%	3.2%	4.7%	20.1%	25.3%
Independent		474		479		21.0%		68.0%				55.7%		51.3%		54.7%		17.3%
SA	285	348	267	327	45.8%	43.3%	18.1%	19.6%		15.3%	25.0%	26.1%	4.9%	7.1%	6.0%	9.5%	16.0%	27.9%