

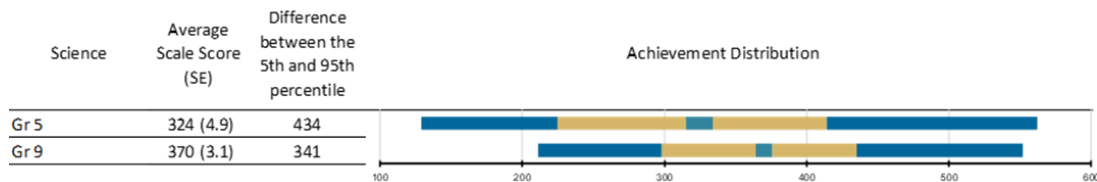
Inequalities in science achievement

Ideally, achievement outcomes should only reflect differences in learners' abilities and effort. However, in most educational systems, outcomes or achievement gaps are also associated with individual and contextual factors such as race, gender, socioeconomic status of the home and school, and geographic location.

In this newsletter we illustrate the inequalities in science outcomes, or achievement gaps, for TIMSS 2019 using [Grade 5](#) and [Grade 9](#) South African data.

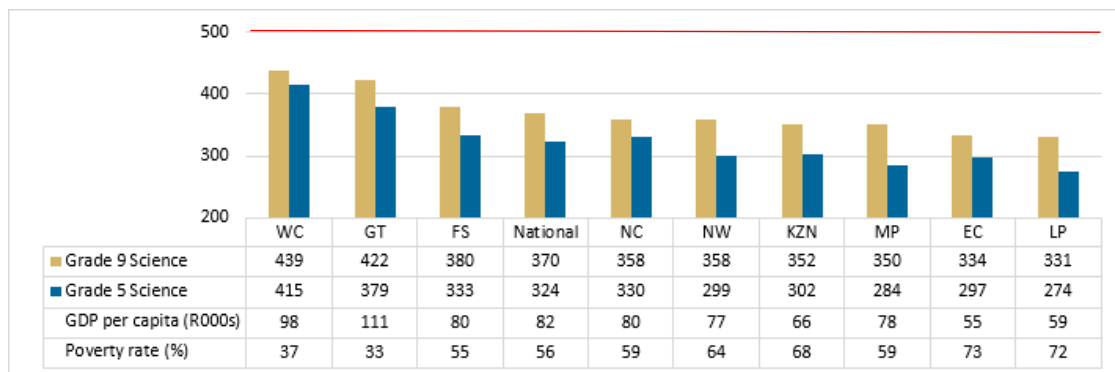
Achievement distribution inequality

The graph below illustrates the TIMSS 2019 science achievement distribution for South Africa. The achievement distributional inequality (i.e. scores between the 5th and 95th percentile) was 434 points for Grade 5 and 341 points for Grade 9, which was a higher score distribution than for mathematics. Achievement inequality was very high at primary school level and decreased in higher grades.



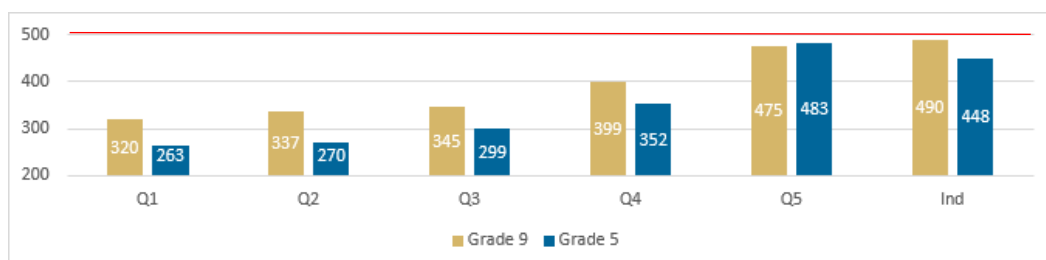
Provincial achievement gaps

The provincial departments of education are responsible for implementing education policies and programmes. The socio-economic conditions (provincial gross domestic product and poverty rates) illustrate the opportunity gradient amongst provinces, and this is linked to learner achievement. For science, the provinces that achieved the highest scores were the Western Cape and Gauteng, with Eastern Cape, Mpumalanga and Limpopo achieving the lowest scores.



Achievement gaps by school quintile

In South Africa, public schools are ranked into five poverty index groups, called quintiles. The lower the quintile rank, the more under-resourced the school, and the more likely that learners come from poorer households. The average achievement for learners in Quintile 1 and 2 schools was similar and the lowest. The average achievement in Quintile 5 and independent schools was not significantly different, but still below the Centrepoint of 500.

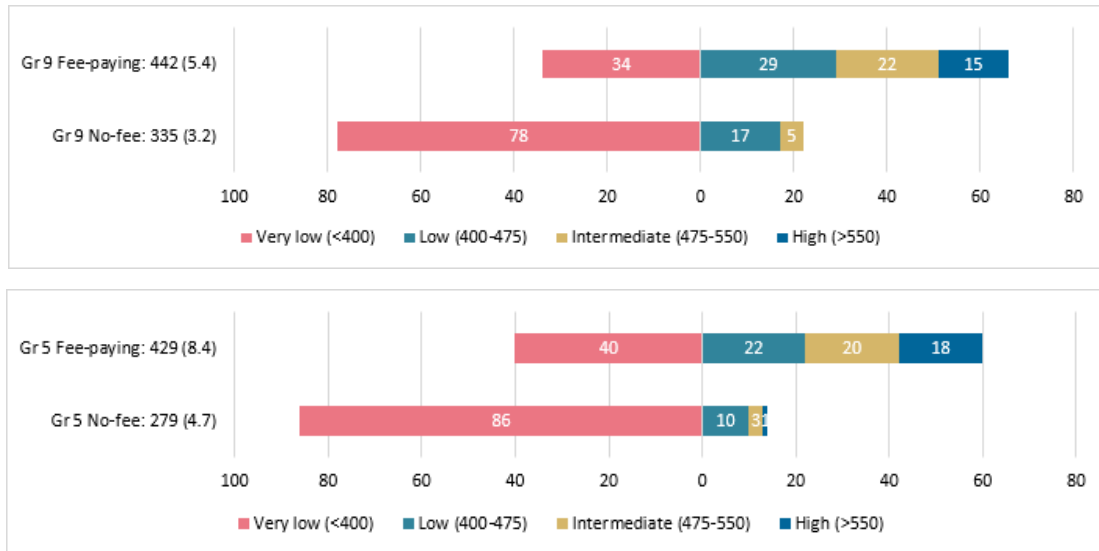


Achievement gaps between fee and no-fee status schools

The school fees for learners in Quintile 1, 2 and 3 schools (termed no-fee schools) are subsidised by the government, while learners in Quintile 4, 5 and Independent schools pay fees (termed fee-paying). In the graphs below, the percentage of learners to the left of the 0 point had not acquired basic science knowledge and skills.

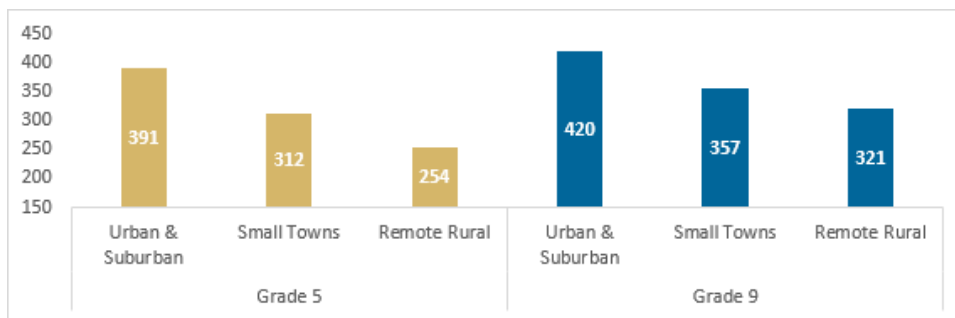
The achievement gap between fee-paying and no-fee schools at Grade 9 was 107 points, with 22% of learners in no-fee schools and 66% in fee-paying schools having basic science knowledge and skills.

The Grade 5 achievement gap between fee and no-fee schools was wider at 150 points, with 14% of learners in no-fee schools and 60% in fee-paying schools having basic science knowledge and skills.



Achievement gaps by spatial location

South Africa is a large and spatially diverse country. Roughly a third of learners attended schools in each of urban or suburban areas, in small towns, and in remote rural areas. Learners in urban and suburban schools scored significantly higher than learners attending schools in small towns, who in turn scored higher than learners in remote rural areas.



Achievement gaps by gender

The relationship between gender and achievement varies across countries. In South Africa, at both Grade 5 and 9, girls achieved significantly higher scores than boys.



Interested in using TIMSS South Africa data for research?

If you are interested in working with us on publications based on the TIMSS data, please [contact us](#).

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