TIMSS SA NEWSLETTER



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Inequalities in mathematics achievement

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

In this newsletter we illustrate the inequalities in mathematics outcomes, or achievement gaps, for TIMSS 2019 using <u>Grade 5</u> and <u>Grade 9</u> South African data.

Achievement distribution inequality

The TIMSS 2019 mathematics achievement distribution is illustrated in the graph below. The achievement distributional inequality (i.e. scores between 5th and 95th percentile) was 330 points for Grade 5 and 252 points for Grade 9. Achievement inequality was very high at primary school level and decreased as learners moved to higher grades.



Provincial achievement gaps

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



Achievement gaps by school quintile

South African 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 learners come from poorer households. The Grade 5 and 9 average mathematics

scores for learners in Quintile 1, 2 and 3 schools were similar (not statistically different). Similarly, learners in Quintile 5 and Independent schools achieved similar average scores, but their average scores were lower than the TIMSS Centrepoint of 500.



Achievement gaps between fee and no-fee status schools

The government subsidises the school fees for learners in Quintile 1, 2 and 3 schools (termed no-fee schools), while learners in Quintile 4, 5 and Independent schools pay fees (termed fee-paying). The percentage of learners to the left of the 0 point (yellow bars) had not acquired basic mathematical knowledge and skills.

The achievement gap between fee and no-fee schools at Grade 9 was 75 points, with 28% of learners in no-fee schools and 67% in fee paying schools having basic mathematical knowledge and skills.

The achievement gap between fee and no-fee schools was wider at Grade 5 at 150 points, with 13% of learners in no-fee schools and 60% in fee paying schools having basic mathematical 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.



