TIMSS SA Newsletter

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TIMSS South Africa 2019 Working Papers

The HSRC called for proposals for the secondary analysis of TIMSS South African data to produce an academic working paper. Aspirant authors attended a series of TIMSS data analysis workshops to support their writing and the working papers were externally reviewed. The six papers in this newsletter are the outcome of this process. The Working Paper series is intended to stimulate discussion and elicit comment about education in South Africa.

Gender, and attitudes towards mathematics and student achievement

This paper by Jacqueline Mosomi employed distributional analysis to investigate the relationship between attitudes towards mathematics and achievement for Grade 9 girls and boys and the gender gap in mathematics using the TIMSS 2019 South Africa dataset. Results showed that girls outperformed boys at the mean, but once individual and background characteristics were controlled for, the gender gap in mathematics achievement actually favoured boys.

Investigating grade 9 mathematics achievement in the Western Cape and Gauteng: An analysis of TIMSS 2019

In TIMSS 2019, the Western Cape and Gauteng provinces sought to increase the precision of their performance estimates through the participation of a larger school sample. This enabled the comparison of learners' mathematics performance in these two provinces against each other, and against the combined performance of the seven remaining provinces. Joel Gondwe and Gabrielle Wills identified relative system efficiencies in Gauteng and the Western Cape as reflected in notably higher levels of Grade 9 mathematics achievement in these provinces, compared to seven other provinces, after accounting for learner compositional and school resourcing differences.

Do instructional leadership practices drive educational improvement gap in South Africa? Evidence from an analysis of TIMSS 2015 and 2019

Dumisani Hompashe investigated the improvement between 2015 and 2019 Grade 9 mathematics scores in South Africa and explored the extent to which the difference in performance could be related to instructional leadership practices among schools. Using the Oaxaca-Blinder decomposition technique, he found that the TIMSS improvement in mathematics achievement was largely explained by the efficiency of the educational inputs, including those related to instructional leadership.

Subjective Well-Being and Mathematics Achievement. What is the Role of Gender, Instructional Clarity and Parental Involvement?

In this paper, Angelina Wilson Fadiji explored the relationship between satisfaction with life and mathematics. Using structural equation modelling, she examined the nature of this relationship, considering the role of gender, parental involvement and instructional clarity. Findings showed that satisfaction with life was positively related to mathematics achievement, but was not moderated by gender. By contrast, parental involvement negatively mediated this relationship, suggesting that mathematics achievement was negatively associated with certain forms of parental involvement.

Leaving boys behind: The impact of gendered repetition patterns on South Africa's TIMSS mathematics results

Heleen Hofmeyr analysed gender differences in South Africa's TIMSS Grade 9 mathematics achievement, with particular emphasis on the role of gendered grade repetition and dropout patterns in contributing to an apparent pro-girl gap in mathematics achievement. Hofmeyr uses Oaxaca-Blinder decomposition analysis to decompose the observed pro-girl gap into its explained and unexplained components, separately by school socio-economic quintile. Comparing the size and age distributions of males and females in the TIMSS sample showed that boys were more likely to have dropped out of school and twice as likely as girls to have repeated a grade by Grade 9.

Illuminating shadow education in South Africa: Mapping participation in and demand for extra lessons

This paper by Joy Olivier and Heleen Hofmeyr analysed 2019 TIMSS Grade 9 data, primarily focusing on participation in extra mathematics lessons. It sought to determine demand-side factors driving the shadow education sector in South Africa using descriptive statistics and regression analysis. They found that participation in extra mathematics lessons offered by schools was high, and greater among learners from lower socio-economic backgrounds and school quintiles.

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.