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Education and Skills Development

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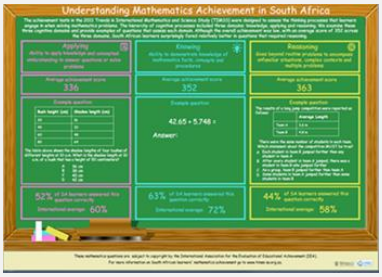
Mathematics education: how does it all add up?

The South African government has highlighted the importance of Science, Technology, Engineering and Mathematics (STEM) in the development of the country. However, the number of learners in Grade 12 passing mathematics with high quality passes is low. This has significant implications for post-school education, the labour market and the development of our society. This month's newsletter focuses on mathematics in South Africa in an attempt to understand what is happening and what needs to be done to improve teaching and learning.



Understanding Mathematics Achievement in South Africa

The achievement tests in the 2011 Trends in International Mathematics and Science Study (TIMSS) were designed to assess the thinking processes that learners engage in when solving mathematics problems. We examine example questions from the three cognitive domains of knowledge, applying and reasoning to better understand grade 9 learners' mathematics achievement.

Mathematics teachers in South Africa: Getting the recipe right

Teachers' content knowledge, practices and attitudes have an impact on learner motivation and performance. Fabian Arends and the team look at the characteristics of grade 9 mathematics teachers from the 2011 TIMSS and how these relate to learner achievement in mathematics.

Indigenous knowledge systems and ethnomathematical studies

Mogege Mosimege examines the importance of understanding indigenous knowledge systems and how they can be interpreted and enacted to guide mathematics classroom interactions. The integration of ethnomathematical studies into mathematics teaching provides a way for this to be achieved.

What has variability got to do with it?

A paper by Linda Zuze and Vijay Reddy casts doubt on the hypothesis that greater variability in the mathematical skills of boys naturally results in greater success for males in mathematics and science, suggesting instead that gender differences are better explained by social and institutional factors.

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