

## Exploring the effects of language on students' mathematics and science achievements in ASEAN countries

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### Abstract

The effect of language on achievement is an important issue as the language policy for teaching has become a sensitive and controversial topic in many ASEAN countries. This paper reports on the research that was based on a secondary analysis of performance of pupils in three ASEAN countries in the Trends in International Mathematics and Science Study (TIMSS) 2007 in which pupils wrote tests in mathematics and science. The aim of this study to investigate the effect of language on pupils' performance in mathematics and science subjects, taking into account gender differences and their socioeconomic status. Given the complexity of data collected in TIMSS, multi-level modeling techniques are used to account for the clustering effects. It found that classroom differences account for around half or more of the variations in student achievements in mathematics and science subjects in Singapore and Thailand. On the other hand, the class differences account for less than forty percent of the variations in student achievements in Malaysia. The effects of language on achievements for both subjects are not significant among Indonesia pupils but has positive effect on mathematics achievement in Malaysia and has a negative effect on science achievement in Singapore.

**Keywords:** Foreign Language, Mathematics, Communication Competence & Awareness, Cultural Understanding, Achievement and Test.

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