

Correlates of science classroom teaching with Southeast Asian and East Asian eighth graders' science achievement in TIMSS 2015

ABSTRACT

Trends in International Mathematics and Science Study (TIMSS) is an international comparative study that has been implemented by the International Association for the Evaluation of Educational Achievement (IEA) since 1995. This proposed study is aimed to identify the correlations of science classroom teachings with eighth graders' science achievement in TIMSS among Southeast Asian and East Asian countries. The freely downloadable secondary data were analyzed using IEA's International Database (IDB) Analyzer (version 4.0) for TIMSS, a plug-in for SPSS. TIMSS uses an imputation methodology, involving plausible values, to report student performance. This study found that countries with higher average science achievement allocated higher percentage of educational hours for science teaching, students were taught the TIMSS science topics, students attended schools with science laboratories and have assistance available when conducting experiments, computer availability during science lessons, with science teachings were not limited by student needs, and less frequency of student absences. Based on the research findings, policy recommendations were made to the Malaysian Ministry of Education to boost Malaysian eighth graders' science performance in the forthcoming TIMSS assessments. Keywords: TIMSS, comparative study, classroom teachings, science achievement.