

Analyzing affective factors related to eighth grade learners' Science and Mathematics achievement in TIMSS 2007

Abstract

Psychologists believe that a student's motivation is influenced by a number of values/beliefs, interests and attitudes that can be positive or negative in their effects. Highly positively motivated students would believe that the task is of value (value beliefs), also with high expectations that they would achieve success (expectancy and self-efficacy beliefs). This article analyzed the affective factors in particular on the values and expectations of Malaysian and Singaporean eighth-graders who participated in the Trends in International Mathematics and Science Study (TIMSS) in the 2007 in relation to their science and mathematics achievement. The study explored if these students' values and expectation towards science and mathematics have any correlation with their achievement in science and mathematics. The data were obtained from 4,466 Malaysian and 4,599 Singaporean Grade 8 students during TIMSS 2007. Statistical Packages for the Social Sciences version 17 was used as plug-in along with IEA International Database analyzer Version 2.0 in data analysis. A comprehensive investigation of the relationship between the variables studied provides a clearer picture to the role played by the variables in affecting students' achievement in science and mathematics. Educational implications were also deliberated by comparing these two countries that have quite a number of similarities and differences as analyzed from the socio-cultural backgrounds, geographical structures and educational system.