Attitudes towards mathematics: Effects of Individual, Motivational, and Social Support Factors

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Received 11 May 2012; Revised 4 August 2012; Accepted 19 August 2012

Abstract
This paper aims to understand how certain different but interrelated variables such as background, motivation, and social support could lead to an explanation of student attitudes towards math and to an understanding of the defining characteristics of these attitudes in the school environment. Participants consisted of 1719 Portuguese students, from fifth-to-twelfth grade. The study utilizes an adaptation of the “Intrinsic Motivation Inventory” assessing main determinants of intrinsic motivation. One section of the questionnaire—“In my Math Class”—also assesses student perceptions of teacher and peer support as well as student attitudes. The results revealed that, in general, students held positive attitudes towards mathematics and also highlighted the main effects of grade and math achievement on these attitudes. No gender effect was identified although the girls showed a continuous decline in attitudes the further they progressed in school. A hierarchical analysis using structural equation modeling showed that motivation-related variables are the main predictors of attitudes towards mathematics and that teachers and the social support of peers are also highly significant in understanding these attitudes.

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Social Attitudes. Outside of brain development and training, the environment in which math is learned also affects the performance of students. While some argue that there are differences between girls and boys in the ability each have to learn math, the difference is largely a social construction, according to a study published in Child Development Research. In the United States, in particular, there is a difference between the attitudes boys and girls take towards the subject of math. 

Child Development Research; Attitudes towards Mathematics: Effects of Individual, Motivational, and Social Support Factors; Maria de Lourdes Mata, Vera Monteiro, and Francisco Peixoto; 2012.