ZMATH 2015f.00136
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Adapting the academic motivation scale for use in pre-tertiary mathematics classrooms.

Summary: The Academic Motivation Scale (AMS) is a comprehensive and widely used instrument for assessing motivation based on the self-determination theory. Currently, no such comprehensive instrument exists to assess the different domains of motivation (stipulated by the self-determination theory) in mathematics education at the pre-tertiary level (grades 11 and 12) in Asia. This study adapted the AMS for this use and assessed the properties of the adapted instrument with 1610 students from Singapore. Exploratory and confirmatory factor analyses indicated a five-factor structure for the modified instrument (the three original AMS intrinsic subscales collapsed into a single factor). Additionally, the modified instrument exhibited good internal consistency (mean $\alpha = .88$), and satisfactory test-retest reliability over a 1-month interval (mean $r_{xx} = .73$). The validity of the modified AMS was further demonstrated through correlational analyses among scores on its subscales, and with scores on other instruments measuring mathematics attitudes, anxiety and achievement.

Classification: C24

Keywords: academic motivation scale; mathematics motivation; self-determination theory; exploratory factor analysis; confirmatory factor analysis
doi:10.1007/s13394-014-0140-9