

Development and Validation of the Mathematics Interest Scale for Students (MIS-St)

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Abstract : This thesis details the development and validation of the Mathematics Interest Scale for Students (MIS-St), designed to quantify students' interest in mathematics. Given the link between interest and academic performance, the scale aims to provide educators and researchers with a reliable measure of this interest. The literature review identified key internal and external factors influencing interest, such as motivation, classroom environment, and attitudes toward mathematical inquiry and methods. The scale comprises five dimensions: attitudes toward mathematical inquiry, interest in the mathematics classroom, interest in amateur mathematics, interest in careers in mathematics, and attitudes toward mathematical methods. The development process involved content validation through a pilot study with high school students and field testing with 394 students from China and Malaysia. Principal component factor analysis and reliability assessment confirmed the scale's validity and internal consistency, with alpha reliabilities ranging from 0.88 to 0.92. The results indicate that the MIS-St is a practical tool for quantifying students' interest in mathematics, offering valuable insights for educators to develop targeted teaching strategies and for researchers to examine the relationship between interest and academic achievement.

Keywords : mathematics interest scale, student interest, academic performance, factor analysis, educational strategies

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