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From Perception to Performance: Unpacking the Role of Student Attitudes in Mathematics Achievement

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Abstract

This study examines factors influencing students' perceptions of mathematics, focusing on confidence, anxiety, and prior academic performance. Using survey data from 332 students in Oman, regression, factor, and cluster analyses were conducted. Results show that while academic performance enhances confidence, self-efficacy is the strongest predictor of engagement in mathematics. Mathematics anxiety emerged as a significant barrier, particularly among younger and female students. Three learner profiles were identified: Math Enthusiasts, Math Neutrals, and Math Anxious, indicating the need for differentiated teaching strategies. The study highlights the importance to improve confidence, reduce anxiety, and promote sustained engagement in mathematics learning.

Keywords: Mathematics confidence, Student perceptions, Math anxiety