

Attitude and Achievement: A Study of Learners' Approaches to Mathematics

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Mathematics is a fundamental subject that develops critical thinking, problem-solving skills, and logical reasoning. Students' success in mathematics is influenced not only by cognitive abilities but also by their attitudes and approaches to learning. Research has consistently shown that students with positive attitudes toward mathematics tend to perform better academically than those with negative perceptions of the subject.

The connection between attitude and mathematics achievement has been extensively examined in educational research. Ma and Kishor (1997) conducted a meta-analysis that revealed a significant positive relationship between students' attitudes toward mathematics and their academic achievement, suggesting that students who enjoy mathematics, value its importance, and feel confident in their abilities are more likely to achieve higher scores. Similarly, Kumar and Singh (2011) found that favorable attitudes toward mathematics are positively correlated with academic performance.

Beyond the direct relationship between attitude and achievement, research indicates that these factors influence one another reciprocally. Ma (1997) argued that achievement in mathematics can enhance students' attitudes toward the subject, while positive attitudes can further improve achievement. This reciprocal relationship creates a cycle in which success builds confidence and motivation, leading to greater engagement and better performance.

Learners' approaches to studying mathematics also play a significant role in determining achievement. Garcia et al. (2016) found that students who adopt deep learning approaches, characterized by genuine understanding and active engagement, tend to achieve better results than those who rely on surface learning strategies such as memorization. Kadijevich (2008) reported that self-confidence is one of the strongest predictors of mathematics achievement across different educational contexts.

In conclusion, the literature demonstrates a strong relationship between learners' attitudes, learning approaches, and achievement in mathematics. Positive attitudes, self-confidence, and deep learning strategies contribute significantly to improved performance, while achievement itself can reinforce favorable attitudes toward the subject. Various studies collectively highlight the importance of fostering both positive attitudes and effective learning approaches in mathematics education. Therefore, teachers and educational institutions should create supportive learning environments that encourage confidence, engagement, and meaningful understanding to enhance students' mathematical achievement.

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