

ZMATH 2016e.00137

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The power of emotions: can enjoyment and boredom explain the impact of individual preconditions and teaching methods on interest and performance in mathematics?

Learn. Instr. 44, 117-127 (2016).

Summary: We investigated students' emotions as intervening variables between teaching methods, motivational and performance prerequisites, and outcomes. 144 students from German schools were assigned to two conditions. In one condition, students were prompted to develop multiple solutions for modelling problems that were missing information. In the other condition, students had to find one solution for modelling problems that were not missing information. Students' interest and performance were measured before and after the 5-lesson teaching unit, and students' enjoyment and boredom were measured during the teaching unit. The path analyses revealed: (1) Students who developed more solutions enjoyed their mathematics lessons more and were less bored than students in the other condition; (2) Enjoyment affected students' interest and performance at posttest and mediated the effects of prompting them to find multiple solutions on interest at posttest; (3) Students' enjoyment during learning mediated the effects of prior interest on interest at posttest.

Classification: C23 C33 D53

Keywords: interest; performance; multiple solutions; enjoyment; boredom

doi:10.1016/j.learninstruc.2016.05.001