Enhancing student beliefs about mathematical problem solving: effects of a problem-solving based intervention.


Summary: Previous studies indicated that students tended to hold less satisfactory beliefs about the discipline of mathematics, beliefs about themselves as learners of mathematics, and beliefs about mathematics teaching and learning. However, only a few studies had developed curricular interventions to change students’ beliefs. This study aimed to examine the effect of a problem-solving curriculum (i.e., Mathematical Problem Solving for Everyone, MProSE) on Singaporean Grade 7 students’ beliefs about mathematical problem solving (MPS). Four classes ($n = 142$) were engaged in ten lessons with each comprising four stages: understand the problem, devise a plan, carry out the plan, and look back. Heuristics and metacognitive control were emphasized during students’ problem solving activities. Results indicated that the MProSE curriculum enabled some students to develop more satisfactory beliefs about MPS. Further path analysis showed that students’ attitudes towards the MProSE curriculum are important predictors for their beliefs.

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