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Developing a Culture of problem solving through heuristic strategies

It is a universally accepted truth that problem solving forms the basis for successful mathematics education. Problem solving is an indicator of the state of comprehension of the concepts that pupils are taught. They help their solvers realize what former knowledge is applicable in a new situation, what role this knowledge plays in it, and which piece of knowledge turns out to be useless, or even erroneous, and thus becomes an obstacle to further development of mathematical knowledge and pupils' skills.

In my talk, I will present the results of a three-year project, The development of a culture of solving mathematical problems in Czech schools (Czech Science Foundation project P407/12/1939) focusing on the use of heuristic strategies in problem solving. Heuristic strategies have been used in Polya's and Schoenfeld's understanding of the concept. The theoretical background of the research was Brousseau's Theory of Didactical Situations.

The use of heuristic strategies will be explored from two different perspectives: how heuristic strategies develop pupils' understanding of mathematics through using them, and how teachers change in consequence to giving their pupils the chance to use these strategies.

Keywords: Problem solving, heuristic strategies, culture of problem solving, creativity