Mathematics Teachers' Specialized Knowledge for managing problem-solving tasks

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Abstract: Problem solving is at the core of the methodological demands in the mathematics classrooms, a major purpose being to give students the opportunity to deal with rich learning tasks. When planning, designing and/or selecting problems, teachers (and researchers) face several questions: why should I pose this problem to my students?, how?, is this context interesting for them?, is it a problem to apply what my students have learnt or will they build new knowledge?, which are the solutions and ways of approaching this problem?, how will my students solve it?, what kind of difficulties will my students find?, all of them?, how can I manage these difficulties?, what kind of help will I give them?, could it be possible to extent the problem, maybe using a "what if..." strategy?, what knowledge should I have to pose and manage this problem in the classroom?, amongst others.

Reflection on these questions leads us to teachers' knowledge. We will focus on that kind of teachers' knowledge that makes sense, is useful for and is specific of mathematics teachers: the mathematics teachers' specialized knowledge (MTSK). One will show a teacher's MTSK whilst managing a mathematical problem in a secondary classroom. MTSK is related to learning opportunities, especially to the improvement of problem solving and problem posing abilities. Ideas concerning teachers' education will be presented