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Framing the use of computational technology in problem solving approaches.

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Summary: Mathematical tasks are key ingredient to foster teachers and students' development and construction of mathematical thinking. The use of distinct computational tools offers teachers a variety of ways to represent and explore mathematical tasks which often extends problem solving approaches based on the use of paper and pencil. We sketch a framework to characterize ways of reasoning that emerge as result of using computational technology to solve a task that involves dealing with variation phenomena.

Classification: D50 G40 G70 U70

Keywords: problem solving; teaching; lesson planning; framework; computer as educational medium; problem posing; student activities; reasoning; teacher role; conjectures; geometry software; phenomena of variation; exploratory learning; discovery learning; area; parallelograms; triangles; differential calculus; computer algebra; loci of points

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