

**INVESTIGATING MENTAL MATHEMATICS' SOLVING PROCESSES:
THE DEVELOPMENT OF A RESEARCH PROGRAM**

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For more than 10 years now, I have been leading a research program focused on mental mathematics. This program is oriented toward scrutinizing the solving processes and the nature of the mathematical activity generated by solvers in mental mathematics contexts about numerous themes (beyond numbers, e.g., in algebra, geometry, statistics, functions). Theoretically grounded in the enactivist theory of cognition, a number of findings to date have been developed from the work conducted in classrooms with students (of various grade-level). From scrutinizing the strategies engaged in for solving tasks in these contexts, these results range from the tailored and emergent nature of these strategies, their inherent creative stance to approaching the tasks, as well as their specificity and potential to point out elements differentiating them from paper-and-pencil work. Finally, this work led beyond the mere consideration of strategies and toward investigating the environment into which these mental mathematics contexts appear to plunge solvers. In this Invited Lecture, I offer a synthesis of these findings and outline the future directions of this research program on mental mathematics.