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Titolo	Broadening the Scope of Research on Mathematical Problem Solving : A Focus on Technology, Creativity and Affect / / edited by Nélia Amado, Susana Carreira, Keith Jones
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Descrizione fisica	1 online resource (573 pages)
Collana	Research in Mathematics Education, , 2570-4729
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Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di contenuto	The use of digital tools in web-based mathematical problem solving competitions: Different levels of sophistication in solving-and-expressing -- Solving probabilistic problems with technologies in middle and high school: the French case -- Prospective high school teachers' use of a dynamic geometry system to understand mathematical concepts and engage in problem solving activities -- The interactive whiteboard and the development of dialogic interaction in the context of problem solving -- Designing learning scenarios with robots for the learning of mathematics -- Developing geometrical exploration skills through dynamic geometry -- Reacting Chapter -- Highlighting creativity in children's solutions to mathematical problem solving beyond the school -- Creative mathematical thinking while solving a multiple solution task with infinitely many solutions -- Problem solving, creativity and visualization: The power of seeing -- Creativity and problem solving with early childhood future teachers --

Stimulating mathematical creativity through constraints in problem solving -- Mathematical creativity: Views from the field -- Mathematical research projects: Creative processes, actions and mediations -- Creativity and problem-solving: Perspectives for mathematics education -- Reacting chapter -- Students' attitudes in mathematical problem solving competitions -- Roles of aesthetics and affect in mathematical problem solving -- On choice, collaboration and closeness in problem solving: aesthetic experiences of pre-service teachers -- Facebook and WebQuests as tools for engagement with mathematics: The emotions experienced in the Math@XXI gymkhana -- Engagement and perseverance in mathematical problem solving -- Positioning and emotions in learning Algebra: the case of high and middle achieving students -- Reacting chapter -- Problem solving in a context of middle-school students doing computer programming tasks; connections to mathematics, affect and creativity -- Towards a more comprehensive approach to research on mathematical problem solving.

Sommario/riassunto

The innovative volume seeks to broaden the scope of research on mathematical problem solving in different educational environments. It brings together contributions not only from leading researchers, but also highlights collaborations with younger researchers to broadly explore mathematical problem-solving across many fields: mathematics education, psychology of education, technology education, mathematics popularization, and more. The volume's three major themes—technology, creativity, and affect—represent key issues that are crucially embedded in the activity of problem solving in mathematics teaching and learning, both within the school setting and beyond the school. Through the book's new pedagogical perspectives on these themes, it advances the field of research towards a more comprehensive approach on mathematical problem solving. Broadening the Scope of Research on Mathematical Problem Solving will prove to be a valuable resource for researchers and teachers interested in mathematical problem solving, as well as researchers and teachers interested in technology, creativity, and affect.
