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Titolo	Opere e sentieri : 3 : Testimonianze e riflessioni sull'arte come veicolo / a cura di Antonio Attisani, Mario Biagini
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Lingua di pubblicazione	Non definito
Formato	Materiale a stampa
Livello bibliografico	Monografia

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Autore	Mazorodze Ronald
Titolo	Cognitive and Metacognitive Problem-Solving Strategies in Post-16 Physics : A Case Study Using Action Research / / by Ronald Mazorodze, Michael J. Reiss
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	9783030246860 3030246868
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Descrizione fisica	1 online resource (IX, 142 p. 23 illus., 12 illus. in color.)
Disciplina	507.1 530.071
Soggetti	Science - Study and teaching Teachers - Training of Physics Astronomy Learning, Psychology of Study skills Education - Research Science Education Teaching and Teacher Education Physics and Astronomy Instructional Psychology Study and Learning Skills Research Methods in Education
Lingua di pubblicazione	Inglese

Formato	Materiale a stampa
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction: Problem solving and the curriculum -- What we know from the literature -- The study -- The findings -- Discussion and implications.
Sommario/riassunto	This book reports on a study on physics problem solving in real classrooms situations. Problem solving plays a pivotal role in the physics curriculum at all levels. However, physics students' performance in problem solving all too often remains limited to basic routine problems, with evidence of poor performance in solving problems that go beyond equation retrieval and substitution. Adopting an action research methodology, the study bridges the `research-practical divide´ by explicitly teaching physics problem-solving strategies through collaborative group problem-solving sessions embedded within the curriculum. Data were collected using external assessments and video recordings of individual and collaborative group problem-solving sessions by 16-18 year-olds. The analysis revealed a positive shift in the students' problem-solving patterns, both at group and individual level. Students demonstrated a deliberate, well-planned deployment of the taught strategies. The marked positiveshifts in collaborative competences, cognitive competences, metacognitive processing and increased self-efficacy are positively correlated with attainment in problem solving in physics. However, this shift proved to be due to different mechanisms triggered in the different students.