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Nota di contenuto	Dialogic Development of Children's Ideas using Computation in the Classroom: keeping it simple, Ian Lawrence -- Technology in Teaching Physics: Benefits, Challenges, and solutions, Ton Ellermeijer, Trinh-Ba Tran -- Sharing LHC Research and Discovery with High School Students, Marcia Begalli, Uta Bilow -- A Mathematical Model of Peer Instruction and its Applications, Hideo Nitta -- Research-based Alternatives to Traditional Physics Teaching at University and College, Jenaro Guisasola -- Organizing Teaching to Solve Problems: the Case of Latitude and Longitude in Pre-Service Primary Teachers' Education, Limiñana, R., Menargues, A., Rosa, S. -- A Reflection on Research-Based Alternatives of Physics Teaching on Educational Activity System, Cristiano Mattos -- The Design of Activities based on Cognitive Scaffolding to Teach Physics, Genaro Zavala -- Examining the Relationships Among North Dakota State University -- Innovation in

Physics Teaching/learning for the Formative Success in Introductory Physics for bio-area Degrees: the Case of Fluids, Marisa Michelini, Alberto Stefanel -- Conceptual Development and Critical Attitude in Physics Education: A Pathway in the Search for Coherence, Laurence Viennot -- Indigenous and Afro Knowledge in Science Education: Dialogues and Conflicts, Antonia Candela & Johanna Rey -- Race, Gender, and Sexual Minorities in Physics: Hashtag Activism in Brazil, Katemari Rosa -- Diversity, Human Rights and Physics Education – Theoretical Perspectives and Critical Awareness, Tanja Tajmel.

Sommario/riassunto

Nations around the globe consider physics education an important tool of economic and social development and currently advocate the use of innovative strategies to prepare students for knowledge and skills acquisition. Particularly in the last decade, a series of revisions were made to physics curricula in an attempt to cope with the changing needs and expectations of society. Educational transformation is a major challenge due to educational systems' resistance to change. Updated curriculum content, pedagogical facilities (for example, computers in a school), new teaching and learning strategies and the prejudice against girls in physics classes are all issues that have to be addressed. Educational research provides a way to build schemas and resources to promote changes in physics education. This volume presents physics teaching and learning research connected with the main educational scenarios.
