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Titolo	Quantitative Reasoning in Mathematics and Science Education // edited by Gülseren Karagöz Akar, smail Özgür Zembat, Selahattin Arslan, Patrick W. Thompson
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Collana	Mathematics Education in the Digital Era, , 2211-8144 ; ; 21
Disciplina	929.374 510.71
Soggetti	Mathematics - Study and teaching Science - Study and teaching Education - Research Mathematics Education Science Education Research Methods in Education Ensenyament de la matemàtica Investigació quantitativa Llibres electrònics
Lingua di pubblicazione	Inglese
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Nota di contenuto	Introductory chapter -- 1. Forming abstracted quantitative structures -- 2. Different forms of covariation -- 3. Multiplication and Division in curriculum through QR -- 4. Relation between multiplicative/additive reasoning and QR in the context of whole and rational numbers -- 5. Linear & Non-linear relations through covariation. 6. Linear, quadratic, exponential functions through QR. - 7. Interpreting graphs of quadratic functions via QR -- 8. Logarithms and/or exponential growth -- 9. Geometric transformations through QR -- 10. Mathematization of science through QR -- 11. Physics Quantitative Literacy through QR -- 12. Modelling climate change with QR -- 13. Quantitative Reasoning in Undergraduate Biology. .

Sommario/riassunto

This book focuses on quantitative reasoning as an orienting framework to analyse learning, teaching and curriculum in mathematics and science education. Quantitative reasoning plays a vital role in learning concepts foundational to arithmetic, algebra, calculus, geometry, trigonometry and other ideas in STEM. The book draws upon the importance of quantitative reasoning and its crucial role in education. It particularly delves into quantitative reasoning related to the learning and teaching diverse mathematics and science concepts, conceptual analysis of mathematical and scientific ideas and analysis of school mathematics (K-16) curricula in different contexts. We believe that it can be considered as a reference book to be used by researchers, teacher educators, curriculum developers and pre- and in-service teachers. .
