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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Part One Introductory Section -- Chapter 1. On the Need for, and Traditions of, Large-Scale Research in Mathematics Education.- Part Two Methodological issues -- Chapter 2. Measurement Issues in Large-Scale Mathematics Classroom Observation Protocols -- Chapter 3. Building Item Generation Environments Using Construct-Centered Design with Learning Trajectories in Mathematics.- Part Three Curriculum and Instruction -- Chapter 4. Curriculum and Implementation Effects on High School Students' Mathematics Learning. - Chapter 5. Learning Mathematics Using Standards-Based and Traditional Curricula: An Analysis of Homework Problems.- Chapter 6. Gains in Teachers' Knowledge and Changes in Instruction: A Three-Year Study of Mathematics Knowledge, Beliefs, and Teaching -- Chapter 7. Factors Influencing STEM Preparedness: From Algebra to Calculus -- Chapter 8. Effectiveness of Schema-Based Instruction for Improving Seventh-Grade Students' Proportional Reasoning -- Chapter 9. A Randomized Trial of Lesson Study: Impact on Teachers' and Students' Knowledge of Fractions -- Part Four National and International Studies -- Chapter 10. How is Students' Mathematics

Knowledge Changing? Evidence from NAEP -- Chapter 11. Teacher Practices and Eighth Grade Students' Mathematics Achievement: Examining International Patterns -- Chapter 12. Measuring the Impact of Teacher Education on Learning to Teach Mathematics -- Chapter 13. Factors Influencing Participation in Mathematics and Physics -- Chapter 14. Effect of Intervention on Conceptual Change of Decimals in Chinese Elementary Students -- Chapter 15. Virtual Algebra Study, Jessica Heppen (American Institutes for Research) and her colleagues.-Part Five Looking into the future -- Chapter 16. Summary of Methodological Considerations for Large-Scale Research in Mathematics Education -- Chapter 17. Commentary 1. Jeremy Kilpatrick -- Chapter 18. Commentary 2. Alan Schoenfeld -- Chapter 19. Commentary 3. Ed Silver -- Chapter 20. Where the field needs to go?.

Sommario/riassunto

In recent years, funding agencies like the Institute of Educational Sciences and the National Science Foundation have increasingly emphasized large-scale studies with experimental and quasi-experimental designs looking for 'objective truths'. Educational researchers have recently begun to use large-scale studies to understand what really works, from developing interventions, to validation studies of the intervention, and then to efficacy studies and the final "scale-up" for large implementation of an intervention. Moreover, modeling student learning developmentally, taking into account cohort factors, issues of socioeconomic, local political context and the presence or absence of interventions requires the use of large data sets, wherein these variables can be sampled adequately and inferences made. Inroads in quantitative methods have been made in the psychometric and sociometric literatures, but these methods are not yet common knowledge in the mathematics education community. In fact, currently there is no volume devoted to discussion of issues related to large-scale studies and to report findings from them. This volume is unique as it directly discusses methodological issues in large-scale studies and reports empirical data from large-scale studies.
