

1. Record Nr.	UNINA9910349351703321
Titolo	Encountering Algebra : A Comparative Study of Classrooms in Finland, Norway, Sweden, and the USA // edited by Cecilia Kilhamn, Roger Säljö
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	9783030175771 3030175774
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (265 pages)
Disciplina	512.007 372.71
Soggetti	Mathematics - Study and teaching Learning, Psychology of International education Comparative education Algebra Mathematics Education Instructional Psychology International and Comparative Education
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1: School Algebra -- Chapter 2: Researching Classrooms in Search of Learning: Theoretical and Methodological Considerations -- Chapter 3: The VIDEOMAT Project: Theoretical Considerations and Methodological Procedures -- Chapter 4: Participation and Mathematization in Introductory Algebra Classrooms: The Case of Sweden -- Chapter 5: Designed Examples as Mediating Tools: Introductory Algebra in Two Norwegian Grade 8 Classrooms -- Chapter 6: Learning to Solve Equations in Three Swedish-speaking Classrooms in Finland -- Chapter 7: How Teachers Introduce Algebra and How it Might Affect Students' Beliefs About What it Means to "Do" Mathematics -- Chapter 8: The Fifth Lesson: Students' Responses to a Patterning Task Across the Four Countries -- Chapter 9: Encouraging Algebraic Reasoning in Contemporary Classrooms: Some Observations and a

Synthesis.

Sommario/riassunto

The book reports a comparative research project about algebra teaching and learning in four countries. Algebra is a central topic of learning across the world, and it is well-known that it represents a hurdle for many students. The book presents analyses built on extensive video-recordings of classrooms documenting the first introduction to symbolic algebra (students aged 12 to 14). While the content addressed in all classrooms is variables, expressions and equations, the teaching approaches are diverse. The chapters bring the reader into different algebra classrooms, discussing issues such as mathematization and social norms, the role of mediating tools and designed examples, and teacher beliefs. By comparing classrooms, new insights are generated about how students understand the algebraic content, how teachers instruct, and how both parties deal with difficulties in learning elementary algebra. The book also describes a research methodology using video in search of taken-for-granted aspects of algebra lessons.