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Secondary algebra education. Revisiting topics and themes and exploring the unknown.

Dutch Design in Mathematics Education 5. Rotterdam: Sense Publishers (ISBN 978-94-6091-333-4/pbk). 236 p. (2011).

Publisher's description: Nowadays, algebra education is subject to worldwide scrutiny. Different opinions on its goals, approaches and achievements are at the heart of debates among teachers, educators, researchers and decision makers. What should the teaching of algebra in secondary school mathematics look like? Should it focus on procedural skills or on algebraic insight? Should it stress practice or integrate technology? Do we require formal proofs and notations, or do informal representations suffice? Is algebra in school an abstract subject, or does it take its relevance from application in (daily life) contexts? What should secondary school algebra education that prepares for higher education and professional practice in the twenty-first century look like? This book addresses these questions, and aims to inform in-service and future teachers, mathematics educators and researchers on recent insights in the domain, and on specific topics and themes such as the historical development of algebra, the role of productive practice, and algebra in science and engineering in particular. The authors, all affiliated with the Freudenthal Institute for Science and Mathematics Education in the Netherlands, share a common philosophy, which acts as a – sometimes nearly invisible – backbone for the overall view on algebra education: the theory of realistic mathematics education. From this point of departure, different perspectives are chosen to describe the opportunities and pitfalls of today's and tomorrow's algebra education. Inspiring examples and reflections illustrate current practice and explore the unknown future of algebra education to appropriately meet students' needs. The articles of this volume will not be indexed individually.

Classification: H13 H14 A60 B50

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