

Contents

Introduction	1
1. International Perspectives	
Göran Emanuelsson & Bengt Johansson	
Stimulating Mathematics Education in Sweden	7
2. Building Children's Understanding	
Doug M. Clarke	
Issues in The Teaching of Algorithms in the Primary Years	21
Diana V. Lambdin, N. Kathryn Essex, Paul E. Kehle & Kelly K. McCormick	
What Are American Elementary Students Learning?	37
Graham Littler & Darina Jirotková	
Learning about Solids	51
Alistair McIntosh	
Re-orienting the Teaching of Computation	67
Sydney L. Schwartz	
Explorations in Graphing with Pre-kindergarten Children	83
Max Stephens	
The Importance of Generalisable Numerical Expressions	97
Erich Wittmann	
Assessing Preschoolers' Geometric Knowledge	113
3. Problem Solving and Modelling	
Alan Bell, Hugh Burkhardt, Rita Crust, Daniel Pead & Malcolm Swan	
Strategies for Problem Solving and Proof	129
Morten Blomhøj	
Mathematical Modelling – a Theory for Practice	145
Frances R. Curcio	
Reading and Mathematics: A Problem Solving Connection	161
Darina Jirotková	
Grid-paper Geometry	173
Frank K. Lester & Diana V. Lambdin	
Teaching Mathematics through Problem Solving	189

4. Learning from Assessments

Gunnar Gjone	
Diagnostic Assessment and Teaching in Mathematics	207
Liv Sissel Grønmo	
Are Girls and Boys to be Taught Differently?	223
Marja van den Heuvel-Panhuizen	
Girls' and Boys' Problems	237
Gilah C. Leder	
Mathematics, Gender, and Equity Issues – Another Perspective	253

5. Theoretical Perspectives on Learning

Guðmundur Birgisson	
Perceptions of Truth	269
Leone Burton	
Learning as Research	283
Willi Dörfler	
Objectifying Relations: Fractions as Symbols for Actions	299
Paul Ernest	
Relevance versus Utility	313
Victor Firsov	
Interest in Mathematics: Is It Necessary?	329
Stephen Lerman	
Learning How to Be in the Mathematics Classroom	339
Luis Rico & Francisco Ruiz	
Geometric Visualization of Additive Operators	351

6. Responding to Contexts

Bill Barton	
Mathematical Discourse in Different Languages	365
Barbara Clarke & Rhonda Faragher	
Possibilities Not Limitations: Teaching Special Needs Children	379
Marj Horne	
Class Grouping for Mathematics: What Do We Know?	395
Anna Kristjánsdóttir	
Confidence in Mathematics Learning	411
Lena Lindenskov	
What Do We Mean by Everyday Mathematics in Adult Education?..	431
Vena M. Long	
Adding "Place" Value to Your Mathematics Instruction	447
Dave Tout	
Curriculum Frameworks and Change	457

7. Towards Learner Centred Teaching

Otto B. Bekken & Reidar Mosvold

Reflections on a Video Study 475

Maria Luiza Cestari, Rossella Santagata & Gail Hood

Teachers Learning from Videos 489

Thomas J. Cooney

Pluralism and the Teaching of Mathematics 503

Barbro Grevholm

Mathematics Worth Knowing for a Prospective Teacher? 519

Ingvill M. Holden

How to Become An Excellent Mathematics Teacher 537

Frank K. Lester, Kelly McCormick & Ayfer Kapusuz

Pre-service Teachers' Beliefs about the Nature of Mathematics 555

Kay Owens

Improving the Teaching and Learning of Space Mathematics 569

Thomas A. Romberg

Classroom Assessment Studies 585

Authors and Editors 601