

Contents

Teaching and Learning About Whole Numbers in Primary School	1
1 Introduction	1
2 Survey on the State of the Art	3
2.1 A Theory of Number Meanings for Teaching and Learning	3
2.2 Arithmetic and Quantitative Reasoning: Why They Are Different.	4
2.3 Teaching Arithmetic in Primary School	6
2.4 Quantitative Reasoning in Primary School	16
2.5 Teaching Quantitative Reasoning	23
3 Knowledge of Numbers and Arithmetic for Teaching	29
3.1 Describing Teachers' Content Knowledge and Its Impact.	31
3.2 Describing Teachers' Pedagogical Content Knowledge.	31
3.3 Other Perspectives on Teachers' Knowledge	34
4 Summary and Challenges for the Future	35
References	38