

CONTENTS

<i>E. Cohors-Fresenborg</i> : A young European society establishing a tradition for scientific conferences	7
WORKING GROUP 1: Creating experience for structural thinking	11
<i>M. Hejný, G.H. Littler</i> : Introduction to WG1. Building structures in mathematical knowledge	13
<i>M. Hejný</i> : Creating mathematical structure	14
<i>J. Kratochvilová</i> : Building the infinite arithmetic structure	25
<i>N. Malara</i> : From fractions to rational numbers in their structure: Outlines of an innovative didactical strategy and the question of density	35
<i>C. Marchini</i> : Instruments to detect variables in primary school	47
<i>H. Meissner</i> : Procepts in geometry	58
<i>B. Pedemonte</i> : Relation between argumentation and proof in mathematics: cognitive unity or break?	70
<i>B. Schwarz, R. Hershkowitz, T. Dreyfus</i> : Emerging knowledge structures in and with algebra	81
<i>M. Singer</i> : Thinking structures involved in mathematics learning	92
<i>N. Stehliková, D. Jirotková</i> : Building a finite algebraic structure	101
<i>P. Tsamir</i> : Intuitive structures: The case of comparisons of infinite sets..	112
WORKING GROUP 2: Tools and technologies in mathematical didactics ...	123
<i>K. Jones, J.-B. Lagrange, E. Lemut</i> : Introduction to WG2. Tools and technologies in mathematical didactics	125
<i>J. Ainley, B. Barton, K. Jones, M. Pfannkuch, M. Thomas</i> : Is what you see what you get? Representations, metaphors and tools in mathematics didactics	128
<i>M. Cerulli</i> : Introducing pupils to theoretical thinking: The case of algebra	139
<i>P. Gallopin, L. Zuccheri</i> : A didactical experience carried out using, at the same time, two different tools: A conceptual one and a technological one	152
<i>A. Hošpesová</i> : What brings use of spreadsheets in the classroom of 11-years olds?	163
<i>J.-B. Lagrange</i> : A multi-dimensional of the use of IC technologies: The case of computer algebra systems	170
<i>J. A. Landa H., S. Ursini</i> : Mediation of the spreadsheet: Composition of the argument	183
<i>T. Lingefjärd, M. Holmquist</i> : Mathematics, technology and examination in distance education	193
<i>C. Mogetta</i> : Struggling to prove motion: From dynamic perception to static theory	203

<i>F. Olivero, O. Robutti</i> : An exploratory study of students' measurement activity in a dynamic geometry environment	215
<i>A. Routitsky, P. Tobin</i> : Graphic calculators: Use in mathematics in Victorian secondary schools	227
<i>B. Schwarz, R. Hershkowitz</i> : Production and transformation of computer artifacts: Towards construction of meaning in mathematics	241
POSTERS AND ABSTRACTS OF ADDITIONAL PAPERS LINKED WITH WG2	255
<i>L. Bilousova</i> : Development of intellectual skills of the pupils with computer technologies	257
<i>T. Byelyavtseva</i> : Student's projects are a tool for the formation of investigating skills	257
<i>O. Chumak</i> : Basic structurization and interactive algorithmization in mathematical education	258
<i>D. Leder, C. Scheriani, L. Zuccheri</i> : The mathematics of the boys/girls: exchange of experience among boys/girls of the same age	259
<i>C. Pellegrino, L. Zuccheri</i> : A video about mathematics	260
<i>S. A. Rakov</i> : Mathematical packages as a tool of a constructive approach in mathematical education	261
<i>C.-M. Chioca</i> : What kind of obstacles may be expected in the simultaneous learning of mathematics and computer software?	262
<i>D. Kontozisis, J. Pange</i> : Using cooperative learning to teach primary mathematics to AD/HD children in a computer-based environment	262
WORKING GROUP 3: Theory and practice of teaching from pre-service to in-service teacher education	263
<i>F. Furinghetti, B. Grevholm, K. Krainer</i> : Introduction to WG3. Teacher education between theoretical issues and practical realization.....	265
<i>N. Climent, J. Carrillo</i> : Developing and researching professional knowledge with primary teachers	269
<i>K. Krainer</i> : Investigation into practice as a powerful means of promoting (student) teachers' professional growth	281
<i>A. Kuzniak, C. Houdement</i> : Pretty (good) didactical provocation as a tool for teacher's training in geometry	292
<i>P. Marshall</i> : A study of primary ITT students' attitudes to mathematics	304
<i>J. P. da Ponte, H. Oliveira</i> : Information technologies and the development of professional knowledge and identity in teacher education	310
<i>M. Tzekaki, M. Kaldrimidou, X. Sakonidis</i> : Reflections of teachers' practices in dealing with pupils' mathematical errors	322

ABSTRACTS OF ADDITIONAL PAPERS LINKED WITH WG2	333
<i>A. N. Ilina, O. A. Ivanov</i> : Simulators in mathematics teacher education ..	335
<i>T. Oleinik</i> : Development of critical thinking	335
WORKING GROUP 4: Social interactions in mathematical learning situations	337
<i>G. Krummheuer</i> : Introduction to WG4. The comparative analysis in interpretative classroom research in mathematics education	339
<i>J. Back</i> : Some numbers are straight and some are round: Considering meaning and focus in classroom talk	347
<i>R. Barwell</i> : Narrative orientation in the construction and solution of word problems by English additional language (EAL) learners of mathematics.....	358
<i>A. J. Bishop, P. C. Clarkson, G. E. FitzSimons, W. T. Seah</i> : Studying values in mathematics education: Aspects of the VAMP project	368
<i>B. Brandt</i> : Classroom interaction as multi-party-interaction: Methodological aspects of argumentation analysis	377
<i>R. Hedrén</i> : Learning in mathematics during group discussions of some rich problems	386
<i>S. Maury, S. Stephan</i> : Solving an algebra problem in a triadic situation in tenth grade	399
<i>T. Rowland</i> : Pragmatic perspectives on mathematics discourse	408
<i>G. Sensevy, A. Mercier, M.-L. Schubauer-Leoni</i> : A model for examining teachers' didactic action in mathematics, the case of the game "RACE TO 20"	420
<i>H. Steinbring</i> : Forms of interactive construction of new mathematical knowledge	434
WORKING GROUP 5: Mathematical thinking and learning as cognitive processes	445
<i>L. Bazzini, P. Boero, R. Garuti</i> : Algebraic expressions and the activation of senses	447
<i>E. Cohors-Fresenborg</i> : Individual differences in the mental representation of term rewriting	457
<i>S. HersHKovitz, P. Neshet, J. Novotná</i> : Cognitive factors affecting problem solving	469
<i>M. Maracci</i> : Drawing in the problem solving process	478
<i>I. Schwank</i> : Analysis of eye-movements during functional versus predicative problem solving	489
WORKING GROUP 6: Assessment and curriculum	499
<i>O. Björkqvist</i> : Introduction to WG6. Assessment and curriculum	501
<i>T. Assude</i> : Elements on evolution of official curriculum in France. The case of inequalities in the "Collège" level	502

<i>J. Lukács, K. Tompa</i> : About the reform of mathematics examination in Hungary	509
<i>J. Törnroos</i> : Mathematics textbooks and students' achievement in the 7 th grade: What is the effect of using different textbooks	518
WORKING GROUP 7: The role of metaphors and images in the learning and understanding of mathematics	529
<i>B. Parzysz</i> : Introduction to WG7. Working together on metaphors and images	531
<i>G. Chartier</i> : Using «GEOMETRICAL INTUITION» to learn linear algebra	533
<i>M. Maschietto</i> : The transition from algebra to analysis: The use of metaphors in a graphic calculator environment	542
<i>J.-C. Régnier, M. Priolet</i> : Teachers' use of semiotic registers	554
<i>E. Robotti</i> : Verbalization as a mediator between figural and theoretical aspects	564
<i>L. Rogers</i> : From icons to symbols: Reflections on the historical development of the language of algebra	577
POSTERS	591
<i>M. Barešová</i> : Sample of pedagogical communication in mathematics lesson	593
<i>C. Green</i> : The effects of type of support on children's thinking when tackling mathematical investigations	593
<i>M. Kaslová</i> : Theory and practice of teaching from pre-service and in-service teacher education - Phenomena of in-service practice training ...	594
<i>M. Kubínová</i> : Improving teachers' beliefs about mathematical education	595
<i>J. Molnár</i> : Euler's theorem	596
<i>M. Panizza, J.-P. Droughard</i> : Reasoning Process and Process of Control in Algebra	597
<i>J. Perný</i> : Space imagination on the cube	600
<i>V. de M. Santos</i> : Generating knowledge and meaning to teach mathematics	601
<i>B. Sarrazy</i> : Study of anthropo-didactic functions and cognitive effects of interactions in three contrasted teaching contexts	602
<i>E. Swoboda</i> : The atomic analysis of the conceptual fields: Similarity (A case study)	602
<i>V. Sýkora</i> : Semiotic representations in the process of construction of mathematical concept	603
<i>A. Ulovec</i> : The role of image schemata in the development of new cognitive objects	603
AUTHORS	605