

Symposium Celebrating the Centennial of the International Commission on Mathematical Instruction (ICMI)

Rome 5–8 March 2008

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In 1908, during the IV International Congress of Mathematicians, which took place in Rome from 6 to 11 April, was created the International Commission on the Teaching of Mathematics (Commissione Internazionale per l'insegnamento matematico, Commission Internationale de l'Enseignement Mathématique, Internationale Mathematische Unterrichtskommission). The first to formulate a proposal for the institution of an organisation of this type was David Eugene Smith, a professor at Teachers College of New York, who was profoundly interested in education and in the history of mathematics. The first president was Felix Klein, eminent mathematician and promoter of significant reforms in the teaching of mathematics in Germany. Klein was an unflagging and enthusiastic promoter of the commission during its early period.

The initial goal of the commission was that to “promote an inquiry and publish a general report on current trends in secondary teaching of mathematics in the various countries”. From that time, the Commission, which since 1954 has been known as the “International Commission on Mathematical Instruction” (ICMI), has gone through successive periods of more or less intense activity (connected with the dramatic events of the first half of the twentieth century) before arriving to the end of the 1960s, when it experienced a veritable renaissance based on new aims and work methodologies. In the last quarter of a century its activities and the lines of research have broadened and diversified, and have contributed to the construction of a new discipline, research in the teaching of mathematics.

To celebrate the Centennial of the founding of the ICMI, an international symposium, entitled “The First Century of the International Commission on Mathematical Instruction: Reflecting and Shaping the World of Mathematics Education”, was held in Rome, 5–8 March 2008

(<http://www.unige.ch/math/EnsMath/Rome2008/>). The International Programme Committee (IPC), was composed of sixteen members, with Ferdinando Arzarello as its president, while Marta Menghini represented the Organising Committee within the IPC. Palazzo Corsini, home of the Accademia Nazionale dei Lincei, and Palazzo Mattei di Paganica, home of the Enciclopedia Italiana, were the splendid venues for the symposium.

Taking as a point of departure the themes connected to ICMI activities over the course of its hundred year history (reforms in teaching of the sciences, formation of teachers, relationships between mathematicians and researchers of teaching, etc.), the symposium sought to identify the future directions of research in didactics and possible initiatives for improving the level of mathematics culture in the various countries.

The symposium was subdivided into ten plenary talks, eight talks in parallel, five working groups, and an afternoon reserved for Italian teachers, with lectures by scholars from Italy and abroad. The talks on the “Italian afternoon” were broadcast via videoconference to fifty schools throughout Italy.

The talks dealt with a wide variety of topics: the origins of the ICMI and the roles played by Klein and Smith; ICMI's renaissance at the end of the 1960s and the emergence of a new field of research; the dialectic between rigour and intuition in the teaching of mathematics; the relationships between pure and applied mathematics and the emphasis that should be given to modelling in teaching and learning of the mathematics; the interactions between research and practice; the relationship between centres and peripheries of the world; teacher training; the relationships between mathematics and teaching of mathematics and between mathematics education and technology, society, and other disciplines.

Some 200 participants from 43 countries the world over took part in the congress. The symposium ended with an excursion which, like a hundred years ago, took participants to visit the Villa d'Este at Tivoli and Hadrian's Villa, both rich in historical grandeur.

On the occasion of the congress a website dedicated to the history of ICMI was created under the direction of Fulvia Furinghetti and Livia Giacardi (<http://www.icmihistory.unito.it/>). It delineates the most significant events and key figures through documents, images and interviews. The site is divided into six sections: Timeline; Portrait Gallery; Documents; The Affiliated Study Groups; The International Congresses on Mathematical Education; Interviews and Film Clips. The Timeline marks the most important moments in the history of the ICMI, with each fact documented with references to the original sources. The Portrait Gallery provides a complete list of ICMI officers, and biographic cameos of those who have passed away, with the aim of making evident their roles within the ICMI, their contributions to the study of problems inherent in mathematics teaching, and their publications that are expressly dedicated to mathematics teaching.

The symposium proceedings will be published by the *Enciclopedia Italiana*, in their book series entitled *Scienze e Filosofia*. The talks of the Italian afternoon are in press in the journal *Progetto Alice*.

The Plenary Lectures

- ▷ Moments of the life of ICMI (Hyman Bass)
- ▷ The development of mathematics education as an academic field (Jeremy Kilpatrick)
- ▷ Intuition and rigor in mathematics education (Dina Tirosh and Pessia Tsamir)
- ▷ Perspectives on the balance between application & modelling and 'pure' mathematics in the teaching and learning of mathematics (Mogens Niss)
- ▷ The relationship between research and practice in mathematics education: international examples of good practice (Jo Boaler)
- ▷ The origins and early incarnations of ICMI (Gert Schubring)
- ▷ ICMI Renaissance: the emergence of new issues in mathematics education (F. Furinghetti, M. Menghini, F. Arzarello, L. Giacardi)
- ▷ Centres and peripheries in mathematics education (Bienvenido F. Nebres)
- ▷ ICMI: One century at the interface between mathematics and mathematics education – Reflections and perspectives (Michèle Artigue)

The working groups

- ▷ WG1: Disciplinary mathematics and school mathematics (co-chairs: B. Barton, F. Gourdeau)
- ▷ WG2: The professional formation of teachers (co-chairs: Deborah Ball, Barbro Grevholm)
- ▷ WG3: Mathematics Education and Society (co-chairs: Hilary Povey, Robyn Zevenbergen)
- ▷ WG4: Resources and technology throughout the history of ICMI (co-chairs: Marcelo C. Borba, Mariolina Bartolini Bussi)
- ▷ WG5: Mathematics Education: an ICMI perspective (co-chairs: G. Leder, L. Radford)