Modelling and Applications in Mathematics Education

The overall goal of Modelling and Applications in Mathematics Education is to provide a comprehensive overview of the state-of-the-art in the field of modelling and applications in mathematics education. Key issues are dealt with, among which are the following:

**Epistemology** and the relationships between mathematics and the "rest of the world"; the meaning of mathematical modelling and its process components; the respect in which the distinction between pure mathematics and applications of mathematics make sense

**Authenticity and Goals** dealing with modelling and applications in mathematics teaching; appropriate balance between modelling activities and other mathematical activities; the role that authentic problem situations play in modelling and applications activities

**Modelling Competencies:** characterizing how a student's modelling competency can be characterized; identifiable sub-competencies, and the ways they constitute a general modelling competency; developing competency over time

**Mathematical Competencies:** identifying the most important mathematical competencies that students should acquire, and how modelling and applications activities can contribute toward building up these competencies; the meaning of "Mathematical Literacy" in relation to modelling

**Modelling Pedagogy:** appropriate pedagogical principles and strategies for the development of modelling courses and their teaching; the role of technology in the teaching of modelling and applications

**Implementation and Practice:** the role of modelling and applications in everyday mathematics teaching; major impediments and obstacles; advancing the use of modelling examples in everyday classrooms; documenting successful implementation of modelling in mathematics teaching

**Assessment and Evaluation:** assessment modes that capture the essential components of modelling competency; modes available for modelling and applications courses and curricula; appropriate strategies to implement new assessment and evaluation modes in practice

The contributing authors are eminent members of the mathematics education community. Modelling and Applications in Mathematics Education will be of special interest to mathematics educators, teacher educators, researchers, education administrators, curriculum developers and student teachers.

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