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**ON THE SERIES *INTERNATIONAL STUDIES IN THE HISTORY
OF MATHEMATICS AND ITS TEACHING***

This note is not a review. It is a brief description of the latest volumes in Springer's series *International Studies in the History of Mathematics and Its Teaching*, given by its editors. The first book in this series came out in 2019 (*Interfaces Between Mathematical Practices and Mathematical Education*, edited by Gert Schubring), and since then, a number of other books in the series have been published, all dedicated to the history of mathematics education in the context of general social development and the development of mathematics.

Let us immediately list several features that the editors of the series have sought to embody in it. First, as its name indicates, we wished to examine processes that had occurred not in isolation, but as international processes. Unfortunately, even if the manner in which mathematics education has been built up and changed over time has been studied in one or another country (which is by no means the case everywhere, as there are countries in which such research remains in its infancy), such studies have often remained inaccessible outside the country in question, and even if they ended up being published in some international periodical or presented at some conference, often they were not connected with what had taken place in other countries. Sometimes simply out of ignorance, sometimes out of a desire to emphasize national priority, processes that have taken place in one or another country are often examined as isolated processes, which inevitably impoverishes any understanding of them – for it is not just today

that educators in the United States discuss textbooks from Singapore or teacher preparation in China: over two hundred years ago, when texts by Lacroix and Legendre were being used to teach mathematics in virtually half the world, while the Lancasterian System was being applied everywhere from Boston to St. Petersburg, the mutual influence of different parts of the world on one another was not less than it is now. It is imperative, therefore, to study what went on back then as an international phenomenon.

The second crucial feature that the editors have sought to embody in the series is the ability to see what has taken place in mathematics education as part of a general social process. Yes, any historian of mathematics education takes note of the fact that, say, at a certain point in history new sections began to be included in the course in mathematics, or that the system of illustrations underwent changes, or even that new notations began to be introduced; but the causes and consequences of what happened can be understood only by thinking about how the labor market changed, how and why technological capabilities developed, and how and why views of the world and education became transformed over time.

Therefore, in the books published in the series, the authors paid close attention to historically important international events and their impact on mathematics education – from the French Revolution, which led to the creation of the École Polytechnique, which had an influence on education around the world, to the collapse of the so-called socialist system, which resulted in significant transformations in the mathematics education of the Czech Republic, East Germany, Hungary, Poland, Russia, Ukraine, and other countries.

Among the latest publications in the series, probably the volume *The International Commission on Mathematical Instruction, 1908-2008: People, Events, and Challenges in Mathematics Education*, edited by Fulvia Furinghetti and Livia Giacardi¹, deserves to be singled out. This is not the first book in the series about the International Commission on Mathematical Instruction (ICMI) – an earlier publication was devoted to the national subcommissions of ICMI, that is, to the influence that the activity of the International Commission had on what was taking place in different countries. But Furinghetti and Giacardi's book covers a far broader range of materials, examining in detail various aspects of the history of the International Commission and offering numerous portraits of figures in mathematics education associated with ICMI; and since a great many people were associated with ICMI, readers end up with what is also effectively a 'who's who in mathematics education' manual in their hands. This dramatic history of ICMI – which began on the crest of a wave of faith in international cooperation in various fields, including mathematics education, which was interrupted by the First World War, and subsequently revived only to be destroyed by the Second

¹ *The International Commission on Mathematical Instruction, 1908-2008: People, Events, and Challenges in Mathematics Education*, ed. by F. Furinghetti, L. Giacardi, Springer, Cham 2023.

World War, and revived again only years after that war ended – tells about both how the world changed and how mathematics education changed with it. The fruit of many years of collaborative work by dozens of researchers from different countries, the book, in the conviction of the editors of the series, will prove to be an important resource for anyone interested in mathematics education since the beginning of the 20th c.

The book *Analysing Historical Mathematics Textbooks*, authored by Gert Schubring², covers a longer period of time – it opens with a discussion of the emergence of a written teaching culture as opposed to an oral one, and then goes on to tell about the ancient world and the subsequent history of teaching manuals. Textbooks have always been an object of study both for working teachers and for historians. Schubring's study discusses the methodology of historical research, the role and place of school textbooks within the overall system of knowledge, and then analyzes certain important stages in the development of textbooks, such as the idea of 'elementarisation', which goes back to D'Alembert, as well as the appearance of certain textbooks that had an impact on the whole world (such as the already mentioned textbooks by Lacroix or Legendre).

Also of note is Schubring's discussion of the ever-fashionable question of the contradiction (or at least seeming contradiction) between the use of textbooks and the freedom of the teacher. Today, too, one can hear the view that textbooks constrain teachers, preventing them from displaying their creative side. This narrative, however, is not new, and such opinions could have been heard in Prussia centuries ago, giving rise to other approaches toward the writing and use of textbooks, different from the ones that were accepted in France. It should be pointed out that, although the book probably devotes the most room to France and Germany, it also analyzes textbooks from Italy, Russia, Islamic countries, Latin America, and other countries.

The book *Theory and Practice. A History of Two Centuries of Dutch Mathematics Education* by Harm Jan Smid³ is dedicated to a single country – the Netherlands – which, although small, played an extremely important role in history, since it was arguably the first country in which a bourgeois revolution triumphed. This event had decisive repercussions on the development of mathematics education as well, which proved indispensable both for solving emerging production problems and for defending the country from its enemies, which continued to threaten it as before. Smid's book is primarily devoted to a period centuries after the so-called Dutch Golden Age, but both the achievements and the problems discussed by the author are linked to the tradition established in the country. One side of this tradition was the practical orientation of mathematics education, which was to be en-

² G. Schubring, *Analysing Historical Mathematics Textbooks*, Springer, Cham 2022.

³ H.J. Smid, *Theory and Practice. A History of Two Centuries of Dutch Mathematics Education*, Springer, Cham 2022.

riched with more theoretical approaches, and above all by expanding the number of students. Its other side consisted in the influences it experienced, frequently coming from far more populous and politically and militarily influential neighboring countries. At the same time, the Netherlands preserved their uniqueness, if only in terms of the influence that various teachers' organizations and associations had there, or in terms of the movement that has relatively recently conquered the world in a certain sense – realistic mathematics education.

Lastly, the fourth book in the series that has come out in the last three years is *Advances in the History of Mathematics Education*, edited by Alexander Karp⁴. This volume is a collection of papers written on the basis of presentations given at the International Congress 2021 in Shanghai. It is by no means a Proceedings, however, as there were many more presentations in the group dedicated to the history of mathematics education at the Congress than papers published in the book, and above all, while the Congress featured brief reports, the corresponding studies in the book are published in their full length. The papers are dedicated to the most varied countries and the most varied topics, but if one were to search for a unifying theme, one could say that practically all of them address the formation of various aspects of mathematics education – textbook writing traditions develop and die out, just as groups of people interested in the development of mathematics education form and dwindle – as do traditions of conducting various kinds of exams – as do organizations that structure and implement such exams, and so forth. The book is based on recent experience in conducting research, and for that reason alone, it may already be of interest.

These words may be applied to the whole series as well: it publishes contemporary research in a field which – despite the fact that it has already been studied for hundreds of years, and that studies on topics associated with this field began appearing in the mid-19th c. at the latest – still contains a great deal that has never been studied. One would like to hope that those who wish to study this field or to learn about the achievements of others in it will find the series useful and interesting.

Bibliography

Advances in the History of Mathematics Education, ed. by A. Karp, Springer, Cham 2022.

Schubring Gert, *Analysing Historical Mathematics Textbooks*, Springer, Cham 2022.

Smid Harm Jan, *Theory and Practice. A History of Two Centuries of Dutch Mathematics Education*, Springer, Cham 2022.

The International Commission on Mathematical Instruction, 1908-2008: People, Events, and Challenges in Mathematics Education, ed. by F. Furinghetti, L. Giacardi, Springer, Cham 2023.

⁴ *Advances in the History of Mathematics Education*, ed. by A. Karp, Springer, Cham 2022.