Handbook on the History of Mathematics Education

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Editors

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Springer

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Introduction

This Handbook strives to present the history of teaching and learning mathematics over the various epochs and civilizations, cultures, and countries. This comprehensive approach became possible only now because of the recent development of research. The aim of this Handbook is, on the one hand, to reflect the current state of the history of mathematics education and to make more accessible the results of existing research, and on the other hand, thereby to facilitate the further development of this field, drawing attention to that which has not yet been studied.

Our conviction is that concern about the future of mathematics education is impossible without an understanding of what is going on in the present, which in turn is impossible without an understanding (and consequently the study) of the past. We would like to instill this conviction in our readers as well, and not limit ourselves merely to providing them with a reference book that contains needed information (although this aim is important for us, too).

The manner in which mathematics education developed is important for today's mathematics educators, but it is likewise important for researchers of the history of education, of which mathematics education is a part. Our view is that, even more broadly, for researchers of cultural history and even of social history as a whole, an appreciation of the historical development of mathematics education will be useful also.

It should be emphasized that at present our knowledge (and hence our understanding) is limited. In certain cases, the spread of knowledge is hampered by linguistic barriers – important and substantive studies remain unread even by those who would be receptive to them and find them interesting. In other cases, there have simply been no studies – it would be no mistake to say that educational documents lying in archives practically in any country have not been sufficiently researched.

We should say at once that, in discussing the history of mathematics teaching and learning, we are mainly concentrating on that which in recent centuries has been called pre-university education. This terminology is naturally not applicable, say, to Antiquity, or even to later periods, but nonetheless it may be said that education which in one way or another corresponds to "higher level education" is usually discussed in this Handbook only in order to gain a better general picture of education at preceding levels (for example, when the discussion concerns mathematics teacher education). Being even more specific, we can say that typically Handbook chapters focus mainly on secondary education (or its equivalents) rather than on primary.

Mathematics education is a complex phenomenon, and therefore an attempt has been made in this Handbook to investigate it from different angles. Consequently, the Handbook is divided into parts. Part I is devoted to the history of mathematics education as a scientific field, with a discussion of its scholarly literature and methodologies. Parts II, III and IV are organized along chronological and geographical lines, containing analysis of mathematics education during different periods and in different regions. Part V is devoted to the study of various mathematical subjects and teaching practices.

Finally, Part VI examines processes that are common to different countries – the emergence of international cooperation, the introduction of technology, and the spread of teacher preparation.

Different chapters in the Handbook are written from different viewpoints and reflect different existing approaches to historical research in mathematics education. Nor did the editors strive to achieve complete uniformity in more technical aspects of the text – in particular, in the spelling of non-English words, as different systems of transliteration have developed for historical reasons, and not infrequently even the same name in different cases is pronounced in English in different ways. Attempts to achieve a uniform approach might have rendered the text incomprehensible.

It should be noted that certain chapters consist of subchapters that were written separately from one another. In such cases, the authors of these subchapters are indicated in the text. All of the authors of such subchapters are also listed at the beginning of the chapter and in the table of contents in alphabetical order. Other chapters were worked on jointly by their authors, in such cases the authors of chapters' parts are not indicated.

In conclusion, it should be reiterated that this book does not and cannot claim to be absolutely complete. Readers (as well as editors) may justifiably express regret that for one or another reason not enough has been said about one or another country or one or another phenomenon. If the recognition of such insufficiencies leads to new research, however, the editors will consider this an important achievement of the present volume.

New York, NY, USA — Alexander Karp
Bielefeld, Germany — Gert Schubring

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