Foreword

We, the editorial committee, are pleased to issue volume 13 of the Hiroshima Journal of Mathematics Education to each member of the Japan Academic Society of Mathematics Education (JASME) and international readers. Volume 13 is a further step for us, following volume 12 last year, which signaled the rebirth of an international journal of the JASME. In this volume, we have included one original research article and two collections of special feature articles under the headings 'Foundations of Mathematics Education for the Future' and 'Trends and Future of Mathematics Education Research in East Asia.'

The original research article 'Elementary School Teacher's Problems in the Process of Pedagogical Reasoning in Proportion from the Perspective of Curriculum Maker,' by Professor Arai, is devoted to the progress of international cooperation in teachers' professional development through lesson study. She reveals the problems teachers face leading to curriculum gaps based on the conceptual framework of the curriculum, which has five levels.

The first collection of special feature articles, 'Foundations of Mathematics Education for the Future,' continues on from the previous volume, and provides a solid perspective on the future of mathematics education through reflection on the current state of mathematics education research. The first article is by Professor Steinbring and is titled 'About the Nature of Manipulatives, Visual Material and Signs in Learning Mathematics: An Epistemological Perspective.' This article invites us to epistemologically reflect on how learning using visual material and manipulatives can become mathematics. This paper is important not only for academic research, but also in the practical sense that teachers/teacher educators should understand and be conscious of this aspect of mathematics teaching. We thank Professor Steinbring for delivering the plenary lecture at the JASME 2018 conference, after which we were able to discuss numerous ideas related to this paper. The second article, by Professor Williams is titled 'Attaining Mathematical Insight During a Flow State: Was There Scaffolding?' and provides a new sense of scaffolding by examining how a student can gain mathematical insight during a flow state. It informs important suggestions about how we can deepen mathematical understanding and increase student interest in mathematics learning. The detailed research methodology used to clarify a student's cognitive and emotional aspects is helpful for readers who are trying to implement the related practices. It is interesting to observe that Professor Williams' perspective is consistent with that obtained from Japanese lesson study. The third article, by Professors Hino, Makino, and Kawakami, 'Mid-career Teacher Learning in a Mathematics Professional Development Program: Focusing on the Growth of Teachers' Perspectives,' analyzes teachers' professional development as an important aspect of lesson study. I believe that it is important to highlight how teachers grow professionally through lesson study, both in Japan and internationally, and I am convinced that all of these articles contribute to providing a solid theoretical and practical background in support of the development of mathematics teaching and teachers' professional development.

The second collection of special feature articles, 'Trends and Future of Mathematics Education Research in East Asia,' is based on the memorial symposium held to commemorate the 50th anniversary of the founding of the JASME. In this symposium, East Asia researchers from China, Japan, Korea, Singapore, and Thailand were invited to discuss the commonalities in mathematics education research in East Asia and the original perspectives and studies in various countries, and to explore the possibility of future collaborative

research in mathematics education. To highlight the achievements of the symposium, this volume includes articles by Professor JeongSuk Pang from South Korea and Professor Tin Lam Toh from Singapore. In her article 'The Trend and Direction of Mathematics Education Research in Korea,' Professor Pang reveals the characteristics of mathematics education in Korea by analyzing a large number of peer-reviewed studies published in Korea in terms of the themes, content, research methods, and target groups of the studies. She showed that a diversity of research topics including learners' abilities or characteristics, instruction or teaching methods, and curricula or textbooks have been studied in Korea, where research tends to focus on students rather than curricular materials and teachers. She also noted the increasing number of international studies undertaken by Korean scholars. Professor Toh, in his article 'A Glimpse into the Mathematics Education Research in Singapore,' examined numerous studies registered on the Singapore National Institute of Education's database, wherein the topics of classroom teaching and learning practices were predominant among the funded research projects. In addition, studies on classroom teaching and learning practices are closely linked to the areas of teachers' professional development, curriculum development, and policy. These two articles suggest that Asian countries have numerous findings in terms of mathematics teaching and mathematics teacher education that can be integrated into classroom practices elsewhere.

I believe that it is important to continue to clarify the theoretical/philosophical backgrounds and mechanisms that facilitate the development of classroom teaching practices and teachers' professional development. Contributions from various international regions are welcome, and will increase our knowledge of how mathematics education can have a positive influence on students' intellectual and emotional growth. We hope that international researchers engaged in mathematics education will continue to develop international communication through the Hiroshima Journal of Mathematics Education (https://www.jasme.jp/hjme/).

Sincerely yours,

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