

DG03: KEEPING THE MATHEMATICS IN MATHEMATICS EDUCATION RESEARCH

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This year's sessions refine the focus begun at PME 27 (The Rise and Fall of Mathematics Education Research). Last year, several issues were identified as important to maintaining the vitality of the field of mathematics education research. A key point was that mathematics must be made visible in our research to distinguish our findings from those of general education studies – including a careful consideration of the *mathematics* inherent in assigned tasks, in the analyses of what learners and teachers do, and in the curriculum that is developed and implemented.

This year we will explore this theme of keeping the “mathematics” in mathematics education research using a case study of a Japanese fourth-grade mathematics lesson as a shared resource. The data for the study were obtained as part of the activities of PME 24 in Hiroshima, in which participants visited a local school and observed one of several mathematics classrooms. In one lesson, which covered an introduction to two-digit division, students used personal strategies to solve a given problem and selected solutions were processed in a teacher-led whole-class discussion.

Session 1

Participants, in small groups, will analyze the case study - exploring mathematical perspectives in the classroom context. Aspects of the data that may be addressed include identifying 1) the mathematics taking place among the students and the teacher, 2) the relationship of this mathematics to fundamental concepts, 3) the potential of the activity to lead to deep mathematical learning or connections.

Session 2

We will consider the implications of the work done in the first session. For example, 1) how the analysis of mathematical issues, and how students and teachers grapple with these issues, can strengthen educational research, 2) how the results of such analysis inform the development of curriculum, materials, and classroom practice, and 3) considerations of long-term learning pathways and what kind of research can help us make longitudinal decisions.

A goal of the session will be to identify a specific research task (in which the mathematics is visible) that can be tried out with learners in several places, to trigger next year's discussion.