TSG 45 Knowledge in / for teaching mathematics at primary level

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The teaching of primary level mathematics (ages 5 to 13) is complex. It requires teachers to master a variety of types of knowledge. We list below some of these types:

- Understanding of important mathematical concepts that underpin meaningful student learning of the main strands of the mathematics curriculum;
- Appreciation of the mathematical processes (conceptual understanding, problem solving, and reasoning) in which students engage in doing mathematics, building mathematical arguments, and their justifications of solutions to problems;
- Selecting and building into lessons tasks that engage students in meaningful mathematics and numeracy learning;
- Awareness and knowledge of activities, tasks, and interventions that engage and develop persistence in students while exploring mathematical investigations;
- Awareness and appreciation of the value of tools (manipulatives) and technology in students' building multiple representations of mathematical ideas;
- Awareness of children's development in their learning of mathematical ideas (e.g. place value, number sense, operations) from informal to formal understandings
- Knowledge of pedagogies that are appropriate with heterogeneous classes

including specific actions to support students' learning, such as collaborative group activities.

- Knowledge of resources (collaborative communities, lessons, activities, video collections) to support teacher learning
- Knowledge of the language challenges inherent to mathematics learning and teaching (e.g. When and how do students develop mastery of the language requirements that are unique to learning and doing mathematics?)

TSG 45 participants will explore the types of knowledge represented by these various challenges, and how teachers can be supported in their learning.

We invite participants, who are interested to participate to contact the co-chairs indicating which kind of research, they wish to present (For **research** reports, indicate: (a) the topic, (b) research questions, (c) key results, and (d) implications. For **teacher education initiatives,** indicate (a) the nature of the knowledge that is the focus, (b) participants, (c) intervention/program structure, and (d) methods of evaluation.)