



TSG 6

TEACHING AND LEARNING OF ALGEBRA AT PRIMARY LEVEL

The Organizing Team

Chair: Jodie Hunter, Massey University, New Zealand

Cochair: Doris Jeannotte, Université du Québec a Montréal, Canada

Members:

Eric Knuth, The University of Texas at Austin, USA

Ann Gervasoni, Monash University, Australia

Xiaoyan Zhao, Utrecht University, Netherlands

Topic Study Group 6 aims to bring together researchers, teachers, teacher educators, and curriculum developers with research interests in early algebraic thinking (working with students up to 12 years old). We invite both empirically grounded and theoretical contributions that address one or more of the following issues in the teaching and learning of early algebra:

- Characteristics and nature of algebraic thinking and reasoning. This includes, but is not restricted to, the study of numbers, operations, and properties in the context of early algebra; reasoning about functional relationships; the study of structure; processes related to early algebra such as making conjectures, justifying, generalizing and developing age appropriate forms of proof; analytical thinking; quantitative thinking; algorithmic thinking.
- Classroom culture and the role of the teacher in fostering early algebraic thinking for all students. This includes a focus on diverse learners including students from different cultural backgrounds or students with specific learning needs including learning difficulties. Also of interest is a focus on specific teacher actions (task enactment, questioning and prompts, classroom practices) which may facilitate or support student development of early algebraic reasoning and formative/summative assessment of early algebra.
- Nature of teacher education and professional development that supports teachers' capacity to foster early algebraic reasoning in classrooms. This includes efforts to support teacher learning about early algebra, its content, student learning and pedagogical practices.

- Analysis of forms of curricular activity that support early algebraic reasoning. This includes task design, curriculum materials, physical and virtual manipulatives, and the development of use of digital tools related to early algebra. Also of interest is different approaches for introducing early algebra in mathematics curricula and cross-national comparative analyses.
- Longitudinal studies which analyse the impact of early algebraic thinking on students' later study of algebra or mathematics in general.