



TSG 4

MATHEMATICS EDUCATION FOR STUDENTS WITH SPECIAL NEEDS

The Organizing Team

Chair: Laurent Theis, Université de Sherbrooke, Canada,

Co-chair: Michelle Stephan, University of North Carolina Charlotte, USA

Members:

Anette Bagger, Örebro University, Sweden

Edith Petitfour, Université de Rouen Normandie, France

Yan Ping Xin, Purdue University, USA

The field that is interested in the learning and teaching of mathematics to students with special needs is a complex one. Several dimensions of and perspectives on teaching and learning need to be taken into account.

First, who are the students with special needs? Research pertinent to mathematics education of students with special needs covers an array that ranges from low-achieving students to students with learning disabilities or difficulties and individuals with autism or emotional disturbance, hearing or visual impairment, intellectual or developmental disabilities.

Second, the schooling context in which mathematics education is studied for these students may include one-on-one teaching, special education, or inclusion classes, with or without a variety of supporting mechanisms including curriculum materials/specialized software/tools as well as qualified special education teachers.

Third, the fields of mathematics and special education have developed a large array of frameworks, at times seemingly contradictory, to study mathematics education for students with special needs. Some of these frameworks are directly rooted into mathematics education, others delve into the field of psychology or special education or draw on a larger array of fields and frameworks.

Fourth, the focus of research in mathematics education for students with special needs covers studies interested in these students' learning mathematics, teachers' teaching mathematics to students with special needs, diagnosis of their difficulties, socioemotional and political aspects of their realities and

professional development of pre service and in service special education teachers.

Fifth, the field uses a large array of different methods to study mathematics education to students with special needs: qualitative or quantitative, single-subject studies or classroom teaching experiments, focus on the student or systemic approaches that analyze the interaction between the teacher, the learner, and the mathematical content.

In this TSG, we welcome both theoretical and empirical contributions that are focused on mathematics education for students with special needs. We are especially interested in contributions that

- highlight phenomena that are specific to teaching and learning mathematics in the context of education for students with special needs,
- study the barriers and possibilities in teaching and learning mathematics in the context of education for students with special needs,
- study the impact of instructional interventions on mathematics learning of students with special needs.
- study characteristics of students with special needs pertinent to mathematics learning, and interventions that can address disadvantages and/or take advantages of the strengths of students with special needs
- compare, integrate and/or synthesize the variety of theoretical frameworks from different disciplines that attempt to explain/interpret the teaching and learning of students with special needs.
- explore diversity issues pertinent to sociopolitical and cultural aspects of the teaching and learning involving students with special needs.