TSG 58
EMPIRICAL METHODS AND METHODOLOGIES IN MATHEMATICS EDUCATION

The Organizing Team

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General introduction to the TSG 58

Research in mathematics education employs a range of Methods, Methodologies, and Paradigms (M/M/Ps) in the service of key goals. TSG 58 is organised around six diverse goals central to ongoing research in mathematics education. TSG 58 aims at promoting a discussion about diverse strands of M/M/Ps investigating these goals:

What would be appropriate M/M/Ps for studying the

1. Improvement of Mathematics Instruction (e.g., instructional materials, strategies, organisation, assessment)
2. Learning of Mathematics
3. Teaching of Mathematics (e.g., teacher beliefs, knowledge, decision-making and professional development)
4. Classroom Processes and Interactions
5. Mathematics Education and Social Justice (e.g. access to formal education)
6. Role of Culture and Language in Shaping the Teaching and Learning of Mathematics

Each goal might be addressed using research designs that integrate one or more different M/M/P combinations. For each goal, one might ask: "Suppose you have a hypothesis about this goal. How do you set about evaluating it?" Alternatively, "Suppose you are trying to explain some aspect of individual or group behavior relevant to that goal. How would you characterize and then theorize that behavior?" Or, "How might cultural, historical and political perspectives shape one's understandings

of the contingencies related to realizing this particular goal?" Which M/M/P combinations help us understand which phenomena, in robust and reliable ways?

Suggestions to those interested in participating

This TSG is specifically focused on the empirical research methods and methodologies employed to address the six broad goals of research in mathematics education identified above. For our work to be coherent and allow for comparability, each paper should identify the specific goal(s) being explored, identify the theoretical frame on which the research design is predicated, and address the question of how effectively the research design (M/M/P bundle) addresses the designated goal(s). A short abstract (about 500 words) should clearly indicate the focus of your paper.

More specifically, full papers are expected to:

A. Specify the methodology and methods that constitute the research design and identify the particular goal/s that are the focus of the reported research study;

B. Specify the theoretical frame or rationale by which the selection of methodology and methods can be justified, discussing advantages and limitations of methodological choices re the identified research goal(s);

C. Further address the appropriateness of the chosen methods in terms of the robustness of the findings generated, their generality or specific domain of relevance, and their capacity to describe, explain or predict phenomena of importance to the field of mathematics education.