

CERME 8: Working Group 1 Argumentation and proof

Leaders

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Scope and Focus of WG1

Papers presented in the last ERME Conferences illustrate the great variety of approaches to research in this field, offering a wide spectrum of perspectives, intertwining educational issues with explicit references to mathematical, logical, historical, philosophical, epistemological, psychological, curricular, anthropological or sociological issues. The richness of diversity gave the participants the opportunity of a fruitful discussion, stimulating not only the interest of comparison but also the curiosity of undertaking a possible integration and the need of enhancing the development of international collaborations.

Call for papers and poster proposals

The organisers for Working Group 1 invite research-based papers on argumentation and proof, teaching and learning issues, classroom situations, clinical studies, dissemination and vulgarisation. We will be particularly interested in theoretical, empirical or developmental papers that address one or more of the following themes (though any papers of relevance to the overall focus of the group will also be considered):

1. The importance of *experience*, *explanation*, *justification*, *argumentation* and *proof* and their relationships in mathematics and in mathematics education.
2. The role of logic and language in teaching, learning and analysing proof and proving process.
3. The designing activity fostering argumentation and proof skills along the curriculum from kindergarten to university, and in teacher training.
4. The use, evolution, elaboration or integration of theoretical frames relevant for research argumentation and proof in an educational perspective.

These issues will be considered from the following points of view:

- (a) Historical, philosophical, and epistemological, related to the nature of argumentation and proof, their functions in mathematics in an historical perspective, including contemporaneous mathematics;
- (b) Cognitive, concerning the processes related to argumentation and proof: cognitive process involved in production of conjectures, interpretation, evaluation and construction of proofs, elaboration of axiomatic; the effect on teaching and learning proof on students' performance in mathematics etc.;
- (c) Social-cultural aspects for student construction of proofs;
- (d) Educational, based on the analysis of students' thinking in approaching proof and proving, and implications for the design of curricula.

Papers and poster proposals should use the CERME word template, and conform to the guidelines at <http://www.cerme8.metu.edu.tr>. To submit it, you must email your paper as a WORD document to Viviane Durand-Guerrier at vdurand@math.univ-montp2.fr, AND at the same time to the conference secretariat at accerme8@metu.edu.tr. If possible please also send a pdf version *in addition* to the WORD document.

Reviews and Decisions

Each paper will be peer-reviewed by three persons from among those who submit papers to this Working Group. Please expect to be asked to review up to three papers yourself between 15th September and 22nd October 2012. It may be necessary for you to revise your paper before final acceptance. Please reserve some time to do this in the second half of November. The group leaders will decide about the acceptance of posters.

Important dates

- 15th September 2012: Deadline for submission of papers.
1st October 2012: Deadline for submission of poster proposals
22nd October 2012: Deadline for reviewers to submit their reviews.
1st December 2012: Deadline for revisions to papers.