

Discussion Group 6 at ICME11

The nature and roles of international co-operation in mathematics education

The general aim of discussion groups is to engage participants in genuine and fruitful dialogue about a topic of relevance for practitioners and researchers in mathematics education. In the particular case of this group, conversations will be focused on the nature and roles of international co-operation in mathematics education.

Mathematics education, as a field of research and as a field of practice, is international. This means that both teaching practices and research practices are carried out in most places in the world and that, despite particular national or local characteristics, practitioners experience similar predicaments and share similar bodies of knowledge not only about the subject ‘mathematics’ but also and foremost about ‘teaching and learning phenomena’ related to mathematics, that is, mathematics education.

Being an international field, relations among people placed in different national contexts have always been at the basis for the development of new trends in the field. The very same history of the International Commission of Mathematical Instruction (ICMI) as an organization promoting coordinated effort in promotion of the betterment of mathematical instruction is a clear example of how the development of the field is international from its very beginnings (for a history of ICMI see <http://www.unige.ch/math/EnsMath/Rome2008/>).

The nature and role of internationalisation in relation to the advancement of mathematics education has changed with time. In our current time of globalization and intense international exchange, international cooperation needs to be carefully examined. The discussion group 5 at ICME 10 “International cooperation in mathematics education” took up this issue and concluded several important points:

- In a globalized world with increasing inequality, international cooperation can be strategic to get access to scarce resources. However, the difference in resources in a partnership can lead to a dominant role of those who have access to the resources and thereby creating an unequal partnership.
- There are clear barriers to cooperation, namely financial resources, language barriers, cultural norms, conflicting agendas and issues of voicing the results of cooperation.
- The search for a genuine, mutually beneficial, equitable cooperation could diminish the impact of the barriers.
- Whether internationalisation leads to homogenisation depends on whether cooperative participants succeed in building strong links “from the bottom” so that diversification of perspectives and forms of contribution in a cooperation can emerge (see forthcoming report in ICME 10 proceedings).

In ICME 11, the organizing team of this discussion group has tried to build further on the discussions and lessons from the previous group. Therefore, as an opening for the call of contributions to the group we proposed some questions for directing the discussions:

- What are the goals of international co-operation?
- Cooperation can take many forms, be organized in many ways, and be implemented accordingly. What are the advantages and disadvantages of

different forms, organizations, and implementations? What topics best fit into which version of cooperation?

- What are the advantages and disadvantages of using regional versus global cooperation?
- What are concrete examples of international co-operation and what has been learned that can be disseminated to all?
- What are the barriers to international cooperation and how they can be dealt with?
- Would international cooperation lead to homogenization? Would that be to the detriment of mathematics education or in its favour for acceptance of the discipline at large?

We received some contributions and therefore have decided to organize the sessions in the following way.

Session 1: Monday the 7th July, 17:00 to 19:00

17:00 – 17:15	<i>Introduction:</i> We start working and introduce the organizing team and the program for the group.
17:15 – 18:00	<i>Networking. Making connections among participants:</i> In this session we will have a “networking” activity where participants will have some minutes for writing on a piece of paper about: a. their expertise in international cooperation and what they know about it; b. what they would like to know and would like to achieve in the sessions; c. meeting other participants to exchange information about themselves and their interests for the group discussion. This will also allow to introduce each other.
18:00 – 18:30	<i>Discussing international cooperation experiences 1:</i> We will have each of the following people making some short presentations (max 10 minutes) of cases of cooperation : a. Artigue et al (European research collaboration) b. Miller (US-China: workshops for common research) c. Corine Castella (Chile-France: unequal cooperation)
18:30 – 19:00	<i>Dialogue . Identifying common issues in cases:</i> Johnny and Paola will pose questions to the participants about the cases. These two persons will be responsible for raising one issue that is common to these examples and formulating some key questions. Their input will serve as motivation for discussion.

Session 2: Wednesday 9th July, 17:30 to 19:30

17:30 – 18:00	<i>Discussing international cooperation experiences 2:</i> We will have each of the following people making some short presentations (max 10 minutes) of cases of cooperation: d. Chi Tanh Nguyen, Johnny Lott and colleagues: PCMI e. Corine Castella (Mexico-France: equal cooperation)
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	f. Valero and Carulla (PhD collaboration)
18:00 – 18:30	<i>Dialogue 2. Identifying common issues in the cases:</i> Richard and Corine will pose questions to the participants about the cases. These two persons will be responsible for raising one issue that is common to these examples and formulating some key questions. Their input will serve as motivation for discussion.
18:30 – 19:15	<i>Key topics for discussion and exchange of ideas and discussion of key issues:</i> There will be identified 3 or 4 issues that participants want to discuss based on the initial inspiration from the cases and initial questions. Here the group could split in 3 or 4 subgroups to have a discussion round on each key issue or in only one of them. People could make subgroups according to interests they found in common in the first networking session.
19:15 – 19:30	<i>Reporting back to the plenary</i> Each subgroup reports back to the plenum about their main points

Session 3: Saturday 12th of July, 15:00 to 14:00

Concluding the group and preparing points for the group report.

Team chairs

Paola Valero, Denmark and Johnny Lott, USA

Team members

Corine Castela, France; Awichi Richard, Uganda and Irma Saiz, Argentina