

ICMI

ICMI Newsletter

A Newsletter from the ICMI-International Commission
on Mathematical Instruction

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1. From the desk of Jill Adler, ICMI President



The current Executive Committee (EC) has been in office now for 18 months. So, what have we been doing? Our newsletters are one of our key means of communication and I want to use this column to open up conversation about some of the issues we, as the executive, deal with, and into which we invite the wider community to contribute. I will kick off with a point made in my welcoming of our country representatives in the March 2017 newsletter, where I wrote (emphasis added): [ICMI has] 92 member countries ... across some continents, but not others. *We hope in our term of office over the next few years, to enable greater*

representation and participation from countries in Africa, South and Central America, Eastern Europe and parts of Asia.

So what does this mean in practice, and for the ongoing work of ICMI through its EC and all its activities? Our most significant project that enhances and supports representation and participation from many countries in the regions mentioned above is the [Capacity and Networking Project \(CANP\)](#). CANP was launched in 2009, and since then has been supported by three successive ECs. Funding has been sought, obtained and used to hold workshops in five “under-represented” regions of the world. In May this year, over two days preceding our EC meeting in Taipei, two participants from each of the five CANPs (Sub-Saharan Africa, Central America and the Caribbean, South East Asia, East Africa and Andean Region and Paraguay), and three young scholars from Thailand, with members of the EC, past president Michèle Artigue and past vice president Angel Ruiz, worked together to reflect on the progress made through each

of the CANPS individually and then collectively. While the evaluation of the CANP, and its overall success, has been reported (see [Here](#)) the EC believed it would be important for CANP participants themselves to not only reflect together on their progress, but also to jointly envision and construct the path forward.

This indeed was a most successful two-day meeting, for numerous reasons. We had time to get to know one another, across CANPs, and so strengthen networking in the project as a whole; to pause and recognize just how much work had gone into establishing and then supporting five CANPs across the world; to acknowledge the numerous people whose collaborative efforts ensured their success; and to map out a three year plan for working together, with each CANP steering its own path, and all working towards the collective goal of international collaboration, support and growth of mathematics education world-wide. We learned, for example, that CANPs had fostered a regional identity and initiated, as intended, new collaborations within a region. There was an increasing awareness of the problem of defining clearly what a CANP is, or what during the workshop we identified as the question of identity.

The question of identity refers to the fact that each CANP responds to the specific mathematics education problems of its own region and operates within the limits of the possibilities and constraints of its own context. As a result, each CANP is different. For example, conference activity has been key in some CANPs for ongoing networking and shared activity; in others, building research capacity through postgraduate programs has been the focus. Sharing these different activities was illuminating of the wider possibilities for each CANP as it moves forward.

In the course of the workshop, there was at the same time an increasing consensus among the participants that a CANP should be a dynamic network of activities, not just a collection of activities. CANP activities should promote research in mathematics education, but also it should influence teaching and learning of mathematics in schools across networked countries (through e.g., workshops and other activities involving teachers, administrators, mathematicians and policy makers).

We are now working on how these efforts can be extended and sustained, the roles of all CANP participants and ICMI in this endeavor.

Each CANP will propose a three-year plan going forward, with support for this from the EC. Luis Radford, one of ICMI's Vice Presidents, has taken the lead in the CANP program. Watch the space in future newsletters for ongoing updates of progress from the perspective of the EC and then from individual CANPs.

A significant challenge for ICMI made so visible in the CANPs is how the knowledge and practices in these communities are valued and then shared locally and more broadly. I am reminded as I write this that some research domains have been significantly influenced by research emerging in the more marginal 'south' and then developed through south-north conversations across communities and contexts. One example is the research on language and mathematics where the change of conversation from issues of bilingual to multilingual classrooms was influenced by research in South Africa (see [Here](#), Chapter 2). This shift has shaped our thinking in this area of study internationally. That ICMI Study 21 had mathematics and language diversity as its focus captures this growth.

Capturing and reflecting such collective international knowledge and practice with respect to curriculum reform in mathematics education is the task of [ICMI Study 24](#). Currently, the co-chairs of ICMI Study 24, Renuka Vithal and Yoshi Shimizu, together with other members of the study's IPC, are developing the program for the Study conference that will be held in Japan in November this year. A challenge for the program is finding ways to learn from how reform has taken shape (or not) across diverse national contexts. There is a recognition of implementation "failure" of aid agency interventions promoting learner-centered pedagogy across many countries with this discussed in a range of papers, e.g. the [International Journal of Educational Development, Volume 40](#). In the comparative education journal [COMPARE, Volume 15, Issue 4](#), a forum on education reform revolves around the provocative suggestion that children in developing countries are being used as "child soldiers" in the curriculum imagination of others. Adding to this discussion is [Richard Tabulawa's analysis](#) of why pedagogical reforms fail in Sub-Saharan Africa where he likens this to "tissue rejection" - to when an organ transplant fails as there is a mismatch with the receiving body's tissue. What might we learn from this debate?

What might be a spotlight from these contexts that can shine back to the wider world on mathematics education reform practices as these have, and have not, unfolded across many countries? What might be similar and different from the [recent reflection by Dutch colleagues](#) on why its mathematics education reform in the Netherlands has not brought the anticipated benefits? In our activities since January 2017, the issue of representation and participation or inclusion continually and necessarily emerges. In September last year, the first IPC meeting for ICME14 was held in Shanghai, where the key elements of the program for the ICME14 meeting were mapped out, and the IPC worked extremely hard for six days to fashion the program and most significantly the various invited speakers. We troubled daily over regional and gender representation - be these in the selection of plenary speakers, invited lectures or Topic Group co-chairs.

Indeed, the work of this committee continues over email almost daily. Have we been successful? Only time and action in the Congress itself will tell and most likely there will be a wide range of perspectives on that question but it is one I will reflect on at the Congress. We all know that participation and representation is not only an issue of number - how many invited speakers are women or men, for example, but more substantively who is talking about what, and what in sum gets talked about. We can and must be consistently vigilant as we pursue our mission, never giving sway to "that is how things are" and always working harder to do better. For the current EC, this is a mantra.

I end here with an invitation to you, the readers, to continue this discussion and send us your comments, proposals, thoughts.

Memento from the CANP Workshop in Taipei, May 2018



Standing (from left to right): Veronica Philemon Sarungi (Tanzania), Narumon Changsri (Thailand), Nisakorn Boonsena (Thailand), Yuri Morales López (Costa Rica), Maitree Inprasitha (Thailand), Binyan Xu (China), Nelly de León (Venezuela), Angel Ruiz (Costa Rica), Gabriela Gómez Pasquali (Paraguay), Margarita Helena Martínez Jara (Ecuador).

Sitting (from left to right): Vu Nhu Thu Huong (Vietnam), Michèle Artigue (France), Jill Adler (South Africa), Zahra Gooya (Iran), Yuriko Yamamoto Baldin (Brazil).

Sitting on the floor (from left to right): Anita Rampal (India), Moustapha Sokhna (Senegal), Abraham Acavi (Israel), Richard Wanzala Batalingaya (Uganda), Jean Luc Dorier (Switzerland), Luis Radford (Canada), Dr. Sampan Thinwiangthong (Thailand).

2. ICMI welcomes the International Society for Design and Development in Education (ISDDE) as an Affiliated Study Group

ICMI Vice-President Merrilyn Goos has welcomed the International Society for Design and Development in Education as ICMI's newest Affiliated Study Group. Merrilyn was an invited keynote speaker at [ISDDE's 14th annual conference](#) that was held at the National University of Ireland, Galway, from 28-31 May. The conference theme, Culture and Educational Design, highlighted the importance of context in principled and participatory educational design, and the significant influence of culture, the historic, natural and social environs on learning, teaching and assessment.

ISDDE was formed to help educational designers work effectively as a coherent professional design and development community, focusing especially on mathematics and science education. The conference was a delightfully intimate and participatory experience, featuring paper and poster presentations, plenary talks, and small group workshops – all held in the beautiful surroundings of the NUIG campus. Congratulations to ISDDE Chair Lynne McClure and conference organizers Tony Hall and Cornelia Connolly for hosting such a successful event.

ISDDE also awards an annual Prize for Lifetime Achievement in Educational Design. In 2017, this Prize was presented to two well-known mathematics educators, Professor Emeritus Kaye Stacey of the University of Melbourne, Australia, and Professor Emeritus Zalman Usiskin of the University of Chicago, USA. ISDDE Chair Lynne McClure commented that this award recognizes the major contribution these two brilliant designers have made to the field of mathematics education over many years. Each has worked to provide research-led products including assessment and classroom materials that have had major impact on the teaching of mathematics in their own countries and across the world.



National University of Ireland, Galway

3. Global survey of mathematical, computing, and natural scientists

ICMI, through the International Mathematical Union, is a partner in an international project that aims to address the gender gap in participation of women in mathematics and science in many countries. The project has launched a global survey of mathematical, computing, and natural scientists to document the experiences of women and men working in academic and industrial settings. Nearly 9000 responses have been received since the survey was launched in May 2018, but this is still well short of the target of 45,000 responses.

ICMI invites all readers to participate in this important global survey before the closing date of 31 October 2018.

The survey is available in seven languages: English, French, Chinese, Japanese, Russian, Spanish and Arabic.

The direct link to the survey is <https://statisticalresearchcenter.aip.org/cgi-bin/global18.pl>

The survey can also be reached from the Gender Gap project home page at <https://icsugendergapinscience.org/>

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Please invite your colleagues around the world to participate in the survey. Invitation letters are available for your use in all seven languages of the survey at <https://icsugendergapinscience.org/2018-global-survey-of-mathematical-computing-and-natural-scientists/> (scroll down).



4. The new ICMI website

Readers of this newsletter are kindly invited to visit the new ICMI website at

<https://www.mathunion.org/icmi>

Please let us know if you find any bugs or malfunctions.



5. Upcoming conferences

- The upcoming quadrennial International Congress of Mathematicians (ICM) will be held in Rio de Janeiro, Brazil on August 1-9, 2018 (see <http://www.icm2018.org/portal/en/home>). There will be three invited panels related to mathematics education and the popularization of mathematics: *New Avenues for Raising Public Awareness of Mathematics*, *Math Museums: a Worldwide Explosion* and *Use of Lesson Study to Support Quality Mathematics Teaching* (for details on dates and participants see <http://www.icm2018.org/portal/en/invited-panels>).
- The upcoming 42nd Annual Meeting of the International Group for the Psychology of Mathematics Education (PME42) will be held in Umeå, Sweden on July 3 - 8, 2018 (see <http://www.pme42.se>)
- 8th European Summer University on History and Epistemology in Mathematics Education, Oslo, Norway, July 20-24, 2018. For more information, visit: <https://esu8.edc.uoc.gr>
- The next CIEAEM conference (CIEAEM 70) will be held in Mostaganem, Algeria, 15-19 July 2018. The conference theme « Mathematics and Living together » is in perfect harmony with the Commission's orientations since its creation. For more information, visit: <https://cieaem70.sciencesconf.org/>

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- The 5th Africa Regional Congress of ICMI on Mathematical Education (AFRICME 5) will take place from August 29-31, 2018, Aga Khan University, Dar es Salaam, Tanzania.
<http://www.mathunion.org/icmi/conferences/icmi-regional-conferences/conferences-to-come/>
 - The seventh EMF colloquium (EMF2018) will take place in Paris, from October 22 to 26, 2018. The theme of the colloquium is "Mathematics on the stage, bridges between disciplines." The colloquium includes 12 working groups, 5 special projects, and actions and events. For more information, visit: <https://emf2018.sciencesconf.org>
 - CERME 11 (in 2019) will take place in Utrecht in the Netherlands in February 5-10, 2019. For more information please visit: <http://www.mathematik.uni-dortmund.de/~erme/index.php>
 - CIAEM-15 (XV Inter-American Conference on Mathematics Education) will be held in in Medellín, Colombia, May 5-9, 2019. For more information, visit: xv.ciaem-iacme.org

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