ERME column

regularly presented by Jason Cooper and Frode Rønning

In this issue, with a contribution by
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ERME Thematic Working Groups

The European Society for Research in Mathematics Education (ERME), holds a biennial conference (CERME), in which research is presented and discussed in Thematic Working Groups (TWG). We continue the initiative of introducing the working groups, which we began in the September 2017 issue, focusing on ways in which European research in the field of mathematics education may be interesting or relevant for research mathematicians. Our aim is to enrich the ERME community with new participants, who may benefit from hearing about research methods and findings and contribute to future CERMEs.

Introducing CERME's Thematic Working Group 10 – Social, Cultural and Political Aspects of Mathematics Education

Group Leaders: Laura Black, Anette Bagger, Anna Chronaki, Nina Bohlmann and Sabrina Bobsin Salazar

This working group discusses mathematics and mathematics education within the realms of the cultural, the social and the political. TWG10 builds on the premise that engaging with mathematics is always more than an encounter between an individual and a mathematical object, whether it be in a classroom, a workplace or a university setting. Instead, it views such encounters as shaped and produced by wider cultural and societal contexts that are inherently social and political. As such, the group addresses questions such as:

- How is mathematics valued in society?
- How does mathematics act in society?
- Who is mathematics for?
- What are legitimate sources of reference?
- Who decides what is legitimate?
- What mathematics should be taught and learned in schools and universities?
- Who decides what mathematics is taught in these contexts?

As an example, in a recent paper [5], Maheux, Proulx, L'Italien-Bruneau and Lavallée-Lamarche question the traditional view of seeing "professional mathematics" as the reference by which all other forms of mathematics are judged. Instead, the authors suggest considering school mathematics as an alternative reference for what mathematics is.

TWG10 began in 2004 at CERME 3 with a focus on teaching and learning mathematics in multicultural classrooms. De Abreu, Grogorió and Boistrup [1] reported that this stemmed from an interest that was gathering momentum in the mathematics education community at the time, due to the increased levels of migration in European countries, contributing to increased diversity in classrooms. Consequently, the group has a long-standing interest in diversity in relation to mathematics from a number of angles:

(1) diversity as expressed in terms of the attributes of people who engage with mathematics (either professionally or in classrooms), such as gender, ethnicity, language, socio-economic status, social class, (dis)abilities, and so on;

(2) diversity in terms of ways of perceiving the world and giving structure to it, such as aspirations, worldviews, ideologies, school systems, and governance structures;

(3) diversity in relation to the variety of sites where doing mathematics takes place, such as schools and universities but also homes, workplaces, after-school organisations, communities; and finally,

(4) diversity in relation to who is doing the research and who is being researched, posing methodological issues of an ethical nature. Clearly this generates a degree of openness in terms of what counts as mathematics and mathematical thinking, but it also recognises the need to adopt an inclusive approach in considering who has the right to do, think, and learn with mathematics.

Whilst culture is viewed as central to thinking, doing, learning and teaching mathematics, more recently "the socio-political turn" in mathematics education has come to the fore [2]. TWG10 adopts a critical perspective in recognising that mathematics may be used in ways that reproduce existing power relations in the world as weapons of capitalism, but crucially, and perhaps more significantly, the group is also focused on how mathematics can be used to challenge or disrupt activities, events, and practices that produce social inequalities. This draws on work in the field of critical math-

ematics education which has been central to developing teaching approaches that utilise mathematics in ways that help learners understand their own struggles against oppression and injustice. See for instance the work of Gutstein [3, 4] and colleagues on teaching mathematics for social justice in the US.

The work of TWG10 is characterised by a strong openness to perspectives and methods that are not yet established within the field of mathematics education, and is interdisciplinary in that it draws on broader fields in social and political theory, anthropology and cultural studies. This adds to the agenda outlined above by identifying innovative and creative ways to understand, critique and address issues of social inequality in relation to mathematics, and proposes creative openings and new imageries. The work of the group also emphasises an ethos of reflexivity, as noted in TWG10's group introductory report for CERME 11: "Research in this group is characterised by an effort to reflect on its own double role in not only analysing but also shaping the possibilities of seeing and inventing mathematics education practices" [6]. This all adds up to a body of work that is both critical and architectural – it both questions the elite gatekeeping function of mathematics (particularly in education, but also in wider society) and also highlights alternative practices and ways of being that position mathematics as progressive rather than restrictive.

References

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Anette Bagger is a researcher and senior lecturer with an interest in mathematics didactics and special education at Örebro University, Sweden. Her research focuses on students in need of support and on developing teaching and learning practices relevant to such students at an individual, group and organisational level. Issues of equity, participation, exclusion and inclusion are often raised in her research.

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Anna Chronaki works at the University of Thessaly in Greece and holds a chair at the University of Malmö in Sweden. Her research evolves around philosophical, anthropological and political issues of mathematics education and works with theories from cultural and gender studies, discourse theory and philosophy of scientific knowledge. Her current research interests include discursive and non-discursive aspects of the pedagogy of mathematics including corporeality, body, identity-work and language-use in processes of learning. She is currently working on a project concerning gender, citizenship, otherness and commons in theorising mathematics education.

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