

First Announcement

Mathematics Education in the Digital Age - MEDA 4

03- 06, September 2024, at the University of Bari Aldo Moro, Bari, Italy, www.dm.uniba.it/meda4

History of MEDA

There have been three successful ERME Topic Conference on the topic Mathematics Education in the Digital Age (MEDA). The first event (ETC 5, September 2018 in Copenhagen) was inspired by the contributions to the Thematic Working Groups 15 and 16 in the CERME 10 in Dublin, highlighting the diversity of research at that time and its overlaps with other TWG themes. It was an interdisciplinary, multifaceted collaboration that brought together participants who would normally attend a range of CERME Thematic Working Groups to provide the opportunity for further in-depth discussion and debate. The successful experience resulted with intensive communication and collaboration during the Conference, which continued and carried on our collegial work towards a publication of a post-conference book "[Mathematics Education in the Digital Age. Learning, Practice and Theory](#)" in the ERME Series published at Routledge in 2021. Inspired by the contributions to the Thematic Working Groups 15 and 16 in the last CERME 11 in Utrecht and CERME 12, and the success of the ETC 10 MEDA 2 organized in September 2020 (which was held online, hosted in Linz), a third edition of the conference (ETC 13 MEDA 3, September 2022 in Nitra) offered the opportunity for further in-depth discussion and debate. Two special issues on ZDM and IJRUME are going to be published, based on the works presented and discussed at MEDA3.

Aims of the conference

Teaching, learning and assessment practices within all phases of mathematics education have dramatically changed due to global pandemics and the increasing dependences on digital technologies across education systems. Meanwhile, the field has witnessed significant changes in research foci regarding the different ways and uses of digital technologies; from supporting active engagement in rich STEM activities to enabling new assessment practices, communication, and collaboration opportunities. More than ever before, it seems that intensive research is now needed on the wide spectrum of roles that technologies play in mathematics education at all phases.

Alongside, rapid developments in Artificial Intelligence (AI) technologies are poised to impact education in, as yet, unseen ways. There is a lack of timely and responsive research that can grasp, document, and acknowledge the positive and negative impacts of digital technologies with respect to its potential to both innovate, and seek to address existing and emerging educational and societal challenges within the context of mathematics education. Therefore, 'New Digital Experiences and Perspectives in Mathematics Education' is a theme that captures the goals for this proposed ERME Topic Conference "*Mathematics Education in the Digital Age MEDA 4*", which will offer space for discussing future directions in the research in mathematics education post-pandemic, and in the age of Artificial Intelligence.

Call for papers

The rationale for the conference is as an interdisciplinary, multifaceted collaboration that will bring together participants who would normally attend a range of TWGs alongside researchers working outside of the ERME community. We will welcome theoretical, methodological, empirical or developmental papers and poster proposals in relation to the following three main conference themes, which will inform both the call for papers and the subsequent organisation of the conference working groups and their intended outputs:

Theme 1: Mathematics educators' practices, teacher education and professional learning

- Shared virtual/hybrid spaces and resources for teacher education and professional learning;
- Formative and summative assessment in remote and hybrid conditions at all levels of education;
- Teachers' experiences and practices in STEM contexts, with Artificial Intelligence, or regarding the promotion of computational thinking.

Theme 2: Design, implementations and evaluations of digital resources and environments

- Design and implementation of resources with emerging technologies such as 3D printers, Virtual Reality, and Augmented Reality;
- Applications of Learning Management Systems, Learning Analytics and Artificial Intelligence in practices, assessment and design of resources;
- Impact of emerging technologies on curriculum transformation in STEM contexts, or regarding the promotion of computational thinking within mathematics education.

Theme 3: Students' experience and learning with digital technologies

- Impact of digital technologies on students' engagement, learning and assessment;
- Development and investigation of students' learning with emerging technologies;
- Role of technologies in developing mathematical competencies in STEM contexts;
- Integration of Artificial Intelligence technologies within formal, high-stakes examination and assessment systems.

Whilst we propose these three themes to support more focused work during the conference, we are acutely aware of the overlaps and relationships between all three. Consequently, we will welcome research papers that bridge two or three of the conference themes, and we will support the 'cross-theme' work by scheduling sessions during the conference for participants to come together and discuss the relationships between the themes.

The conference particularly welcomes contributions at any level of mathematics education: pre-school, primary, lower- and upper-secondary or tertiary. Any paper/poster of relevance to the overall focus of the group will be considered.

Papers (8 pages) and poster (2 pages) proposals should use the MEDA template which will be provided through the website. Each paper will be peer-reviewed also with the involvement of the authors. The OC –with inclusion of the IPC– will decide on the final acceptance.

Members of the Organizing Committee

Hans-Georg Weigand (Germany)
Alison Clark-Wilson (UK)
Eleonora Faggiano (Italy)
Michal Tabach (Israel)

Members of the Local Organizing Committee

Eleonora Faggiano – Chair
Roberto Capone – Co-chair
Maria Lucia Bernardi
Ida Maiellaro
Saverio Tortoriello
Federica Troilo

Members of the International Program Committee

Hans-Georg Weigand (Germany) – Chair
Bärbel Barzel (Germany)
Rogier Bos (The Netherlands)
Roberto Capone (Italy)
Eirini Geraniou (UK/Greece) – member of the ERME board
Luca Lamanna (Italy) – YR Representative of YERME
Janka Medová (Slovakia)
Ornella Robutti (Italy) – leader of TWG 16 at CERME 13
Helena Rocha (Portugal)
Osama Swidan (Israel) – leader of TWG 15 at CERME 13
Jana Trgalova (Switzerland/France) – member of the ERME board
Melih Turgut (Norway/Turkey)

Further information

We aim for 20% participation by early career researchers by encouraging experienced researchers to attend with a less-experienced colleague.

We will offer an award for the best paper by an early career researcher. The IPC will clarify the definition of ‘early-career researcher’ and the criteria for the award. Specific activities for early-career researcher participants will be organized in the morning of the first day of the conference.

The peer-reviewed digital proceedings will be published on HAL Archive (<https://hal.archives-ouvertes.fr/>). The IPC will explore the following opportunities: a special issue or selected contributions in a Journal; an edited volume in the ERME series published by Routledge; Contributions to the webinar series for the ERME TWGs 15 and 16 initiatives.

Important dates

01.03.2024: Deadline for the submission of proposals
01.04.2024: Preliminary decisions on papers and posters sent (Submission of reviews).
01.04.2024: Early online registration for the conference opens
15.04.2024: The authors send a revised version if needed.
15.05.2024: Final acceptance decisions sent.
20.05.2024: Early online registration for the conference (compulsory for presenters) closes.
15.07.2024: Normal online registration for the conference closes
16.07.2024: Late online registration for the conference opens
31.08.2024: Accepted papers available for participants (if registered).