TSG 44   Distance learning, e-learning, blended learning

Co-chairs:
Rúbia Barcelos Amaral (Brazil)   rubiaba@rc.unesp.br
Veronica Hoyos (Mexico)   vhoyosa@upn.mx

Team members:
Els de Geest (UK)
Jason Silverman (USA)
Rose Vogel (Germany)

IPC Liaison Person: Johnny Lott (USA)

In Topic Study Group 44 we build on current and emerging research in distance learning, e-learning and blended learning. Specifically, we will push boundaries of what is known through an examination and discussion of recent research and development in teaching and learning through these modalities, with a focus on primary, secondary and higher education. Therefore for the full achievement of TSG44's goals the organizing team will preview a series of online and blended activities, which will be materialized from July 26 to July 30 along four slots. Specifically four areas of research will be displayed with special subtopics to be discussed. Also high-level crossover questions will lead each session, where the specificity of online (or blended) technologically mediated courses are related with support for their development, exposing how their instrumentation results from a research point of view, and finally how social media are incorporated in them.

Discussions will be led by expert invitees around previously accepted thematic papers. The content of the papers should be posted at the TSG44 Website, in a textual or in a video format, to guarantee readiness for productive discussion in each area. Moreover, we gladly communicate that ICME 13 and Springer Publishing House have developed a publication strategy by which it is assured the publication of a TSG 44 monograph that will contain the best-submitted papers. TSG 44 will serve to disseminate significant contributions as seen from international perspectives through

providing an overview of the current state-of-the-art research, sharing and discussing emerging work (trends, ideas, methodologies, results) with a call to develop a canon of research for online, blended and distance math education.

The detailed program of activities follow.

July 26th. Session I, from 12.00 to 13.30 hrs. First day. Area 1.
Els Degeest and Rose Vogel set the stage of Area 1, having **Nicholas Balacheff** as invitee to take an active part by maybe leading the discussions for the area. Possible subtopics to be discussed here will be: utilization of both Web 2.0 and Web 3.0 resources in e-learning, blended learning and distance education modalities (for instance, how are OER utilized as a resource by users?); using MOOC (what are the affordances and constraints of this approach?); and emerging work on the usage of such mobile technologies, as cell phones and tablets, for distance learning.

July 27th. Session II, from 12.00 to 13.30 hrs. Second day. Area 2.
Veronica Hoyos and Jason Silverman set the stage of Area 2, having **Gerry Stahl** as invitee to take an active part by maybe leading the discussions for the area. Possible subtopics to be discussed here will be: transitioning traditional classroom practices to use online affordances and constructing bi-learning environments; orchestrating productive mathematical conversations in an online or in a blended setting; and enabling mathematical collaboration in online mathematics education.

July 29th. Session III, from 12.00 to 13.30 hrs. Third day. Area 3.
Jason Silverman and Rose Vogel set the stage of Area 3, having **Arthur Powell** as invitee to take an active part by maybe leading the discussions for the area. Possible subtopics to be discussed here will be: using online distance education and blended learning in the professional development of mathematics teachers; using e-portfolios for reflected mathematics teaching and learning; and research methodologies and paradigms for studying online and blended mathematics education.

July 30th. Session IV, from 12.00 to 13.30hrs. Fourth day. Area 4.
Rubia Barcelos and Els Degeest set the stage of Area 3, having **Hussein Sabra and/or Isabelle Quentin** as invitees to take an active part by maybe leading the discussions for the area. Possible subtopics to be discussed here will be: developing the role of the faculty/moderator in online mathematics education; exploring the emergence and sustainability of communities of practice in online environments of collaboration and co-

construction of resources; and evaluating the effectiveness of distance education, e-learning and bi-learning.

Finally, our group or leaders in the area may identify leading questions ahead of time in each of the areas. Then, in each session the questions will be distributed and addressed to move the group along toward the deep discussion we want to promote. This approach will guarantee that what we truly want discussed is discussed through the use of the leading questions printed and ready to hand out when the discussion starts. The approach does not give "star power" to a speaker, but the identified person leading the questioning/discussion is still spotlighted. The overall goal is to have the deep discussion, record it, and be able to distribute it to a wider audience than the small group at ICME.