TSG 38   Research on resources
(textbooks, learning materials etc.)

Co-chairs:

Lianghuo Fan (UK)   L.Fan@southampton.ac.uk
Luc Trouche (France)   Luc.Trouche@ens-lyon.fr

Team members:

Chunxia Qi (China)
Sebastian Rezat (Germany)
Jana Visnovska (Australia)

IPC Liaison Person: Birgit Pepin (The Netherlands)

TSG38 focuses on issues related to mathematics teaching and learning resources, which mainly refer to school mathematics textbooks but also include other resources such as teacher manuals, student learning and assessment materials, and online resources.

During ICME-13, we hope to bring to foreground and examine various theoretical and methodological approaches used to study teaching and learning resources.

In relation to this, we seek contributions addressing broadly the areas of resources, teachers, and students, as outlined in the list of possible questions below. We are in particular interested in analyses of the evolution of interactions between resources, teachers, and students in a time of transition.

About the resources themselves: Among the teaching and learning materials available in mathematics classrooms in different countries, what role do textbooks and other curricular or learning resources play in mathematics teaching, learning, and assessment? Could we consider different types of textbooks which suit for project-based, inquiry-based or problem-based learning? How does the digitalization of information and communication affect this role? What are defining features of e-textbooks, and how could we characterize the differences between the traditional textbooks and e-textbooks?

About the teachers: What are the relationships between teachers' individual and collective resources, and how could we model such relationships? What is the role of teachers in developing textbooks and other teaching and learning

materials? What are the relationships between resource designers and users? What are the consequences of evolutions at stake for the teaching of mathematics, and for teacher knowledge and professional development?

About the students: How do students, as well as their teachers, interact through resources? What are the effects of modern ICT (particularly internet) on students' use and the design of resources? How do these evolutions affect student behaviour, learning, and relationships to the subject of mathematics?

TSG 38 overview – four 90 min regular sessions

In addition, four sessions will allow the presentation of 50 other papers submitted to TSG 38 and accepted as oral communications, precisions to come in January.

Session 1 (chair Sebastian Rezat). Setting the scene: what role do textbooks and other curricular or learning resources play in mathematics teaching, learning, and assessment

1.1 Remillard, J. *Understanding Teacher-Resource Interactions*

1.2 Leshota, M. J., & Adler, J. *Disaggreating a mathematics teacher's pedagogical design capacity*

1.3 Fan, L., Mailizar, M., Alafaleq, M., & Wang, Y. *How proof is presented in selected secondary maths textbooks in China, Indonesia and Saudi Arabia*

1.4 Qi, C., Zhang, X., & Huang, D. *Research on textbooks used in teaching transformation for secondary school*

Session 2 (chair Jana Visnovska). How does the digitalization of information and communication affect the role of resources?

2.1 Trouche, L., Gueudet, G., & Pepin, B. *Open educational resources: a chance for enriching mathematics teacher's resource systems?*

2.2 Kynigos, C., & Kolovou, A. *Teachers as designers of digital educational resources for creative mathematical thinking*

2.3 Pu, S., *Research on international development trends of primary mathematics textbooks in the 21st century*

2.4 Rocha, K., *Uses of online resources and documentational trajectories: the case of Sésamath*

Session 3 (chair Chunxia Qi). Teachers' collective work through resources

3.1 Van Steenbrugge, H., & Ryve, A. *A collective perspective on educative curriculum resources*

3.2 Faughn, A. P., & Borchelt, N. *Mathematics teachers' circles: a resource perspective on classroom transfer*

3.3 Wang, C. *Analyzing teachers' expertise, resources and collective work throughout Chinese and French windows*

3.4 Essonnier, N., Kynigos, C., Trgalova, J., & Daskolia, M., *Studying the role of context in social creativity for the design of digital resources*

Session 4 (chairs Lianghuo Fan and Luc Trouche). Teachers and students interactions through resources

4.1 Ruthven, K. *Researching instructional activity and student interaction with digital resources*

4.2 Visnovska, J., & Cortina, J. L. *Resources as a means of supporting teachers in planning for interactions with students' ideas*

4.3 Naftaliev, E., *Engagements of prospective teachers with e-textbook*

4.4 Kim, O.K., *Teacher decisions on lesson sequence and their impact on opportunities for students to learn*

For any question about TSG38, please email L.Fan@southampton.ac.uk and Luc.Trouche@ens-lyon.fr