

Working Group 4 / Group de Travail 4

Cultural, political, and social issues / Sujets culturels, politiques et sociales

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In the first day, we have started with a presentation of some objectives for the group work. Besides that, two papers regarding Culture Constructions (both in History and for students ranging) were presented and discussed. The first, from Samuel Bello and Karin Jelinek, focused on the school selection process and monitoring of gifted students and analysing language games through Wittgenstein's concept. The second, from David Guillemette, brought us a discussion of the value history of mathematics in mathematics classrooms from a sociocultural point of view, after some conceptual elements of the theory of objectivation.

Second day was allocated for the papers regarding sociocultural factors in mathematics teaching. Three papers were in this slot. The first, from Vasiliki Chrysikou and Charoula Stathopoulou, was dedicated to the issue of teaching mathematics to students with severe intellectual disability. The focus of this paper was on the sociocultural factors that affect teaching and learning mathematics of three students, and the potential of home-school collaboration to promote students' active involvement during grocery shopping and money dealing. Second paper, from Filipe Sousa, Pedro Palhares and Maria Luísa Oliveras, tried to analyse the knowledge and the critical thinking level of students from two different cultural contexts (one in a fishing community the other in a more urban area) regarding the mathematical topic of symmetries, finding some slight differences between students of the two contexts in these aspects. Third paper, from Nina Bohlmann and Uwe Gellert, concerning students solving word problems, discussed the claim that standardized testing (re)produces the myth of mathematically illiterate students, but they argue the problem may rely on the standardized test and their designers and not on students' capability itself.

Third day was devoted to culture and language either as obstacles or resources. First paper was from Peter Appelbaum, Charoula Stathopoulou, Christos Govaris, and Eleni Gana and explored aspects of culture, its role as a resource or as an obstacle, discussing, through their experience in a project regarding the education of Roma Children, how it affects mathematics teaching in the classroom, considering that norms and practices in the classroom are mostly political rather than culturally embedded. The following two papers, second and third of the day were both presenting and discussing aspects of a European Commission funded project. The second paper, from Franco Favilli, attempted to describe a teaching unit, which aimed at overcoming the learning obstacle represented by the contrast between the simplicity of classroom language and the complexity of mathematics language. Third paper, from Hana Moraová, Jarmila Novotná and Andreas Ulovec, focused on the issue of coping with the increasing language diversity and presented some points regarding the implementation of a teaching unit, concluding that teachers, instead of detailed teaching units, what they really need is topics with different cultural origins that they can adapt to suit the needs of their particular group of students.

Fourth paper, from Lisa Boistrup and Eva Norén, discussed the issue of Swedish second language learners and their success in the national tests in mathematics in grade 5. They verified that some schools adapted the administration of the test to give second language students a better opportunity and other schools didn't and discussed it from an institutional perspective.

Fourth day was dedicated first to the issue of the complexity of mathematics teaching and learning through comparative studies and then to the preparation of the group report. First paper, from Benedetto di Paola, tried to understand the reasons why Confucian Heritage students have been

performing better in PISA or TIMSS, by interviewing a Chinese teacher and exploring similarities and differences between East and West didactical approaches. Second paper, from Andreas Moutsios-Rentzos, discussed the role of perceived proximity in mathematics education as a crucial factor in the determination of the relevance of theoretical and empirical tools in mathematics teaching and learning research, by the consideration of a research project on proof.

For all the papers, we chose to limit the presentation to ten minutes, leaving 5 minutes for a reaction prepared in advance by another participant of the group, and ten minutes more for a generalized discussion. The group felt that this allocation of time and roles was extremely productive generating fruitful discussions and great involvement among the members of the group, as it was depicted in the last moment's video recording.