CERME 8
6-10 February 2013 Manavgat-Side, Antalya - Turkey

WG13
Early Years Mathematics

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Data

22 submitted papers – all accepted for the Conference
19 presented papers
Most about Kindergarten

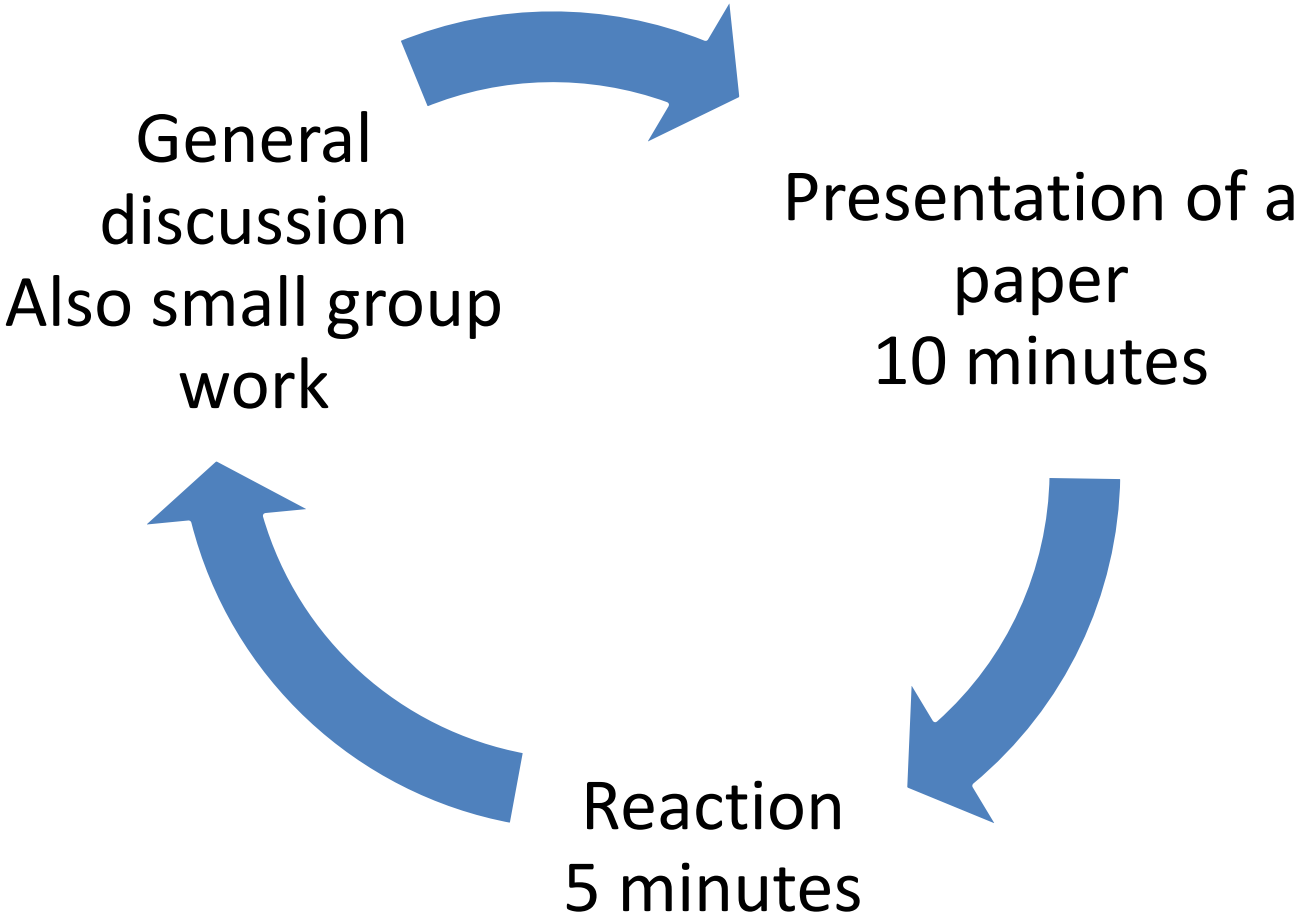
34 participants

Germany (12)
Italy (7)
Sweden (5)
Norway (3)
France (2)
Greece (1), Israel (1), Turkey (1), Canada (1), China (1)

Structure: timeslots

timeslot	day	Time	hours	Pap. #	FOCUS
1a	Wed. 6	17.00 – 18.00	1	2	**Introduction DIALOGUE BETWEEN CULTURES (ADDITION AND SUBTRACTION)**
1b	Wed.6	18.00 – 19.00	1	2	**MEASURING**
2	Thu. 7	8.30 - 10.30	2	4	**GEOMETRICAL SHAPES**
3	Thu. 7	16.00 – 18.00	2	3	**ICT AND DIGITAL TOOLS**
4	Fri. 8	9.00 – 10.00	1	2	**CURRICULUM 1**
D1	Fri. 8	10.00 – 10.30	½		**SMALL GROUP AND DISCUSSION 1**
5	Fri. 8	11.00 – 12.00	1	2	**CURRICULUM 2**
D2	Fri. 8	12.00 – 12.30	½		**SMALL GROUP AND DISCUSSION 2**
6	Sat. 9	8.30 – 9.30	1	2	**KINDERGARTEN**
D3	Sat. 9	9.30 – 10.00	½		**SMALL GROUP AND DISCUSSION – QUESTIONS 3**
7	Sat. 9	16.30 – 17.30	1	2	**FROM K TO PRIMARY SCHOOL**
D4	Sat. 9	17.30 – 18.00	½		**SMALL GROUP AND DISCUSSION 4 Conclusions**
R1 / R2	Sun.10	9.00 – 11.00	2		**GROUP REPORT 1-2**

Structure: papers



DIALOGUE BETWEEN CULTURES (ADDITION AND SUBTRACTION)

Different cultures with their own advantages and disadvantages are, rather than oppositional, complementary. Different education systems can learn from each other. Task design in Italy and China. Different epistemologies, different pedagogies, different cognitive processes.

MEASURING

Measuring is approached through indirect comparison of length, with the aid of diverse tools or with engagement in drawing a map for small toys (L: cars, boats, etc.).

Differences between tasks directly oriented towards the construction of mathematical meanings and play activities with social interaction drawing on outside experiences.

Geometrical shapes

- *Several theoretical backgrounds:*
  - *Figural concept (Fishbein)*
  - *Comprehensive conception (Vollrath)*
  - *Prototype theory (Szagun)*
  - *Van Hiele levels + prerecognition (Clements & Battista)*
  - *Concept image, concept definition (Vinner)*

Geometrical shapes

- *With several kinds of situations:*
  - *classifying, defining, denominating, reasoning, describing, explaining, working on properties*
  - *starting from several materials (shapes, figures ; objects or representations of them)*
- *Influence of the curricula on the research and ways of teaching (curricular constraints)*

Geometrical shapes

- *The link with movements and finger pointing can be made with materials (shapes, but also technologies, technologies can take into account the "continuity" and geometrical transformations).*
- *the question of artefact / instrument.*

ICT & Digital Tools

1. *What are some of the roles of the teacher?*
   - *The assistant approach – e.g., help running the software*
   - *The mediator approach – e.g., supporting interpretation and pointing out crucial elements*
   - *The teacher approach – e.g., using questions and comments to monitor the interaction with digital tools*

ICT & Digital Tools

2. *iPads and mathematical play*
   - *Supporting mathematical learning while allowing children to play games on the iPad.*

3. *Finger counting and adding with touch counts*
   - *Direct mediation through fingers and gesture of the touch screen interface.*

Questions related to ICT and learning mathematics in preschool

- *How are digital tools and apps different than non-digital tools?*
  - *Can building with physical blocks be replaced by an app?*
- *What are some of the affordances and constraints of using ICT with young children?*

Counting and enumeration

1. *The giant Slavonic abacus*
   - *Working with preschool teachers and using semiotic mediation to explore a system of tasks for the abacus.*

2. *"Enumeration" and the importance of lists*
   - *Hidden knowledge which is required for counting.*

Reasoning in preschool

- *Characterising curriculum statements related to childrens explorations.*
- *Childrens work with tasks promoting early generalisation.*
- *Different kinds of explanations.*

Transition between preschool and primary school

- *Potential of modelling and dramatised stories in teaching of counting with reference to narrative and paradigmatic way of thinking*
- *Differences in primary and kindergarten teachers' beliefs revealed by considering their typical mathematical activity*

Outside the classroom

- *How to identify the development of mathematical concepts outside the classroom? In family ?*

Other issues

- *Methodology (videocoding)*
- *Teacher education*
- *Teacher beliefs*
- *Transition from Kindergarten to primary school (continuity/discontinuity)*

Perspectives