

Nordic Graduate School in Mathematics Education (NoGSME) organises workshop in the Norma08 conference  
Tuesday 22 of April 2008 at 14.45 to 18.30

**Theme for the NoGSME-workshop**

*The use of ICT in mathematics education – neither salvation nor catastrophe?*

*What can we learn from research and what are our conclusions?*

**Introduction: Opening and lectures (70 minutes) 14.45-15.55**

Introduction. Welcome and short background by Barbro Grevholm

Three short lectures focusing on research results (20 minutes each):

Mette Andresen - Use of ICT in school mathematics

Per Eskil Persson - Use of graphic calculators in school mathematics

Christer Bergsten - Teacher education and use of ICT in mathematics learning

**Coffee break (30 minutes) 15.55-16.25**

**Group work (65 minutes) 16.25-17.30**

A number of knowledgeable group leaders will take care of one group each and focus mainly on a specific theme inside the overarching issue:

Mette Andresen, Christer Bergsten, Mary Billington, Paul Drijvers, Ingvald Erfjord, Hildegunn Espeland, Eva Jablonka, Barbro Grevholm, Gudny Gunnarsdottir, Mogens Niss, Per Eskil Persson.

The chair leads the discussion and one other person decided by the group is taking notes to the report back (saved on OH slide or computer memory stick)

The research perspective is central in the work.

**Reports from group work (30-40 minutes) 17.30-ca 18.00**

The workshop ends with a plenary session where each group leader will get about 3 minutes to report back from the group the most important issues and questions raised.

**Closing general discussion (20-30 minutes) ca 18.00-18.30**

Open plenary discussion, summary and closure by Barbro Grevholm.

*Questions or themes to be treated in the groups (we might use only a selection of these)*

Pre-school children use computers today without any problems. How will this influence the learning of mathematics in schools?

Use of ICT in the pre-school - how and when is it done efficiently?

Development work is going on where mathematics classes in upper secondary school only use one tool during lessons: the computer. What could be the consequences of that?

Teachers need competence development in the area of use of ICT-tools in teaching and learning mathematics. How could this issue be resolved? And what kind of competence is needed?

What are the characteristics of use of ICT in teaching and learning mathematics at university level?

Different views on use of ICT and traditions in school mathematics and university mathematics seems to be the case? What problems or opportunities for the learners can be created by this fact?

What are the most strengthening features and most threatening features in use of ICT in school mathematics learning?

What kinds of questions about the use of ICT in mathematics education are meaningful to ask and possible to answer?

What in mathematics is learnt more easily by the use of what ICT?

Why is it that computers are generally still not much used in mathematics teaching?

Why is it that use of (graphing) calculators in mathematics teaching is still at an *ad hoc* level?

At which step(s) in a didactical situation, and how, can ICT support the students' work:  
Devolution – Action – Formulation – Validation – Institutionalisation

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