

Astrid BECKMANN, Schwäbisch Gmünd, Damjan KOBAL, Ljubljana  
Claus MICHELSEN, Odense (Moderators)

## **Mathematical Literacy and Cross Curricular Competencies Through Interdisciplinarity, Mathematising and Modelling Science – Examples from the European ScienceMath-Project**

The project ScienceMath is an interdisciplinary European co-operation project for the promotion of mathematical and scientific literacy. It is supported by the European Commission. Co-operation partners are universities and schools of Germany, Denmark, Finland and Slovenia. Objective is the development of proven teaching sequences and -modules that lead to a comprehensive and multidimensional learning of mathematic contents and concepts. It is the basic idea to encourage mathematic learning in scientific contexts and activities of the pupils. Here the project offers concrete teaching and learning material to integrate the formal aspects of the European mathematical lessons into interdisciplinary and applicable contents.

The basis of the project is an interdisciplinary approach with sciences especially with Physics. The pupils shall experience Mathematics in an appropriate interesting and important way by the means of extra-mathematical references; learning in interrelations shall contribute to an intuitive mathematic understanding. With the aid of scientific contexts and methods the gap between formal mathematics and authentic experience shall be closed and on the other hand the variety of mathematic items shall be experienced.

In the moderated session we present examples from the project:

- Introducing mathematical functions to students at the age of 13/ Einführung des Funktionsbegriffs in der Sekundarstufe I (Thilo Höfer)
- Two simple math ideas in technology (Damjan Kobal)
- Preparing the teachers for an interdisciplinary curriculum: Modelling courses for secondary in-service teachers (Claus Michelsen)
- Erkunden des Variablenbegriffs durch physikalische Experimente (Simon Zell)
- Fächerübergreifender Unterricht zwischen Mathematik/ Naturwissenschaften und Kunst (Astrid Beckmann)

### **Literatur**

Please visit our website: [www.sciencemath.ph-gmuend.de](http://www.sciencemath.ph-gmuend.de)