



Educating the Educators, Essen 15-16 December

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Physics Education Volume 50, s127, doi:10.1088/0031-9120/50/2/127

During two intense days in Essen, at the University Duisburg-Essen, 171 educators from 21 countries met to learn and discuss different efforts to influence the teaching in very large numbers of science and mathematics classrooms. The participants were first welcomed by Bärbel Barzel, local organizer, Katja Maaß, coordinator of the project Mascil - MATH and SCIENCE for Life and by Jürg Kramer, Director of the DZLM - German Centre for Mathematics Teacher Education, and later by Sylvia Löhrmann, Minister of School and Further Education of North Rhine-Westfalen, and Ulrich Radtke, Rector of the University, together with some local musicians (see photo).

The first keynote speaker, Konrad Krainer, Director of the School of Education at the Alpen-Adria-University, Klagenfurt, Austria, described a vision of a pyramid game, with "teachers as disseminators of innovation" and "practitioners supported by researchers". He emphasized attention to Content, Community and Context for successful implementations. He also talked about the change in from "train the trainers" to "educate the educators" and would like to aim for Inquiry-Based Learning (IBL) for all - teachers, multipliers, researchers, educational administrators and policy makers - as a way to learn more about the effectiveness of different approaches to teaching and learning.

After a short poster session and a second welcome, the participants divided into 4 separate tracks on the themes:

1. Scaling up with multipliers in face-to-face professional development courses
2. Blended learning concepts and e-learning support
3. Disseminating and scaling-up through materials
4. Professional learning communities.

We focused on tracks 1 and 3. Judith gave a presentation in Track 1 on "Building capacity: developing a course for mathematics and science teacher educators" and Ann-Marie presented a poster on "Teacher roles in amusement parks".

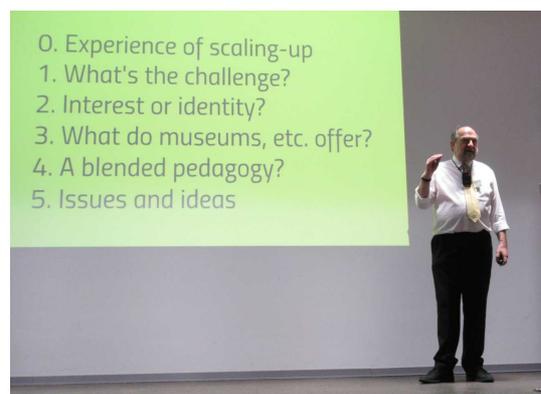
Dissemination and implementations

Dissemination, implementation, IBL (no longer IBSE) and "best practice" were common words at the conference - not surprising with many EU-projects represented. The portal Scientix <http://www.scientix.eu> aims to ensure that materials developed can be accessible also after the original projects have finished, as a bank of "good practices". The question was asked: what is required for teachers to use materials produced by others?

M. Doorman (U. Utrecht), J. Garcia (U. Jaén) and D Potari (U Athens) presented an activity from the Mascil resource bank at <http://www.mascil-project.eu/classroom-material> used in three different contexts in three different countries. The design of a parking garage, given external constraints, sparked students' engagement in all contexts - in contrast to many traditional mathematics problems, where the context, if any, is rarely taken seriously (or needed) for the solution. However, the lessons turned out very differently for different groups. An experienced teacher in the project first chose to elicit questions from the students, helping them to spend time making sense of the problem, before embarking on the investigations, leading to more in-depth work. This teacher also required students to present the reasons for their choices which also gave the teacher considerably more insight and possibility to assess the work performed. A conclusion from the comparison was that open-ended activities, that offer little scaffolding for the students, instead requiring more scaffolding for the teacher to implement them.

H Eijkelhof (Freudenthal Institute) talked about the successful interdisciplinary project NLT - "Nature, life and technology" (www.betavak-nlt.nl), where a total of 70 modules have been developed since 2006 in collaboration between teachers, researchers and also industry, in development cycles each lasting 18 months. An important success criteria has been the demand that three teachers from the same school are committed to collaborate in the project. Teachers from nearly 100 schools using the material meet at annual conferences. He emphasized the importance of keeping the modules up to date.

The second day opened by a presentation by Justin Dillon on "The role of informal science institutions in teacher education". He opened by noting that, in spite of the focus in Mascil on "World of work"-problems, very little could be seen in the program about the work done by science centres and other institutions, that also provide significant teacher CPD. He also noted that in many context "training" is needed more than "education", e.g. when an experienced teacher needs familiarity with a new device.



It was often obvious from discussions that the situation for teachers varies widely between different countries. The differences were quantified in the final plenary presentation by Peter Birch on "Teacher professional development in Europe: perceptions, policies and practices". He also presented more recent data from the Eurydice network, due to appear in June 2015 on the collection of reports at <http://eacea.ec.europa.eu>.

In the final panel discussion, the track leaders were invited to express wishes for Santa Claus. Günther Törner, representing a fifth track where professional development institutions got together, wished for a "master plan" for teacher CPD, including plans for master programmes for teachers. Two different approaches for masters programmes had been presented in one of the tracks, by Judith Hillier, with a program focusing on experienced math and science teachers developing their own capacity as educators, and Bärbel Barzel, focusing on "multipliers" in the scaling-up systems. However, a number of important questions were raised in these sessions, and others, at the conference: how do teachers (and those who support them) identify the teachers' CPD needs, without telling teachers what to do (there are already plenty of voices doing that)? How can teachers be supported to make use of the many teaching resources and findings that come out of these educational research projects? And who are the teacher supporters/educators/multipliers – what do they need to know and what form does their role take? Something to discuss in the science team room next breaktime!