GASFA

Genre et apprentissages scientifiques en France et en Allemagne

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SEMINAIRE 3

29 mai 2008 de 17h à 19h en salle F103 à l'ENS LSH

Dr. Helga Stadler, Université de Vienne

Gender issues in physics education.

Résumé :
The PISA 2006 results show that in all OECD countries boys outperform girls in physics and that gender differences in attitudes towards science are considerable high. In my presentation I will give an overview of the general outcomes of research in this field and a closer view on my own research on interaction in physics class, particularly between teachers and students. In the final part of the presentation I will discuss intervention strategies that aim to close the gender gap in physics.

SEMINAIRE 4

5 juin 2008 de 17h à 19h en salle F103 à l'ENS LSH

Pr. Manuela Welzel, Université d'Éducation de Heidelberg

Development, Proof and Evaluation of a Gender Sensitive Computer Assisted Learning Environment – or How to Transfer Research Results Into Practice

Physics is one of the most interesting subjects for boys at school in Germany and one of the most uninteresting subjects for girls. The reasons for this fact are based on different interest profiles of girls and boys. Research showed for example that the interest of girls in physics could be increased if the contents of the curriculum were embedded into applications referring to medical aspects, if they offered a phenomenological approach or had social relevance.
But not only the subject matter influences the interest and motivation of girls and boys in physics. The methods and the material to be used for teaching and learning are also important. Surveys show for example that opportunities for students to work cooperatively, the possibility to work on own projects, to discuss own ideas have a positive influence on the interest and motivation especially of girls, but also of boys.

With these assumptions in mind, we developed in Heidelberg a computer assisted learning environment. The guiding question for that was: How should a computer assisted learning environment for physics education be conceptually designed to advance the interest and motivation of girls and boys on an equal footing? We tried to take into consideration a maximum of recent results of physics education and gender research known at this time. Thus, the computer assisted learning environment, developed and evaluated within this project, includes a multimedia system in combination with physics experiments and interactive animations. The environment allows team work. Students have the possibility to use an intrasystem chat room for communication and sign up on the system entrance for learning and working in pairs. Furthermore, the students have the possibility to document their experimental results directly in the software. The conceptual design of this environment takes into consideration the specific physical interests of girls and boys. The content

includes optical topics e. g. light and shadow or the scientific dimension of seeing. These subject matters offer a phenomenological approach and refer to medical aspects.

We expected a positive influence on interest and motivation especially of girls.
How this worked, and how we proceed we will present in this talk. The Presentation will include the conceptual design of the environment and the results of the evaluation.