

## **PROMOTE MSc – PROvide MOTivation Through Exciting materials in Maths and Science Objectives**

### **Rationale and Background:**

In all of the participating countries one can observe a lack of mathematics and physics teachers, as well as a lack of students in mathematics and physics teacher training. School children can hardly be motivated to be interested in maths and physics, partially because of lack of motivating material, partially because the lack of teachers leads to non-subject-specific teachers (e.g. biology teachers) having to teach mathematics and physics. Therefore schools produce children with little or no interest in studying maths and physics or becoming maths and physics teachers, exacerbating the already non-optimal situation described in the first sentence.

Additional rationale of the participating countries:

Austria feels a particular bad situation in the lack of physics teachers and teacher training students, as well as the need to motivate students to further study in mathematics education.

Slovakia feels an additional lack of chemistry teachers and a rapid worsening of the situation.

Czech feels a reduction of quality in mathematics and physics knowledge of children.

### **Aim and objectives:**

The main aim is to address the problem of the shortage of young people, and especially women, attracted to study and enter teacher training in the mathematical and scientific subjects of the school curriculum.

Specific objectives:

- to exchange data and views on this problem in a European context
- to collect material from the participating countries, from teacher training institutions, teachers, etc.
- to design and implement curriculum materials which reflect the best European practice for use with trainee teachers
- to make materials available for use in teacher training institutions, and by students in schools
- to evaluate the project products
- to disseminate evaluated project products, using electronic format where possible

### **Innovations:**

- exchanging and sharing best European practice
- producing innovative (new and motivating) material
- using electronic format and internet technology for collecting and distributing material
- humanisation and popularisation of maths and physics

**Pedagogical and didactical approach:** not applicable

### **Target groups and expected impact:**

- Primary target group: Mathematics and physics trainee teachers (at universities, and eventually at other teacher training institutions for primary and secondary school teachers)  
Impact: To provide motivation through exciting materials, leading to more motivating teaching, and generally to a better image of mathematics and physics in society.
- Secondary target group: School children taught on practice by these trainee teachers.  
Impact: To provide motivation through the trainees of the primary target group by using the collected and produced materials, thereby motivating the children to become more interested

in the subjects, eventually leading to more children interested in studying mathematics and physics, and/or becoming teachers in these subjects.

**Justification of Duration:**

Three years are required to complete this project. The first year will be needed to organise the national workshop and to collect a reasonable amount of material. The second year will be used to analyse the material at an international level, to identify areas where additional material has to be produced, and to actually produce this material. The third year will be used to translate the material, to evaluate it, to produce a reasonable index, to publish the material in different media, to disseminate it and to present and discuss the outcomes, as well as continuing strategies.