



## Report of Meeting Researches in Didactics of Mathematics and Computer Sciences January 22 – 24, 2016 Bratislava, Slovakia

The meeting Researches in Didactics of Mathematics and Computer Sciences was held in Bratislava, Slovakia from the 22th to the 24th of January, 2016 at Comenius University in Bratislava. It was organized by the Doctoral School of Mathematical and Computational Sciences of University of Debrecen and the Faculty of Education of Comenius University.

The 60 participants – including 47 lecturers and 15 PhD students – came from 5 countries, 23 cities and represented 32 institutions of higher and secondary education.

After the warm welcome of Róbert Osadan, vice dean of the Faculty of Education, Comenius University in Bratislava and head of Department of Preprimary and Primary Education the conference was opened by professor Gyula Maksa, leader of the Didactic Program of the Doctoral School of Mathematical and Computational Sciences. He welcomed the participants and emphasized the importance of the fact that the conference was held this year at a new location, in Bratislava, in Slovakia.

The subjects presented in the lectures and posters of the conference were of great variety. Beyond the researches on the didactics of mathematics, the use of alternative methods in teaching mathematics, history of mathematics there were several lectures on different subjects in computer sciences.

A very memorable event of the meeting was the sightseeing in the historical centre of Bratislava.

In his closing speech, professor Károly Lajkó, ex-leader of the Didactic Program of the Doctoral School of Mathematics and Computer Sciences appreciated the high quality of the lectures, with special regard to the works of the invited lecturers and PhD students. He also gave his thanks to all the lecturers, the chairs of sessions, and also to the main organizers Eszter Herendiné-Kónya, Edita Partová and Lilla Korenová, whose work essentially contributed to the success of the conference.

Subsequently, we provide the abstracts of the lectures in alphabetical order of the authors' names.

### List of abstracts of lectures

ANDRÁS AMBRUS: *The worked example effect in mathematics education*

Using worked out examples in mathematics education is traditionally present in the teaching. In our presentation we analyze the possibilities to use worked examples from the cognitive load theory point of view. After a short presentation of human cognitive architecture we give a broad analysis of the cognitive load theory and the possible effects to decreasing cognitive load. Our main aim is to analyze the worked examples in mathematical problem-solving teaching. Beside its theoretical base we give concrete examples taken from our teaching to demonstrate the effect of worked examples on students' learning.

GABRIELLA AMBRUS: *Openness as a problem while solving tasks*

There are already some open tasks to be found in the mathematics textbooks, but their number is quite low. This's probably one of the reasons why solving open tasks is a problem for students. In a survey among elementary school, middle school and first grade university students, we were looking - with the help of a reality based problem - for the answer to the question that in what extent the recognition and the handling of the openness depends on the age of the solver of the problem.

VERONIKA ÁRENDÁS: *Talents and competences*

I have been teaching at ELTE TTK since 2012 and in the Jedlik Ányos Secondary Grammar School since 2013. I am also a third year PhD student at the University of Debrecen. My research topic is the criteria and development opportunities of mathematical talent in education. In this presentation, I demonstrate the unique competences and skills needed to solve certain test problems from my