



543223-LLP-1-2013-1-LV-KA4- KA4MP

# Innovation in education of scientific topics in vocational education

Bratislava, Slovak Republic

28 September 2015

## Minutes

21 teachers and experts and 18 students participated in the first Slovak national seminar. Teachers were from our partners and associated schools especially from vocational education schools. Seminar was held on Secondary electrical technical school in Bratislava. Experts were from Scientific faculty, Pedagogical fakulty and from Methodic pedagogical Centre in Bratislava and from State Institut of Vocational Education in Slovakia, On seminar participated 5 mathematic teachers, 4 chemistry teachers , 3 physics teachers and 1 biology teacher. During seminar presented 2 experts and 4 teachers your approach to supporting scientific topics in your schools. The discussion with students about scientific topics was very interesting. One conclusion was that students prefer and enthusiastic teachers compared to a teacher who is expert in the topic.

Profile of teachers and experts:

1. Ing. Iveta Šafránková, director of Secondary school of electrical engineering, Hálova 6, coorganisator of this seminar, and Mgr. Alena Brychtová, deputy director
2. TRANSFER Slovensko s.r.o. - director - PhDr. Juraj Dúbrava, CSc.
3. PhDr. Vlasta Dúbravová – project coordinator Goerudio and lector TRANSFER Slovensko s.r.o.
4. Methodic Pedagogical Centre in Bratislava – PaedDr. Darina Výbohová, PhD. – deputy director for pedagogical area
5. Teacher and trainer: Ing. Beata Ľubová, Common school Nižná
6. Participants of our Goerudio work group in presentation list
7. Teacher –Dr. Táňa Genšorová, Associated school Vocational secondary school Tvrdošín
8. Other participants, teachers, students

**Aims of the seminar:**

- a) Presentation of Goerudio project and their outputs which are on project portal Goerudio
- b) To give information for all seminar participants how to use Goerudio project by teaching of scientific topics on vocational secondary schools
- c) Discussion with teachers, experts and students about innovations which can increase student motivation for scientific topics

School director **Ing. Šafránková** welcome all participants on this national seminar , introduce your school and presented how Goerudio have positive input for scientific teaching on this vocational school.. **PhDr. Juraj Dúbrava, PhD.** presented experiences education company TRANSFER Slovensko with participation and organising this kind of projects and appreciate active approach all schools and teachers during all project.

Very positive reactions were from students and teachers for presentation of PhDr. **Vlasta Dúbravová**. **She presented Goersudio project – aims, outputs, and activities. She underline innovative approach of this project and students participation.**



Mathematics teacher **RNDr. Viera Kolbaská**, is a part of our project work group, she comment project outputs which are useful for your teaching process in class. For your teaching work was very interesting initiatives and education products which presented connection between aims in cognitive area with aims in social development of students. Students reaction during seminar were very positive for this approach. Students joint in discussion and comments thus products and activities and in expert part of seminar students were involved in activities which prepared our expert Katarína Javorová from Scientific faculty Comenius University in Bratislava.

**During the expert part of national seminar presented teacher and trainer – Ing. Ľubová and Dr. Výbohá** from Methodical and Pedagogical Centre in Bratislava

**Ing. Beata Ľubová**, Common school Nižná, topic: **Students enforcement on labour market from point using of scientific topics on vocational schools.**

**a. Presentation of Ing. Ľubovej** give theoretical frame for innovation in scientific education (students competences on vocational school connected with state education programme (ISCED3) and samples how in vocational school can be connected scientific topics with future jobs. That means to see mathematics around in all environment in which we live. That means underline experiences teaching in which theory is only one part of education in which theory is a part of solution from practical oriented situations. Mrs. Ľubová is author of publication *Mathematic modeling in hands of students - 2013* and in this book she presented examples of mathematical models in practical.

**PaedDr. Darina Výbohá, PhD.**, is deputy director for pedagogical area in Methodical-Pedagogical Centre in Bratislava, and she presented need of innovation in education and teaching of scientific topics which should increase students scientific literacy and their motivation for these topics and after that better outcomes in international PISA tests. Name of this presentation was: **Actual problems in teaching of scientific topics.** She appreciates complex approach in Goerudio project, database of initiatives as source for innovation in this area.

During the afternoon programme was round table with discussion about experiences in practical teaching of scientific topics, what motivates students for more interest in scientific topics and about teachers' experiences in this area. **Dr. Táňa Genšorová**, from associated school in Tvrdošín appreciates invitation for this seminar, seminar topic and Goerudio portal which is very inspiring for your teaching.

### Seminar outputs and conclusions:

For the question what motivates students for more interest in scientific topics seminar participants were:

- connection of theoretical and abstract topic with practical life
- connection between scientific topics with other topics
- need to teach in atmosphere in which is possible teaching with mistakes, to discover right answer and don't get right answer from teacher
- very good atmosphere in class, enthusiastic teacher
- teaching oriented to students
- teachers as one of the project outputs have need for changes in your curricula after this Goerudio project
- to use outputs of Goerudio project
- very interesting are comments teachers work from students –
- involving students to cooperation in this project gives students more interest in scientific topic and motivation for this area

