

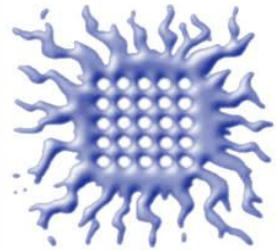
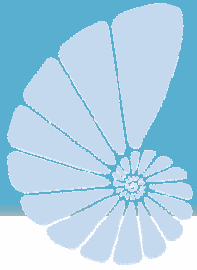
The International Conference “Science Education in School” Galati, Romania
April 18-21, 2013.

Experience in the application of IBSE method in teaching science in Serbia

Dragana Miličić

Faculty of Biology, University of
Belgrade, Serbia





Vinča Institute
Belgrade

France: *La main à la pâte*

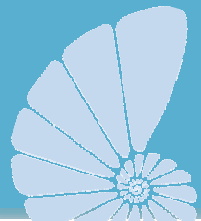
Sweden: NTA

China: *Learning by doing*

Great Britain: *XXI Century Science*



The starting point: Providing resources for teachers without any financial support



Digital Books are also available in Serbian through the web site:

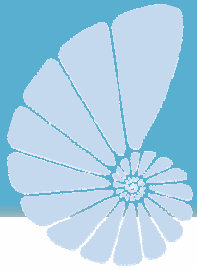
Wynne Harlen:

http://rukautestu.vin.bg.ac.rs/inquiry/pdf/PROCENJIVANJE_IBSE.pdf

Karen Worth, Mauricio Duque, Edith Saltiel:

http://rukautestu.vin.bg.ac.rs/bdd_image/prilog2.pdf

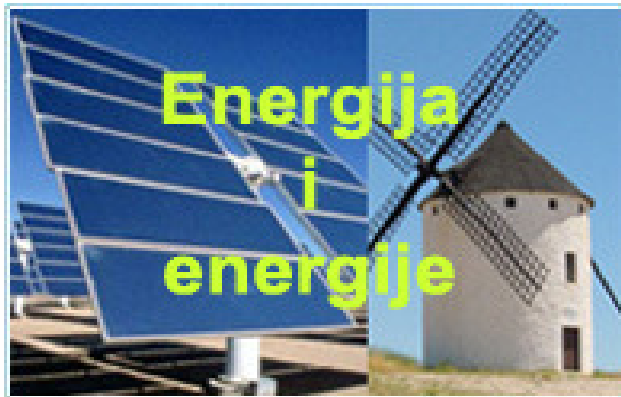




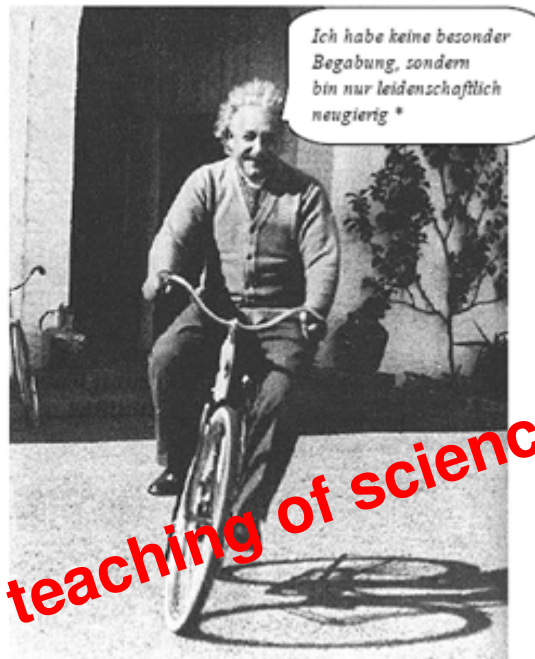
<http://rukautestu.vinca.rs>



Different Modules and teaching resources are available through the site



Energy and energies



Integral teaching of science

Matter and materials

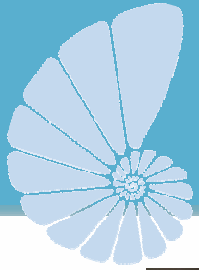


A growing project: Creation of own resources, establishment of teacher networks for dissemination of inquiry-based science education



Serbian Regional Centres

The Serbian Team members from 14 Regional Centres



The Pedagogical kits



Air
Water
Electricity
Colors
Floating and sinking



Five boxes containing more than
20 experiments and translated books

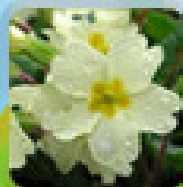
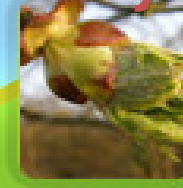
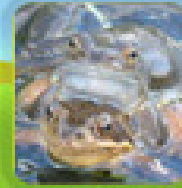
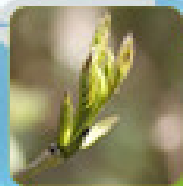
Started in January 2010 for 38 months.

Please select your country

- ...
- ...
- Belgium (French)
- Denmark
- Finland
- France
- Germany
- Greece
- Ireland
- Netherlands
- Poland
- Portugal
- Romania
- Serbia**
- Slovakia
- Slovenia
- Spain
- Sweden
- United Kingdom
- Belgium (Dutch)

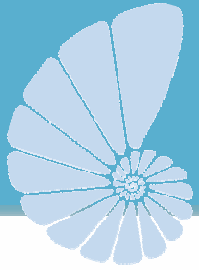
To See a Green wave moving up across Europe in springtime

FP7 Science in Society



Following the 4 species between February and June

Serbia: 14 regional coordinators
55 schools
160 teachers
More than 1000 pupils



Continuing Professional Development: Providing one-day courses for teachers

The eight-hour sessions of professional development have been organized for more than 1,000 teachers and trainers



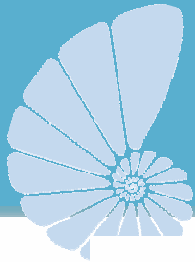


Mobilising decision-makers and a local support network to ensure the project's viability

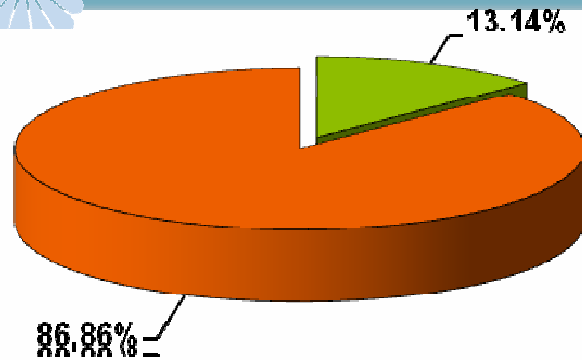
Five Southeast European workshops on “*Hands on primary science education*”

[Proceedings](http://rukautestu.vin.bg.ac.rs/inquiry/) is available on <http://rukautestu.vin.bg.ac.rs/inquiry/>



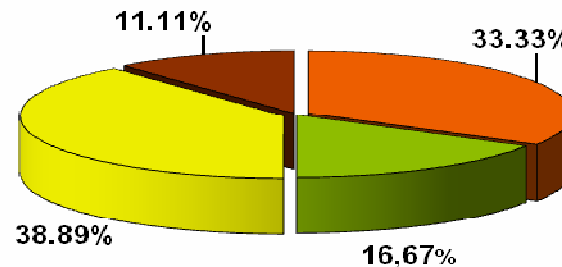


Current practice results and feedback



percentage of teachers who taught or teach the optional subject Hands On

percentage of teachers who did not teach the optional subject Hands On



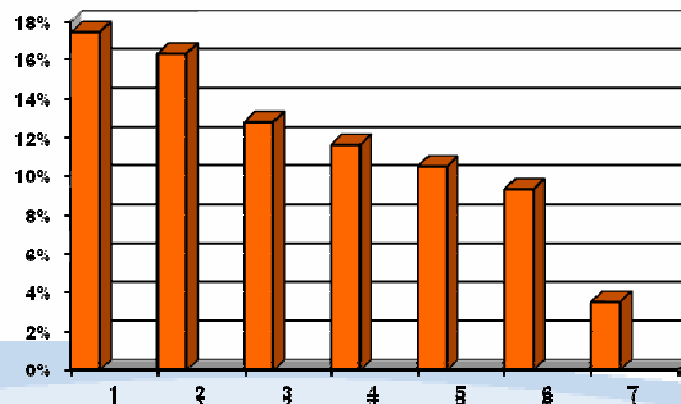
pupils who showed better results

pupils who did not show better results

pupils who showed partial improvement

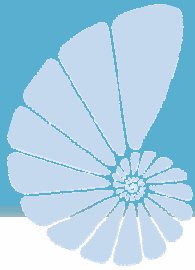
no answer

Percentage of the pupils that especially liked the given experiment



The most liked experiments:

- 1 - Air as fuel – a self-moving car
- 2 - Owl with glowing eyes
- 3 - A construction that can both float and sink- a submarine principle
- 4 - Magnetic potential of materials
- 5 - Construction of a rocket-balloon
- 6 - Lighting in two room of a doll house
- 7 - Electric Hand; Floats/sinks in different types of liquid; the existence of air-the candle that 'burns under water'.



Challenges and Lessons learnt

Main challenges:

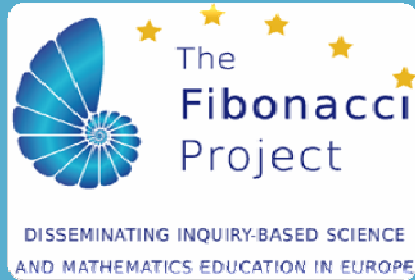
- The lack of financial support
- Society's inertia against change in education
- Teachers mainly present science via lecture
- Parents are mainly interested in children's assessment, rather than for their competencies and skills



Lessons learnt:

- In the beginning you need a small enthusiastic team in order to inject fresh impulse into inquiry based education. It is very important to overcome a lack of financial support in the start-up phase.
- Learning from the experience of the partner-projects is very important.
- Establishing a local support network and mobilizing decision makers are key elements of success.
- An education project will only be sustainable by the strong support of the Ministry of Education.





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Thank you

