

# HSCI2013

Proceedings of the  
10<sup>th</sup> International Conference on

## Hands-on Science

Educating for Science and through Science

1<sup>st</sup>-5<sup>th</sup> July 2013

Pavol Jozef Šafárik University  
Košice, Slovakia



The Hands-on Science Network



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initial data. Version Control Systems (VCS) ensure tracking the changes made in a project. The two courses, “Programming technologies and program products development” and “WEB-programming”, deal with the above mentioned matters. After a web-product is tested and uploaded, its support and Search Engine Optimization become a priority task to ensure a reliable operation and high usage. Thus, the web-development curriculum equips our students with a toolkit which they need to develop efficient web-related solutions.



## ONLINE SCIENCE CLASSROOM

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**Abstract.** Project “Online Science classroom” is a sample of digital technologies in science education and popularization of science in society. During the workshop we are planning to present:

1. Elements of modern science electronic applications to school physics textbooks (Electronic Application for Students and Lessons Constructor for Teachers)
2. Multimedia interactive models and scientific games based on authors original development – “Network environment for collective modeling”
  - DNA constructor
  - My First Collider
  - First Nanotechnologist
  - Memo + Knowledge
3. Samples of research labs in collective modeling environment (Physics, Biology)
4. Interactive model of electron microscope in the augmented reality environment
5. Multimedia interactive expositions for science education (Microcosm, Macrocosm, the Cosmic Calendar by Carl Sagan, Morphology of Plants)



## HOW VIDEOS CAN BE USED IN E-LEARNING – A CASE STUDY

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**Abstract.** For this case study video was used in the context of a course of Biological Classification and Evolution. This is a course that integrates within a 3-year Environmental Sciences degree (Bachelor). This degree is given by the Universidade Aberta (Open University of Portugal) in e-learning. The objectives of this course are essentially to study the biological classification as well as their evolution in temporal scale. Videos were used to explain evolution, illustrate the scheme of animals and their behaviour. To achieve this objective several links were used to free videos on the internet. Descriptions of certain behaviour are much easier to understand when viewing animals doing it compare with a text description. The visualization of videos by students is advice but not compulsory. Some of the student used it others no. From written evaluations was detected that the students that watch the videos have better results in identification of animals, principally if the photo is taken while an animal is moving. A small survey is done to evaluated how the students considering videos important to their learning.

