

## ICT use in science Education

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The popularity of natural sciences (e.g.: Physics, Chemistry, Mathematics...) as well as the interest in those fields have declined in the schools world wide in the last decades – as reflected by several pedagogical studies. The world of the 21st century however can not be understood without a basic knowledge of natural sciences.

During my research work I already studied the students' attitude to physics, their motivation and IT knowledge by a wide poll made by questionnaires. As a result of the survey it has become clear that science classes should be made more colorful and interesting, if we want to let our students leave the secondary school with adequate level of knowledge and with applicable skills in physics, chemistry and other natural sciences. To turn classes more interesting it is necessary to take advantage of the opportunities offered by IT and multimedia. In this process the use of an interdisciplinary approach is highly desirable. It is not easy to reach the target but it is possible by applying complex methods.

As a practicing teacher I had introduced the project method<sup>1</sup> as a qualitative method of pedagogy, and as a demonstration of and motivation for the scientific research activity. The method is complex enough to efficiently mobilize masses of students to meaningful learning and to help them acquire knowledge that they can use effectively.

In order to change the attitude of the students I organized and took part in national and International collaborative projects where the use of ICT was required. In the last five years, I also applied enthusiastically the cooperation learning, Dr. Spencer Kagan's method, at international level, in different common projects organised by the European and Hungarian Schoolnet.

In the last 10 years I took a leading part in the planning and organization of those projects which all required the use of ICT (E.g.: The Solar constant measurement<sup>2</sup>, Observation of the Venus transit, The Day of Physics in our school, XPERIMANIA project).

As a Hungarian National coordinator since 1 year I had opportunity to involve students and teachers to another big international project called XPERIMANIA, lunched by the European Schoolnet. The aim of this project was to help students in lower and secondary school classes (covering pupils aged 10-20) and their teachers to understand the wide variety of applications of physics and petrochemistry and how this relatively new and fascinating science has contributed to the evolution of many day-to-day items. It is well known that this project could not be assessed, and worked out without the ICT techniques.

During the conference I aim to present my former research activities in the use of ICT in Education, focused at XPERIMANIA<sup>3</sup> project, which is still open this school year

I believe that the method will highly increase the motivation of the students for the work in science..

Use of the ICT in Education combined with the project method could be a promising asset to modernize the teaching of physics and make natural sciences more attractive by engaging multimedia and Internet communication.

**Keywords** ICT, project method

<sup>1</sup> Jarosievitz Beáta (2006): "A projekt módszer alkalmazása a fizika oktatásban" (Project method in Education), In: Esélyteremtés az oktatási informatika eszközeivel, tanári kézikönyv a 12-14 éves korosztály oktatásához, Szerkesztő: Kárpáti Andrea, Nemzeti Tankönyvkiadó, (old.: 123-129)

<sup>2</sup> Jarosievitz Beáta (2005): In: 101 Innovative Idea (Microsoft) - 6.13-6.23

<http://download.microsoft.com/download/b/b/5/bb584cad>

<sup>3</sup> <http://www.xperimania.net>