



## The use of meteorological station in Science Park during May floods

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A lot of educators and education process researchers have noticed and pointed out the need of broader learning space than a mere classroom, in learning physics and natural sciences. Many cognitive installations and didactic patterns for an extended school space have been proposed and implemented in schools [1, 2] and outdoor science parks [3]. From their side, school designers have argued that the learning environments can be more educationally and optimally useful if the architecture of the built, natural and cultural environment would be used as a teaching tool [4]. Through the merge of these two tendencies the concept of a school as a three-dimensional textbook was created [2]. The growing team of educators and researchers in Serbia [2] has been promoting this idea among students, teachers, and cultural and educational authorities, ranging from individual schools and municipality to state level, with emphasis on the school buildings investors and public. The net of schools and educational institutions has been implementing this concept [5]. Their activities have attracted the attention of newspapers and e-media [5].

The Science Park in Šabac, developed in the town in the vicinity of Belgrade, was completed in 2010. The Science Park is a part of the Center for professional advancement of educators (CSU) [6] that is surrounded by the eight-year Primary school, kindergarten, water tower and the church. Twenty-six interactive installations are connected to teaching units from all science subjects. For example: The periodic system of elements was placed on the building facade, the structure of graphene, sodium–chloride crystal structure, planetary model of atom (Chemistry) Pythagorean theorem, pyramid related to Tales doubt, golden ratio (Mathematics); model of DNA (Biology); globe-DING, educative fountain, brachistochrone, Newton's pendulum (Physics), the Greenwich meridian replica, sundial and meteorological station (Earth's science).

During May 2014, when big floods hit our region, the meteorological station was the most useful and visited installation in the Science Park. Inside CSU students observed parameters at the touch screen connected to the outdoor measuring instruments. Continuous observations and recording of rainfall, air pressure and temperature made them witnesses and researchers of catastrophic floods. The scale of this flood was biggest in the last one hundred twenty years, since we have had recordings in Serbia. Besides observing rainfall, air pressure and temperature the students updated data in charts and graphs, and then they compared to those updated by the meteorological station. Observing the data enabled the students to study this phenomena quantitatively and to face the problem courageously in their town, which was one of the maximally affected during May floods (14 – 21 May 2014).

### References

1. Interactive Physics Demonstrations, edited by Joe Pizzo (AAPT, College Park, MD, 2001).
2. [http://www2.pmf.uni-lj.si/SEEMPE/index\\_files/Bozic.pdf](http://www2.pmf.uni-lj.si/SEEMPE/index_files/Bozic.pdf)
3. R. Mir, Outdoor Science Parks, 13th Int. Public Communication of Science and Technology Conf., Salvador, Brazil, 2014.
4. Anne Taylor, The Learning Environment as a Three-Dimensional Textbook, *Children's Environments*, 10 (2) (1993) 104.
5. <http://www.poko.ipb.ac.rs>
6. <http://www.csusabac.rs/galerija.php?lan=cir&id=223>