Novel technologies as facilitators of learning process - inspirational examples from Aviation Education Center Krakow Airport

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Abstract. We live in a time of enormous technological progress that cannot be ignored or stopped. It affects every sphere of human activity, including education. Therefore, teachers face an increasing challenge in motivating students, especially in physics. Classic experiments are often difficult to perform using outdated experimental equipment and cannot compete with the stimulating environment. Our Aviation Education Centre (CEL) presents new technologies that contribute to action-oriented education of students, and also provide a deeper understanding of physical phenomena and increase the attractiveness of classes.

Introduction

Today's generation of students was almost born with a phone in their hand. New technologies are something they feel very comfortable with and often expect to be able to use them in the learning process as well [1, 2]. On the other hand, new technologies, in general, increase the possibility to show interesting phenomena and scientific laws, but also allow to take students on a virtual journey where they would not normally have the chance to go [3, 4]. Seeing their potential, we are also trying to implement new technologies at the Kraków Airport Aviation Education Centre.

Novel technologies in Aviation Education Centre

The Krakow Airport Aviation Education Centre is the only one of its kind, where the focus is not directly on the laws of a field of science, but on its application - in our case specifically in aviation. We provide training for different age groups in aviation procedures and safe travel, but also in the practical application of science, including physics. For the latter, we are supported by new technologies such as:

- virtual reality stations that allow us to show parts of the airport that are inaccessible to the public and to verify aircraft components, such as setting the engine blades in motion or checking pitot tubes, to which a person not working at the airport has no access,
- a dedicated app to run a field game around a publicly accessible part of the airport using QR codes, beacons and AR technology,
- a proprietary A320 cockpit with a flight simulator in which all key indicators are operational and their operation is explained during the training flight,holograms, which offer the possibility of preparing 3D film footage.

What will be presented

The poster is envisaged as a place to present the new technologies we are using, along with the rationale for their choice, examples of use as well as key advantages and disadvantages. An important point will also be to present the feedback received from their recipients - both students and teachers.

References

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