Geophysical Research Abstracts
Vol. 20, EGU2018-3912, 2018
EGU General Assembly 2018

WORKING AND LEARNING WITH VIRTUAL WORLDS Eliciting further abilities with hands- on technology.

Annalaura Achenza
ISTITUTO TECNICO INDUSTRIALE "G. M. ANGIOY"- Via Principessa Mafalda di Savoia –07100 Sassari , Italy (alaurach@tiscali.it)

The impact that technology has had on today's school has been quite significant. Innovative materials are rapidly entering the science class and educational networks are increasing on the web, offering teachers plenty of resources and new intriguing tools to boost their teaching strategies.
The purpose of this project was to promote a deeper understanding of concepts, starting with a simple topic to get to academic and social experiences where students are the main characters involved.
Therefore, based on the above mentioned new strategies and resources, the topic on Volcanoes was developed with 14/15- year- old students in an Italian secondary school. A task - based approach was adopted, and the macro task was divided into sub- tasks, so that students could achieve the required results more easily. The activities and experiments were intended to cover this topic using readily available, inexpensive materials. To start with, we used a papier mâché volcano the students had built on a previous activity. Each lesson was arranged in three different steps where students worked in cooperative groups: an initial warming up under the teacher's guidance, a core part and a final part to summarize the work done.
The micro tasks focused on:
• the vocabulary needed to identify the main constituents of a volcano
• the chemical reaction used to simulate a volcanic eruption
• the use of augmented reality to show how volcanoes work
• a follow-up activity on the vocabulary learnt
As part of the project, all the participating students were asked to show their entire work to younger fellow students making this a very satisfactory experience, as they felt important actors in the teaching-learning process.
In order to monitor all the steps of the project, at first, a process-oriented in-itinere diagnostic assessment was used. And then, to evaluate the results a summative, product-oriented, holistic rubrics was preferred.
The feedback received showed that the experiment was excellent in helping stimulate students' motivation. Augmented reality proved to be a very useful complementary new tool to enhance the learning experience thanks to its dramatic visual impact.
In conclusion, with the rapid development of science and technology, the tools, contents and methods of the education industry are facing huge challenges. Educators and students have seen first-hand the thanks to the integration of new technologies, such as augmented reality, educators can gain better cognitive results and raise the overall quality of education available to students.