WORKING AND LEARNING WITH VIRTUAL WORLDS

Eliciting further abilities with hands- on technology.

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AMBASSADOR
The community for science education in Europe

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WORKING AND LEARNING WITH VIRTUAL WORLDS

ELICITING FURTHER ABILITIES WITH HANDS-ON TECHNOLOGY

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THE IMPACT THAT TECHNOLOGY HAS HAD ON TODAY'S SCHOOL HAS BEEN QUITE SIGNIFICANT

EDUCATIONAL NETWORKS OFFER TEACHERS PLENTY OF RESOURCES AND NEW INTRIGUING TOOLS TO BOOST THEIR TEACHING STRATEGIES

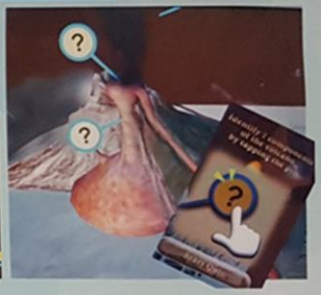
MAIN CONSTITUENTS OF A VOLCANO → CHEMICAL REACTION → AR VOLCANO

PROJECT OVERVIEW

AR VOLCANO

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.

CLASS	APPROACH	ACTIVITIES AND EXPERIMENTS	LESSONS' STEPS	MONITOR
14/15 YEARS OLD STUDENTS	TASK - BASED COOPERATIVE GROUPS OF STUDENTS	READILY AVAILABLE, INEXPENSIVE MATERIALS	WARMING UP UNDER THE TEACHER'S GUIDANCE CORE PART FINAL PART TO SUMMARIZE THE WORK DONE	A PROCESS-ORIENTED ON-GOING DIAGNOSTIC ASSESSMENT A SUMMATIVE PRODUCT ORIENTED HOLISTIC ASSESSMENT



FOLLOW-UP ACTIVITY ON THE VOCABULARY

CONCLUSION

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.

This learning project focused on :

- The impact that technology has had on today's school
  - innovative materials are rapidly entering the science class
  - educational networks are increasing on the web, offering teachers plenty of resources and new intriguing tools to boost their teaching strategies

Technology

QuiverVision

use of augmented reality

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educational networks' resources

How does SCIENTIX work?

- Scientix is a project funded by the European Commission and coordinated by European Schoolnet (EUN), based in Brussels.
- At the national level, Scientix is supported by Scientix National Contact Points (NCPs) and Scientix Ambassadors.
- Scientix promotes Europe-wide collaboration among STEM teachers, education researchers, policymakers and other STEM education professionals.

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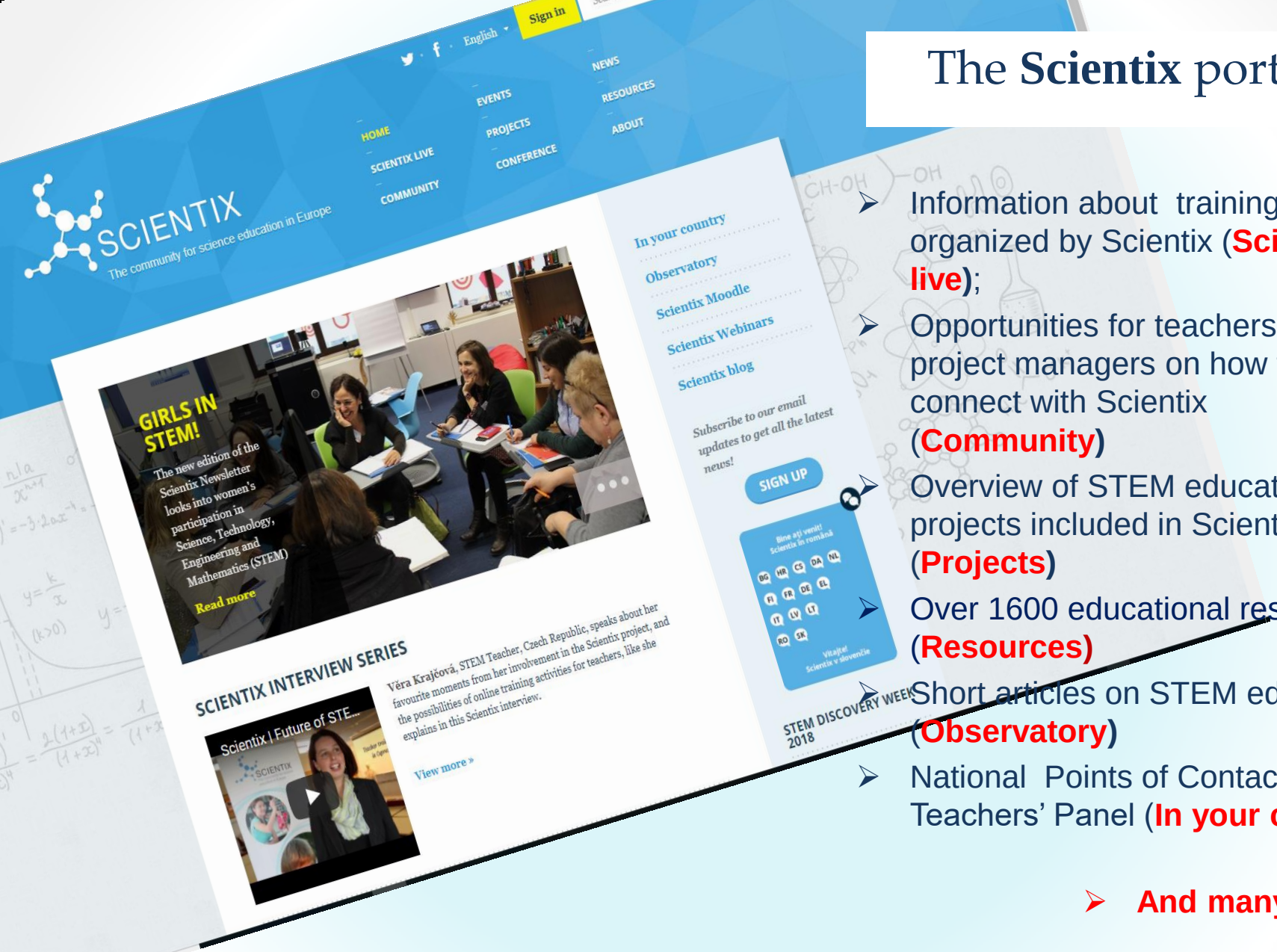
- I am a **Scientix Ambassador** and as a **member of the Scientix Teacher's Panel** – my role is to promote Scientix among STEM teachers and other science education stakeholders in Europe and to advise teachers on how to get involved in European activities regarding STEM.

The **Scientix** portal:



- Information about training events organized by Scientix (**Scientix live**);
- Opportunities for teachers and project managers on how to connect with Scientix (**Community**)
- Overview of STEM education projects included in Scientix (**Projects**)
- Over 1600 educational resources (**Resources**)
- Short articles on STEM education (**Observatory**)
- National Points of Contact and Teachers' Panel (**In your country**)

- **And many more...**

PROJECT OVERVIEW

The purpose :
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 (students were asked to show their entire work to younger fellow students).

Class

- italian secondary school
- 14/15- year- old students

Approach

- task - based
- macro task was divided into sub-tasks
- students worked in cooperative groups

Activities and experiments

- readily available, inexpensive materials

Lessons' steps

- warming up under the teacher's guidance
- core part
- final part to summarize the work done.

Monitor

- a process-oriented in-itinere diagnostic assessment
- a summative, product-oriented, holistic rubrics

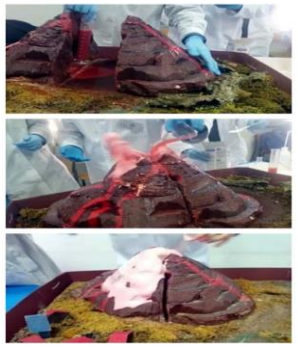
As part of the project, all the participating students were asked to show their entire work to younger fellow students making this a very satisfactory experience, as they felt important actors in the teaching-learning process (peer tutoring).

3 micro tasks

- To start with, we used a papier mâché volcano the students had built on a previous activity.

1. the vocabulary needed to identify the main constituents of a volcano

2. the chemical reaction used to simulate a volcanic eruption



3. the use of augmented reality to show how volcanoes work and a follow-up activity on the vocabulary learnt

https://youtu.be/H4-gPhRG2HY

QuiverVision

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.