

Project Overview: Italy

Digitalisation in the EU and European schools

istituto d'istruzione superiore „Gemelli Careri“ Oppdio Mamertina

Description of the activity:

- Describe the content, methodology and expected results of the activity.

- How is it going to be related to or integrated with the normal activities of the involved schools?

Our involvement in the project consists in ensuring IT support to the different activities.

Our school has a lot of experience in this field and the IT and telecommunication section has got many successes winning different national competitions in the areas. It is an ECDL and a CISCO centre.

We will take care of installing the website providing the instruments to publish the results of the two planned years of cooperation and a blog for partners to communicate.

The partner students, together with their Italian mates, during the LTTA in Italy will work on the building of a web site and the different useful applications of technology. Our students, in fact, carried out several projects to demonstrate the positive possible issues they can achieve. As far as our project is concerned very important is the application created to insure the authenticity of a food product and protect the "Made in Italy" brands from counterfeits. This application can be used and learnt by partner students while in mobility in our country.

In particular, through the use of the well-known Italian open source platform "ARDUINO" and a card reader / writer NFC, a technique has been developed for creating an

electronic label with a "security code" derived from the serial number of the TAG throughout a complex algorithm implemented in the microcontroller platform.

By placing one smartphone with NFC technology on a TAG pasted on the product package, we read the code thanks to an app Arduino, and not only verify the authenticity but obtain all of the tracking information regarding the chain of distribution.

The NFC Technology (Near Field Communication,) is a wireless radio frequency technology that allows the exchange of information, i.e. the transfer of small amounts of data, between two devices at a short distance. When two devices equipped with NFC are within a range of 4 cm, they create a "point to point" network between them and can "communicate", or send and receive information.

A very important aspect of the NFC technology is that it is arranged to read the so-called TAG, which are small and cheap programmable chips used to give information and perform operations to NFC terminals.

The TAG used in NFC are "passive", i.e. no power supply (battery) is needed the TAG is powered by the induced current generated by the device that reads it, the Reader (e.g. a smartphone), thanks to the phenomenon known as magnetic induction.

Moreover, during the mobility students could enjoy the creation of

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simple animation using IT applications.

How is participation in this activity going to benefit the involved participants?

Istituto d'Istruzione Superiore „Gemelli Careri“ Oppido Mamertina is situated in two small towns in Calabria (South Italy) : Oppido Mamertina and Taurianova. Our territory is mostly rural and is characterized by problems connected to inadequate infrastructures and socio-economic problems.

Our students use public transport to attend school and it is often the only meeting place for them. I.T. is fundamental to help them overcoming the problems deriving from living in such a difficult and isolated area. With the introduction of computers, the world was changed forever.

Information technology plays a key role for students to keep in touch, to develop social, creative and cultural skills and enrich their knowledge, helping to prevent school dropouts as well. It helps students to be prepared for the future.

During the mobility we will work on the building of the web-site and a blog for partners to communicate. Moreover students will experience how a microcontroller system, created by our classes, can be integrated within a food chain to insure the authenticity of a product and protect the "Made in Italy"

brands from counterfeits. (In particular, through the use of the well-known Italian open source platform "ARDUINO" and a card reader / writer NFC, a technique has been developed for creating an electronic label with a "security code").

By placing one smartphone with NFC technology on a TAG pasted on the product package, they will be able to read the code thanks to an app Arduino, and not only verify the authenticity but obtain all of the tracking information regarding the chain of distribution. To make the activities more enjoyable, students will also work on the creation of simple animation using it applications.

Besides, the students will work on the blog to keep in touch and the design of the tutorials.