

Report

Title of the workshop:

Learning Mathematics and Physics with Computational Modelling: Two **Examples**

Project covering: Scientix 2

Expert – Vitor Teodoro

Duration of the workshop – 4 hours

Type of participants: Maths, Physics and Chemistry teachers

Local: Escola Secundária Emídio Navarro- Almada- Portugal

Number of participants - 20

Date: 29 April 2014

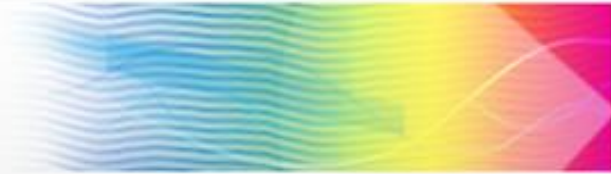
The workshop was organized as an autonomous activity within the scope of Scientix 2. It was publicized on DGE's website, as well as on a platform used by the central bodies of the Ministry of Education and Science to communicate with the heads of School boards. More than 40 teachers from the fields of Maths, Physics and Chemistry wanted to participate in the workshop; yet, only 23 were selected, due to the hands-on approach of the workshop.

There were 26 participants at the workshop: 22 teachers from all the country's regions, the School Principal of the school where the workshop took place, António Neves, the General Director of DGE, Fernando Reis, the expert Vitor Teodoro, who was responsible for the main activities of the workshop, and a member of the Portuguese Scientix2 team, Isaura Vieira.

The workshop began with a welcome message by the School Principal, António Neves. Then, the General Director of DGE, Fernando Reis, presented Scientix2 at a glance, focusing on the new facilities and the professional development tools which the project grants teachers of natural sciences. After that, he provided the audience with some useful information on other European Projects in which DGE is engaged, namely Ingenious and ITEC. He also provided the participants with information on forthcoming events of Scientix and encouraged the participating teachers to apply for the European conference to be held in Brussels, 24-26 October, 2014. Then, he gave the floor to Isaura Vieira, who provided the audience with more information concerning events within the scope of Scientix 2 and procedures on how the teachers could join the initiative. Then, Vitor Teodoro presented the Goals of the workshop. He explained the reasons why computational modelling is now a major approach used in the scientific endeavour, both in the physical and life sciences, and urged maths, science and physics teachers to work together, using a transversal and interdisciplinary approach that encourages critical thinking among the students and fosters inquiry-based learning.

After that, both the features of Galileo Program and the concept of the mathematisation of motion were presented, followed by an exploration exercise with Modellus and Excel using the original data from Galileo and Oscillations and waves: from observation to mathematical models. The methodology used was mainly hands-on, by working with concrete examples of the programs of the disciplines involved, as well as including periods of collective discussion.

At the end, an assessment of the workshop was made and the participants asked some questions on the goals of Scientix and on how teachers can participate in the project. The assessment of the seminar was very positive, which became apparent both in the teachers' interventions and in the evaluation sheets they filled in.



Teachers were enthusiastic about the Scientix Agenda, namely about the conference to be held in Brussels, 24-26 October, 2014.

The General Director of DGE, Fernando Reis, presented Scientix2:



The General Director of DGE, Fernando Reis, presented Scientix2:



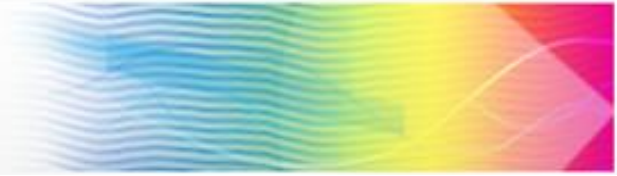


Image of some participants working (hands-on):



Another image of Participants working (hands-on):



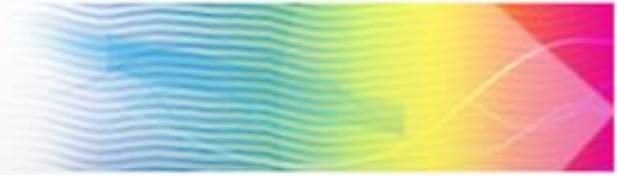


Image of some participants – collective discussion:

