



JULY 2015



Dear Partners,

the TEMI participation to Science on Stage 2015 at Queen Mary, University of London on June 17-20 was a unique occasion to inform the science teachers community about TEMI and interact with over 350 educators coming from across Europe and Canada. We were very pleased to work with 3 exceptional TEMI teachers: Jens Eschem from Germany, Fiona McKeever from Ireland and Coral Smith from the UK took ownership of the TEMI stand and talked at length of their experience of the TEMI training and of using the TEMI methodology. We also presented the project and some mysteries during a dedicated workshop which provided space and time for many questions. Discussions also took place around Pegasus, the TEMI mascot displayed at the stand. The “Teaching the TEMI Way” booklet which describes the TEMI methodology and innovations was a favourite with more than 150 copies picked up by participants.

The production of the TEMI book of mysteries is now in its final stage. The consortium has developed 30 mysteries with guidance notes for teachers and student worksheets. The book is currently undergoing final checks and design. It will be available in the autumn in English from the TEMI website.

Thanks to all partners for their contribution
Peter McOwan and Dorothee Loziak

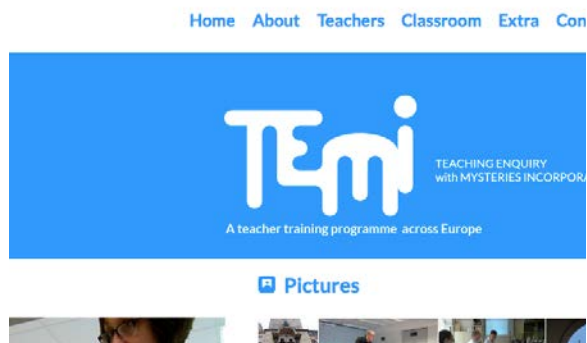
WHAT'S COOKING?



Hectic summer for TEMI Israel

June and July were very busy and exciting months at Weizmann Institute, organizing workshops at the TEMI Prague meeting, writing the WP5 report and planning the next cohorts.

TEMI Israeli led two workshops during the meeting in Prague: the first workshop dealt with the characterization of TEMI activities in terms of the four main innovations. In the second workshop, partners shared the activities with other each other and most teacher trainers took part in this workshop. The Israel team was glad to see that the meeting was productive, partners debated and offered suggestions for upgrading the activities. For the deliverable D5.2, the team received and



TEMI website: work in progress

Some TEMI partners – Cnotinfor, Sterrenlab and the University of Leiden – met in July at the Stix Camp workshop about “Using Open Standards in Science, Education, Technology & Culture, for Development”, that took place in Figueira de Cateslo Rodrigo, Portugal. The workshop was also the occasion for Cristina, from Sterrenlab and Secundino, from Cnotinfor, to review the Prague meeting TEMI web workshop outcomes and agree on changes to implement. Changes are now being made in order to give more visibility to teacher’s resources and enhance dissemination and legacy purposes. The main menu will be now: Home | About | Methodology | Resources | Extra |



Picturing the perfect mystery

In the first phase of the project, TRACES asked the TEMI teachers to pick between a few choices to tell what a productive mystery was to them. The most chosen answer was by far: “A mystery that makes students ask questions”. Thanks to these feedbacks, the consortium has now a clear picture of what the perfect mystery looks like to teachers: it is practical, attractive and brings pedagogical benefits. It must be practical to be quick to use and simple to prepare and it must be part of the curriculum, to fit the topics taught in school. The « perfect mystery » is also attractive in the sense that brings a fresh element to the lesson, being fascinating for teachers and motivating for

analyzed data from all the partners regarding the cohorts held between July 2014 and July 2015. According to Weizmann, it was very interesting to read what the partners do – and they learned a lot from that. The report made the team feel very proud to be part of this wonderful project!

Contacts. Submenus will appear dropdown. Home page will be redesigned to show at glance what the project is about and what it can offer to teachers. Changes will be visible online by the 20th August, after summer holidays, when a first set of classroom resources will uploaded as well.

students. As it involves students actively, creates cognitive conflict and connects to students' everyday life, a good mystery is a great tool to allow enquiry. Did you discuss other aspects with your teachers? Don't forget to let TRACES know!



Società Italiana di Fisica
Italian Physical Society



Disseminating TEMI with *ad hoc* talks

TEMI has been presented and discussed in three talks given by TEMI Italy at the GIREP-EPEC International Congress held in Breslavia, 6-10 July 2015. The titles of the 3 presentations were “Enquiring the Higgs mechanism: A path for teachers”, “Teachers participating to the European project TEMI practice the enquiry methodology in

Gravity explained to ESA teachers the TEMI way

On 8 July, the Leiden TEMI team organized a workshop at the ESA Summer Teachers Programme that took place in Noordwijk, the Netherlands. During the workshop, 60 European teachers discussed the mystery ‘Flat Galaxies’, to learn how to explain the concept of gravity to secondary school students, This was a great

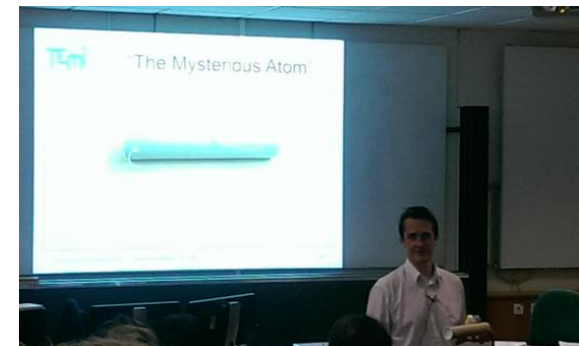
TEMI Norway presents TEMI to policymakers

The ministry of education visited the university for a one-day seminar this spring, and Kjetil from TEMI Norway presented the TEMI project for representatives from the ministry. The purpose of the seminar was for the ministry to receive updates on research and development at our institution. This was an important opportunity to

their classroom” and “Teaching enquiry to physics teachers following the TEMI methodology”. Besides, the Italian team has been asked by the Italian Physical Society (SIF) to give an invited talk about “The Higgs mechanism: a path for teachers in the framework of the European Project TEMI” during the SIF National Congress that will take place in Rome in September. A full training about Higgs and TEMI will be delivered in September to Italian teachers attending the CERN annual training.

opportunity for the teachers to use the enquiry based learning approach and the TEMI methodology. The contribution of TEMI to the programme continued in the evening, when magician Tilman Andris had a great time performing for an audience of 120 enthusiastic teachers. In November, the TEMI team will take part in another ESA training workshop for science teachers in Noordwijk, organised in association with the Galileo Teacher Training Programme (GTP).

disseminate the TEMI methodology to policymakers. After a great TEMI meeting in Prague in June, TEMI Norway has discussed how to improve on different aspects of the teacher training. They are currently in the progress of recruiting science teachers for cohort 5 and 6, from two municipalities in the region.



TEMI and Tilman Andris in the newspaper

For a second time the Dutch magician Tilman Andris worked with science teachers in Germany on the TEMI innovations. At the IGS (comprehensive school) Wilhelmshaven, Tilman gave a workshop on presentation skills and what science teachers can learn from illusionary presentations, magic tricks, storytelling and other forms of showmanship. The regional newspaper 'Wilhelmshavener Zeitung' published a second article on TEMI, after they also did on the first workshop in February. With the heading "The art of magic shall fascinate pupils' the intentions of TEMI were presented. Parallels of the work of a professional presenter with teachers were discussed and both the IGS Wilhelmshaven and the University of Bremen clearly stated that TEMI shall be only the start of a long term cooperation in terms of curriculum innovation and teacher continuous professional development.

TEMI features in "Chemie & Schule"

The University of Vienna team published a special issue about TEMI in the Austrian teacher journal „Chemie & Schule“ (Chemistry & School). The issue consists of two articles addressing the theoretical background of the four TEMI innovations and six articles introducing mysteries with practical hints for the teachers. In the middle of the magazine are worksheets to be taken out and copied, that can be directly used in the classroom. The special issue (in German) can be downloaded here: www.vcoe.or.at/files/sonderheft2015_1b.pdf
Last week the UNIVIE team finished cohort 5 in Graz, Austria. The first workshop day took already place on March 13th, 2015. The second day had to be conducted during the summer holiday. 10 teachers met on July 13th, 2015, with Tilman Andris and the UNIVIE team. The feedback of the teachers was again very positive. Nevertheless teachers find it challenging to design smooth transitions between the phases of the 5E-Model. This may be one reason for their expressed interest in the planned follow-up workshops 'Mysteries in Practice' (MiP) in summer semester 2016.

Atoms and marbles in Geneva

On Tuesday July the 21st, John Walker from Sheffield Hallam University had the opportunity to present TEMI to 52 physics teachers who were attending the Teachers Summer Programme at CERN, the famous particle physics laboratory based in Geneva, Switzerland. TEMI collaborated with the head of the CERN education team, Rolf Landua, to design a workshop that would introduce the concept of the atom structure following the TEMI methodology. The lesson plan - that will soon be available online on the CERN website – offers a structured investigation to discover the shape of covered wooden pieces, drawing a parallel with the research carried on at CERN and with historical experiments, like Rutherford's one. The teachers appreciated the approach of the lesson, that delivered information about atoms but also presented a structure that can be used for different lessons.



TEMI running smoothly in Prague

TEMI Prague has been busy preparing and presenting a lecture about TEMI and Inquiry Based Science Education at Eurovariety, a Chemistry Education meeting, held in Tartu, Estonia from June 30th to July 2nd conference. The conference was also an occasion to meet other TEMI partners, including TEMI Ireland and Israel and share the latest updates about TEMI.

Besides disseminating TEMI results, Charles University has been revising the Teaching the TEMI Way booklet in Czech and the booklet it is now ready for print and distribution to TEMI teachers in Czech Republic.

Exploring connections

A TEMI workshop was selected to be presented at the END conference, that took place in Porto on 27-29 June. The END international conference seeks to explore the processes, actions, challenges and outcomes of learning, teaching and human development and provide some answers. The goal is to offer a worldwide connection between teachers, students, researchers and lecturers, from a wide range of academic fields, interested in exploring and giving their contribution in educational issues. For the TEMI project it was a challenging opportunity to discuss about enquiry based science education with educators at large and to see how the theme of mysteries can apply to other disciplines other than science.
