

Claudio Pardini,

Carlo Anti School, *The path from the national PP&S and LS OSA Projects to the international SMART Project*

Claudio Pardini explains that the first idea of the PP&S Project on Mathematics originated precisely in Turin a few years ago during a talk with professor Rodolfo Zich of the Turin Polytechnic. It has been really important that later the General Director Carmela Palumbo has promoted and supported the idea. The project partners are CNR, AICA, Confindustria, The University of Turin and the Turin Polytechnic.

The project objectives are: to accompany the school reform through teachers training, to develop competences for the world of work and a “problem posing and solving” culture in the students, to promote cooperative learning in both teachers and students and didactic innovation thanks to the use of the new technologies.

The PP&S Project is made up of a community of teachers who work on an e-learning platform using the Advanced Computing Environment and self-assessment instruments; it makes use of an integration of Moodle, Maple and Adobe Connect. The strengths of the project are the interactive materials, the self-correcting tests, the synchronous and asynchronous tutoring courses on the Moodle platform and the Maple activities for the ICT laboratories.

Innovation in didactic and methodology is a key issue nowadays: innovation necessarily involves technology because the students have to learn how to reason, not how to calculate. The teachers of the scientific subjects have often tended to adopt some traditional teaching methodologies: in particular, the Maths teachers have always tended to focus on the idea of exercises. Too many exercises don't let the students learn what Mathematics really means. Maths should be presented in a context, not through repetitive exercises and numbers: in this way, memorization and significant learning are promoted in the students. The attention is focused on learning and students more than on teaching and teachers: this is one of the most important aims of the PP&S and of the SMART Project.

The PP&S Project has been getting good results mainly thanks to the collaboration and work of the University of Turin staff. Thanks to the positive results in the PP&S Project, the Maths final State Exam has consequently been improved with new types of problems. It is now time to strengthen what has been achieved and this is possible and desirable because the project platforms will remain available after the end of the project life.

The Science teachers have been given very good training opportunities thanks to the LS OSA project. The last School Reform has drawn many differences in the teaching classes of habilitation: teachers with different university curricula have now to teach the “Integrated Sciences” (Physics, Chemistry, Earth Science) which are treated and taught as a continuum, seamlessly. This gives the students the possibility to enter and comprehend the scientific culture as a whole.

Itinerant laboratories have also been organized, in which poor everyday materials are used, in this way focusing on methods, rather than on contents.

The SMART Project has originated from the necessity to confront and compare the good and excellent achievements and results of the national projects with those of some European partners.

Anna Brancaccio adds that a *Framework for the final exam in Physics* has already been prepared; moreover, a *Framework for the final exam in Science* is being prepared and a community of

practice of Science teachers has been constituted under the guide of the University of Roma Tre staff.