

# Chapter 11

## Active Learning of Science in the European Dimension

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### ABSTRACT

*This chapter talks about the author's experience as a teacher in the panel of SPICE (Science pedagogy innovation centre for Europe), a partnership between fifteen European countries for the renewal of science education in a two-year project carried out by European Schoolnet and funded under the European Commission's Lifelong Learning Programme. The aim of this project is to identify and validate a number of good practices (GPs) of teaching in the field of MST (Mathematics, Science, Technology) which will be available for all European teachers on a special portal in order to use them with their students. GP criteria will become guidelines for new projects to ensure innovation and quality. SPICE was a great occasion for the participants' professional development due to the international collaboration, the opportunity of a deep reflection on their teaching methodology, and the chance of a scientific observation of their students' learning during different kinds of activity.*

### INTRODUCTION

I got my degree at University and I soon started my job as a math and physics teacher. Since then, a few decades have passed but my love and devotion to my job is still the same.

While teaching, I have never forgotten to measure the fruitfulness of my methodology through the students' learning outcomes, being sensitive to the innovations in the didactics and introducing new strategies to arise my students' motivation. However, without denying my efforts and attempts, I must join the chorus of complaints

about the students' inadequate scientific literacy throughout Europe, and restate the need for a concrete solution.

I still remember the sense of professional frustration at the beginning of my career: I felt alone with no one to share my doubts or my experiences with; those were not times of learning communities and shareable contents, or good practices.

I have enthusiastically welcomed the new technologies in my daily work at school, even though I've always considered the positive feedback from my students, with an uncomfortable feeling of subjectivity, due to my devotion to the

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ICT, even if I have always been conscious that new technologies are just a tool and can only enhance a lesson, not make a good one themselves alone.

When I came across the EUN call for proposals, in the frame of the SPICE project, I immediately sent my application, finding the project absolutely close to my scientific interests. There were the teachers' communities, the perspective of a European cooperation, the good practices, the ICT, together with a "research mode" of working, thus moving from didactics to an enquiry-based instruction, applied to the daily life, which has been my main concern in the last years.

I've been successfully selected and I'm very proud of being the only Italian teacher who took part in the project experience, which, I must say, has largely contributed to my professional development.

My experience took place in the framework of the SPICE project (Science Pedagogy Innovation Centre for Europe, see Figure 1) a two-year partnership (2009/2011) between fifteen European countries, carried out by European Schoolnet (EUN) together with Direção Geral de Inovação e Desenvolvimento Curricular (DGIDC) from Portugal and Dum Zahranicnich Sluzeb MSMT

(DZS) from Czech Republic, and funded under the European Commission's Lifelong Learning Programme (DG Education and Culture).

My role was double: at the European level I was a member of the panel who developed good practices to be tested, at the school level I was a simple teacher among others who tested those practices with students. The educational context was the school where I teach, a public school of general education for students 14 to 18 years old. The school is located in an urban area, a beautiful place where the main source of income comes from the tourism sector, due to the beach and the proximity to the archaeological sites of Pompeii and Herculaneum. However students come from a quite big area, and some of them reach the school uneasily from islands or from small towns on the mountains.

I have been teaching mathematics and physics in this school for eighteen years, being also the person in charge for European projects, as a coordinator, for several years and having been in charge for teacher training on ICT in several occasions.

I chose two classes to participate in the SPICE project, with the target age of fourteen, as required

*Figure 1. SPICE logo*



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