

## Chapter 12

# Planning Implementation and Evaluation of a Distance Seminar on the Pedagogical Utilization of Educational Robotics in Teaching Lessons (2018–2020)

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### ABSTRACT

*In this chapter, the author describes an effort for distance training of teachers in Greece on educational robotics' pedagogical utilization. This is done through the European eTwinning program, which aims to collaborate with schools from many countries to produce new technologies. Based on a Community of Practice of the South Aegean teachers, eTwinning organized the seminars for the utilization of ICT in the implementation of eTwinning projects and the teaching of courses with their use. From 2018 the author has included these seminars for the utilization of educational robotics in the implementation of eTwinning projects and the teaching of courses. These seminars were attended by many teachers and were very positively evaluated by them. The author believes that the Ministry of Education will soon adopt educational robotics in the teaching of courses, which is why the author plans to expand the seminars and create new ones for other robots such as Edison and BeeBot.*

### INTRODUCTION

In the area of education, the Internet makes a strong appearance of the decade of 90 and the evolution can fairly be described as rapidly. In Greece, the first efforts exploitation of the Internet into classroom began 4 -5 years after, particularly in the context of pilot program «ΟΔΥΣΣΕΑΣ - ODYSSEAS» (a

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pilot project of act «ΟΔΥΣΣΕΙΑ - ODYSSEIA») which tries to interface via a network, the gymnasium of Xanthi, the Aegean islands and Achaia from some trainers in approximately 20 schools. Then, with the project «ΘΗΛΕΜΑΧΟΣ - TILEMACHOS» (act «ΟΔΥΣΣΕΙΑ») is an attempt to link small remote schools and provided the opportunity for teachers, not only to communicate electronically and to create web pages of their schools and then followed by other actions in this direction.

The use of the Internet but by teachers requires familiarity with the services and tools. The training of teachers in information and communication technologies (ICT) is highlighted as a priority, both in research and in international organizations and policymakers (Kalogiannakis & Papadakis, 2017a). Although from different theoretical origins and viewpoints, all converge on the need to train teachers (both at the level of initial and continuing training), on issues related to ICT and their applications in the educational process (for example Kontogiannopoulou - Polydoridi, 1995; Raptis & Tailor 2000; European Commission, 2003 Dimitrakopoulos-Leinen, 2004; Crown, 2004). At the Lisbon Educational Statement (focal text of Community policy for education), the training of all teachers in the use of the Internet and multimedia emerges as the prime objective for the educational systems of the countries - members.

In Greece, the training of teachers was implemented piecemeal with various small projects of the European Union, but also with large projects of “training level A”, where have been trained more than 100.000 teachers in basic computer use skills and also with training level B’ “, where about 30.000 teachers have been trained in the use of the internet and educational software in the teaching practice.

However, the teacher today must be able to use ICT and to incorporate it in the lesson, to upgrade the quality of cognitive benefits for their students (Orfanakis & Papadakis, 2014). In this direction, the tools of the Internet can, if used properly, to enhance the learning process and to generate significant learning benefits. Therefore, the teachers must be familiar with these tools, to be able to use them in their class (Tzimopoulos & Porpoda, 2010).

But teachers need continued support for the use of ICT in the teaching practice, given the rapid technological development and the continuous development of new tools (Kalogiannakis et al., 2009). It is therefore necessary to operate new institutions and support structures, which will provide permanent support needed by the teacher of the act. An idea for the continued support of education is the communities of practice, which through the internet may be virtual.

The cooperation between the individual members of the Community is intended to allow another member to see himself as part of a collective work toward the common goals of the Community and its members. In this way, a community is an interdependent system that is determined by the efforts for cooperation between members.

## **BACKGROUND**

### **Virtual Communities of Practice**

Virtual Community of practice is a group of people created (joined) from the need to communicate to support one another (interact) to address problems that exist in their social (working) space, to cooperate, and to move to a common purpose (objective). These common problems can be professional, social, and management of leisure time. Share their mutual objectives, practices, beliefs, experiences, knowledge, problems, interests, and passion, and the conditions of operation.

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