

## Chapter 14

# Theoretical Rationale for Designing a Blended Learning Teachers' Professional Development Program

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### ABSTRACT

*This chapter explores the underlying theoretical principles that provided the basis for the design and implementation of a professional development program for informatics teachers in Greece. A blended learning model was adopted combining live workshop meetings, face-to-face in-lab training sessions and online videoconferencing sessions. The framework of constructivism and experiential learning was used as a theoretical rationale for the combination of face-to-face activities with online learning experiences. It is shown that a blended learning design based on the principles of constructivism and experiential learning pedagogy can provide vital tools for the creation of an active environment for informatics teachers' professional development. Also, it appears that a promising direction for further investigation, in terms of improving the learning outcome based on the same theoretical principles, is the more detailed design of the sequence of learning activities and a closer look at the development of communities of practice among teachers.*

## **INTRODUCTION**

In a modern school environment, professional development programs are necessary for all school teachers regardless of educational level and experience. A growing body of research and case studies show that the provision of high-quality clearly focused and sustained professional development programs have a significant positive impact on teaching and learning as well as on student performance (Groosman, 2009; Vescio, Ross, & Adams, 2008). Professional development programs throughout the school year at every grade level and for every subject enable teachers to update and expand their knowledge, keep track of scientific developments in their field of expertise, refine their skills and improve instructional practices (Garet et al., 2008; Weiss & Pasley, 2006).

In many practical situations, professional development programs are viewed today as an integral part of teachers' work and are implemented either as pre-service or in-service programs offered by appropriate professional development providers. Such programs vary widely in terms of philosophy, content and format (Wei et al., 2009; National Professional Center on Inclusion, 2008). Professional development has to include the use of information and communication technologies in its main priorities when transforming teacher education into an effective process (Chen, Chen, & Tsai, 2009; Dede et al., 2006; Ingvarson, Meiers, & Beavis, 2005). Online learning and virtual learning environments provide ease of delivery, flexibility in the usage of resources, technology to support collaborative work and capabilities for the creation of communities that can further help each other in their common learning goals (Prestridge, 2010; Ross & Gage, 2006; Garrison & Cleveland-Innes, 2005).

Currently, blending face-to-face sessions with online sessions seems to be a natural approach for designing a continuous professional development program for teachers (Berger, Eylon, & Bagno,

2008; Skibba, 2006). It should be pointed out that there is a variety of meanings attributed to the term "Blended Learning" and, also, there is some skepticism about its conceptual integrity (Graham, 2006; Oliver & Trigwell, 2005; Rovai & Jordan, 2004; Kerres & De Witt, 2003; Singh 2003; Driscoll, 2002; Rossett, 2002). Empirical studies, based on real-world applications of blended learning methodologies to teacher professional development, highlight certain benefits from the perspective of teachers and trainers: Blended learning provides greater time flexibility, enriches pedagogy, improves learning outcomes, creates enhanced opportunities for interaction, increases engagement in learning, creates opportunities for continuous improvement, expands access to training events and reduces operating costs (Stacey & Gebric, 2008; Wideman, Owston, & Sinitskaya, 2007).

In this chapter, the design of a blended learning program is described concerning the professional development of informatics teachers in Greek schools. The program was launched by the Ministry of Education, Life Long Learning and Religious Affairs and focused on providing practical training to Informatics teachers in the utilization and technical support of modern school computer infrastructures and applications. The program (which was co-financed by the EC) was conducted during 2008 and addressed about 3.200 informatics teachers.

## **BACKGROUND**

There is an increasing number of studies in the literature describing a variety of blended learning models in detail. Such models are diversified according to the mix between online and face-to-face learning they suggest, the structure of technology-supported courses they use, the different ways of alternating face-to-face and online class meetings they propose, the inclusion or not of videoconferencing to multiple class

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