

## Chapter II

# Blending Interactive Videoconferencing and Asynchronous Learning in Adult Education: Towards a Constructivism Pedagogical Approach—A Case Study at the University of Crete (E.DIA.M.ME.)

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### **ABSTRACT**

*This chapter focuses on the designing and development of blended learning environments for adult education, and especially the education of teachers. The author argues that the best combination of advanced learning technologies of synchronous and asynchronous learning is conducive to the formation of new learning environments, which, under certain pedagogical conditions, will adequately meet the special needs of adult students. Particular emphasis is given to the designing and development of a pedagogical blended learning model based on the principles of transformation adult theory and constructivism. This model implements advanced learning technologies in a pedagogical context, aiming at the formation of a collaborative blended learning environment, which will encourage critical thinking and reflection, providing the necessary conditions for a polymorphic distant education for teachers. Finally, we present a case study of a blended environment of teachers' training designed by the Center of Intercultural and Migration Studies (E.DIA.M.ME.) at the University of Crete.*

## INTRODUCTION

Education is now playing the most important role in the Information Era (Anastasiades, 2002a; Raptis & Rapti, 2004). In the modern world of globalisation and the Internet, knowledge constitutes the main productive element of economy (Tapscott, 1999). Although the pace of change in the working and social environment may influence evolution and renewal of all human activities positively, it does depreciate knowledge and skills to an unprecedented extent and contributes to the establishment of digital divide (Anastasiades, 2005a; Norris & Pippa, 2001; United Nations, 2003). The influence of age on the use of information and communication technologies (ICT) (Eastman & Iyer, 2004), the updating and enhancing knowledge, and skills of citizens in the emerging information society designate lifelong learning as an essential condition for their harmonious and productive integration into the new social and working conditions (Anastasiades, 2005b).

ICT form a new teaching and learning environment in all levels of education, mainly adult education. Educational institutions throughout the world are designing and applying distant teaching environments, which take into consideration the specific needs of adult students and hope to provide flexibility regarding the location, time, and pace of learning (Anastasiades, & Spantidakis, 2006).

For many years, distance education (DE) was regarded as a technological and organisational entity according to prevailing technology-centered perceptions (Bates, 1995). This view led to the downgrade of the pedagogical aspect of learning and teaching (Massialas, 1989; Paulsen, 2003).

This chapter demonstrates the view that new technologies should not be considered as a neutral teaching medium (Lionarakis, 2006) but, instead, be implemented under pedagogical conditions aiming at the development of critical thinking (Brusilovsky, 1999; De Bra, Eklund, Kobsa, Brusilovsky, & Hall, 2000; Kemmis, 1985; Kostoula

& Makrakis, 2006; Mezirow 1981) through their creative integration into the social and cultural context (Carr & Kemmis, 2002).

The contents of the chapter are as follows:

In the second section we provide the theoretical frame of e-learning and describe the technologies of synchronous and asynchronous transmission and the *blended* learning environments. Emphasis is given to the pedagogical conditions of the designing Web-based learning environments.

The third section outlines the basic principles, methodology, and characteristics of the proposed pedagogical model, which is based on the rudiments of adult education emphasizing the transforming learning, the constructivism theory, and the fundamental principles of DE by American Distance Education Consortium (ADEC).

In the fourth section we analyse key issues of designing and developing an asynchronous learning environment, which are the basic characteristics, the functions, and designing models of an asynchronous learning environment, focusing on the designing principles and the phases of development.

The main issue of the fifth section is the designing and developing of synchronous learning environments. We describe the characteristics and the methodology of designing collaborative environments emphasizing interactive videoconferencing and live transmission of lectures via Internet.

Finally, in the sixth section we present a case study on the designing and developing of a blended Web-based learning environment, which has been applied for 4 years by the EDIAMME of the University of Crete and aims at the training of teachers around the world.

## NEW TECHNOLOGIES AND DISTANCE EDUCATION

The dynamic appearance of digital technology in the recent years, the advanced potential of telecom-

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