Chapter 7
Innovative Tools and Models for E–Learning in Romania

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ABSTRACT

This article reports examples from new, ongoing distance learning activities in Romania that utilize state of the art digital media, tools, and methods. Examples include state of the art video tools, design of video infrastructure, and training courses employed for classroom modernisation, to address technological and pedagogical innovations in vocational education and training. The objective is to renovate the teaching infrastructure used by specialists in vocational education, and improve vocational training quality by providing more flexible trainings paths to the Romanian labor market. The latter includes dissemination of a new model for organizing and delivering professional vocational training comprising of competence transfer, competence export, building networks, and development of contacts with vocational schools within a regional development perspective. The training delivery utilizes state of the art ICT solutions, high definition video services, and blended learning frameworks.

1. INTRODUCTION

The new information and communication technologies have an important impact on the society, obviously modifying it. In the field of education major changes are necessary and foreseeable, especially for adults, thus the new educational and consultancy technologies are synonymous with information society (Parzinger, 1998).

The scientific, technologic and economic evolution lays its mark at all educational levels, being necessary new technologies of learning. People interested in the educational system must have permanent access to the scientific and technological information provided by institutional interconnection (universities, companies, administration)
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in an information network (Zhang & Nunamaker, 2003). Long-distance learning represents a modern way of learning, characterized by high flexibility, meant to provide the students with superior accessibility and applicability of the traditional learning methods used in the educational institutions (Farazmand, 2005). The new form of computer based knowledge involves a different approach to didactics, through the learning object practice, and, in particular, a careful reflection on technological equipment intended to: 1) assure accessibility to every user, 2) grant for the fruition of a useful product to all recipients, 3) assure a perfect integration between the knowledge content and the different devices employed (Penna, Stara, & Puliti, 2006).

One prototype of collaborative virtual geographic education environment has been developed using Java and Java 3D. It provides one immersive 3-dimensional environment and many virtual teaching methods including virtual geographic environment, virtual geographic process. Teachers and learners can discuss with each other in a social way by combination virtualization and reality (Li, Gong, Wang, Huang, & Zhou, 2007).

How to design learning environments leading to learning, thinking, collaboration and regulation skills which can be applied to transferable, knowledge oriented learning outcomes is still controversial (Zitter, De Bruijn, Simons, & Ten Cate, 2010).

Established roles, resources and locations of learning are extended, changed and replaced in current vocational training education. The rapidly changing knowledge-based economy puts pressure on vocational training education to extend, change and replace established roles, resources and locations of learning and deliver flexible, employable, high qualified professionals (Zitter, De Bruijn, Simons, & Ten Cate, 2010). The massification and diversification of the higher education system, economic globalization, novel modes of knowledge production, new professional requirements and the establishment of new vocational higher education system in many countries have challenged higher education to develop new forms of collaboration with working life. They state that learning environments in which learners work collaboratively on actual (or simulated) real-life problems are good examples of forms of collaboration between education and working life (Tynjälä, Välimaa, & Sarja, 2003). There is a need to develop teaching strategies and approaches that can be used by technology and vocational education teachers to achieve effective classroom practices (Pavlova, 2009).

In-company training is indeed one of the critical skills and key constraints to economic growth and development in Central and Western Romania, and a range of new international standards developed support immediate needs for skills development in industrial applications and practices. The pilot project Move-IT tries to solve this challenging problem by disseminating and deploying successful state of the art large-scale skills upgrading solutions from Norway to Romania (Moldovan, 2010, July). This includes developing a technical infrastructure that supports the application of quality assurance services for institutions dealing with vocational training. Thus, it promotes the establishment and development of quality control culture that targets the technical infrastructure, the pedagogical methods, the teaching quality management, and the administrative level in industrial training. Teachers may from host institution jointly guide the student by use of video conferencing through the training process. This paper presents the scope of the project and virtual classroom modernization.

2. THE VOCATIONAL TRAINING NETWORK

A high definition video network is constructed in the Central and Western parts of Romania, and organizations in 4 different towns may utilize the infrastructure to provide vocational education
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