Networked Learning in Professional Education using Virtual Enterprises

POSTER PRESENTATION

V.C.Vescoukis, S. Retalis and S. Michiotis[+]
Software Engineering Laboratory
National Technical University of Athens
{V.Vescoukis, retal} @cs.ntua.gr

[+]Centre for Vocational Training
Sivitanidios School
s.michiotis@sivitanidios.edu.gr

No doubt, the use of new technologies in education has attracted the attention of researchers and education providers for several years. Many cases have been proposed, where the use of new technological tools, especially of network-based ones, can be applied in order to favour the educational process by adding some value. New educational models have been proposed. Tools, frameworks and educational content in electronic form, have been presented and many are still under development using support from the private and public sector, as well as from the EU. Although there are several cases where networked learning has been a paradigm of great success, it cannot be said that the human and capital investments made in the area have been proven "profitable" in terms of improving the quality of at least some categories of education. Perhaps it is the co-incidence of the introduction of networked learning with the restructuring of educational systems that hold the wide adaptation of new methods in education, or perhaps it is simply too early. No matter what the case is, we are still trying to identify areas where networked learning can be applied, which educational models, tools and, last but not least, types of educational software are effective.

For the past three years, we have been working using support from the second framework program for education in Greece, exploiting the possibilities of using networked learning in secondary-level technical education. Early results of this research are and a model and an applied case study for using networked learning methods supplementary to the traditional on-the-job training in an effort to provide a learning environment enriched by educational content produced by the learners themselves. Lately, we have been experimenting with the development of a virtual enterprises model to support technical professional education. A "virtual enterprise" is a

simulation of a real world professional activity in a controlled educational environment. Virtual enterprises allow learners to obtain some professional experience without interacting with real world companies, where, as known, several practical problems arise. Learners are involved in a simulation game with real world cases, where they have the opportunity to apply knowledge obtained in classroom and/or by studying educational content.

There are several issues related with the implementation of such an idea. First, a global framework model that would provide the basis for simulating the real world market (i.e creating a "virtual market") as well as for organising the game activities has to be developed. Second, the rules that control the interactivity of learners in various virtual enterprise instances have to be established. The results of these two actions are classes of virtual enterprise models for different kind of enterprises, which, then, have to be presented and most importantly accepted by teachers and staff that will co-ordinate the game. Once this is done, a series of instances of the virtual enterprise models and therefore games that correspond to specific enterprises has to be developed. As can be foreseen, the implementation of a virtual enterprise game cannot be done using classroom, paper and homework. The use of a series of new technology tools, especially of networked learning, is quite essential in the development as well as running of the game.

In this work, we introduce a generic model for designing a virtual enterprise model and for implementing a virtual enterprise game in a technical education institution. We also present our experience with the development of content and tools for running virtual enterprise games in a network environment. So far we have developed the models and the educational content for seven types of virtual enterprises, each one of which can have many instances (that is, many companies of the same kind) operating competitively in a virtual market.