

DEVELOPMENT OF INNOVATIVE TOOLS AND MODELS FOR VOCATIONAL EDUCATION AND TRAINING IN CENTRAL AND WESTERN ROMANIA

Liviu MOLDOVAN
“Petru Maior” University of Targu-Mures

Abstract

This paper presents an initiative developed by two partner universities from Romania and Norway entitled „Innovative Tools and models for Vocational Education and Training in Central and western Romania” (MoVE-IT) financed by SEE mechanism [1]. It has the priority to develop human resource through promotion of education and training, by means of distance learning. The objective, legal issues, outcome and results and envisaged impact of the project are presented.

1. INTRODUCTION

“Petru Maior” University of Targu-Mures (UPM) is currently offering vocational education and training in Central and Western parts of Romania. UPM will enhance the attractiveness, access and participation into vocational training by utilizing best experiences from successful large scale continuing training activities in Norway. This includes utilization of state of the art technical ICT solutions and video services, a range of new pedagogical methods, and a symbiotic relationship development between the educational system and 1) the local community, 2) regional schools, and 3) the working life in local industry.

The very successful EU-supported Leonardo da Vinci (LdV) pilot project MECCA [4] utilized state of the art technological ICT- and video solutions to simplify and improve the access to vocational training. It developed brand new pedagogical methods that enhanced the attractiveness and participation in vocational training and education. This included development, testing and validation of new, state state of the art vocational training methods in industry [2,3]. On this background two partner universities from Romania, “Petru Maior” University of Targu-Mures and Norway, Sør-Trøndelag University

Trondheim, have developed the project “Innovative Tools and Models for Vocational Education and Training in Central and Western Romania” (MoVE-IT).

2. OBJECTIVE

MoVE-IT the main objective to renovate the teaching infrastructure used by specialists in vocational education, and improve vocational training quality and making it more adaptable to the Romanian labour market by arranging a new vocational care teaching program in Central and Western parts of Romania.

The later includes dissemination of a model for organizing and delivering professional viable vocational training comprising of competence transfer, competence export, network building, and schools association development within a regional development perspective. The training delivery utilizes state of the art ICT solutions and video services, to improve vocational training services and solutions.

Outcome and results of MoVE-IT:

1. Modernize the existing ICT infrastructure at UPM by developing 2 state of the art computer technology labs, 1 digital classroom, and 1 video lab.
2. Install modern technical ICT and video equipment at 2-3 regional vocational schools that will act as regional study - and competence centres. The equipment may be used by their regular day students, local vocational training of staff in industrial companies, and transfer and/or export of training within the network consisting of UPM, the vocational schools and industry.
3. Deliver instructor training targeting use of technology and new pedagogical methods.
4. Enhance training delivery through regional

Keywords: development, training methods, impact

- seminars at the vocational schools.
5. Deliver vocational training at each of the 2-3 vocational schools sites.
 6. Developed and maintain a web-page for dissemination of projects results in Romania. A summary of activities and results shall be provided in English for dissemination at European scale.
 7. Develop a "good circle" for tailor made training programmes providing vivid and cost-efficient distribution of income and expenditure between the teachers, the regional schools, and UPM.
 8. Improve and simplify administration of training activities by extending existing Learning Management Solutions for effective deliverance of educational material from teachers to students.
 9. Arrange a national conference where use of state of the art high quality ICT and video solutions within vocational training are demonstrated and disseminated.

3. OPEN AND DISTANCE LEARNING DEPARTMENT

„Petru Maior” University of Targu-Mures (UPM), is the main development centre for human resources and higher education in the Mures region.

Since 2000, within the university operates the Long-Distance and Low-Frequency Learning Department (LDLFLD).

The university is an important institution with direct links with industry, providing services and short-term courses that reflect needs from market. It has affirmed itself as an important development factor in development of relations with the industry by offering short term training courses to industry under market conditions.

The link with industry is ensured by the permanent contact with the local Chamber of Commerce, Industry and Agriculture, with the enterprises in the area, as well as with other institutions interested in updating and retraining their staff.

In the area of Internet and telecommunications, UPM is among the first five major Internet Service Providers in the Romanian academic world (RoEduNet). This provides the necessary infrastructure for Advanced Educational Technologies in Education.

Concerning the updating of technical education, the use of new technologies, based on multimedia and modern communications techniques is of most importance for UPM.

The development of short-term studies along with the long-term form is very important, taking into account the actual needs of the economy and the future development of the country. It is also very important to develop post-graduate studies, mainly in the fields having an important impact in economy and research.

In the field of continuous education, the priorities of the university are the development of a study center for distance and continuous education and of a studio for the production of educational materials using multimedia technology, activities already in course of implementation.

The creation of a special department for Open and Distance Learning (LDLFLD) in the university was the first step in offering to this type of education the place that it deserves in our future development plans. During the last academic year, the ODL Department knew a very important development, seven new specialization have been created and almost 1800 students are enrolled.

“Petru Maior” University gives very much attention to the improvement of the quality of learning process, to promote access to new and innovative methods and educational resources and the large implications of Information and Communication Technology (ICT) in education.

The participation of the “Petru Maior” University of Targu Mures in European projects has a significant and benefic impact on all the aspects of education, both inside the university and the local community but also in development of the regional industry.

In the field of European grants dedicated to the distance learning, UPM has coordinated many previous projects, as a support for the development of this grant, like:

- Distance education and profile specialization in total quality management (TQM) using new learning technologies, Project CNFIS PM Code 231/2000, financed by World Bank and Romanian Govern;
- Training of trainers for implementing life-long learning regarding environmental management by using ICT, Project Leonardo Da Vinci;
- Development of relevant and innovative e-learning content in the field of management of integrated systems, Project Leonardo Da Vinci.

4. PARTNERSHIP

The consortium envisaged in the project consists of the following organisations: „Petru Maior” University of Targu-Mures Romania (UPM) the coordinator of the project and Sør-Trøndelag University College (HiST) It is a regional actor, recruiting their students from the region of Mid-

Norway. HiST offers the widest bachelor programs in Norway and the largest commercial program for open and distance learning solutions at university level in Norway. Their staff have key competence within application of state of the art digital media, video streaming and videoconferencing solutions for in-company training/education and train-the-trainer solutions, and integration of traditional educational models with new pedagogical methods adapted for video communication.

The role of HiST will be:

- offer independent technical guidance and counselling to UPM that targets selection of equipment, and state of the art construction of the physical infrastructure according to needs in Romania;
- offer pedagogical advices targeting inclusion of effective training principles into vocational training;
- offer instructor training to staff at UPM and the 2-3 participating vocational schools;
- offer necessary support to UPM during the phase where they validates the infrastructure by delivering vocational training;

6. BILATERAL RELATIONS

The project will contribute in strengthening the relations between Romania and Norway in different areas:

1) Establish new cooperation within the educational sector through the knowledge transfer of pedagogical know-how related to video technologies and blended learning. This cooperation will be established with Norwegian leading edge companies in their fields and UPM. The first phase of the project will see a direct knowledge transfer and cooperation while in the latter part of the project UPM will use these companies more on a consulting basis, but on the same time broaden their cooperation in scope.

2) The project will strengthen the industrial cooperation between Romania and Norway, due to the industrial seminars that will be carried out both in Romania for this purpose. The nature of the training courses and its targeted audience, namely welding, will stimulate the use of the special strength of both nations in the education, stimulating further cooperation.

3) The use of video technologies will enable the project to utilize teaching expertise from Romania and Norway in a blended learning environment. This will stimulate the exchange of teacher and students and increase their mobility. Due to the countries diversified industrial sectors also highly application oriented courses may be developed on a joint basis.

Additionally, the international relations positions UPM as a natural hub for and course provider for the Romanian industry in Central and Western parts of the country. By utilizing modern ICT and video technologies the international communication and cooperation facilities puts the UPM in “the champion’s league” as the natural national hub for such activities.

7. LEGAL ISSUES

The project complies with the EU legislation and Occupation European Strategy (http://ec.europa.eu/employment_social/employment_strategy/index_en.htm), as a main instrument for ensuring the direction and coordination of the occupational policies priorities in the member states.

Competition: The project is a non-competitive project and do not inter fear with and competitive situation in Romania or Norway. The project relates to knowledge transfer and enhancement of competence and know-how. State aid rules and public procurements rules will be followed and open calls for tender will be used for the investment in infrastructure and video technologies when purchased.

Environment, external, will not be affected directly by the project. However the environmental issues will be dealt with in the envisaged courses in a positive manner as training is transferred using high quality videoconferencing. This includes avoiding a significant number of airborne trips between the countries without loss of necessary contact and communication between the teacher (expert) and the geographically separated students due presence at distance, thus ultimately protecting the environment.

The project team will try to utilize the same technological principles in order to reduce the travelling. It will be necessary to have initial meetings in order to initiate the contacts and some regular meetings in order to discuss special topics. However, the follow up on the daily basis during the project will as far as possible be done through state of the art professional videoconferencing solutions. This is expected to protect the environment in a very positive way.

The consortium believes that the project will contribute to the implementation of PED 97/23EG (Pressure Equipment Directive) both in Romania and in Norway through the development of relevant courses and modules covering the basic requirements for the industry.

Additional background information related to PED may be developed in order to highlight the benefits for Romanian industry when complying with

the directive.

The project is compliant with:

- The National Reforms Plan (http://www.guv.ro/obiective/200705/pnr_ro_oficial_2.pdf) for the period 2007—2012 aiming at reaching of the economical performances and occupation recommended in the Lisbon Strategy, correlated with a justly social system, elements that will assure to Romania a durable development, the priority: stimulation of the human resources employment and improvement of human resources quality.
- The National Development Plan (<http://www.fonduri-ue.ro/upload/118951881348.pdf>) for the period 2007-2013, the priorities: development of human resources; decrease of the development disparities between the regions of the country.
- The National Reference Strategic Framework 2007-2013 (<http://www.fonduri-ue.ro/index.php?sectionId=172&id=2>), the priorities: development and more efficient employment of the human resources in Romania; promotion of the equilibrated territorial development.
- The Operational Sectorial Program for Human Resources Development 2007-2013 (POS DRU).
- “Petru Maior” University., Strategic Development Plan: www.upm.ro/conducerea/docs/plan_strategic_de_dezvoltare_2008-2012.pdf.
- “Petru Maior” of University - Operational Plan 2008 - http://www.upm.ro/conducerea/docs/plan_operational_2008.pdf.

5. OUTCOME AND RESULTS

The main outcome and results of MoVEIT are:

1. Modernize the existing ICT infrastructure at UPM by developing 2 state of the art computer technology labs, 1 digital classroom, and 1 video laboratory.
2. Install modern technical ICT and video equipment at 2-3 regional vocational schools that will act as regional study - and competence centres. The equipment may be used by their regular day students, local vocational training of staff in industrial companies, and transfer and/or export of training within the network consisting of UPM, the vocational schools and industry.
3. Deliver instructor training targeting use of technology and new pedagogical methods.
4. Enhance training delivery through regional seminars at the vocational schools.
5. Deliver vocational training at each of the 2-3

vocational schools sites.

6. Develop and maintain a web-page for dissemination of projects results in Romania. A summary of activities and results shall be provided in English for dissemination at European scale.
7. Develop a "good circle" for tailor made training programmes providing vivid and cost-efficient distribution of income and expenditure between the teachers, the regional schools, and UPM.
8. Improve and simplify administration of training activities by extending existing Learning Management Solutions for effective deliverance of educational material from teachers to students.
9. Arrange a national conference where use of state of the art high quality ICT and video solutions within vocational training are demonstrated and disseminated.

REFERENCES

- [1] Moldovan L. *Innovative Tools and Models for Vocational Education and Training in Central and Western Romania*, Petru Maior University of Târgu-Mureş, 2008.
- [2] Stav J. B. Open, *Dynamic Content and e-Learning Management Infrastructure for Engineering and Natural Sciences*, ISSN 1479-4403 Electronic Journal of E-Learning, 2004.
- [3] Stav J. B. and Tsalapatas H. *A Content and Learning Management Infrastructure for Distance Education of Natural Sciences*, proce. of The 2nd European Conference on eLearning, Glasgow, 2003.
- [4] <http://prosjekt.hist.no/mecca,05-07>.