EUROPEAN PROJECTS AS A TOOL FOR IMPROVING FARMERS SKILLS VIA MODERN INFORMATION TECHNOLOGIES

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Abstract

This article presents European projects with the main focus on the improving the skills and competitiveness of farmers by modern information and communication technologies and e-learning methods. Two projects – AVARES - Enhance attractiveness of renewable energy training by virtual reality and NewCAP - New European Standards in the Context of Reformed EU Common Agricultural Policy are projects under the Leonardo da Vinci Transfer of Innovation grant scheme. They try to present new way of vocational education and training in the agrosector. The main aim of the AVARES project is to develop the multimedia learning materials for vocational education and training in the field of agricultural and rural development and application of modern information of modern ICT equipment and technologies, with the main focus on the Virtual reality, 3D visual display and e - learning 2.0 methods. New programming period 2014 – 2020 will bring significant changes within the Common Agricultural Policy (CAP) which will have a serious impact on economy especially of larger beneficiaries. The "NewCAP" project aiming at preparation of actors in rural areas to take the proposed changes in the policy through interactive educational programme.

Key words: e-learning, common European policy, competitiveness of farmers, renewable energy sources, vocational education and training

INTRODUCTION

Vocational education and training aims to develop knowledge, skills, jobs' habits and other competences of students. The final effect of a graduation is the qualification, which enables them to engage in the working process as a skilled workforce or continue their studies.

For the successful entry of graduates into the labour market adequate education and training are necessary.

According to the Bruges Communiqué[1] it is essential to adapt the content of vocational training in favor of changing needs of labor market. Integration of needs of the changing labor market into the content of the vocational education and training requires better understanding of skills of new created sectors and related changes within more and more integrated Europe. The main aim of the vocational education and training is to contribute continuously to the employment and economic growth as well as to react on more extended social challenges. By the quality and excellence of vocational education and training in EU communities is essential to ensure the sustainability of employment and economic development. In the knowledge-based society there are vocational skills and competencies as important as the academic ones. At the present EU there are preferred thematic fields focused on sustainable development. In more details we can speak about topics related to the energetic sustainability linked directly to the use of renewable energy resources and the Common Agricultural Policy. The paper focuses on two international projects in the frame of the Leonardo da Vinci - Transfer of Innovation programme with their main aims to enhance the quality and attractiveness of vocational education and training via current information and communication technologies.

MATERIALS AND METHODS

In the new vision of European Commission for the future of vocational education and training [1] has been written that vocational education and training is chosen by an average of around 50% of all students in upper secondary education. However, the sector needs to be modernized to make it more attractive and more relevant for job market needs with the aim to help young people to find a suitable job and adults with an opportunity to update skills throughout their working life.

There are several ways of how to give vocational education and training a new impetus. First of all, it should ensure the highest possible quality of education and training. Second, it should use new, creative and innovative methods for education [2]. At the present time, 3D graphics, virtual reality or Web 2.0 technologies actively intervene into the educational process. As technologies change the society, they change the education and training systems as well. Paper presents a way of how to use e-learning and computer based learning methods, Web 2.0 technologies and multimedia for an efficient and attractive shifting from the traditional book/textbook paradigm to a new way of the digital learning content in the vocational education and training.

Project "AVARES - Enhance attractiveness of renewable energy training by virtual reality" has started in November 2012 and its main aim is to use virtual reality, Web 2.0 technologies and e-learning 2.0 as educational methods and tools for improving quality of the vocational education and training in the area of renewable energy sources.

Fundamental emphasis is put on the application of modern ICT equipment and technologies, especially on Virtual reality and 3D visual display, social networking and Web 2.0 methods.

The main aim of the project "Newcap – New European Standards in the Context of

Reformed EU Common Agricultural Policy" is to create an interactive educational programme for rural actors as farmers, agricultural advisors, rural people and especially rural youth seeking their job. The project assumes using of e – learning methods and resources – CBT, WBT, LMS system, various forms of auto testing - included into individual modules and multimedia study materials chapters, as well, synchronic and asynchronous communication.

RESULTS AND DISCUSSIONS

Project AVARES

Fundamental emphasis of the project partnership is put on the application of modern ICT equipment and technologies, especially on Virtual reality and 3D visual display, social networking and Web 2.0 methods.

The created Virtual Learning Environment provides users of vocational education and training with the space joining popular social networks and mobile technologies as well as qualitative content. As in a real classroom, the students can communicate between them and with the teacher and collaborate in learning experiences. There are available activities, as blog or wiki, which use Web 2.0 techniques and students start to be not consumers of Web information, but they become information producers as well.



Fig. 1. AVARES Virtual Environment with the 3D World Tutorials for teachers/trainers

Virtual 3D auditorium, as a part of Virtual Learning Environment, include the major teaching facilities - open air auditorium and smaller open air classroom. The auditorium and the classroom include facilities that enable lecturers to make use of PowerPoint presentations, to display films, to hold faceto-face learning process as well as discussion rounds with experts or host various events such as courses, workshops, seminars.

As a last part of the Virtual learning environment 3D Virtual RES Park has been developed. It has been set up as the Island with several buildings and areas. On the windy table-land students can visit Wind turbine, on the roof of Research and development Centre students can see solar collectors and PV cells and inside are prototypes of RES devices - turbines or heat pumps.

Thanks to the new learning methods and professional content of the learning materials, the AVARES project will allow to vocational education and training participants obtain practical knowledge and skills from area of renewable energy resources and their effective using.

Participants of the learning process, through theoretical knowledge obtained in the multimedia learning materials and virtual reality of the 3D RES Park, should acquire knowledge and skills for preparation and competently review the application of the RES, to assess the suitability of the type of renewable energy for specific natural, climatic and geographical conditions.

They can analyse the energy consumption of buildings or premises and will be able to design and implement energy efficient solution with regard to available resources.

New methods of learning give possibilities for application the principles of the non-barrier learning as well.

Project NewCAP

To avoid obstacles and to meet requirements determined within the new Common Agricultural Policy, Slovak University of Agriculture in Nitra together with partner universities decided to apply for the NewCAP project - "New European Standards in the Context of Reformed EU Common Agricultural Policy". From this point of view, the main aim of the NewCAP project is to create an interactive educational programme for rural actors (farmers, agricultural advisors, rural people and especially rural youth

seeking their job) which will provide them complex information in the field of the new reformed Common Agricultural Policy. This project is transferring an innovation from the previous NEW AGRI pilot project which was focusing on creation of printed training handbook in a field of Common Agricultural Policy and cross – compliance (project No. 2005-I/05/B/F/PP-14137 New Agri: New European Ways in Agriculture).

Project is being realized from September 2012 together with three project partners -Agroinštitút Nitra, štátny podnik, Slovakia, Confederazione Italiana Agricoltori Toscana, Italy and University of Agribusiness and Rural Development, Bulgaria.

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Fig.2. NewCAP project web site (http://www.newcap-project.eu

Project web page was created within the project initial phase (http://www.newcapproject.eu). It provides complex information on project aims and objectives, consortium planned outputs. All this and basic information is available in English and partner languages, as well. An access to e – learning modules will be provided in the future from the web page. For this purpose – and as the main project output, too - an interactive training programme for farmers and farm advisors will be created and situated in the elearning platform. The training programme will consist of online learning modules focused on new Common Agricultural Policy and modified cross - compliance - "a mechanism that links direct payments to compliance by farmers with basic standards concerning the environment, food safety, animal and plant health and animal welfare, as well as the requirement of maintaining land in agricultural and environmental good condition". The NewCAP project will help to

Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development Vol. 13, Issue 2, 2013 PRINT ISSN 2284-7995, E-ISSN 2285-3952

farmers mainly in new EU member states to be prepared for the new programming period (2014-2020) and to meet the Statutory Management Requirements and Good Agricultural and Environmental Conditions within the system of cross – compliance by providing them online training system in the field.

From this point of view, the results of the project are defined as follows:

-developing of webpage on CAP, crosscompliance, direct payments, etc.,

-creation of LMS and Virtual learning environment,

-creation of online training modules focused generally on the new CAP and specifically on new CAP components concerning direct payments for farms and cross – compliance,

-distribution of newsletters and other dissemination tools related to CAP to famers and other stakeholders.

CONCLUSIONS

In recent years there are thematic fields closely connected to the extension of the labour market and sustainable development focusing on the renewable energy sources and the agricultural policy support. Projects AVARES and NewCAP realized at Slovak University of Agriculture in Nitra supported by Leonardo da Vinci programme, Transfer of Innovation bring the present situation in the field to both young graduates and experienced farmers by using the modern ICT, virtual reality, electronics education methods as well as social networks.

ACKNOWLEDGMENTS

This project has been founded with support from the European Commission. The content of this document does not necessarily reflect the view or legislation of the European Commission. Neither the European Commission nor the project partners or any person acting on behalf of the Commission is responsible for the use that might be made of the information in this document.



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[3]<u>http://www.newcap-project.eu</u> [4]<u>www.avares.org</u>