INTERACTIVE E-LEARNING FOR VETERINARY MEDICINE STUDENTS AND PRACTITIONERS

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Abstract

*Innovative methods in education, including in medicine, either human or veterinary contribute to enhance the learning effectiveness. The aim of this paper is to present the results that have been obtained by implementation of 3 e-learning platforms in veterinary undergraduate and post-graduate education and training. The e-learning platforms were developed through three projects, **Higher Education at European Level in the Field of Veterinary Medicine, ID: HRDSOP 86/1.2./S/63654, Labour Market Integration of Veterinary Medical Students – Practical Training, ID: HRDSOP/90/2.1/S/63915** implemented by the Faculty of Veterinary Medicine Bucharest in partnership with the other faculties of veterinary medicine in Romania and **Improving the Quality of Human Resources in Veterinary Medicine, ID: HRDSOP/81/3.2./S/58833,** implemented by the College of Romanian Veterinary Physicians in partnership with the Faculty of Veterinary Medicine Bucharest. These projects are cofinanced by the Social European Fund through the Human Resources Development Sectorial Operational Programme 2007 – 2013. A number of 3,000 students from all the faculties of veterinary medicine from Romania have accessed the e-learning platform developed by the first mentioned project, that introduced a modular curriculum with 4 new courses: Veterinary Medical Deontology and Professional Ethics, Development of Professional Abilities and Career Guidance, Quality Management of the Veterinary Medical Act, Quality Management in Veterinary Higher Education. The second project e-learning platform presents 5 modules. Farm Animals Breeding Units, Clinics and Hospitals, Laboratories (research, diagnosis, food control), Slaughtering Houses, Rural Veterinary Clinics are the five domains for which platform presents scenarios that introduce the students to real-life situations. 2,500 students accessed the platform before the effective practical training. The third e-learning platform was intended for 1,000 veterinary practitioners in order to help them to update their knowledge in ten thematic areas: Advanced Veterinary Diagnostic Imaging, New Technologies in Laboratory Diagnosis, New Technologies in Large Animals' Pathology and Clinic, New Technologies in Companion Animals' Pathology and Clinic, Modern Technologies in Clinical Biochemistry and Molecular Biology, Modern Devices Used in Animal Hygiene, Use of New Technologies for Food Control and Expertise, Informatics Technologies Dedicated to Food Safety and Quality Management, Modern Devices Used in Reproduction Pathology, Animals' Selection and Amelioration and New Technologies Introduced in Emergency Veterinary Therapy. The project's success is proved by the fact that a number of 2,488 public and private veterinary practitioners have already accessed the platform. A positive feedback of the e-learning platforms was recorded from all the members of the target groups, students and practitioners.*

Key words: veterinary medicine education, e-learning, lifelong learning in veterinary medicine.

INTRODUCTION

Computer aided learning in veterinary medicine is not a novel attempt to provide valuable resources for education in this field. In 1993, Teaching and Learning Technology Programme – TLTP represented a successful project in the United Kingdom (Dale et al. 2005). Internet - based medical education advantages, limitations and impact as well as the opportunities and challenges for students, teachers and practitioners in veterinary medicine are largely discussed in veterinary education literature (Simões, 2010, Choules, 2007 and Ruiz *et al.*, 2006). Tenhaven et al., (2013), have published a richly documented comparative study on the use of the internet and Web 2.0 by students and the veterinary profession, entitled with a question "Is there a next generation in veterinary medicine?", conclude that both students in veterinary medicine and veterinarians are comparable with other professional groups

in terms of online media usage. These authors highlight that it is important to train students but also teaching staff and practitioners and to illustrate both risks and opportunities of getting media information. The aim of the present paper is to present the results obtained after developing 3 e-learning platforms dedicated to under and postgraduate veterinarians in order to provide valuable resources for students and longlife learning in veterinary education.

MATERIALS AND METHODS

The e-learning platforms were developed through 3 projects, **Higher Education at European Level in the Field of Veterinary Medicine, ID: HRDSOP 86/1.2./S/63654, Labour Market Integration of Veterinary Medicine Students – Practical Training, ID: HRDSOP/90/2.1/S/63915** implemented by the Faculty of Veterinary Medicine Bucharest in partnership with the other faculties of veterinary medicine in Romania and **Improving the Quality of Human Resources in Veterinary Medicine, ID: HRDSOP/81/3.2./S/58833**, implemented by the College of Romanian Veterinary Physicians in partnership with the Faculty of Veterinary Medicine Bucharest. These projects are cofinanced by the Social European Fund through the Human Resources Development Sectorial Operational Programme 2007 – 2013.

First project introduced a modular curriculum with 4 new courses: Veterinary Medical Deontology and Professional Ethics, Development of Professional Abilities and Career Guidance, Quality Management of the Veterinary Medical Act, Quality Management in Veterinary Higher Education. The second project e-learning platform presents 5 modules. Farm Animals Breeding Units, Clinics and Hospitals, Laboratories (research, diagnosis, and food control), Slaughtering Houses, Rural Veterinary Clinics are the five domains for which platform presents scenarios that introduce the students to real-life situations. The third e-learning platform was intended for veterinary practitioners in order to help them to update their knowledge in 10 thematic areas: Advanced Veterinary Diagnostic Imaging, New Technologies in Laboratory Diagnosis, New Technologies in Large Animals' Pathology and Clinic, New Technologies in Companion Animals' Pathology and Clinic, Modern Technologies in Clinical Biochemistry and Molecular Biology, Modern Devices Used in Animal Hygiene, Use of New Technologies for Food Control and Expertise, Informatics Technologies Dedicated to Food Safety and Quality Management, Modern Devices Used in Reproduction Pathology, Animals' Selection and Amelioration and New Technologies Introduced in Emergency Veterinary Therapy. All the developed courses were provided by experts in the field, and processed in interactive presentations by specialized IT companies. At the end of each module/ course/ thematic area different tests enable participants online evaluation.

RESULTS AND DISCUSSIONS

3,000 students from the faculties of veterinary medicine from Bucharest, Cluj, Iasi and Timisoara accessed the e-learning platform developed through the project Higher Education at European Level in the Field of Veterinary Medicine. In fig. 1 there is represented the distribution, in %, of the students' options for the 4 courses offered. The student's interest in the module Quality Management in Veterinary Higher Education is decreased as compared to the others. The Quality Management of the Veterinary Medical Act module was also less visited than modules Veterinary Medical Deontology and Professional Ethics, Development of Professional Abilities and Career Guidance. The e-learning platform of the project Labour Market Integration of Veterinary Medicine Students – Practical Training has five modules that covers the practical needs and allow the application of the acquired theoretical knowledge: *Animal Farms and Breeding Units, Veterinary Clinics and Hospitals, Laboratories (research, diagnosis, food control), Slaughtering Houses, Rural veterinary Clinics.*

The platform presents 360° scene simulations for these five domains that introduce the students to real-life situations. Students accessed the platform before the effective practical trai-

ning, e-learning process and outcomes being on-line evaluated, master teachers and tutors having access to the results obtained by the students.

The outcome of this project is presented in fig. 2 and it is important to specify that students could access more than one module.
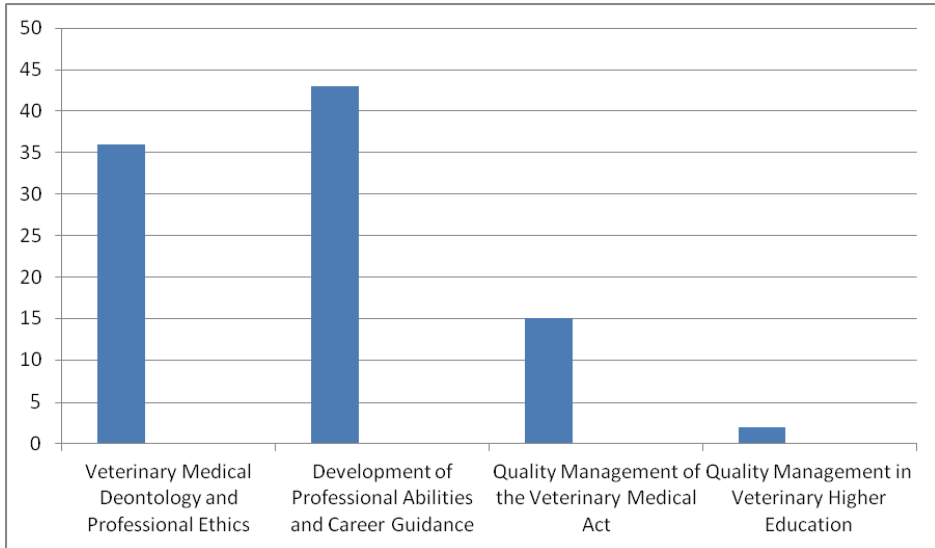

Figure 1. Students' options (%) for the courses from the e-learning platform of the project Higher Education at European Level in the Field of Veterinary Medicine
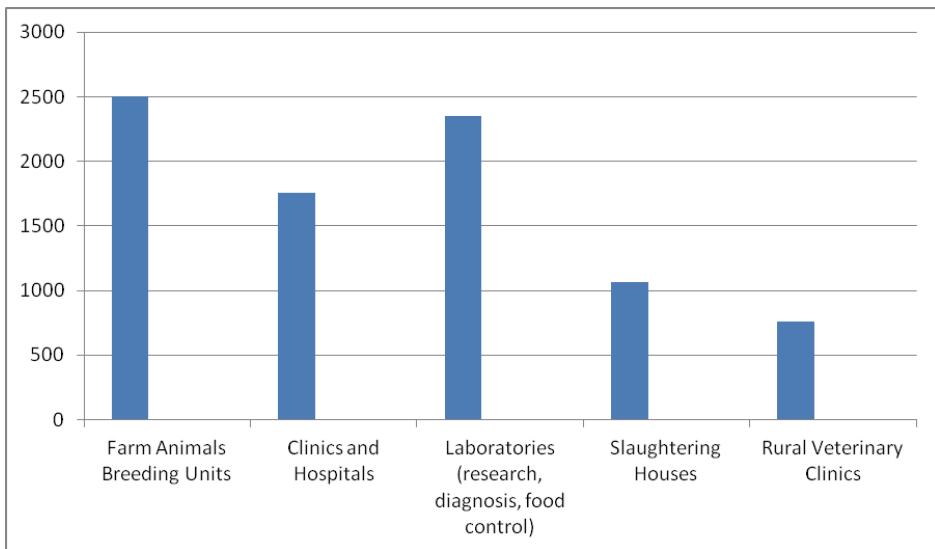

Figure 2. Number of students accesses on the e-learning platform of the project Labour Market Integration of Veterinary Medicine Students – Practical Training
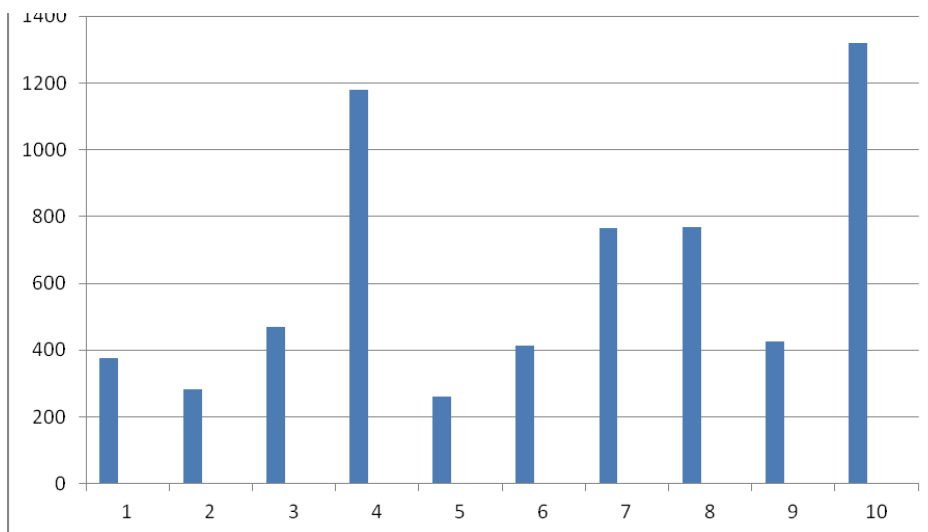
Figure 3. Post-graduate options for the 10 thematic areas of the e-learning platform of the project Improving the Quality of Human Resources in Veterinary Medicine
(1- Advanced Veterinary Diagnostic Imaging, 2- New Technologies in Laboratory Diagnosis, 3-New Technologies in Large Animals′ Pathology and Clinic, 4- New Technologies in Companion Animals′ Pathology and Clinic, 5- Modern Technologies in Clinical Biochemistry and Molecular Biology, 6- Modern Apparatus Used in Animal Hygiene, 7- Use of New Technologies for Food Control and Expertise, 8- Informatics Technologies Dedicated to Food Safety and Quality Management, 9- Apparatus Used in Reproduction Pathology, 10-Animals′ Selection and Amelioration and New Technologies)

The practitioners involved in the project Improving the Quality of Human Resources in Veterinary Medicine could also access more than one thematic area. It was very well received by veterinary professionals community. The number of participants, 2,488 is more than double than the expected number of 1,000 members of target group. This project includes both e-learning activities for each thematic area and face-to-face courses. All the mentioned projects aimed to meet changing professional and social demands.

CONCLUSIONS

E-learning represents a useful tool for distance and longlife learning, contributes to a better comprehension of information, enhance communication among professionals and students.

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