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Training

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In this issue we present the results of a cognitive survey carried out by Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise on the spread of knowledge on distance learning among the practitioners in the field of veterinary public health.
Presently eLearning is transforming itself in an important methodology for the transfer of knowledge and expertise. However, in order to ensure the implementation of eLearning programmes that correspond to the training needs of the target groups and their level of technological proficiency and equipment, precise and specific information is needed. This survey, therefore, is intended to serve as a primary cognitive tool that ensures correct approach to the process of planning of eLearning training courses in the field of veterinary public health.

Veterinary public health and eLearning: survey in Italy

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Summary

In Italy, the request of advanced training in veterinary public health is increasing both quantitatively and qualitatively, and traditional training models are inadequate to satisfy the expressed needs. The integration of the new information and communication technologies with interactive learning methods favoured the development of advanced and innovative web-based learning solutions. Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise (IZSA&M), centre of advanced training in veterinary public health, is changing its offer, moving from traditional models to the new solutions offered by eLearning. Training performed through the new information and communication technologies, in fact, is a great challenge not only because it implies the use of advanced technologies, but most of all because it requires the development of new teaching strategies, better suiting the beneficiaries of the learning solutions. In order to better face these new opportunities and to apply them properly to the reference market, IZSA&M carried out a survey to analyse the training request in veterinary matters and potential participants to eLearning initiatives. This investigation was finalised to understand eLearning knowledge of veterinarians usually participating in training courses (and, in this specific case, of veterinarians who attended traditional courses carried out by IZSA&M), their familiarity with information technologies, and their interests in terms of learning contents. Two hundred and four people were interviewed: 32% only know what eLearning is, but 97.6% is interested in attending this kind of courses.

Keywords

eLearning, Training, Veterinary public health

Introduction

In the last decade, the work market and the innovation rate of productive processes influenced training trends. This raised the growing need of updating professional knowledge and skills, as a reaction to the quick competence obsolescence (4). Training was subjected to fast evolutions, due to the need of validating new methodological and technical tools, able to satisfy the professional training request.
In this framework, training in veterinary public health has to meet a twofold challenge in the production sector, linked to the significant importance

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of food and livestock production and the consumers' increasing appreciation of product safety.

The national veterinary systems, in fact, must have the skills to guarantee the quality of goods and products by assuring an ever-increasing reliability of the veterinary certification service of both exported products and products consumed within the countries.

This guarantee implies not only to know how to do things, but also the need to give evidence, to national and international community, that skills are really owned (1).

The need for training is very evident in quality assurance and management (total quality management), risk and knowledge management sectors.

Technical competence, combined with organisation competence and leadership management, is essential for the internationally recognised accreditation of veterinary services. This is a prerequisite and a preliminary condition to guarantee the necessary monitoring activities in the plants that process, sell and administer food of animal origin.

This knowledge is also essential to guarantee not only the health operators' most appropriate performance, but also consistent behaviours when managing the development of new standards on animal health and welfare, in relation to the safety of the by-products.

Management and professional training, therefore, is critical to be updated with emerging and new outcomes and to perform homogeneous operational levels in veterinary services.

The need of assuring and certifying continuous training of health professionals in Italy, led to the implementation of the "National Programme of Continuous Education in Medicine" (ECM) (3), which involves all the health personnel of public and private institutions and organisations. ECM Programme was implemented to control and evaluate the quality of training activities destined to professionals belonging to the National Health System, aiming at carrying out training events consistent with the national and regional learning objectives of this personnel.

In Italy, the request of advanced training in veterinary public health is increasing both quantitatively and qualitatively, and traditional training models are inadequate to satisfy the expressed needs: times for performing traditional training events, costs of travel, board and lodging, non-worked times, cuts made by health administrations to the budget for professional development of human resources, are some of the bonds of traditional training, which can be overtaken by the new teaching methodologies.

The integration of the new information and communication technologies with interactive learning methods favoured the development of advanced and innovative web-based learning solutions. More specifically these solutions:

- are based on systems that guarantee communication, learning and knowledge management
- permit the use of high-quality teaching materials specifically designed for this learning strategy
- permit the creation of customised learning paths
- allow the quick assessment of what has been learned through self-assessment systems
- increase the motivation of the students who choose an on-line training experience
- comply with market standards, i.e. the specifications, guidelines and recommendations that were established to guarantee the communication between and/or joint operation of different technologies
- help to save money (e.g. travel expenses, teachers and experts, simultaneous delivery to large numbers of learners, etc.) (5).

Web based learning, in fact, allows to test learning paths able to adapt to individual needs, using methods and teaching materials specifically designed for this purpose, and consulting the web resources, now considered data source for research, evaluation, and solution of complex problems.

The possibility to deliver the course simultaneously to large numbers of professionals without any time and space bounds, and the availability of a permanent self-learning source accessible at working places, are some of the advantages of eLearning (2).

Since some years ago eLearning is being increasing its weight with reference to traditional training, showing a very functional approach to professional continuous development.

Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise (IZSA&M), centre of advanced training in veterinary public health, is changing its offer, moving from traditional models to the new solutions offered by eLearning. Training performed through the new information and communication technologies, in fact, is a great challenge not only because it implies the use of advanced technologies, but most of all because it requires the development of new teaching strategies, better suiting the beneficiaries of the learning solutions.

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Materials and methods

The questionnaire

A 14-item questionnaire was specifically designed for this survey. Questions referred to the most interesting information in order to obtain a distance learning need analysis (Table 1) (6). Trained interviewers submitted the questionnaire through phone calls, entering data in an Access database.

Sample selection

The sample was randomly selected among people who had attended IZSA&M training courses from January 2002 to December 2004 and who had left a phone number.

The whole population was made of 376 people from 30 to 60 years old; most of them were males. The sample size was determined according to the purpose of the investigation (to determine the % of people available to attend an eLearning course in veterinary public health). This percentage was set out at 0.5%. Considering that the whole population was made of 376 people and that the error was set out at 0.05 and the confidence interval at 0.95, at least 190 people had to be interviewed.

Results

Knowledge and experience in eLearning

Among 204 people interviewed, 67 only know what eLearning is: the interview could be fulfilled even with those who declared not to know such methodology, because a short description had been prepared and introduced before starting the interview. Among these 67 people, only 26 directly experienced eLearning courses and 85% evaluated them positively for two reasons: the possibility to decide their own learning times and the quality of didactic materials. Negative evaluations (15%) arose from technical problems met during the courses.

Information technologies and tools

Familiarity with information technologies was investigated through five questions. The items "sufficient", "good", and "very good" were considered positive, while the items "poor" and "no" were classified as negative. Interviewers said that people who do not use computers did not answer to this question. In order to attend an eLearning course, a pc and a web connection are required. Figure 3 shows the % of people having them available and where (at home, at work, or both). Figure 4 compares the web connections

Table I
The most significant questions

Partecipation in eLearning courses	yes			no		
Experience evaluation	very good		good		poor	
Motivation	training material quality	tutor support quality	organisation of study times	other		
Familiarity with web tools	1. e-mail	poor	sufficient	good	very good	
	2. Web	poor	sufficient	good	very good	
	3. Chat	poor	sufficient	good	very good	
	4. Forum	poor	sufficient	good	very good	
	5. Teleconference	poor	sufficient	good	very good	
	6. Videoconference	poor	sufficient	good	very good	
Workstation	home station			workstation		
	software Windows 98 Mac OS 9 Linux other	connection analogical telephone line ISDN ADSL ADSL		software Windows 98 Mac OS 9 Linux other	Connession analogical telephone line ISDN ADSL ADSL	
Place	workstation		home		other	
Daily time avalaible for distance learning	less than 1 hour	1 hour	2 hours	3 hours	4 hours	5 hours
Hours of connections	morning (8-13 h)	afternoon (13-18 h)	evening (18-21h)	night (after 21 h)	during week-end	no preference
Corse duration	short: few days		medium: some weeks		long: more than 2 months	
Learning methods	supported self-learning		collaborative learning	virtual class	"blended" learning	
Technical items	Epidemiology and surveillance Risk analysis Food safety Quality Management of services and laboratories Health Education and animal-assisted therapy Animal Health and welfare Management Wildlife and environment All Other					

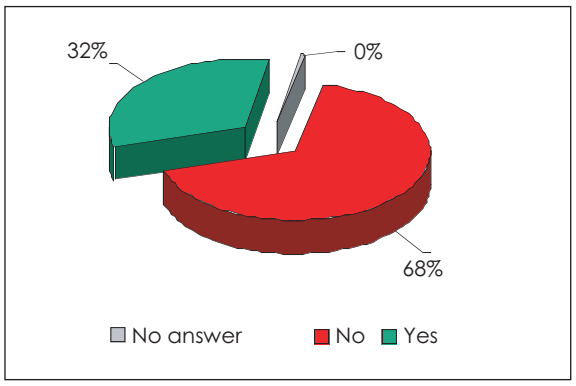

Figure 1
eLearning knowledge

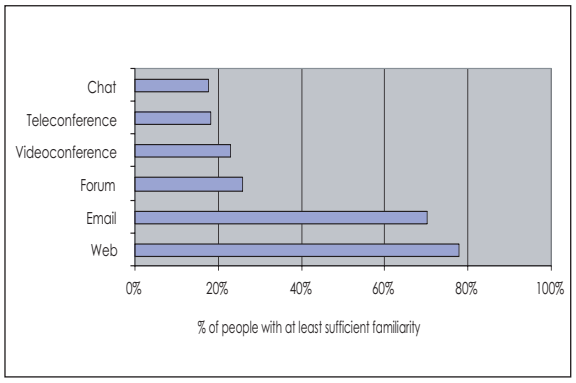

Figure 2
Familiarity with web tools

with stations: nowadays ADSL connection is widely available both at work and at home. 65.2% of people who have pc and web connection both at work and at home prefer to attend an eLearning course from the workstation, while 32.6% from home.

Time available for eLearning

Figure 5 shows the daily allocable time for eLearning, while Figure 6 shows when people are available for web connections

Methods and contents

Eighty-seven people declared to prefer a short course (few days), 63 a medium course (some weeks), and 28 a long course (more than 2 months). Figure 7 shows preferences on the learning methods. Figure 8 shows the technical contents that participants would prefer to study: epidemiology, animal health and welfare, food safety and risk analysis are the most required subjects (86%) 97.6% of the people interviewed would participate in eLearning courses accredited by the Italian Programme of Continuous Education in Medicine (ECM). 36 people did not answer this question, while 4 people said "no". These last ones are the same people who do not use computer and,

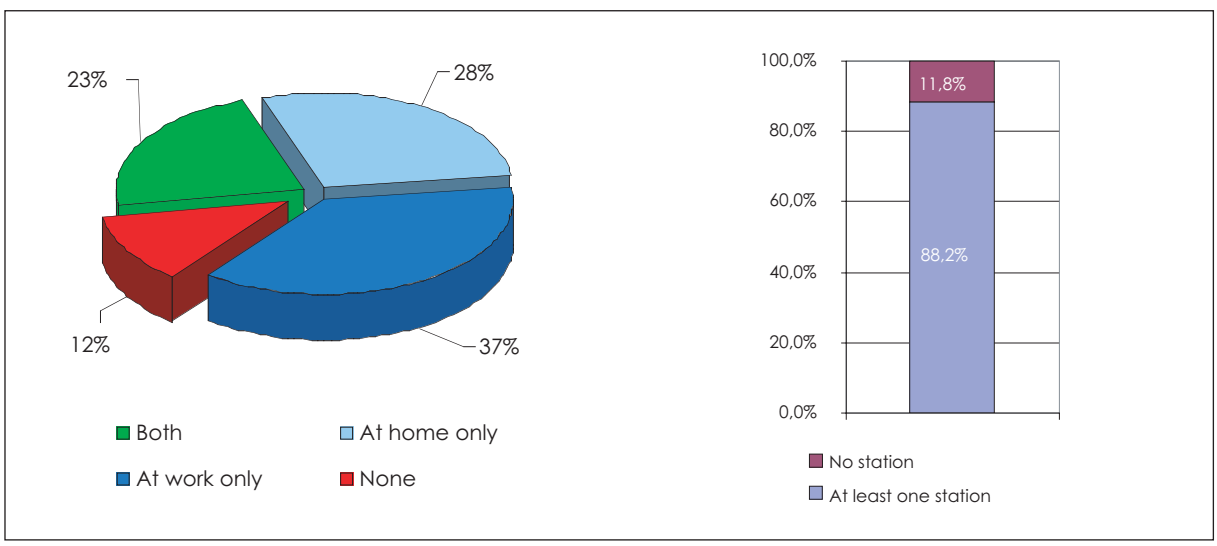

Figura 3
Availability of a pc station

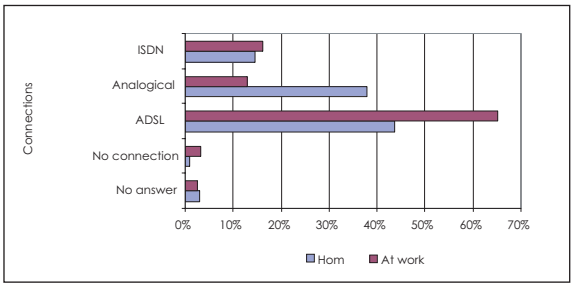

Figure 4
Comparison between web connections and stations

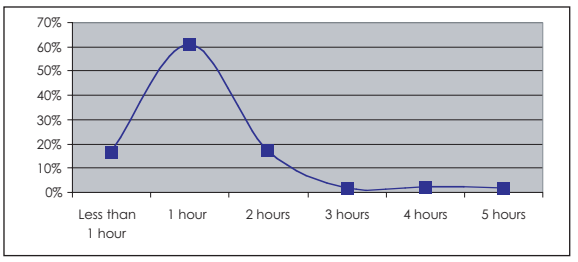

Figure 5
Daily allocable time for eLearning

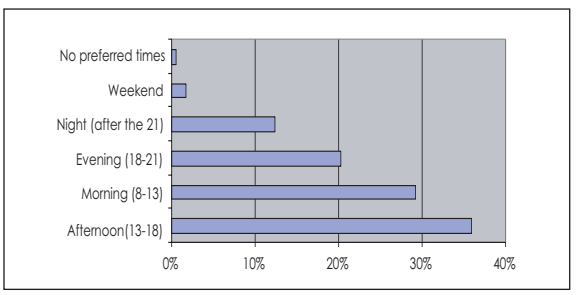

Figure 6
Preferred times for web connections

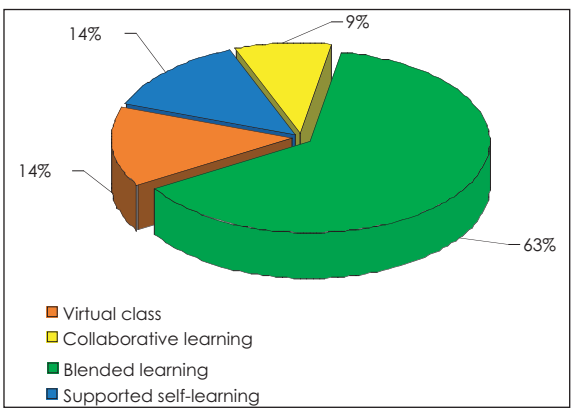

Figure 7
Preferences on the learning method

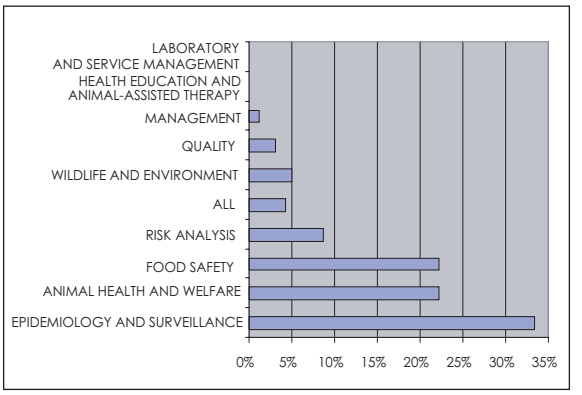

Figure 8
Preferred technical contents

consequently would never attend an eLearning course. For this reason, the estimation of the % includes, conservatively, only interviewed people who said "yes" (p = 164 / 204 = 80.4%, whose confidence interval is between 76,7% and 84,1%, with a probability of 95%).

Discussion

The first information arising from this survey is the high percentage of people who do not know eLearning (68%). This result comes unexpected, considering that the sample was extracted from health professionals who regularly attend training courses, in order to obtain the compulsory ECM credits. The other emerging information is the low spreading of technologies and of advanced knowledge of information tools.

Nevertheless, almost all would attend an eLearning course accredited by the ECM Programme. Blended learning – which joins traditional training with distance learning – is the most appreciated methodology. This includes virtual classes for lecturing and conferencing; supported self-learning for theoretical and applicative knowledge; collaborative learning, for skill improvement, applicative model testing, and co-operation with peer group (5).

If we assessed these results in a global view, a paradox would arise: few of the people interviewed know eLearning or directly experienced it and even less had a positive evaluation. Technologies are not widely spread, 28% of participants have a web connection at home, while 12% do not have it at all; 40% could not attend distance courses at work, but almost all of them would attend an eLearning course.

These results may be interpreted connecting them to the big changes occurring in training, now moving from traditional models linked to the unities of time, place and action, to new paradigms in which individual is in the middle of the learning process, managing it at his/her convenience.

This change requires and adaptive process, involving cognitive, relational, and technical-scientific areas of learner: for this reason, planning, monitoring and evaluation processes are being redesigned. eLearning, in fact, allows the student to manage his learning, while teachers and peer group are not present simultaneously in the same environment; feed-backs are asynchronous while on-line tutors mediate relationships between participants and teachers.

We may assume that the interviewed people perceived, even if not clearly, these changes: on this base we can suppose that beyond the preference of blended learning is the need of knowing personally teachers and other course participants, before working with them virtually. This hypothesis is supported also by the evaluation of the final questionnaires filled by the participants to eLearning events implemented by IZSA&M (data will be presented in a future paper).

Providers of eLearning courses in veterinary public health, can draw useful information from data on the daily time that professionals can dedicate to eLearning (max. 1 hour), the time they can be connected (work-time), and the preferred course duration (short).

Many areas are still to be investigated and many variables to be evaluated, in order to obtain a clear description of the Italian distance learning market in this specific scientific field. This survey, in fact, was carried out involving a small sample of health professionals who already know the training activity of IZSA&M. Moreover, demographic factors and their implications with technical items, were not considered. For this reason, in 2006 IZSA&M will carry out a wider investigation among the Italian public veterinary officers.

If the trends confirm the results of this survey, a clear and complete marketing policy will be developed, in order to implement a training offer consistent with the request in terms of contents, learning methods, and technical choices.

If data on technology availability and access are confirmed, it will be difficult to design a scenario in which traditional training models will be replaced by the new ones, since the firsts should remain relevant tools of knowledge dissemination and technical and scientific skill implementation.

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