Virtual conferences for professional training and retraining

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Abstract. *The aim of the study* is to optimize the structure of training to ensure the formation of professional skills. *The task* is the definition of e-learning tools that should be used to ensure the effectiveness of professional training and retraining. *The object of the study* are especially implementation of competence-based approach in higher education, *the subject of study* – the use of LMS tools during trainings and business games for the masters of economics. The study is experimental and was conducted in the disciplines which form a cycle of continuous mathematical training. Virtual learning environments, which are used in the educational process are Moodle and Google Classroom. It was shown the effectiveness of visual conference for the formation of professional skills not only students full-time study, but also for professionals undergoing training or retraining. Further research in this area should be associated with the development of the system of assessment of independent work of the student and his work during a visual conference.

Keywords: learning management system; e-learning 2.0; visual conference or webinars; rapid e-learning; measuring the effectiveness of educational technology.

С. С. Лебедєв. Віртуальні конференції для професійної підготовки та перепідготовки

Анотація. *Метою дослідження* є оптимізація структури навчання для забезпечення формування професійних навичок. *Завдання* полягає у визначенні засобів електронного навчання, які слід використовувати для забезпечення ефективності професійної підготовки та перепідготовки. *Об'єктом дослідження* є, зокрема, впровадження компетентнісно орієнтованого підходу у вищій освіті, *предмет дослідження* – використання інструментів системи підтримки навчання під час тренінгів та ділових ігор з магістрами економіки. Дослідження є експериментальним і проводилося під час вивчення дисциплін, що утворюють цикл неперервної математичної підготовки. Віртуальні навчальні середовища, які використовуються у навчальному процесі, – Moodle та Google Classroom. Показана ефективність візуальної конференції для формування професійних навичок не тільки студентів денної форми навчання, але і для фахівців, що проходять підвищення

кваліфікації або перепідготовку. Подальші дослідження у цій галузі повинні бути пов'язані з розробкою системи оцінки самостійної роботи студента та його роботи під час візуальної конференції.

Ключові слова: система управління навчанням; електронне навчання 2.0; візуальна конференція або вебінар; швидке електронне навчання; вимірювання ефективності освітніх технологій.

Організація: кафедра вищої математики й економіко-математичних методів, Харківський національний економічний університет імені Семена Кузнеця, пр. Науки, 9-А, м. Харків, 61166, Україна.

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The current stage of economic development is characterized as a post-industrial economy or knowledge economy. This leads to a substantial change in the requirements for the training of specialists. That's why competence-based education is the paradigm of modern professional education. The purpose of education is not just the acquisition of knowledge, but also skills and practical skills. Competence approach involves the orientation on the specific learning results. Competence approach is a set of common principles determining the aims of education, the selection of the content of education, organization of educational process and evaluation of educational outcomes. This is especially true of training higher qualified specialists. With the rapid development of business and, accordingly, with the emergence of new information, future professionals must learn to translate academic knowledge into concrete management decisions.

In order to improve the training of specialists it is expedient to expand the base of practice, using the possibilities of e-learning. To this end, business games and trainings provided for masters training program can be carried out in the form of on-line seminars or webinars. In addition to the competencies associated with the study of the subject area, the use of a virtual learning environment promotes the formation of students' information competence, which involves the use of modern information technologies in their future professional activity.

Using Learning management system (LMS) allows you to view the slide presentations, to comment on what is happening in the classroom, participate in polls in real time. It is important that the use of LMS makes it possible to take part in the business game is not only for students hospital, but also to students of correspondence courses. It should be emphasized that one of the parties involved in the game, are the experts. That professional specialist evaluates the decisions and actions of the participants of the game.

Virtual learning environments, which are used in the educational process in the S. Kuznets KNUE, are Moodle and Google Classroom. The server

Google Hangouts On Air is employed to operate webinars. This is effective because the number of participants is unlimited. Using Hanzhouts server assumes that the participants of the webinar must be logged in to Google+ account. Because of this they will have this opportunity to participate in a group chat, ask questions, use applications, i.e., full use Hangouts service interface. The team uses the tools of E-Learning 2.0, in order to support action groups for joint training, research and the current challenges.

Let us consider the features of the use of virtual conference and other tools of e-learning at work with full-time students. Extensive using the tools of e-learning 2.0 is useful as a preparation for a business game, and during its implementation. Conducting business games requires students to cooperate on projects, team building. The main part of the game or training in which masters take part suggests the construction of mathematical models of the business process. It requires participants to perform these steps: to study the economic aspects of the problem, collecting and analyzing statistical information, the construction of a mathematical model and its application to decision-making. At the stage of collection and analysis of statistical data, each member of the team makes the search of useful web pages, add tags and comments, and distributes them. Using tools del.icio.us or Yahoo MyWeb, the command creates a copy of each page, this page is available for full text search and can be opened from any computer, any member of the team has access to the same links. The same interaction of team members takes place at the stage of constructing a mathematical model of the business process and the assessment of its quality.

The key point of the business-game or the training is the presentation of the models which were built by different teams. This part of the game is performed as an imitation of the work of production space where this business process is carried out. The form of this part of the game is also a webinar. To this end, representatives of the various teams get together to present of their models and to discuss their advantages and disadvantages. The teacher plays the role of moderator. His task is to make sure that members of the group went their own specific learning process, and came to the result. This is the fundamental difference between the moderation and other methods of the learning process control. Visualization of the information used by the coach helps to improve moderation and makes it more efficient. Experts are also participants of the webinar who are watching the debate process and participate in it. But they are at their workplace. Also, students of correspondence courses can be remote participants in the webinars. Because most of them are already working in their specialty, they do not have a pressing need for purchase of practical experience as it takes place for students of the full-time training. Their experience allows them to participate in discussions at the expert level.

However, distance learning students are usually less able to apply the mathematical apparatus. Participation in the webinar gives them the opportunity to remedy the lack of knowledge.

Visual conferences are also effectively used in retraining and advanced training of specialists. In this case, the term "rapid e-learning" is used as a characteristic of the "rapid development" process that seeks to increase the speed by which training content is developed and delivered to a learner. Rapid e-learning can also be viewed in terms of "rapid consumption" – to provide a low-cost, rapid response to an urgent business need; to provide rapid updates; or, to easily deal with short-lived content [1]. Visual conference best meet the requirements of corporate training. The main difference such conference from visual conferences, which are held for students of full-time teaching, is to use ready-made statistics, and the teacher acts as an active participant in the mathematical modeling of the process, not the moderator.

The final stage of the visual conference, on which mathematical models of business processes are presented, is the evaluation of knowledge and skills that students have acquired, as well as their ability to present their projects. An important element of the feedback of learning is self-control. Especially it is increasing its role in the open learning system [2]. At the stage of statistical data collection and analysis all students work in accordance with their own plans. They themselves determine the scope of work and terms of its execution. This includes an independent evaluation of the results of their work. Since all members of the team constantly communicate on-line, it gives them an opportunity also to evaluate the performance of each member of the team. Opinions of the expert and trainer-moderator are form a "feedback", which the student receives during the visual conference.

Thus the experience of business games and training in mathematical modeling of business processes demonstrates the effectiveness of using visual conferencing and other LMS tools for the professional training of economists.

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