UDC 336

Practice-oriented online courses: the way of improving the quality of higher education

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Abstract

The paper examines trends in the development of practice-oriented online courses that can improve the quality of higher education. The possibilities of virtualization of an automated banking system for educational purposes are considered. The capability of learning in different disciplines through a virtual laboratory using a cloud-based automated system able to provide acquaintance of students to real work of financial institution is analyzed.

Key words: information technology management, e-learning, virtual laboratories, cloud technology, financial institutions.

The creation of specialized laboratories that allow students to obtain practical knowledge and skills directly in higher education institutions is one of the variants of the practice-oriented approach in the system of higher education.

In Peter the Great St. Petersburg Polytechnic University a specialized laboratory of «Banking business», based on an automated banking system «BISquit» of the firm "Banking Information Systems"was set up several years ago.

The automated banking system «BISquit» is a modern banking system, more than several hundred Russian banks and its branches in the Russian Federation operated by this system. The general structure of the system is

represented by the system core around which the modules are located, within which the main lines of activity of the financial institution are realized; the DBMS Progress is used as a database management system (Figure 1) [1-3].

General structure of the automated banking system «BISquit».

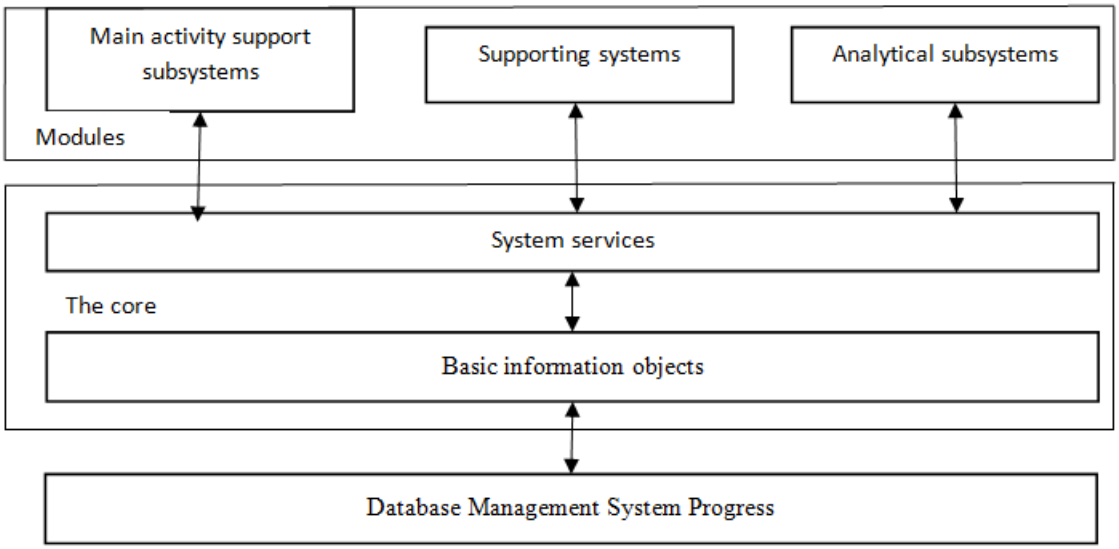


Fig 1

The structure of the specialized banking laboratory is fully corresponding to the organization of financial institution's work: on the central server there is the automated banking system «BISquit», which through a server running the operating system Windows Server, is connected with the workplaces of employees (Figure 2).

Architecture of the banking laboratory

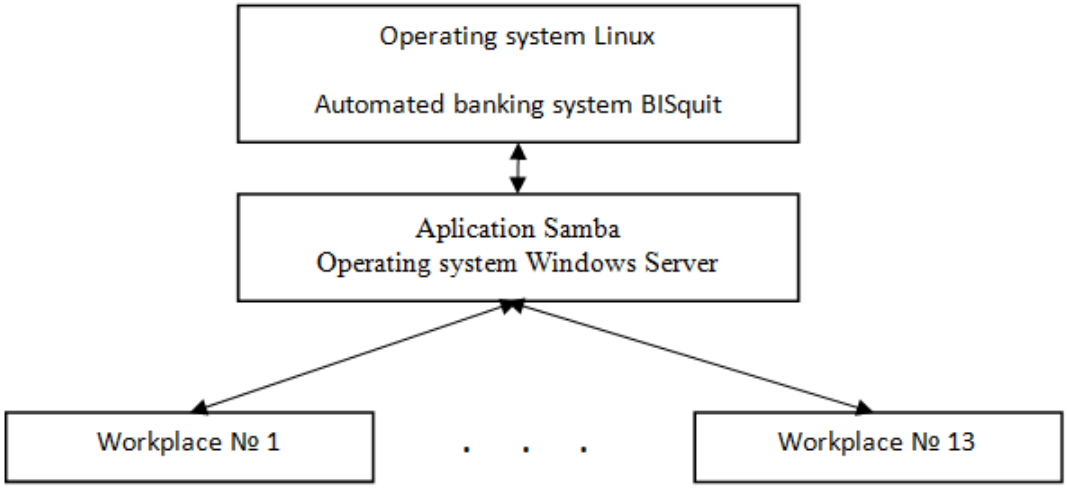


Fig 2

Over the years of its existence, hundreds of students have passed through the specialized banking laboratory, received huge practical experience in the environment of the real automated banking system.

Monitoring of the practical importance of the specialized banking laboratory showed very high results among the students. An average of 70% of future graduates expressed their opinion that the laboratory has a high practical importance in their future profession (Figure 3).

Results of monitoring students on the practical importance of a specialized laboratory «Banking business»

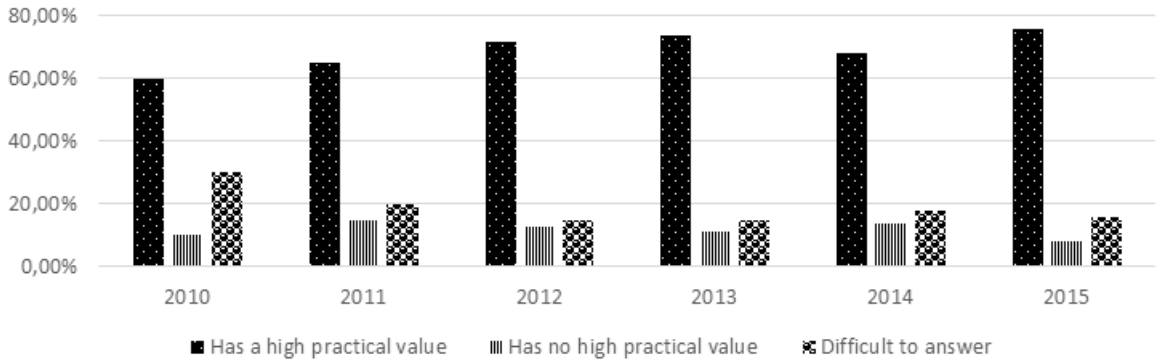


Fig 3

Even higher results were among the graduates who went to work in the banking sector. More than 81% of graduates assessed as a positive

contribution to the development of their professional careers, training in a specialized banking laboratory (Figure 4).

Monitoring of graduates in relation to the banking specialist laboratory

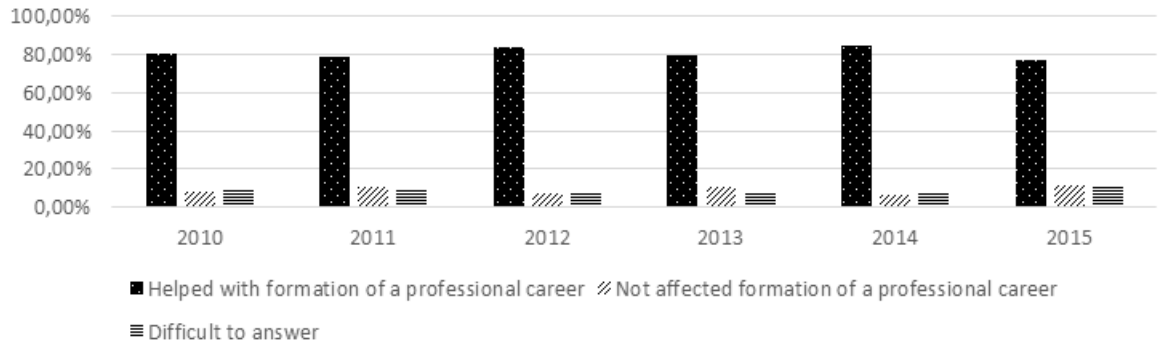


Fig 4

As you can see, the introduction and use of the specialized banking laboratory has great practical interest. However, due to thirteen seats of the laboratory, the number of students passing through its walls is limited, and such forms as evening tuition and part-time practically are not getting the necessary information. The limited number and time of classes lead to students can not completely gain all the opportunities provided within the laboratory «Banking business», which gives the possibility to get acquainted with the work of the financial institution in full and as an employee.

In this situation, there is only one possible way out, which is to apply new innovative approaches to the organization of the learning process. Modern information and communication technologies enable to create a virtualized banking laboratory, where the automated banking system «BISquit» acts as a virtual object.

In information technology, the term "virtualization"is understood as a certain abstraction of computing resources and providing the user with a system that hides its own implementation, while the user may not even know how the object is structured, and how it actually works. Virtualization of the automated banking system will allow to move away from the certain hardware requirements imposed in case of installation of a banking application. Besides, another problem will be solved, connected with limiting the number of users

of the system, their number will be confined only by the capabilities of the server itself. A question how to expand access to the banking application «BISquit» arises.

Virtualization technologies are the basis of the most innovative technologies in the information and communication sphere - cloud computing.

Cloud computing – is software and hardware available to the user through the Internet or a local network in the form of a service that allows using a convenient interface for remote access to allocated resources (computing resources, programs and data) [4, 5].There are several types of clouds in the use of cloud technology.

Private clouds, when all the cloud infrastructure and software are fully owned and managed by the organization.

Public clouds, when all infrastructure and software belong to an external company that is completely responsible for providing cloud services.

Hybrid clouds combine the principles of building private and public clouds.

In our situation, the most correct way from the point of view of efficiency and security is to create a cloud service in the private cloud form (Figure 5).

Structure of the virtual banking specialized laboratory «BISquit»

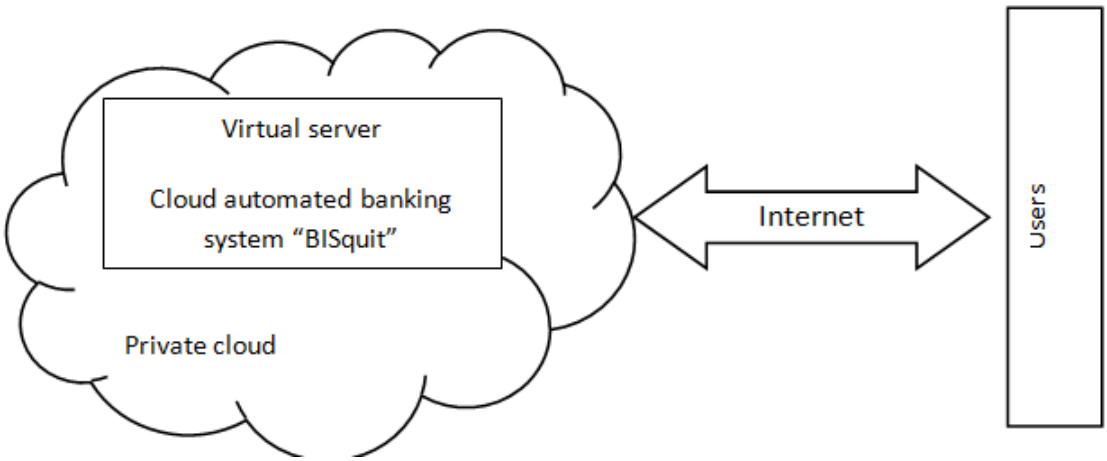


Fig 5

In this case, we can talk about using not just an automated banking system, but the cloud automated banking system «BISquit», access to which is provided through the Internet.

As a result of this configuration, students have access from anywhere 24 hours a day, the task of scaling up the banking laboratory is completely solved; access to the server is practically unlimited in quantitative terms.

The question, related to the security of the banking system, will not play a decisive role here, because the system is used for training purposes and, therefore, an actual risk as in real banks does not exist.

The virtual laboratory can be built into the system of the whole range of online courses that exist on the portal of the Institute of Industrial Management, Economics and Trade. Thus, the quality of e-learning courses will rise to the new level, allowing to combine theoretical knowledge and to receive full-fledged practical skills in the cloud automated banking system «BISquit» and thereby ensuring practice-orientedness (Figure 6).

System of online courses, based on the virtual laboratory of «Banking business»

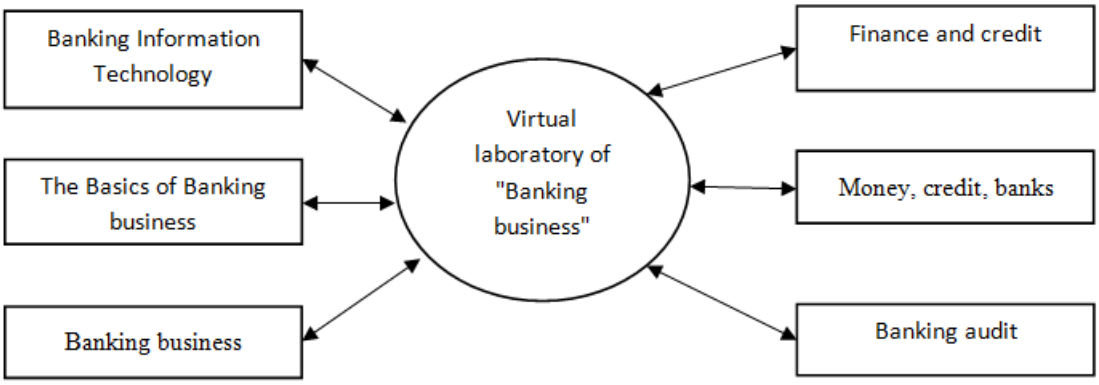


Fig 6

References

1. V. P. Ignat'ev, E. I. Mikhailova, V. M. Savvinov, Practice-oriented education as a guarantee of improving the quality of higher education // Eurasian Scientific Association 2.10, 2016, pp. 153-156.

2. E. N. Glubokova The preparation of the teacher of the modern University to the implementation of practice-oriented educational process // Man and education, 2016, 3 (48).

3. A. N. Yakovlev, S. A. Yakovlev, Modern aspects of information and communication technologies in the system of professional education // Synergy, 2016. № 5.

4. T. V. Trishina, A. N. Belyaev Experience of practice-oriented training of future engineers // Modern scientific and practical solutions of the XXI century, 2016.

5. A. A. Semenov, The activity of teacher of higher school in the conditions of application of electronic educational resources, Actual problems of modern education: experience and innovation, 2016, p. 432.