Theoretical Foundations of Object-Oriented Education Systems in Preparing Future Specialists

Adambek Maksutovich Tatenov and Shynar Maratovna Askarova

Eurasian Technological University, Almaty, Kazakhstan

INTRODUCTION

In recent years the rapid development and adaptation of information and communication technologies (ICT) are important factors in the modernization of society affecting not only on economic performance, but also the mode of life. In order to create modern information and communication space to continue stimulating the development of the telecommunications sector, the creation of a modern infrastructure of ICT, telecommunication and electronic distribution services, as well as laying the foundations of a dynamic information society.

The skills development will be linked to plans for industrialization. In technical, vocational and higher education will be made remove to a system meeting the requirements of the modern labor market and the educational standards will be formed on professional standards through the National qualification system.

In secondary, technical, professional and higher education system will be implemented the electronic system of learning (e-learning). To higher education institutions will be given academic freedom with the introduction of the principles of corporate management.

One of the important factors to improve the system of professional training in higher education is the active use in the educational process of object-oriented training systems. Despite the presence in the area of serious research, still remains very acute need for further development of its theory and methodology [1]. Currently, there has been progress in the development of educational technology, appropriate goals, content and methods of intensive training, resulting in a wide variety of universities developed advanced learning technologies that effectively address many teaching problems that exist today in the high school in preparation of the professional specialists [2].

Usually the software environment in which the user is working on a computer, determined by a combination of existing software components on it. As we know, the software is consisting of many the software components that have been certified are proven to have been widely adopted. On each computer as a rule there is only the software, which is necessary to create a professional user interface. The software includes components for general use - operating systems, applications that increase the level and improve the quality of the interface. However, the main component of the software is a problem-oriented system. Each of these systems is designed to meet the challenges of a particular subject area. The number of problem areas is very large, so is convenient to define several types of such systems and most use and have a number of features and characteristics of them. Usually the task-oriented system represented by a set of programs designed to address
the problems of a certain type of application and is the general interface. The adaptation of a type of problem-oriented systems to some of the domain results has their users, specific purpose and application [3].

Despite the great differences of problem-oriented systems, we can identify a number of frequently sold in these works, the most characteristic of basic functions. These basic functions: analysis of phrases spoken language, generation, synthesis of programs, structuring, placement, storage and retrieval of information, creation of configuration, versioning, editing links, planning, design, computing, performance management, optimization of algorithms, ensuring the appropriate interface, editing, macro-processing, expectation, the history of changes, support for collaboration, information and referral service.

There are several of the most popular types of problem-oriented systems that are suitable to these core functions, namely, that: systems programming database systems, information systems, software packages, word processing, computer graphics systems, training systems, systems of artificial intellect. However, as shown by this study, the introduction of modern teaching technologies in the educational process of higher education institutions are still limited by the weak elaboration of didactic framework and the lack of evidence-based practice recommendations for use in training. The relatively poorly studied the psychological aspects of their implementation. Currently, the rate of improvement of technology training ahead of the processes of psychopedagogical reflection and research. The successful solution of this problem to some extent hindered by the fact that the accumulated experience of their use in high schools is not scientifically generalized and theoretically meaningful. Approaches to the interpretation of this phenomenon are very different and full of clarity in the interpretation of the spirit and the specifics have been made. This means that those potential opportunities to improve the educational process, which are incorporated in the application of object-oriented systems are used in teaching practice is far from complete.

It is important to note that the level of awareness of the need to supplement their knowledge of different people is not the same. Students often begin to take the fore pragmatic motives of addressing individual, situational problems. Under these conditions is particularly important for object-oriented systems to provide special measures to encourage training activities, maintaining a positive motivation for learning, creating a positive mode. Need to engage students in self-employment exercises simulating practice, repeatedly reinforcing capabilities for analysis and synthesis of phenomena and processes. Application in the object-oriented systems of computer simulators, databases, e-books, which performs graphic, and text editors, etc. allows you to implement it. Conducted in a number of universities studies show that it is a computer learning tools are tools that create the necessary preconditions for the emergence of intrinsic motivation of the individual in the information technology education. In this case, students begin to enjoy the process of teaching, regardless of external motivational factors. This is facilitated by the fact that the training based be transferred on object-oriented from system to computer some functions of the teacher. Electronic textbook can serve as a coach, which is able to show the error and to hint at the answer, repeating the task again and again, «friendly» contact with the user and at some point even give him substantial assistance. The analysis shows that the majority of students in the early stages of being in high school are well aware of the need for a computer in his career. The educational process is inherently more and more close to productive work. This effect is particularly enhanced if the training tasks in the framework of object-oriented systems linked with the practical activity of the future specialist or interest in its current academic work. The most effective in this case, such a motivational technique, in which the teacher refers to a perception of the role of the student in his future activities for the successful solution of professional problems. The focus give not so much with a special selection of educational material as proper formation of the positive value orientations of students in relation to learning, to the subject and to academic work in general [4].

The object-oriented software system provides studying clear and adequate information about the progress of learning, supports their competence and confidence, thereby stimulating the intrinsic motivation. Cognitive process is under the control of the student, he feels responsible for their own behavior, explains the reasons for its success than external factors (easy task, luck), and its own diligence and zeal. Many training programs implemented the principle of encouraging students to search, when the computer in the event of a wrong decision provides guidance instructions, thereby directing the action of students. An effective training system in the long run will be corrected errors and allows you to bring the solution to the end. This eliminates one of the common causes of negative attitudes to learning, namely the failure to training missions. To maintain the incentive to learn the use of object-oriented gradation system necessary to provide educational material with the zone of proximal development for groups of students with different basic training, different skills for performing mental and intellectual development, that is, you must have a data bank with the tasks of different complexity, providing multiple methods and the presentation of the same educational material according to the level of basic knowledge, goals, and development of students [5]. It should be noted that the motivation for students to use in the educational process of object-oriented systems over the entire period of their stay in the university increased from course to course. This is evidenced by the results of questioning of students of Kazakh National Pedagogical University, conducted as part of a comprehensive inspection physical physic mathematical faculty. When asked to indicate what the problem is now the greatest impact on your professional development of
respondents identified among the twenty proposed as one of the most important - the problem of building the training program and its use in the learning process.

The particular importance in the creation of positive motivation to the use of object-oriented systems is the ability to control the process of cognitive activity. Object-oriented system of appropriate quality software helps to provide students with real freedom in the choice of educational tasks and supporting information according to their individual abilities and inclinations. This tendency to differentiation and individualization of learning enables many more students to have confidence in the academic work, meet the requirements and complexity of the tasks to the level of their abilities.

The use of object-oriented system is one of the factors of development and customization strategy of the subject, its motivational and personal regulation. The success of the training activities with their use is achieved when there is search activity, is born out of the motivational sphere, in which there is a goal, achieved through the formation of an action plan. Motivation for the application of object-oriented systems at this stage of development of information-logical future competence specialist schools are: higher intensity of the work, its organization, activity, quality of learning, independence and objectivity of evaluation, discipline, subject novelty and unusual activities and others.

Use in the educational process of the university object-oriented systems can be the basis for the emergence of entirely new forms of education, based on a detailed and self motivated individual self-education activity, supported by modern means.

Considered in the work of psychological and pedagogical aspects of the development and application at the university of object-oriented systems to help teachers successfully address the problem of intensification of the educational process at the present stage of development of information technology training and the implementation of practical recommendations and suggestions will contribute to more efficient use of object-oriented systems in their professional activities [6].

Professionalization is the process of mastering the skill and trained to promote its top ensures the implementation of their strategy for succeeding in school work. The strategies to achieve the vision of students peak of excellence and adherence to the logic of promoting them involves the passage of a number of stages. Each of these marks the new levels of professional competence, such as professional development (the ability to independently perform duties) to ensure stability in the (secure, timely and proper execution of the service tasks) ascension to professional skills (creativity, efficiency, assuming the implementation of individual activity-related strategies) and others.

The most complete expression of the problem enhance the creative capacity of students in the university receives in the form of implementation of the ITO (learning environments), to implement them effectively professionalization. Moreover, its strategy is to implement a variety of interactions with environmental factors that are designed to both personal growth and the formation of their psychological content tumors comprising different aspects of the conceptual model of a professional. It is assumed to consider two main points. At first, the understanding and acceptance of the trainees position productive interaction with the environment created within ITO, primarily through the use of conditions, impacts and opportunities presented itself information environment for their self-actualization and self-realization. The development and adoption of such a position can be trained as a result of not accidental and creative self-determination, in which they set the degree of compliance (non-compliance) personal prerequisites to the professional activities and the depth of understanding and comprehension of the content.

Secondly, the construction of the trainees themselves subjectively acceptable models of professional and individual choice of adequate methods and strategies for mastering them. Movement of the subjects of training in personal, meaningful and operational sense as directly linked to the implementation of the processes of personal and professional self.

Just as printed material and technical means of mass communication have led to the huge expansion of possibilities of human knowledge, retention and transfer of expertise, computer equipment, used in the ITO, increases the potential of the human mind, to cause certain changes in the structure of mental activity.

The study showed that the more productive use of object-oriented systems in the university can be achieved through better use of the achievements of modern pedagogy, teaching is, activation of the cognitive activity of listeners, to improve the content of training, mainstream individual psycho physiological and psychological characteristics of students. Object-oriented design on this basis is a prerequisite for the creation of pedagogical systems a new level, with their own objectives, theoretical framework, methods of organization, delivery and evaluation that can provide modern requirements of social order to prepare today's professionals.

REFERENCES