

Using of Information and Computer Technologies in Teaching Chemistry in Higher Education

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Annotation: *This article devoted on preparing the future teacher for use of information and computer technologies in gaming training includes awareness of the importance of technology in the process vocational training; formation of personal qualities and abilities that meet the requirements of the activity; knowledge and skills, necessary to perform productive gaming activities on teaching chemistry.*

Keywords: *chemistry, computer technology, higher education, pedagogical disciplines, training, pedagogy.*

Chemistry occupies an important place in the training of future teachers define a set of competencies that effectively perform professional duties, which based on the use of gaming training in conditions of using information and computer technology. The preparedness of the future teacher for use of information and computer technologies in gaming training includes awareness of the importance of technology in the process vocational training; formation of personal qualities and

Abilities that meet the requirements of the activity; knowledge and skills, necessary to perform productive gaming activities. Let us reveal some innovative techniques

Teaching chemistry in high school. At first, we note the interactive nature of innovative teaching chemistry at university. This involves the introduction of interactive mechanisms into the process of teaching chemistry teaching methods, which include problem-based learning, discussions, case studies, group work, business and role-playing games, blitz method surveys and questionnaires based on personal teacher-oriented interaction and a student who assumes student activity

Students in the process of mastering chemical knowledge, intellectual skills and abilities. Direct pedagogical training of students includes three main interrelated components: general, additional and component involving differentiation and individualization training and education. Common component requirements include availability of a sum of knowledge in the field of pedagogy and related pedagogical disciplines. Additional pedagogical component implemented through the need for elective disciplines, electives, etc. The differentiation and individualization component carried out by organizing students' independent work based on their interests. By recommendations from employers, the curriculum includes such electives disciplines such as "Application of new innovative technologies in chemistry", "Computerization of educational games in chemistry", "Computer technologies in chemistry", etc. In our opinion, these elective disciplines directly interconnected with the technology of game learning in the conditions of use information and computer technologies and should reflect content side of bachelor's professional training game activity of the teacher. The university program in chemistry includes studying module fundamental principles of chemistry in inorganic, organic, analytical and other chemistry. It should be taken into account that in the 1st year, the study of chemistry is just beginning, and this imposes additional conditions for preparing educational games for

this period. Therefore educational chemistry games created for university schools can, apparently, conditionally divided into three main groups:

- Educational games used at the initial stage of training in Inorganic chemistry, general chemistry (1st year);
- Educational games used in teaching analytical and organic chemistry (2nd year);
- Educational games used in teaching organic and general chemistry (3rd year);

The task posed to all conditional groups of games is unambiguous this is to improve the quality of student training, and highlight any of these groups are not allowed. It must be remembered that for all of them there are several general provisions that are recommended to be discussed preliminary, before moving on to the presentation of the educational games themselves. Therefore, when using educational chemistry games designed for universities, this has both positive and negative effects. Depending on the purpose of application, innovative online pedagogical technologies and teaching methods science of chemistry, according to V.A. Trinova, divided into information and development, activity, developmental and personality-oriented technology. Depending on the content of the training to simulation-based technologies professional activities in educational process. Innovative pedagogical technologies and methods of teaching chemistry take into account the composition of the student, their age, level of preparedness and development, quantitative composition of students, their physical state.

Therefore, when using educational chemistry games designed for universities, this has both positive and negative effects. Samples are that the chemical laws are simple and, therefore, to them it is easier to choose the appropriate rules of the game. Relatively small number of chemical elements studied makes it possible not to clutter game, i.e. makes it more manageable and accessible to students with preparedness. At the same time, quantitative limited availability of chemical elements, adding up additively with the relative simplicity of the chemical laws used, limits possibilities for modernizing educational games and generally directly affects their total quantity. A certain complexity introduced by the quantitative (not to mention qualitative) the composition of the audience, usually ranging from 20 or more people. This forces the game played in several groups' students, since creating a good educational game that played all students in the audience at the same time is not always possible. True, noted that all students are still in adolescence, when a person is characterized by great emotionality, passion, activity, which (to a greater extent than in adults) should make future teachers interested in games (even educational ones). It should be noted that all students are still in adolescence, when a person is characterized by great emotionality, passion, activity, which (to a greater extent than in adults) should make future teachers interested in games (even educational ones). At you can also count on the fact that students will use games they liked and when preparing independent tasks, thereby activating, accordingly, its independent preparation. Plan your own gaming activities; understand its importance and responsibility for the results obtained. All these qualities will contribute to the formation of the readiness of the future specialist in field of chemistry.

The data presented in this section allowed us to determine that the gaming training using information and computer technologies has a special specificity that can be explained sufficient complexity of educational computer games. It argued that the role and place of game-based learning using information and computer technologies as a method of active learning for students depends from creativity, professional excellence, innovation the teacher himself, from his psychological, pedagogical and motivational readiness and proficiency in game-based learning technologies using information and computer technologies.

This section also discusses the scientific and practical basis for use of information and computer technologies in conditions Game-based learning for chemistry teacher training. Shown, that the readiness of future chemistry teachers needs to be formed and improve through the widespread use of

educational computers games. However, in the educational and methodological literature on chemistry this issue reflected and needs appropriate organization of application of training computer games in teaching chemistry.

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