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THE USE OF NEW PEDAGOGICAL TECHNOLOGIES IN UPBRINGING

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Abstract
The article shows the use of modular and contextual learning technologies that ensure the development of engineering thinking of a future specialist in the example of the course "General Chemical Technology" in the preparation of a chemical process engineer.

Keywords: engineer, chemical technologist, educational technology, task-based learning, context-based learning.

Introduction

Developing Uzbekistan is seen in the eyes of the world as a country with a bright future. Currently, the country is carrying out many reforms and works in various fields, including in the higher education system, in order to build a strong foundation for the future of the country and reach the level of developed countries. New educational technologies and foreign experiences are being introduced into the country's education system to ensure that the future generation becomes educated, well-rounded and the opportunities provided to them are comprehensive throughout the world, and changes are made accordingly. For example, Uzbekistan's accession to the Bologna Declaration, signed by 29 countries of the world in Bologna, Italy in June 1999, to which 48 countries of the world have now become parties, and the start of work on introducing credit. -the modular system in the country's higher education system marked the beginning of the era of modern changes in the education system.

The goal of the scientific program is very simple - to achieve a transparent, targeted and planned organization of the educational process in universities.

Materials and methods

The importance of independent work performed by the student is extremely important for the student to master the subject being studied and understand its essence. Taking into account the requirements for training a chemical engineer, laws and conditions of their functioning are studied in higher educational institutions of the Republic of Uzbekistan. The use of modular and contextual educational technologies in the subject "Basic technological processes and devices" is of great importance. The traditional teaching of this course leads primarily to the reproductive level of learning the educational material. An activity-based approach based on modern educational technologies allows one to overcome these shortcomings, as students learn new information and acquire skills to work in situations close to professional ones. The essence of modular educational technology is that the student independently works according to an individual curriculum, which includes a proposed program of targeted actions, an information

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bank and a methodological manual to achieve the set didactic goals. In the educational process, with the help of the entire system of didactic forms, methods and means, the subject and social content of the future professional activity of a specialist is modelled, and he acquires and assimilates scientific knowledge. This activity is called contextual. [3]. The basic unit of a student's work with educational content is not “information” or a task, but a problem situation and social uncertainty and inconsistency in its entire subject. “Basic Technological Processes and Devices” (ATJ) The main goal of the course is to provide students with deep and solid knowledge of the theoretical foundations of the design and optimization of chemical engineering systems. During the course of their studies, students must acquire not only theoretical knowledge but also the ability to use this knowledge to solve specific technological problems. When training specialists, it is necessary to read lectures prepared according to the problem-dialogical type and read and assimilate informational lectures with basic concepts and definitions. In laboratory practice, not only theoretical and practical thinking is studied, but also human social qualities: the ability to work in a team, initiative, and responsibility, it is advisable to conduct business games that determine the conditions for organizational development. In the process of independently solving educational problems, students develop the skills and competencies of technological calculations, absorb theoretical material more deeply and systematically, and develop intuition and creative abilities. The model also allows the teacher and student to determine the level of proficiency in each specific topic of the course and the course as a whole [5].

In order to increase the efficiency of the educational process, the process of solving problems with the help of a problem book proceeds synchronously with the course of lectures. The workbook is intended for students to work independently under the guidance of a teacher. Its structure and content are constructed in such a way so that the student can acquire the necessary amount of knowledge and skills required by the state standard to perform technological calculations while maintaining an individual pace, method and level of mastery. [6-10].

Results and discussion

Thus, each educational element has its own didactic purpose and structure. The proposed structure of the problem book and its content, in our opinion, make it possible to solve several problems facing the teacher: to teach students to calculate the technological indicators of chemical technological processes and at the same time the speed of achieving the goal, an individual approach to the path; support the development of students' independent work skills; a more objective assessment of the level of mastery of educational material by students. It is advisable to use modern pedagogical technologies when implementing a course project in order to ensure a deeper assimilation of theoretical material based on contextual learning technology and its practical use in the calculation and development of a production flow diagram. During the course project, students gain experience in individual and teamwork and thus establish a social context [11-16].

Accept the first task and divide it into small groups. Assignments for the course are divided into small groups according to the topic of the assignment and based on the speciality profile. After dividing into small groups, small group leaders receive a list of recommended literature from the teacher. Independent work of students aimed at choosing the second required subject of studying literature. At this stage, students independently study the basic production scheme, physical and chemical fundamentals and the technological scheme of a separate production stage following the assignment. Then a discussion is organized in small groups and a drawing of the main production scheme is organized. a separate stage will be held, and one of the

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managers will prepare a report on the topic. The result of students' independent work is a preliminary selection of the optimal production flow diagram at a separate stage, as well as the formation of each student's idea of the composition and structure, as well as the entire production process. it is necessary to discuss and participate in the discussion of the results of the report. Report from one of the small group leaders; members of small groups - student reports on the topics "Physico-chemical foundations of the individual stage of production" and "Technological scheme of the individual stage of production." The seminar discussion is conducted under the guidance of a teacher who directs the course of the discussion, but does not interfere in it and does not impose his opinion. Even if students choose the wrong direction of the technological process, they will discover, identify their mistakes and correct them in the next stages of work on the course project. Based on the results of the seminar discussion, the teacher gives the task to the entire small group to perform a technological calculation of a certain stage and then gives each student the task to perform a technological calculation of a specific device. Independent work of students in small groups aimed at completing the calculation part. is planned as follows: each student in a small group independently completes the task of calculating and describing a specific apparatus or reactor of a certain stage. Small groups of students gather and discuss the results of their work [16-19]. A technological diagram of a separate stage is drawn up and the calculation of the entire stage is carried out, taking into account the work done by each student (you can use a computer). Each student independently reports on the work done based on regulatory requirements. These reports are then included in the general explanatory note. Conducting a discussion seminar based on the results of independent work. Reports from small group leaders on independent work performed on the technological calculation of a separate stage of production at this stage; discuss reports; Each small group is given tasks to design the graphic part of the course project at each stage of production. The seminar discussion is conducted under the guidance of a teacher. It is recommended to select the small group that developed this step as critics.

Conclusions

Thus, each student can act as both a generator of ideas and a critic. Independent work of students in small groups, aimed at completing the graphic part, is based on the following plan: each student in a small group draws a general view of an apparatus or reactor of a given stage; the leader of the small group makes adjustments to the calculations and descriptions of the technological scheme, and also completes the drawing of the main technological scheme; small groups of students meet and discuss the work each student has completed. Each student independently prepares a report on the work performed. If students work well and in an organized manner at all stages of work on the course project, they should receive a completed calculation part in the form of a graphic part, including an explanatory note and a technological diagram of a separate production stage. Defence of the course project. carried out using active learning methods. Each student observes one or two discussants. The activity of participation in the discussion, the nature of proposals and critical comments are recorded. Then a joint discussion begins, during which comments are made by "outside" observers and members of small groups. During the discussion, they express their opinions about each other's behaviour and its effectiveness. After the presentations of all small groups, a general discussion of the results of the work will begin and its effectiveness will be assessed. The teacher summarizes the progress of the discussion, the work of each small group and each student separately. Thus, the introduction of modern educational technologies in the process of special training of chemical engineers and technologists ensures not only the application of theoretical knowledge

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in the calculation and development of a production flow chart but also the modelling of the subject and social context of production. production. At the same time, the future specialist needs additional knowledge on this topic, which will stimulate his research activities and contribute to the development of his engineering thinking.

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