

METHODS OF TEACHING INFORMATICS IN HIGHER EDUCATION: PROBLEMS AND OBSERVATIONS

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Abstract: The author's method of teaching computer science in higher education, using the positions of personal-oriented pedagogy, is considered in the article with the purpose of revealing the potential of all participants in the pedagogical process, providing them with opportunities to manifest creative abilities.

Keywords: teaching computer science; individualized learning system; student-centered pedagogy; innovative teaching methods.

OLIV TA'LIMDA INFORMATIKA O'QITISH METODIKASI: MUAMMO VA KUZATISHLAR

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Аnnотaцсиya: Oлиy ta'limda муallифнинг шaxсиy yo'naltirilган педагогикaнинг пoзиcиyларидaн фoйдaлaнган holda информaтикa фaнини o'qитиш методикaси, педагогик жaрaйоннинг бaрчa иштирокчилaрининг сaлoхиyaтини oчиб бeриш, улaргa иждиy qoбилиyaтларини нaмoйoн eтиш имкoниyaтларини бeриш мaқсaдидa ko'риб чиқилгaн. .

Калит сo'zлар: информaтикa фaнини o'qитиш; индивидуaл та'лим тизими; тaлaбaлaргa yo'naltirilган педагогикa; o'qитишнинг инновaцсиoн усуллaри.

The active use of modern information technologies, both in the professional sphere and in society as a whole, presupposes the presence of deep knowledge and practical skills in this area among graduates of higher education. In this regard, the role of training young specialists in the field of computer science and information technology is increasing [1, 2]. This training should not be limited to teaching the basic skills of working in the software packages most used in the professional environment of a future specialist, but also to the formation of an information culture in the student as a whole.

The goal of the educational environment of higher education is to create conditions for the assimilation of the required educational material by every student who is willing and able to learn. In accordance with this, self-education and self-control, as well as the development of such technological teaching aids that help such an organization of the educational process, have become a priority. This approach is characterized by the transition from an orientation towards the average student to differentiated and individualized training programs.

Problems in Teaching Computer Science in Higher Education

The first problem faced by a computer science teacher is a huge spread in the initial knowledge in this discipline received at school. There are many reasons for this - this is the shortage of informatics teachers in individual schools, and the transfer of informatics hours to teachers of those subjects for which the Unified State Exam is massively passed and other reasons. One of the solutions to this problem in higher education can be the approach of personality-oriented pedagogy.

Another problem, not only in teaching computer science, but also in any other discipline, is the different level of learning of the students themselves. Moreover, some students lack the very desire to learn. In the modern realities of higher education, the teacher is placed in tough conditions for the preservation of the contingent of students, no matter how weak he is. How can both requirements be met simultaneously: to ensure the quality of training while maintaining the contingent? And here the solution can be the approach of student-centered pedagogy.

The success of teaching is ultimately determined by the attitude of students to learning, their desire for knowledge, the ability to consciously and independently acquire knowledge, skills, and activity. A student is not only an object of educational influences, he is a subject of specially organized cognition, a subject of the pedagogical process.

It is necessary to comprehensively implement all components of the content of education and to focus the educational process on the comprehensive creative self-development of the student's personality.

Methods of teaching informatics in higher education

To implement the system of individualized learning into the educational process [3], it is required:

- individualization and differentiation of students based on available indicators;
- development of training materials based on a modular principle;
- organization of students' independent work;

To maintain interest in the subject, both for well-prepared and insufficiently prepared students, we individualize the educational process. The theoretical course is read to all students in full. We will introduce the following changes into the laboratory work plan: for insufficiently prepared students, it is enough to complete a certain number of laboratory work, ensuring the mastery of the minimum skills and abilities required for this discipline. Thus, they carry out the number of works for the assessment "satisfactory". If these students wish and their active work, by

increasing the number of independent work, they can perform a more advanced level of work, thereby filling the gaps in knowledge acquired at school. For students wishing to have a "good" and "excellent" grade in the discipline, the number of works increases and the material presented in them becomes more complicated.

The student determines the level of knowledge, abilities and skills that he wants to get in the discipline, be sure to close the minimum level that is required in this subject. Thus, the student himself participates in the differentiation of his grade in the discipline.

Students perform laboratory work at home using specially developed educational materials [10], containing a detailed explanation of the order of work and the requirements for the protection of each work. The student's questions and difficulties are considered with the teacher in laboratory classes.

Each work, in addition to practical work, also includes a small theoretical block of questions on the discipline. The practical part of the work and the theoretical part are defended separately. Thus, a student has two credits for each job.

The breakdown of large theoretical material on the discipline into small fragments and the defense of these theoretical issues in laboratory work during the semester allows you to strengthen and systematize the theoretical knowledge of the student. This is especially true in connection with the peculiarities associated with the clip thinking of modern youth. The most important questions on the discipline can be repeated in the section of theoretical material of different laboratory works.

Thus, the work with each student is individualized and interest in learning new techniques and skills in the discipline is not lost among all students.

This technique allows students to get an early assessment in the discipline, subject to all the requirements related to the protection of the practical and theoretical parts of laboratory work and the time of their defense. Thus, the student receives an additional incentive to submit all work on time.

Self-education and self-control on the part of the student and on the part of the teacher, the development of such technological teaching aids that help such an organization of the educational process, acquire a priority importance in such a system of the educational process [4, 6, 7, 8].

Conclusion

The introduction of non-traditional pedagogical technologies has significantly changed the educational and developmental process, which made it possible to solve many problems of developmental, student-centered learning, differentiation, humanization, and the formation of an individual educational perspective of students.

All technologies are characterized by certain common features: awareness of the activities of the teacher and students, efficiency, mobility, integrity, openness; independent activity of students in the educational process is 60 - 90% of the study time; individualization.

This technique can be used in the study of any discipline in the presence of the appropriate educational and methodological material.

The introduction of the considered system into the educational process provides the practical possibility of individualizing the educational process, correcting gaps in the structure of individual knowledge, and contributes to improving the quality of knowledge of both well-trained and insufficiently trained students.

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