

TASKS OF METHODOLOGICAL MODELING OF EDUCATIONAL PROCESS IN DEVELOPMENT OF COMPETITIVENESS OF STUDENTS OF TECHNICAL HIGHER EDUCATIONAL INSTITUTIONS

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ANNOTATION

The article provides information on the requirements for the organization, management, methodological support of the educational process in the development of competitiveness of students of technical higher education institutions, their role, importance, tasks in the educational process and proposals and recommendations for methodological modeling of the educational process.

Keywords: *competitiveness, student, methodology, lecture, practice, experience, independent learning.*

In Uzbekistan, where international rankings are high in terms of development, a number of decisions and decrees on the accelerated development of all sectors of the economy have been created, the legal framework has been created, and systematic work is underway on the developed roadmaps. As a result, improving the welfare of the people, the education of young people, who make up more than half of the population, as well as education are considered at the level of state policy, and all conditions are created. As a result of the ongoing reforms to further develop the education system, continuing education is developing day by day, material and technical support, methodological support is at the required level. A clear example of this is the fact that today in Uzbekistan, practical work is being done in all areas of basic education.

Interdisciplinary integrated education, building an educational trajectory of higher education, successful training for professional activities, development of professional competencies should be considered as the main goals in the development of competitiveness of graduates of vocational education in technical higher education institutions.

The subject "Methods of teaching computer science" is aimed at developing students' skills in organizing lessons using modern teaching technologies, the use of new teaching methods in the learning process, the use of modern educational technologies in the systematic organization of educational processes and their use in teaching computer science. .

The following requirements are set for the knowledge, skills and abilities of students in the subject.

Student:

Knowledge of the education system in Uzbekistan and its legal framework, new pedagogical technologies of teaching special subjects, means of teaching special subjects;

be able to conduct lectures, practical and practical classes, assess students' knowledge, know and use methods that ensure the effectiveness of lessons using electronic resources created using modern software;

have the skills to use the most optimal methods of creating e-learning resources using modern software, effective use of e-learning resources in the learning process, conducting research and scientific-pedagogical work, working with gifted students, organizing independent learning.

The subject "Methods of teaching computer science" is designed for 4 semesters and includes lectures, practical, experimental, course work, independent work.

In the course of lectures students will gain theoretical knowledge on the methodological basis of teaching, the principle of demonstration teaching, distance learning technologies, design methods, methods of working with gifted students.

In practical training, students learn the methods of teaching computer science and have the ability to design lessons in this specialty on the basis of new pedagogical technologies.

In the practical training, students will develop certain skills acquired in practical training and acquire certain skills. In practical classes, students achieve certain results on the basis of specific options and specific tasks, analyze the work done and prepare reports based on the findings.

The course work is given to students individually in the form of appropriate assignments on issues related to the subject. The volume of course work, the form of registration, evaluation criteria are determined by the working science program and the relevant department. Completion of the course work serves to develop students' knowledge, skills and abilities in science.

In independent education, students work independently under the guidance of teachers of the department, based on an independent education system to strengthen the theoretical knowledge acquired in the classroom and develop skills in solving practical problems in economics. In doing so, they study additional literature and prepare abstracts and scientific reports using Internet sites, do homework on the topic of practical training, prepare visual aids and slides.

These forms of education alone (lecture, practice, experience, course work, independent study) are not enough to develop the competitiveness of a future vocational education graduate. It is necessary to take into account the pre-graduation internship (internship), graduate work of students. Therefore, in the development of the competitiveness of graduates of technical universities "Vocational Education" we develop a methodology for the organization of performance and defense of lectures, practical, experimental, course work and extracurricular production practice and graduate work (Figure 1).

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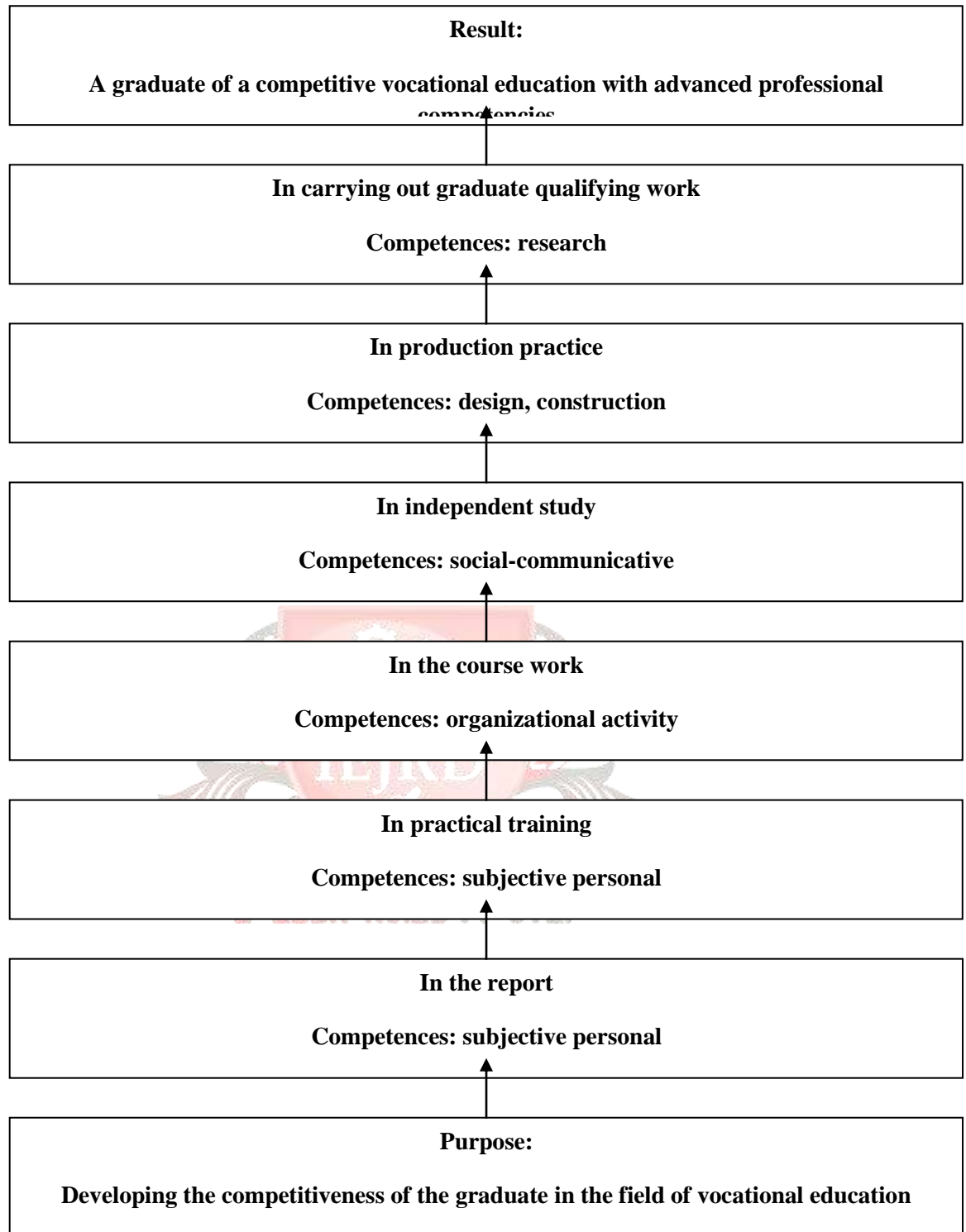


Figure 1. Algorithmic block diagram of the methodology of developing the competitiveness of students in the field of vocational education

METHODS OF CONDUCTING LECTURES

It is known that the lecture is the main link of the educational process, one of the main forms of teaching. The lecture is characterized by the size of the volume, logical construction, the complexity of generalization, which is intended to express knowledge verbally, orally. A lecture (Arabic lecture (lat. Lectio) -reading) is a logically coherent, well-defined statement of a teaching material, an issue, a topic, etc.

The function of informing the lecture is performed by the teacher when revealing the essence of the main scientific facts, rules, conclusions. The application of the methodological function of teaching helps to compare research methods, to determine the principles and approaches of scientific research. The educational function of teaching is carried out in the course of the lecture by arousing the relationship of emotional evaluation of the teaching material, the growth of interest, logical thinking and clarification of proof.

The analysis shows that the main tasks of the report are:

a certain amount of scientific knowledge is stated;

students are introduced to science and research methodology;

methodological links between learning activities and all types of learning information are shown.

The didactic purpose of the lecture, its role in the teaching process, will have its own characteristics according to the methods of information presentation.

Requirements for the report:

scientific;

convenience;

professional orientation;

make effective communication.

According to the didactic purpose, introductory, thematic and general - final lectures are distinguished.

The introductory report describes the role of the course (section, topic) in the scientific system, the possibilities of practical application of this material, methods of studying the content of the course (section, topic). Thematic lectures are especially common. Such a report is devoted to this or that topic, in which the facts, their analysis, the content of the conclusions are stated and clear scientific rules are proved.

The final report will focus on re-generalizing previously studied materials. Its content is not similar to the content described earlier, but the information assimilated by students is systematized in the stage of high abstraction. Such lectures are of special importance in deepening students' knowledge and better understanding of the methodology of teaching science.

According to the information, the lectures are dogmatic, informative and demonstrative, as well as problematic, but it is important to note the specifics of each lecture, as well as to distinguish between them in general, as it is impossible without reading and designing the lecture. .

When the lecture is read by a skilled speaker:

provides new information;

explains, teaches, systematizes complex theoretical questions;

teaches creative thinking in the process of problem solving;

shows, analyzes different ideas that have a big difference from the surface, explains the connection between them;

encourages learning;

encourages reconsideration of learned ways of thinking and beliefs;

creates a desire for future knowledge.

Not everyone can read a traditional lecture in this way. Too many lectures are read in the form of a monologue, which causes the audience to be dissatisfied with the lecture, not to listen to it attentively.

It is this shortcoming that motivates the audience to change the methodology to achieve the expected results, ensuring passive and active participation in the lecture.

This can be achieved through in-depth (engaging, accelerated, dynamic) speech. Accelerated speech is an improved, in-depth version of a report prepared on the basis of creating, developing, universal foundations of analytical thinking skills. Accelerated lectures can be conducted in groups of any size, and students can be actively involved in the lesson.

It is necessary to see the educational process on the basis of positive emotions. IP Pavlov viewed positive emotions as a source of productive functioning of the cerebral hemispheres. Psychologists consider positive emotions as a powerful stimulus of human activity. Didactics has proven that boredom is the worst enemy of education. Naturally, the possibilities of emotional painting of a statement largely depend on the content of the science.

Every educator's speech quality and tone of voice will be different. By exercising properly, you can achieve a pleasant sound. It is necessary to eliminate individual shortcomings of speech, for example, speaking from the mouth, "swallowing" the last part of the word, and similar shortcomings. Speech should be cleansed of bad words. It is very useful for the teacher to be able to identify the tone in which the voice itself can speak fluently. Deviating from this tone enlivens the speech.

Asking students questions while narrating the material also gives much better results. This methodical method serves two purposes. First, the teacher will be able to know how the students are mastering the material, depending on the nature of their responses, i.e. to make a certain amount of 'feedback'. Second, students listen to it more carefully, without distracting themselves, knowing that the teacher will ask whenever they want. During the presentation, the teacher should ask students questions to try to determine how well they understand what is being said. At the same time, the teacher should ask students not only to repeat what they have said, but also to try to understand the laws, conclusions and put them into practice. At the same time, students should be accustomed to asking questions to the teacher, which also contributes to the successful mastering of the teaching material, increases the activity of students' thinking skills in the classroom. We must not forget Pestalozzi's wise words, "A question that is not asked in time is a lost treasure." V. A. Sukhomlinsky believed that students' questions to the teacher were a manifestation of their intellectual activity, a necessary element of "knowledge acquisition."

Since a certain amount of time is set aside to describe the learning material, the teacher should make an effort to have time to explain everything that is intended in the lesson. To do this, the teacher must start the lesson on time, approximate the time spent on some stages of preparation for the lesson, if necessary, on some key issues, and follow these rules during the lesson, require students to answer questions clearly and concisely. .

It is always necessary to conclude at the end of the narration of any material. The final part of the oral statement is necessary to summarize and conclude what has been said. It is necessary to reiterate the main points of the material described in the introductory part of the statement, to draw the students' attention to the most important parts, to repeat the main conclusion.

Thus, lecture is a special form of communication with students, the function of which cannot be accomplished through any other form of teaching. S.I. Arkhangelsky emphasizes that the lecture is the most effective, lively form of communication with the inner world of students through all the richness of the teacher's personality: consciousness, feelings, will, emotion, belief. Therefore, it is in the lectures that students have ample opportunities to think logically, to promote leading ideas.

METHODS OF CONDUCTING PRACTICAL TRAINING

Practical training is a kind of lesson that connects theory with practice, which serves to strengthen the knowledge of various educational and practical issues, mastered by students. Effective practical training leads to the strengthening of theoretical knowledge and the formation of the necessary skills in the student. Therefore, the science teacher is busy finding effective methods of conducting practical training and applying them to the teaching process.

Practical training should be conducted under the direct guidance of the teacher and with the independent work of students. During the practical classes, students work independently under the guidance of a teacher, focus their theoretical knowledge on solving practical problems, and thus acquire the skills to apply the theory in practice. According to the role of practical training in the educational process, they do not have a direct production character, but occupy an intermediate position between theoretical training and industrial training, and this intermediate position serves as the most important means of communication between these two parties in training.

During the practical training, the classroom should be light and comfortable, equipped with a personal computer or current computer, theoretical literature should be provided with textbooks, special indicators, catalogs. It was found that the full implementation of this supply will have a positive impact on the conduct of practical training.

The following requirements should be met when organizing practical training and analyzing the issues addressed in it:

1. Pay attention to the performance of certain tasks during the solution of the problem, pay special attention to the independent work of the student;
2. When solving the problem, it is necessary to pay attention to the safe operation of the machine or computer in the room, to follow the rules of safety in the room.

It is advisable to give individual assignments to each student in order to ensure that students work independently on the practical training and to create their approach to the practical training in the spirit of creative research. A set of questions will be developed for students to complete each practical assignment.

Successful completion of practical training is not due to the creation of a "compulsory" situation in students, but to the creation of a high cultural environment and aspirations, ie a healthy environment in the room, a healthy outgrowth among students, healthy competition, hard work (passion) in computing. development should be associated with a brief analysis of the results. A healthy environment in the classroom is closely linked to the teacher's business acumen and skill, which he or she can achieve by giving interesting assignments specific to the lesson and properly organizing the practical process.

When the teacher organizes the lesson process, first of all, its effectiveness is aimed at the students' full mastery of the topic. Therefore, different methods of organizing lessons are used. As the teacher creates the lesson structure, the lesson structure is a chain of activities that ensures the purposeful course of the lesson and describes the relationships between its various elements.

The course may have different structures depending on the objectives. At present, various variants of lesson structures are used in pedagogical practice.

The structure of the lesson is a combination of all the elements of the lesson in different variants, which arise in the process of teaching and are goal-oriented. Summarizing all the above steps, we present an improved practical training structure.

Thus, the following factors can have a positive impact on the effectiveness of practical training in the teaching of information technology:

Thorough mastery of theoretical knowledge;

Taking into account didactic principles, not only to give students a rigorous scientific description of the information, but also to apply a variety of interesting teaching methods;

Recommend interesting assignments aimed at activating students and developing independent practical skills;

Systematic organization of practical tasks.

At the end of the practical lesson homework time, volume, should be planned so as not to burden students, choose different types of oral, written, theoretical, practical tasks, instructions on how to do homework, preparation, additional resources: textbooks, manuals .

METHODS OF CONDUCTING EXPERIMENTAL TRAINING

It is known that the main purpose of experimental work is to study in depth the scientific and theoretical foundations of science and to develop skills in working with modern computer technology. During the experiment, the student begins to understand the essence of physical, chemical and computational processes, performing tasks at different levels. This allows the use of machines, hardware, devices and measuring instruments and their partial study.

The topics of the experimental work are chosen to cover the most important aspects of the whole study material and are usually conducted after the lectures. Because theoretical material serves as the basis for any experimental work. In the internship, each student will have their own workplace. Depending on the nature of the work, the task can be done individually or in groups of 2-3 people. If the whole group performs the same task at the same time, it is convenient to organize them and organize the work, but it can reduce the process of independent research in solving the problem and hinder its deep understanding. Sometimes it is possible to divide the whole work into parts, to involve 5-6 students for each part, and at the end to summarize the work they have done. This can lead to better results at a lower cost. It is also possible to give each student a separate assignment. This causes all students to worry about different problems. The order of tasks is controlled by a schedule. This organization of work leads to the identification of interested students in a particular field of study. However, it requires a lot of work and precision from the teacher in managing the process.

Due to the nature of the special disciplines, practical training focuses on the development of skills in the application of various methods and teaching aids in the educational process. This guide provides a variety of assignments related to the organization of the session. For example, lesson planning, analysis of normative documents, preparation of control questions, selection of visual aids, separation of learning objectives, development of practical assignments.

INDEPENDENT EDUCATION AND METHODS OF ITS ORGANIZATION

The following forms are used in the organization of independent work of the student, taking into account the characteristics of a particular professional subject (course), as well as the level and academic ability of each student:

independent study of theoretical topics of some professional disciplines with the help of textbooks, didactic materials and electronic textbooks;

Participation in lectures and seminars of the educational institution;

preparation for laboratory work;

completion of course work (project);
strengthening practical skills in teaching and production practice using special literature;
participation in various exhibitions with samples of creative work on the results of independent work (preparation of samples from models, schemes and details of professions and specialties);
participation in conferences and competitions with models based on the results of independent work;
doing homework from subjects. Depending on the characteristics of the subject taught, the student can use other forms in the organization of independent work.

The form, content and scope of independent work are expressed in the standard and working plans and programs of academic disciplines.

In accordance with the budget of time allocated for independent work of students, organizational forms of independent work, options for assignments are developed and approved by the department in the relevant departments for each subject.

In order to work independently, the departments develop the necessary methodological recommendations and instructions, manuals and instructions for students in the disciplines.

Independent assignments for a student in a particular specialty are developed by the relevant department in conjunction with the teacher who conducts the training and approved by the head of the department. The assignment given to the student contains the initial instructions and recommendations for independent work.

New sources of literature, textbooks, manuals, manuals, relevant information on the Internet, information about previous work on a given topic, etc. serve as a source of information for students to work independently.

The professor prepares questionnaires for students to collect the necessary information on the topics of independent work to strengthen the work with information sources, information and communication technologies, to strengthen scientific and practical cooperation with various libraries, network institutions and enterprises.

In conclusion, the development of a "Pedagogical Strategy" and, on this basis, a "Road Map" for modeling the educational process in the development of competitiveness of graduates of technical universities will lead to the development of competitiveness of training personnel, achieving quality and efficiency of the educational process. .

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