EDUCATIONAL TECHNOLOGY AND METHODOLOGY IN TEACHING SPECIAL SUBJECTS TO STUDENTS

Urinov Uygun
Bukhara Engineering-Technological Institute, 200100, Bukhara region, Bukhara city, 15, K. Murtazoev str., Republic of Uzbekistan

Annotation. This article describes the use of new pedagogical technologies and the use of educational methods in the course of teaching students in special subjects. The methodology of the teaching process is explained on the example of the subject of automated production technology, which is taught in technical higher education institutions.

Keywords
Teacher, student, educational material, case study, educational method, pedagogical technology, types of cases, automated production technology.

ОБРАЗОВАТЕЛЬНАЯ ТЕХНОЛОГИЯ И МЕТОДИКА В ОБУЧЕНИИ СПЕЦИАЛЬНЫХ ПРЕДМЕТОВ СТУДЕНТОВ

Уринов Уйгун
Бухарский инженерно-технологический институт, 200100, Бухарская область, г. Бухара, ул. К. Муртазоева, 15, Республика Узбекистан

Аннотация. В данной статье описывается использование новых педагогических технологий и использование методов обучения в процессе обучения студентов специальным предметам. Объясняется методика учебного процесса на примере предмета «Технология автоматизированного производства», который преподается в технических вузах.

Ключевые слова. Учитель, ученик, учебный материал, кейс, учебный метод, педагогическая технология, виды кейсов, технология автоматизированного производства.

TALABALARGA MAXSUS FANLARNI O‘QITISHDA TA’LIM TEXNOLOGIYASI VA METODIKASINI QO’LLASH

O’rinov Uyg’un
Buxoro muhandislik-texnologiya instituti, 200100, Buxoro viloyati, O‘zbekiston Respublikasi, Buxoro shahri, K. Murtazoyev ko‘chasi, 15-uy

Annotasiya. Ushbu maqolada maxsus fanlar bo‘yicha talabalarga o‘qitish jarayonida yangi pedagogik texnologiyalardan foydalanish va ta’lim usullaridan foydalanish yo‘nalishlari yoritilgan. Texnik oliy o‘quv yurtlarida o‘qitiladigan avtomatlashtirilgan ishlab chiqarish texnologiyasi fani misolida o‘qitish jarayonining metodikasi keltirilgan.

Kalit so’zlar. O`qituvchi, talaba, o`quv materiali, keys, o`quv metodi, pedagogik texnologiya, ish turlari, avtomatlashtirilgan ishlab chiqarish texnologiyasi.

Introduction. Currently, the development of the production sector and rapid changes in the development of science and technology require the development of the education system. That is, it is important to train specialist personnel who will serve the form, methods, tools and methods of traditional education for today’s development stage of education. As a result, the creation of a system of non-traditional forms of education based on the individuality, uniqueness and needs of the student, i.e. methods encouraging the student to think independently and creatively, is rising to the level of an actual issue. This requires the use of modern pedagogical technologies in the field of education, which is constantly developing. Therefore, the use of modern pedagogical technologies at all stages of the educational system is a requirement of the present time.

Today, the lack of educational methodical literature on the use of pedagogical technologies

leads to their limited use in the course of the lesson. Also, among teachers, there are many cases of viewing pedagogical technology and educational methodology as one concept. As a result, when some teachers conduct classes by changing the teaching methods, it gives the impression that they have applied pedagogical technologies to the classes. In fact, there is a huge difference between them, and they have different goals in the educational process. Therefore, below, we found it permissible to touch on them in order to enrich the concepts and ideas about pedagogical technology and educational methodology.

The main part. As a result of the analysis of the educational literature, it can be seen that research scientists approach the concept of pedagogical technology in different ways and give different definitions.

Pedagogical technology is a project of the process of formation of a person that can guarantee pedagogical success regardless of the teacher's skills.

Pedagogical technology is a technological approach to the educational process, based on predetermined goal indicators, designing the educational process.

Pedagogical technology represents a goal that can be reliably understood, defined, and reflected in the actions of students.

Pedagogical technology is a system of actions that lead to pre-planned results and must be performed.

The definitions and views of these scientists are close to each other, and they mainly look at it as a project of a specific pedagogical system that puts knowledge into practice, based on the purpose of the predetermined lesson, and focuses on the design and organization of the educational and pedagogical process in advance, and it must be done in order to acquire thorough knowledge. plans a number of actions.

Therefore, pedagogical technology is a set of organizational and methodological tools for teaching the knowledge and experiences gained by the older generation to the younger generation, and it is the use of a set of educational methods, methods, ways, and tools based on convenient and intensive approaches to achieve the planned goals of education.

In order to distinguish pedagogical technology and educational methodology from each other, it is necessary to know the dictionary meaning and definition of the word «method», which is the basis of the concept of methodology.

The word method is derived from the Greek word ―methodos‖, which means research method, way.

Method is a way of knowing and researching the phenomena of nature and society.

Therefore, the method is a method of practical and theoretical acquisition of reality, assimilation, learning, guidance for knowledge, a set of methods, a method of creating and substantiating philosophical knowledge. That's why people learn different methods during their life. The reason is that a person who has mastered the method of doing something can do it easily, quickly and better than others, on the contrary, a person who has not mastered the method spends a lot of time and effort to do it.

Methodology is a set of methods and ways of doing something according to the purpose. Methodology is a branch of science that develops recommendations for organizing and conducting the educational process and researches the laws of teaching subjects.

Educational methodology is a method of work that the teacher constantly applies to students, which allows them to develop their knowledge and abilities and to apply their knowledge and skills in practice.

Currently, the flow of information is entering our social life at a rapid pace and covering all areas. One of the urgent problems is to quickly receive such information, analyze it, process it, summarize it, conclude it, and establish an exchange of information. Modern pedagogical and information communication technologies are of great importance in solving such problems.

Nowadays, when it comes to applying new methods to the educational process, the use of interactive methods is understood. In educational processes based on interactive methods, the student learns to think critically, to find a solution to complex issues based on analysis,

to search for information accordingly, to express some alternative opinions freely in mutual discussions, and such skills are formed.

The use of interactive methods in the course of the lesson forms the following characteristics in students and develops them.

Today, the introduction of modern pedagogical technologies into the educational system, ensuring the mutual cooperation of teachers and learners during the educational process, and developing the skills of independent learning of learners is one of the important tasks facing education. In the implementation of such tasks, it is appropriate to use case-stage and modular educational technologies calculated from modern pedagogical technologies in the organization of practical training in Automated Production Technology courses in higher education institutions.

The main purpose of the case-study technology is to activate the learning process of students, to develop their scientific and creative abilities by solving existing problem situations. Also, the Case-study technology is an educational technology that teaches students to use their knowledge, skills, and abilities in cooperation, to search for an alternative solution by analyzing the proposed solutions.

The case-study technology, which is used in solving practical situations in the educational system, is one of the pedagogical technologies that teaches students to find solutions to specific situational problems that arise in the course of educational activities, and guides them to develop new solutions.

Case-study technology is one of the problem-based learning technologies. The difference between this technology and the problem-based learning technology is that in the Case-study technology, specific situations and phenomena are given in a problematic way. This technology is directed to the solution of specific problematic situations, specially developed on the basis of specific educational materials, which is created based on the topic of the lesson in advance and aims to analyze this problem together with students.

In this, the teacher describes a multi-variable problem, the students give their opinions and opinions to find a solution to this problem, in this process, the teacher identifies the knowledge that the students lack in solving the problem, and gives the necessary instructions and recommendations to search for and find a solution to the problem. In this, students are directed to independent activities, summarizing the knowledge they have received so far, looking for ways to find a unique solution to the problem using their own experience. In such a situation, students need additional information and daily information in addition to the knowledge they have acquired in class. In the process of collecting, analyzing and working with additional information from various sources, students independently draw conclusions and make their own proposals for solving the problem situation.

Teaching with the help of case-study technology is a method of teaching in which the real creative process is modeled. In other words, a problem situation is created and the students' search for problem solving is guided.

Students acquire new knowledge with the help of the teacher and peers. For this, two factors are important in the student, one is the need to master and know certain educational material, and the other is the desire to acquire generalized new knowledge necessary to solve a certain problem. The reason is that the organization of practical training using the case-study technology requires a specific approach to the study sequence and analysis of the educational material. In this, the teacher poses questions as learning problems. At the heart of the questions is an educational problem that reflects a specific problem.

Case study technology belongs to the group of interactive technologies. The reason is that this technology is implemented through a subject-subject relationship between the teacher and the learner. In such an educational activity, the student becomes an active subject of learning, in which the skills of teamwork, expression and defense are formed.

Open communication method is more effective when using problem cases in automated production technology classes. Students' skills and abilities and the teacher's ability to organize communication are important factors in open communication. At the same time, it encourages students to pay attention to specific information in the text of the case, to logically

answer the questions and draw correct conclusions in order to solve the problem situations in it. Identifying the problem in the given case text, analyzing the event and process, evaluating the situation and expressing their opinions on it develops students' communication skills.

When organizing practical training, the teacher should develop different types of cases, taking into account the educational goals. There is an opportunity to organize students' activities in different ways in case-based practical training. For example, the proposed situation can be staged and discussed through the methods of brainstorming, debate, and scientific debate.

There are several types of cases.

1. Practical cases. In this, the situation or event is reflected realistically. It is based on historical sources, real documents, statistical data. The purpose of these types of cases is to model a real event in history, ways to solve an environmental or technological problem, to form the ability to use the acquired knowledge in life.

2. Educational cases. The purpose of such cases is to teach, and the basis is educational situations. The skills developed in the process of completing these cases become competencies.

3. Scientific cases. It is designed to guide students to research.

For example, production processes in mechanical engineering, - automated lines in mechanical engineering, detail machining process in RDB machines, etc.

For this type of case materials, it is possible to use the works of scientists who have conducted scientific research on the topic, as well as mechanical engineering materials.

Cases used in case-study technology must meet the following requirements:

- the selected case text matches the topic and purpose of the practical training;
- the problem given in the case text is relevant and has several solutions;
- existence of a problem situation in real life that needs to be found and solved;
- sufficient information to solve the problem situation being studied;
- the availability of the opportunity to give recommendations and instructions to students as a help in solving a problem situation, and to evaluate their actions.

The use of case-study technology in the organization of practical training can cause a number of difficulties for the teacher.

This technology requires the teacher to constantly work on himself to develop critical thinking and creative activity, as well as the ability to develop cases, to collect new information on the subject.

Because case studies rely on data collected from real situations and empirical analysis. The activity of the teacher to use the case-study technology in practical training consists of two stages: The first stage is the creative work of the teacher to develop the text of the case and the necessary questions for its analysis. This stage is carried out before the practical training and covers the scientific-research, methodical and constructive activities of the pedagogue. The second stage is the activity of the teacher in the audience. This includes the teacher's introduction, conclusion, organization of work in small groups, management of the debate, assessment of student performance on the analysis of the situation.

Working with cases in the process of organizing practical training consists of the following three stages:

The first step is to enter into cooperative activities. The main task of this stage is to form motivation for cooperative activity.

The second stage is the organization of cooperative activities. The main task of this stage is to organize problem-solving activities in small groups or individually. In each group, a speaker (who will present a solution to the problem), a secretary (who will record the progress of the discussion), and a time controller (who will control the passage of time) are selected. If the case is properly structured, one group's solution will not be the same as another group's answer. The teacher organizes and leads the debate.

The third stage is the analysis and reflection of collaborative activities. The main task of this stage is to highlight the results of working with the case. The teacher concludes the discussion, evaluates the activity of groups, draws a conclusion.

Results oath discussions

Below we will consider the method of using the case-study technology in the practical training of the Automated Production Technology course.

Topic of practical training: Selection of technological bases.

The educational goal of the lesson: to learn the selection and assignment of technological bases and basing surfaces of students, and to expand and strengthen the knowledge acquired in the lecture by performing practical tasks and discussing cases.

The educational purpose of the lesson: to teach students to use equipment and equipment correctly and wisely and to be careful when working with them, to teach them to respect our national values, to form a sense of respect for ancestors, pride, and pride.

Developmental goal of the lesson: to expand students' scientific outlook on the selection of technological bases, to work independently on textbooks, additional literature, drawings, tables and references, to develop analytical skills and the culture of speech and communication.

Equipment for the lesson: Lathe lathe, various detail samples, keys and fasteners, detail drawings, reference books, methodical manuals or lecture texts, projector and presentation materials.

Technology used in the lesson: blitz question, work in small groups, case study technology.

The course of the lesson:

I. Organizational part. Introducing students to the topic, purpose, progress and independently completed educational tasks.

II. Repetition of the lesson. Answer the blitz questions.

1. What do you mean by precision in mechanical engineering?

2. Explain the concept of functional assembly (dopuski) of machine, mechanism and their details? What is it composed of?

3. What do you mean by technological system? Comment!

4. Explain the concepts of nominal, real and limit sizes?

5. The concept of sheep and how it is defined?

6. What are the factors affecting accuracy?

III. The main part. Learning a new topic.

a) Dividing students into small groups and achieving independent, high-quality performance of the educational tasks set by the groups.

b) to discuss cases developed in advance on the basis of educational material and to implement educational activities aimed at solving them.

Formulation of problem 1: One of the most complex and fundamental sections in the design of mechanical processing and assembly processes is the selection and assignment of technological bases and base surfaces. The problem of creating technological processes of quality production of new products is always related to the problem of choosing bases. What are the reasons for this problem?

Questions to solve the problem:

1. What does the appointment of technological bases in the design of technological processes mainly depend on?

2. What should a technologist who designs a technological process pay attention to?

3. What kind of surfaces are divided according to the method of applying base surfaces in detail processing?

4. What is the reference base of the detail?

5. Comment on the setting base.

6. What do you mean by control technology base?

Formulation of problem 2: The need to apply the principles of basing in the creation of new items. Explain why.

Questions to solve the problem:

1. What do you understand by base unit?

2. What error occurs if the technological base and the measuring base lie on different surfaces?

3. When are adjustment and verification technological bases used?

4. What happens if the principle of constancy of bases is not observed?

5. In what cases does the exchange of bases occur?

Formulation of problem 3: The need to correctly implement the selection of defined bases and the connection with force. What are the measures to do this? Explain!

1. What do you understand by defined and undefined basis?

2. What is the accuracy of basing the item (parts, details, assembly units)?

3. What forces are involved in force coupling?

4. What should be done regarding the requirement of determining the basis?

5. What is baseline uncertainty? Give an example.

Conclusion

Using the case-study technology in the above-mentioned practical training classes, it is appropriate to give creative tasks, during their execution, to give instructions and recommendations necessary for the formation of practical skills in students. Giving students freedom when working with cases, creating favorable conditions for them to acquire new knowledge based on the acquired knowledge, forms such qualities as having an independent opinion, giving a full statement of their opinion. After the student consolidates the knowledge acquired in the lecture on the basis of the case-study technology, when performing the practical tasks, firstly, the students complete the task with a full understanding of its content, secondly, they complete the task quickly and easily, and thirdly, they achieve high results. As a result, students will have creative and independent thinking, analysis, and comparison skills.

References

1. U.S. Begimkulov, Informatization of pedagogical education: theory and internship (Monography, Tashkent. Fan, 2011)

2. BS Nuridinov, UA Urinov, Journal of vocational education, 6 , 1, 11-16 (2003)

3. KT Olimov, International Journal of Innovative Technology and Exploring Engineering 9 , 425-429 (2019)

4. UA Urinov, European Journal of Research and Reflection in Educational Sciences . Great Britain. Progressive Academic Publishing, 8 , 2, 62-65 (2020)

5. UA Urinov, ACADEMICIA: An International Multidisciplinary Research Journal, 10, 10, 1321-1328 (2020)

6. UA Urinov, Social psychological priorities of social cooperation. European Journal of Research and Reflection in Educational Sciences . Great Britain. Progressive Academic Publishing. Vol.8, No.2, 2020, P 62-65

7. UA Urinov, Formation of Students' Practical Skills in Technical Higher Education Institution and Production Enterprise. «The american journal of social science and education innovations» Volume 2 - Issue 10, 2020. P 313-320

8. UA Urinov, Opportunities for developing cooperation between technical universities and industrial enterprises. Scientific reports of Bukhara state university. Volume 5. 2020. P 66-72.