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# ANALYSIS OF INNOVATIVE TEACHING METHODS IN CONTINUING PROFESSIONAL EDUCATION.

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**Abstract:** The article presents innovative teaching methods, outlines the methods applied to teaching at a university. It is shown that future specialists must have the skills of self-education and self-improvement, which makes it possible to actively participate in the learning process. It was also noted that a future specialist must be competitive in the labor market. Studying these methods does not exclude the possibility of transforming them for marketing, technical creativity, solving production and technical problems for research purposes.

**Key words:** self-education, motivation, professional games, research, educational system innovative methods, learning, education, physiological ability, range of perception, pedagogy, dominant, memory receptivity, research.

## INTRODUCTION

The formation of a harmoniously developed creative personality capable of solving complex issues in a mobile developing market economy, creating a model that ensures continuous professional education, raising them to the level of world standards is the main task facing society. the existing talent, the foundations are determined, the stages of reforming the education system in our country are presented. Today, in order to consistently develop a democratic rule-of-law state and a just civil society in Uzbekistan, the system of personnel training has been radically reformed, human interests and the priority of education have been resolved in the state social policy. The need to provide the educational process with advanced pedagogical technologies is one of the conditions for the implementation of state policy in the higher education system.

One of the components of conceptual approaches to the educational process is the standardization of education. The standard clearly regulates the essence of the requirements for a future specialist. The graduate must be competitive in the future labor market, otherwise he will not be in demand. A future specialist must have the skills of self-education and self-improvement, otherwise he will not fit into the system of scientific and technological progress. Competitiveness implies the ability to be competitive, and this is what professional games teach. Self-education and self-improvement presupposes active, personal participation of the student in the learning process. Active teaching methods also contribute to this.

With the transition to market relations, the most important indicators of the value of a graduate of an educational institution are his competitiveness in the labor market and the life cycle of the profession he has mastered. However, training does not end at the graduation stage. The specialist must continue to improve his professional skills and the teaching methodology must meet these requirements.

The classification and implementation of goals in general can be represented as follows:

- obtaining a profession, within the framework of the educational standard, for which

a certificate (diploma, certificate) is issued;

- obtaining an educational level within the framework of the status of an educational institution,

assigned to him by the law on education (primary, secondary, higher);

- obtaining knowledge, skills and abilities to carry out the process

self-improvement in order to successfully compete in the labor market.

The latter is becoming increasingly important. In this regard, the general approach to teaching methods is changing.

Teaching methods are classified according to three major criteria [1]

1- method of organizing educational activities;

2 - a method of stimulating learning activities;

3- control method,

Dividing them by types: 1-transmission and perception of information, 2-verbal methods, 3- story, 4-explanation. 5- lecture, 6- conversation, etc.

In a planned economy, a person who received a professional education had a guarantee to work in his profession almost all his life. In a market economy, competition acquires a special status, and the average statistical indicators indicate that a person changes vocational education in a lifetime, has a guarantee that he can work like the rules by changing his profession - 10-12 times. This example illustrates a non-standard situation, therefore, its solution lies in the path of non-standard approaches.

A distinctive feature of these approaches is that they used to "teach a profession", but now it is time to "teach, learn a profession", because at every turn of life you cannot put a teacher who would teach you how to behave in a new situation. We need active teaching methods.

Thus, the purpose of active methods "teach, learn a profession"

Socrates is credited with the aphorism: "There is nothing more important than the education of yourself and your loved ones." [2]

Education is the dominant industry all over the world. It covers almost 40% of the population and overall progress depends on its effectiveness. Can this process be optimized? Leading experts believe: 'The efficiency and time of solving the assigned tasks can act as optimality criteria. In this case, the

optimization of the educational process is also understood as a purposeful choice by teachers of the best option for building this process, which ensures the maximum possible efficiency of problem solving, education and upbringing of students in the allotted time [3]. The criterion for the optimality of training can be the assimilation of the largest amount of educational information per unit of time.

In general, as a criterion for the optimality of the learning process, one can

choose the same parameters that are used to evaluate the computer: memory and performance.

The realization of this teaching purpose is carried out using teaching methods. The specificity of the presentation of active methods lies in the approach to the implementation of their purpose. [4]

The ultimate purpose of training is to create an image. The depth of this concept can vary. For a child, an airplane is an object flying across the sky. For a pilot, an airplane is a complex organism with a hydraulic system, pneumatic system, electrical system, life support system, engine, fuselage, wings, up to various devices, levers, handles, toggle switches, buttons. And the richer his knowledge, the deeper the image. That is why it was figurative teaching that was valued at different stages of the emergence of the learning system.

**Physiological capabilities of human thinking** – these are memory properties.

The first and main property is its discreteness.

Memory draws its images with strokes-properties and the allowable amount for each subject individually. The average statistical subject has seven. [2] This means that if the teacher in the description of the image uses more than seven characteristics, then such a subject will "disconnect" from their perception, that is, figuratively speaking, the excess characteristics "will ignore". The range of perception of both, ranks students on a scale of ability from gifted to weak. But initial abilities are not a criterion for achieving this or that final result. The volitional factors of students and the talent of teachers can change a lot.

The second property is the awareness of memorization. Consciousness is the guiding star of memory. Let's describe two experiments. The manager asked the employees to tell what happened to them on the way to work, or what they were thinking at the time. The first remembered that he was late for the bus, the second - that he had forgotten the book of tickets; the third, that his shoe lace was broken. What was remembered by people who did not care to remember? Only what prevented or helped to solve the main problem - not to be late for work. People had one mindset, and memory obeyed it. [4]

Another experiment. The subjects were offered 15 pictures, in which: numbers from 1 to 15 were depicted. The subjects were divided into 2 groups. The first - had to arrange the pictures according to a common feature, the second - to decompose them in ascending order of numbers. [5] After that, both groups were asked about the common features of the objects depicted in the pictures, and what numbers correspond to them. To the experimenter's amazement, the first group could not say anything about the numbers, while the second could not say anything about the content of the pictures. Thus, it is not numbers or pictures that are best remembered, but what serves as an object of activity.

The third property is memory consolidation during repetition. One of the most common techniques used in art and advertising, the refrain, is also based on this. Thanks to him, the repeated chorus of a

popular song is much more firmly embedded in the memory than a beautiful melody of a rarely performed classical piece. The optimal dose of perception is individual for everyone. Let's say you need to memorize 10 unfamiliar foreign words. This must be done mechanically, i.e. by simple repetition. As a result of the previous exercises, you found out that for a strong mechanical memorization of a phrase or formula, you just need to repeat them 10 times. The question is what you should do (in which case the effect will be greater): repeat all 10 words 10 times, or consecutively each word 10 times, or in groups (for example, 3 words, 3 and 4) 10 times Each can determine the optimal dose. As in the case of micro and macro columns, it is individual.

The fourth property is the presence of dominants.

Влияние доминанты можно проиллюстрировать таким примером. Опытный преподаватель (например, математик) в случае допущенной ошибки, даже при получении правильного результата, испытывает чувство дискомфорта (тревоги) и интуитивно начинает искать ошибку. Роль доминант especially high in the development of habits and, it is desirable that these habits were positive. This is possible only by linking dominants with other properties of memory.

The fifth property is the susceptibility of memory to encoding.

A banal question of the mechanisms of memory and thinking.

Do an experiment. [6]

Try to memorize a fragment of a poem by ear. Note the time and number of repetitions it took to memorize.

Take them for 100%. Do a similar experiment visually.

Compare the effect. Perhaps the time will change (albeit up to 90%). Now do the same with the third fragment, but connecting the auditory perception with the visual. The effect will increase (let up to 80%). But it will increase even more if you connect the motor memory, that is, if you not only see and hear, but also record (60%). All this is present at the lecture.

The role of emotion. It is known that the people's memory divides events into those that were "before the war" and those that were "after the war." The attachment goes not to the years, but to those events that caused the greatest emotional experiences.

There are similar memory bindings to dates of birth, weddings, deaths, natural disasters, major misfortunes or luck. But emotions are invisibly present at every moment of our life, including at every step of the learning process, and the effectiveness of learning depends on how effective they are. Therefore, the primary duty of the teacher is to arouse interest in the subject of instruction.

One important factor to consider is empathy.

Why is theater alive when there is cinema? There is no feedback in the cinema. And in the theater, the viewer empathizes with the performance together with the actor. That is why the impression of the play in the theater is much richer. For the same reason, it is impossible to replace 100% a living teacher with training programs, no matter how talented they would be (if, of course, the teacher meets the relevant requirements).

The methods introduced into the education system and the goal of pedagogical technologies are to bring certain knowledge to the student in a simple and understandable language. The development of information technology contributes to the use of multimedia directly on the topic and the increase in the effectiveness of lessons.

Creative methods. One of the varieties of this method is the art of reincarnation. So for students, for example, the language of computer information is more accessible and interesting than the language of an adult. For a freshman, the language of the street is often closer than the language of vocational training. And in order to start communication, you must first, at least, find a common language.

Example. The sphere of education. A student in his usual state is more irresponsible and has a bad influence on the team.

It is necessary to endow him with the rights and duties of the head of this collective, transfer him from the context of the instigator of everything bad into the context of the leader of everything positive. Give time and you need to evaluate the result. It must be positive.

Another example. Scope of study. Lab lesson. The student does not know how to work with laboratory instruments. This fear must be overcome. Get him involved in the instrument lab. The new context - the execution should overcome the old fear - and give in the future a positive effect, organize lessons-contests, lessons-discussions on them, in which to implement the participants' abilities for creativity, for the ability to fantasize. [6]

Free association method. This method is one of the varieties of the heuristic method and its purpose is similar. The specifics can be shown on the example of a handout in the form of a notebook, the left part contains the text of a related topic, divided into similar ones; sections. The student, by analogy with the left side, must fill in the right side with a printed base. The notebook should be divided into two halves. The right side is empty. It contains only the name of the topic and the names of its constituent sections.

Example from apprenticeship: the left side is external threading, the right side is internal threading. But this is just an expression of the specifics of the method. In general, this method involves the development of associative thinking of a person, both with the use of analogies and with the use of associations of a different rank and of a different nature. This is especially important for the problem of labor protection.

Problematic methods. Gordon's method. [7] The essence of the method lies in the fact that during its implementation the discussion of the problem is preceded by a discussion of the concept. Target? There can be two of them:

1). Broadening your horizons.

Examples.

1) A lesson in special technology.

Subject (problem). Car engine performance and environmental friendliness. Concept: environmentally friendly engine.

2) Lesson labor protection.

Subject (problem). Ways of organizing labor protection at the enterprise. Concept: environmental safety.

Subject (problem).

1) Analysis of the possibilities of creating production: the availability of areas, tools

labor, skilled labor.

2) Analysis of organizational and legal capabilities.

Example. Industrial training lesson. Problem: you need to determine the name of the product shown in the figure - nut, screw, stud, bolt or screw. Substantiate what has been said.

1) Identification of parameters: the product resembles a rod, there is an external thread, there is a groove along the end flush with the diameter, there is no head.

Systemic methods. Questionnaire method. The essence of the method is to use programmed questions. Purpose: the study of issues (topics, disciplines) that allow program learning.

To study the problem, a scheme is acceptable: a text with a description of the section - questions for consolidation - explanations in case of unsatisfactory answers. A separate use of a standardized questionnaire is also possible.

The method must meet the requirements for the questionnaire to fully disclose the topic (completeness condition) and provide an opportunity to understand all the subtleties of the topic (accessibility condition).

An example of the implementation of this method is training programs on personal computers. As another example, programmed learning is now a thing of the past. An example is a test. In this case, two forms are possible: selective control and frontal.

The first one is for separate tickets for each student.

The second - also on tickets, on a closed cycle of questions on the whole topic (for example, in the form of the educational game "Pinwheel"), when the whole topic is divided into a cycle of questions equal to the number of students. Each question is included in one of the tickets. Tickets are handed out to students and then after a certain period of time they pass the tickets around.

The specificity of the questionnaire method is best realized in programmed learning. Questions should be structured with logical completeness, unified in complexity and complexity.

Answers to them must be arranged and timed. In this case, the implementation of this time can significantly improve the training efficiency.

Socrates method. When implementing this method, the student himself finds a solution to the problem by answering a logically complete circle of questions. [5]

Here is one example of a dialogue:

An example from the practice of students in the lesson.

Master: What is the movable part of the lathe?

Student: Spindle.

Master: What movement is he making?

Student: Rotational.

Matrix structuring. The essence of matrix structuring can be schematically represented in the form of a matrix-table. Blocks of the problem are located horizontally, its characteristics vertically. This dismemberment simplifies the processes of generating ideas, criticizing them, and subsequent creative synthesis.

Example. Problem. It is required to draw up a perspective-thematic plan for the study of topics.

The methods are universal. The same "freeze frame" can be applied in "Industrial training" (showing the actions of the wizard with stops for each fragment), and in "Computer Science and Computer Engineering" (showing the program by the teacher in the trace mode), and in literature ('lyric digressions "), etc.

**Portfolio method**. New educational standards introduce a new direction of assessment activity - this is a cumulative system for assessing personal achievements - a portfolio [7] In other words, it is a form of fixing self-expression and self-realization. The characteristic of the portfolio is its feature, which includes quantitative and qualitative assessments, assuming the student's teachers and parents in the course of its creation, and the continuity of replenishment of the assessment.

The results of the work complement pedagogical research in the field of organization and functioning of innovative educational processes at the university, an innovative approach to training students of various specialties.

The materials and results of the research can be used by teachers of the higher education system, in the system of industrial training, in the educational practice of training and advanced training of engineering and teaching personnel.

Radical reforms in the field of education in the Republic of Uzbekistan today are enriched with a new approach to building the educational process.

The division of materials of pedagogical technology into modules in the process of modulation uses the concepts of a small module, a set of modules, a primary module and a modular level and is described as follows:

- small module - represents the smallest value of EE in pedagogical technology. In practice, it is considered that it is impossible to separate other smaller modules into submodules;

- primary module - a module that is selected as an initial module for describing pedagogical technology at one of its levels and includes one or more submodules;

- a set of modules is a set of several modules, which are considered as a single module for describing pedagogical technology from one of its levels.

Modular level - Divided into the following levels depending on how many modules they actually contain:

- modules designed for conducting training sessions;

- modules that form the technology of teaching several related disciplines or individual disciplines;

- modules that make up DTS components and technologies for their implementation;

- modules that make up the components of curricula and programs, and technologies for their implementation;

- modules that make up teaching aids;

- modules that form the methods used in the process of pedagogical technology.

Determining the relative position of the smallest parts of pedagogical activity and the sequence of performing this activity is the primary level of algorithmicization, which are called primary algorithms. With the help of algorithms, it is possible to implement pedagogical technologies by properly trained professionals, ensuring the full implementation of the set goals.

Only when the culture of modulation and algorithmicization becomes a habit in the educational process, the activity on the creation and application of pedagogical technologies at different levels will gain wider development.

Systems: An essay is an abstract of 1000 to 5000 words on a proposed topic.

An abstract is a form of free written expression of the author's personal opinion; includes the general or original worldview of the subject.

5 MINUTE ESSAY.

A five-minute essay is a five-minute essay that is performed at the end of the lesson, in which the results are summarized and the knowledge gained on the topic under study is noted.

Brainstorming strategy

Стратегия «Мозговой атаки» побуждает студентов к широкому и всестороннему размышлению на тему, формированию навыков, умений. Make positive use of your ideas and ideas. Thanks to him, in organized classes, it becomes possible to find several original (unique) solutions for completing tasks. The strategy allows you to identify certain views within the topic, to choose alternative ideas for them.

Table B / B / B - I know / want to know / know

• Allows you to search by topic, text, section. Develops the skills of systems thinking, structuring, analysis.

• Students familiarize themselves with the rules for drawing up a table. They tabulate in independent / small groups.

• They answer the questions “What do you know about the topic” and “What do you want to know” (creating a guiding framework for previous work). They fill in columns 2 and 3 of the table.

• Listen to lectures, read on their own.

• In independent / small groups fill in the 4th column of the table.

Modular learning is one of the most promising learning systems because it is best suited for the development of knowledge and creativity of students. Modular training involves the reading of problematic and instructive lectures that provide generalized information on the main issues of science. Lectures should be aimed at developing the creative abilities of students.

Modern teaching technologies include:

1. The essence and principles of student-centered learning technologies;

2. Technology of problem-oriented learning;

3. Technology of differentiated education;

4. Individualized teaching technology;

5. Computer training technologies;

6. Technology of business games.

In today's developing world, computer-based learning technologies have reached such a degree that they even fully embrace distance learning systems. In particular, distance learning is developing in Japan, Turkey, China, India, Sweden, Korea, Finland, Australia and Russia. Distance learning is developing not only in national education systems, but also in individual commercial companies such as IBM, General Motors, Ford and others.

Distance learning is a combination of information technologies that provide teachers with the bulk of the material being studied, the interactive interaction of teachers and requirements in the learning process, allow students to independently work on independent study of the material being studied and evaluate their knowledge and skills.

In Western Europe, distance learning with higher education takes the form of so-called "open universities". National Open Universities use the organizational principles of distance learning to a large extent. Based on open education, a fully independent learning environment has been carefully designed in which teachers strive to achieve the educational goals they set for themselves.

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