

PROVIDING INNOVATIVE TEACHING METHODS THROUGH GRAPHIC PROGRAMS

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Abstract. The problem is that the student is aware of new knowledge, new methods, new advanced technology and behavioral problems. If the student does not get the starting point for his creative search to overcome the difficulty, he cannot think about it. So the student does not accept it to solve it.

Keywords: Problems, teaching methods, new pedagogical technologies, problem solving, logic ideas.

ПРЕДОСТАВЛЕНИЕ ИННОВАЦИОННЫХ МЕТОДОВ ОБУЧЕНИЯ ЧЕРЕЗ ГРАФИЧЕСКИЕ ПРОГРАММЫ

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Аннотация. Проблема в том, что ученик осознает новые знания, новые методы, новые передовые технологии и поведенческие проблемы. Если ученик не получает отправной точки своего творческого поиска преодоления трудности, он не может о ней думать. Поэтому студент не принимает решение.

Ключевые слова: Проблемы, методы обучения, новые педагогические технологии, решение проблем, логические идеи.

GRAFIK DASTURLAR ORQALI O'QITISHNING INNOVATSION USULLARINI TA'MINLASH

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Milliy tadqiqot universiteti "Toshkent irrigatsiya va qishloq xo'jaligini mexanizatsiyalash muhandislari instituti" muhandislik grafikasi va dizayn nazariyasi kafedrasini mudiri

Annotatsiya: Muammo shundaki, talaba yangi bilimlar, yangi usullar, yangi ilg'or texnologiyalar va xatti-harakatlar muammolaridan xabardor. Agar talaba qiyinchilikni yengish uchun ijodiy izlanishlari uchun boshlang'ich nuqtaga ega bo'lmasa, u bu haqda o'ylay olmaydi. Shunday qilib, talaba uni hal qilish uchun qabul qilmaydi.

Kalit so'zlar: Muammolar, o'qitish metodlari, yangi pedagogik texnologiyalar, masalalar yechish, mantiqiy g'oyalar.

Introduction. The rapid advancement of technology has necessitated the evolution of teaching methods to keep pace with the changing educational landscape. Traditional lecture-based teaching methods are increasingly being supplemented or replaced by innovative techniques that leverage technology to enhance learning. One such innovation is the use of graphic programs in education. Graphic programs, which include tools for creating diagrams, charts, infographics, and interactive visualizations, have proven to be highly effective in improving student understanding and engagement.

The traditional education system, which relies heavily on verbal and textual information delivery, often falls short in catering to the diverse learning styles of students. Visual learners, in particular, benefit significantly from graphic aids that can simplify complex information and present it in an easily digestible format. Graphic programs provide a versatile platform that can transform abstract concepts into tangible visual representations, thereby bridging the gap between theoretical knowledge and practical understanding.

Furthermore, the integration of graphic programs into the curriculum aligns with the growing emphasis on STEM (Science, Technology, Engineering, and Mathematics) education, where visualization and data representation are crucial. By incorporating these tools, educators can create more engaging and interactive learning environments that not only capture students' attention but also foster a deeper level

of cognitive processing.

In this article, we will explore the various graphic programs available for educational use, their applications across different subjects, and their impact on teaching effectiveness. We will also discuss the challenges associated with their implementation and provide recommendations for overcoming these obstacles to ensure equitable and effective use of graphic programs in education.

What is the problem situation? The essence of a problematic situation in teaching is that it causes difficulty. It can be overcome by the student with his own thinking activity [5]. The problem situation should be significant to the student. Its occurrence should be related to the student's previous experience and interest and should ultimately include personal issues as well as the general problem situation. Fundamentals of Problem-Based Education American psychologist, philosopher, and educator J. Dewey (1859 - 1952) opened an experimental school in Chicago in 1894. Develops a curriculum for active learning in play and labor. V. Arefeva, A.N. Kostikov, etc., in this field, to establish the teaching of «Engineering computer graphics» in our country and foreign countries and to design a methodical system of teaching; on improving the methodology of teaching graphic subjects and the problems of using computer technologies: Ya. Blaus, A.D. Botvinnikov, A.S. Kamenev, I.E. Malahotkina, T. Rikhsiboev, U.Nasritdinova, Sh.Muslimov, and others who conducted research. S. Saydaliev, D.S. Saidahmedov, Ch.T. Shokirova and other scientists conducted scientific research on the basics of designing the application of modern computer technologies higher education institutions. The problems of researching the science of engineering computer graphics in foreign countries based on different approaches were studied by Z. Zuo, L.T. Yeorgi, H.J. Chery, R.L. David Amari and other scientists. Work to provide students with new knowledge by creating and solving problematic issues and situations in the classroom. The reason for the problematic situation in solving technical problems is the appearance of schematic images and the direct incompatibility of the technical device in the constructive design.

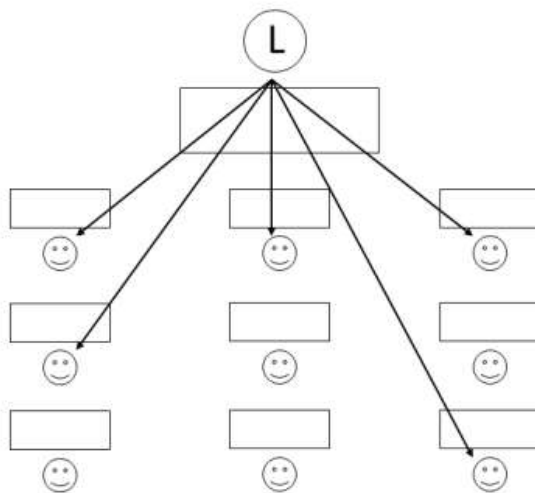
An alternative view of problem-based learning is heuristic learning [5]. Rules for organizing problem situations: Theoretical and practical exercises set for students should be such that they acquire new knowledge. Let the task set before the students correspond to their intellectual potential. When faced with more complex situations, a system of sequential application of problematic situations should be established. The first problematic situation here is the need for students to want to know.

The role of the teacher in the problem situation the nature and objectives of problem-based learning introduce sufficiently new assimilations into the teacher's work. They include preparing material for students, creating situational stages, responding to them, mastering the task given to students very well, knowing how create a problematic situation and get out of it at any time, providing students with information on the topic [5].

Here, the teacher has to take the lead in solving the problem that arises in the problem situation together with the students and has to stand on a much higher level than them. It is the responsibility of the students to guide them in solving the problem. The main concepts of the problem-based learning complex are the problem situation, the "problem" and the "problem". The problem situation is the student's conscious difficulty in acquiring new knowledge, new methods, new modern technologies, and actions. If a student is not given the initial information for his or her creative pursuit to overcome adversity, there will be no food to think about. For example, in geometric constructions, when a circle is divided into six equal parts, and a regular hexagon is made, some of the sides of the hexagon may become smaller or larger [5].

«The use of interactive methods of teaching ensures the full participation of students in the learning process and is the main source of education.» The main difference between traditional and interactive activities is that the student not only revises and consolidates his knowledge, but also constructs and completes it with new material. (Figure 1) [8].

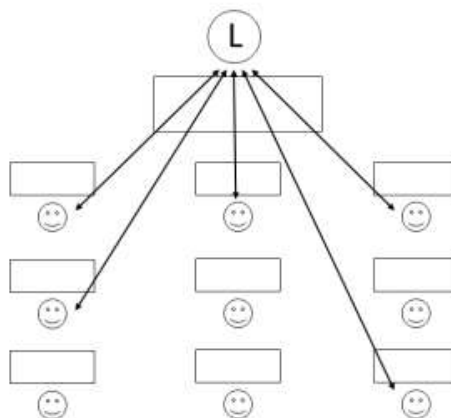
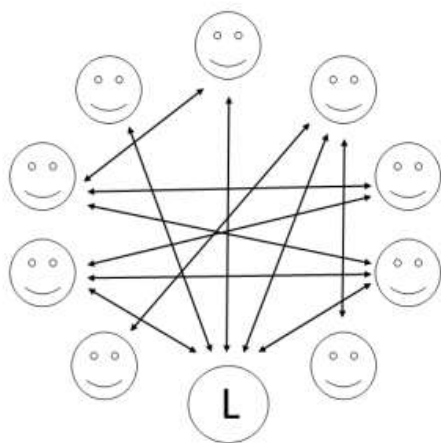
Figure 1. Non-standard work (a, b).



An analysis of the cuts made can lead to the following conclusions: All students correctly understood the surface of the detail on which the cut was to be made. As a result, students have different perceptions. The course process was not interesting, exciting, with little attention paid to standard requirements. Some students did not pay attention to the topic because they were bored class [5].

Figure 1.2

Figure 1.3



Recent studies show that interactive learning not only helps students learn new material easily, but also helps them remember it for a longer period of time. The diagram below clearly shows that through passive learning, the student can memorize only 30% of the material, while interactive learning allows memorizing 90% of the information obtained (Figures 1.2.-1.3) [8].

The lesson was not consolidated at the required level, i.e.

The knowledge acquired by the students was not satisfactorily tested by the teacher using question-answer or various pedagogical factors [5]. By creating problematic situations in students' thinking activities,

it helps to cultivate in them such formal qualities as curiosity, curiosity, intelligence, independence, and a desire to be creative. Abu Rayhan Beruni (973-1048), a thinker and scholar, spoke about the creation of problematic situations in the minds of students, the activity of active thinking of the student, the thorough study of the material. In his pedagogical and didactic views, he emphasized the need to reflect on various topics in the process of teaching and upbringing, not to bore the student, not to strain his memory, that is, not to strain. One wants to see and watch them all. Every new event brings pleasure to a person” [1-4,7]. Thus, it is possible to create a problematic situation I which students develop a passion for learning, intellectual perceptions and mental experiences related to the problem-solving process that leads to search. [1-5]

The task can become a problem with the essence of this issue only if it can meet the following requirements If it makes it difficult for students to know (learn) while thinkin about the problem being studied. When students are interested in learning (learning) in every way. In the process of analysis, students rely on previous experience and knowledge. If the teacher notices that the students’ interest in the topic is fading during the lesson, then it is necessary to create an artificial problem situation and draw the attention of all students to this problem situation. For example, if the lesson is devoted to the analysis of a detail (model), the teacher will address the students and ask why this hole of the detail is needed. The origin of problems does not arise by chance. It is impossible to get in from it because the non-threaded part of the pin does not enter the threaded hole [5]. As a result, the number of students taking vacant classes will increase.

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