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DISTINCTIVE FEATURES OF TEACHING STUDENTS OF THE PEDAGOGICAL INSTITUTE METHODS USED IN MATHEMATICS LESSONS

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Abstract. This article analyzes the active learning methods used in mathematics lessons for students of the pedagogical institute, their essence and effectiveness. The impact of active learning methods, including problem-based learning, project-based learning, game technologies, interactive methods and computer technologies on the learning process is considered. The article also gives recommendations for organizing mathematics lessons in an interesting and effective way, and highlights the contribution of active learning methods to deepening students' knowledge and developing independent thinking.
Keywords: Mathematics education, pedagogical institute, active learning methods, problem-based learning, project-based learning, game technologies, interactive learning, computer technologies, innovative pedagogy, independent learning of students.
Annotatsiya. Ushbu maqolada pedagogika instituti talabalari uchun matematika darslarida qo‘llaniladigan aktiv ta’lim metodlari, ularning mohiyati va samaradorligi tahlil qilinadi. Faol o‘qitish usullari, jumladan, muammoli ta’lim, loyihaviy ta’lim, o‘yin texnologiyalari, interfaol usullar va kompyuter texnologiyalarining o‘quv jarayoniga ta’siri ko‘rib chiqiladi. Maqolada, shuningdek, matematika darslarini qiziqarli va samarali tashkil etish bo‘yicha tavsiyalar berilib, faol ta’lim usullarining talabalar bilimini chuqurlashtirish va mustaqil fikrlashini rivojlantirishga qo‘shadigan hissasi yoritiladi.
Kalit so‘zlar: Matematika ta’limi, pedagogika instituti, faol ta’lim metodlari, muammoli ta’lim, loyihaviy ta’lim, o‘yin texnologiyalari, interfaol o‘qitish, kompyuter texnologiyalari, innovatsion pedagogika, talabalar mustaqil ta’limi.
Абстрактный. В статье анализируются активные методы обучения, используемые на уроках математики для студентов педагогических вузов, их сущность и эффективность. Будет рассмотрено влияние активных методов обучения, включая проблемное обучение, проектное обучение, игровые технологии, интерактивные методы и компьютерные технологии на процесс обучения. В статье также даются рекомендации по организации уроков математики интересным и эффективным способом, подчеркивается вклад активных методов обучения в углубление знаний учащихся и развитие самостоятельного мышления.
Ключевые слова: Математическое образование, педагогический институт, активные методы обучения, проблемное обучение, проектное обучение, игровые технологии, интерактивное обучение, компьютерные технологии, инновационная педагогика, самостоятельное обучение студентов.

1. Introduction
2. One of the main tasks of higher education is the training of highly qualified specialists with fundamental scientific knowledge and practical skills in their professional field. This applies to mathematical training, which is important not only for the technical, but also for the humanitarian sphere. In our country, mathematics was designated as one of the priorities for the development of Science in 2020. In the past period, a number of systematic works have been carried out aimed at bringing the science and education of mathematics to a new level of quality[1]. As noted in the target program of improving the quality of education in Mathematical Sciences in the Republic of

Uzbekistan in 2020 — 2023, improving the productivity and practical significance of research in the Republic of Uzbekistan: "popularization of Mathematics among young people on the basis of digital technologies"...[2]. The implementation of this program can ensure the promotion of mathematics education to a new level in higher and vocational schools.

3. In the context of the implementation of modern lesson requirements, it is impossible to imagine without the forms and methods of active education. Active forms and techniques allow you to make the usual and boring lessons more interesting and meaningful. Modern technologies and methods of active education serve to provide students with the necessary knowledge, skills and qualities that will help them feel confident in independent life, quickly adapt to new conditions and be able to find optimal solutions to complex issues.

4. What educational methods and forms can be used to form an interest in knowledge in students? This question is relevant today and makes many educators and parents think.

5. LITERATURE ANALYSIS AND METHODOLOGY

6. There have been many scientific studies on the application of active teaching methods in mathematics education. Y. in pedagogy.A. Komensky, I. Pestalotstsi, D. Scholars such as Djui have emphasized the importance of increasing student activism in the educational process. In modern research, however, active teaching techniques, including problem learning (D.B. Elkonin, V.V. Davidov), Project Education (J. DUI), game technologies (L.S. Vigotsky), interactive methods (G.K. Selevko) and the effectiveness of computer technology has been widely studied.

7. RESULT AND DISCUSSION

8. In the course of the lesson, the student's activity is one of the important problems of educational practice. For effective teaching, it is necessary to create such conditions in which the student can independently master a certain part of the educational material corresponding to his capabilities[7]. The most effective form of education should be based on the active involvement of the student in the relevant activities.

9. The emergence of active teaching methods and forms is primarily associated with the desire of educators to activate or increase the cognitive activity of students. In other words, the main purpose of these methods is to ensure the activity of students.

10. Classification of educational methods

11. According to the theory of knowledge, a method is a system of sequential actions performed to achieve a set goal, which in the educational process is manifested through various forms of Education.

12. The form of teaching is a stably organized educational process, which embodies all the components of the pedagogical process in a single system, which includes: interaction between an educator and a student, the proportions of management and self – management, the place and time of education, the number of students, educational goals, tools, content, methods and results.

13. The methodology classifies teaching methods as follows:

14. 1.Passive methods-in which the educator occupies a dominant position, and students are in an inactive state. Such methods are recognized as least effective, but can be used in some teaching classes. The most common type of passive methods is lecturing.

15. 2.Active methods (AMO) – in this, the educator and the student participate in the lesson as equal participants, interaction occurs in the pedagogue = student vector.

16. 3.Interactive methods (IMO) – are considered the most effective methods, in which students actively communicate not only with an educator, but also with each other. Interaction is carried out in the pedagogue = student = student vector.

17. Active educational methods are those that motivate students to actively think and practice activities in the process of mastering educational material. These techniques contribute to the formation of positive educational motivation of students[6], the development of their creative

abilities, active involvement in the educational process, the cultivation of their communicative qualities and the development of skills such as working in a team, maintaining project and research activities, protecting one's own opinion and listening to the opinion of others.

18. Main features of active educational methods
19. Activating the thinking process of students, encouraging them to be constantly active.
20. Students take an active part in the entire course of study not for a short period of time.
21. Teach to independently find ways to solve problems.
22. Formation of internal motivation for education in students.
23. The educator can apply one active method in the teaching process or combine several techniques. In this, the systematicity of the selected methods and their compatibility with the goals of the lesson will affect success.
24. Functions of active and interactive methods
25. Active involvement of each student in the process of mastering new knowledge.
26. Increase motivation and activity in mathematics lessons.
27. Formation of independent opinion of students.
28. Develop skills in independent research, information analysis and correct decision making.
29. Formation of skills of successful communication.
30. When teaching students of the Pedagogical Institute to methods of teaching mathematics, the following effective methods can be used:

31.Keys-method-students are given a situation that is brought closer to real or real life. They need to analyze this situation, identify problems and find the best solutions.

32.Project method-students independently analyze the given problem and develop a project to find a solution to the problem. This method develops a research, research and creative approach.

33.The problem method educator creates a problem situation during the course of the lesson, and students find an optimal solution to this problem through similar situations, scientific approaches and analyzes.

34.Methods of developing critical thinking-students develop mathematical thinking skills through independent analysis of Information, Assessment and drawing a reasonable conclusion.

35.Euric method-various game-shaped approaches, contests, role-playing games, elements of scientific research are used.

36.Research methods-the educator puts the research problem before the students, who must research and come to scientifically based conclusions[10].

37.Modular teaching method-the teaching material is decomposed into didactic modules, and students work individually or in groups on each module.

38.Presentation method-students independently prepare slides on mathematics lessons and explain them to their classmates.

39.Case-technology-a realistic or modeled case is placed before the students and they develop an optimal strategy for solving the problem.

40.A problematic lecture-educator shows the problem through problematic questions, and not ready-made knowledge, while students try to find ways to solve the problem independently.

41.Didactic games are educational techniques in the form of interactive and game. For example, quizzes in mathematics, KVN, role-playing games, competitions.

42.Baskit-method-students feel in a specific role in accordance with the given situation (for example, performing the role of a historical excursion guide) and provide the necessary information.

43.Brainstorming (Brainstorming) – students put forward various ideas on a given problem and then choose the most effective among them.

44.Cluster generation, diagrams, pazls are interactive methods aimed at tracing and analyzing basic concepts on the topic.
45.The use of online tests and interactive learning platforms – for example, electronic textbooks on mathematics, educational programs and test systems.
46.Roundtable (discussion, debate) - serves to develop students ' thinking and discussion skills.
47.The use of software education and ICT tools – to increase the effectiveness of the lesson using modern technologies.
48.BarCamp, or Anti-conference – each participant presents their thoughts and experiences to others, which helps to discuss problematic issues and discover new approaches.
The main goal of active and interactive techniques is to teach students to think independently and gain knowledge. The use of these techniques in teaching mathematics serves not only to give theoretical knowledge, but also to develop critical thinking, problem analysis[8], correct inference, and teamwork skills. Knowledge and application of these techniques for students of the Pedagogical Institute will help them effectively organize their future pedagogical activities.
Each method of Education contains in its composition a set of specific methods that help to effectively implement the method in practice.
Active forms of education are included in the class of educational technologies, which is defined as "technologies for the modernization of Education based on the activation of student activities."
They include the following technologies: problem Education Technology, Project Education Technology, game technologies, interactive technologies.
1.Problematic educational technology is such a form of education in which the cognitive process of students is brought closer to research, research activities. The success of problematic education is ensured by the joint efforts of educators and students. The main didactic method is to create a problematic situation that expresses the task of knowledge. Such tasks should be sufficiently understandable in terms of the degree of complexity, appropriate to the students ' cognitive capabilities, and important for the acquisition of new knowledge within the framework of the topic under study[4]. The task of students is not only to process information, but also to actively engage in the disclosure of unknown knowledge for themselves. The main task of the educator is not to convey information, but to involve students in the objective contradictions of scientific knowledge and methods of their resolution. In collaboration with an educator, students "discover" new knowledge, realize the theoretical features of various disciplines. The most effective problem methods are communication methods: stimulating and directing dialogues.
2.Project education technology develops problematic educational ideas. A characteristic aspect of Project technology is that it contains a social or personal problem of the student, which must be solved through integrated knowledge, the process of research and project activities. The role of an educator is a curator, consultant, leader, but not an executive. The goal is to acquire general knowledge and skills in the process of independent creative work and to develop social consciousness.
3.Interactive technology is such a way to organize the educational process, which is based on the direct interaction of students with the environment. The student's experience is the main activator of the cognitive process, perceiving the learning environment as realism and acquiring experience through it. The main method is communication. Organizational forms-collaborative education, working in pairs, working in groups, student dialogue, educational discussion.
4.Game technologies are a form of education that covers a certain educational process and connects with general content, plot, hero. The plot of the game develops in parallel with the main educational content, helps to activate the educational process and assimilate educational elements[5]. Didactic play is one of the important factors that ensure the dynamics of the

educational process, the activation of educational activities, the development of independence and the formation of broad cognitive interests of students.

5.Computer technology provides great opportunities to increase cognitive activity. With the help of Information Technology, students can go on various "trips", become knowledge-seeking Scouts. Working with a computer is of high interest in children and promotes educational motivation. Multimedia tools make it possible to better implement the principle of imagism than other technical teaching tools.

Conclusion

The article analyzed active educational methods used in mathematics classes for students of the Pedagogical Institute. Research shows that the use of interactive and innovative techniques helps students to increase their level of knowledge, develop logical thinking skills and form independent learning skills. As a result of the application of problematic education, a project approach, game technologies and interactive methods, students will have the opportunity not only to understand, but also to apply mathematical knowledge in real life. The application of computer technology, on the other hand, creates a visual and interactive educational environment, making the educational process more efficient. In the future, it is advisable to conduct in-depth research on the results of experiments on the practical application of these methods and their impact on educational effectiveness.

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