

ENHANCING THE EFFECTIVENESS OF INTERACTIVE METHODS IN  
TEACHING HIGH SCHOOL PHYSICS

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**Abstract:** In this article, you can get acquainted with the information about increasing the efficiency of the use of pedagogical technologies necessary for teaching science in general secondary schools, as well as the advantages of methods that can be used in training classes.

**Keywords:** Veer, cluster, BBB, FSMU, resource, interactive.

**Introduction**

Today, the formation of new social relations in our society, the integration of education into the world educational system, the development of democratization and progressive processes presuppose the need for a new approach to modern pedagogical technologies in the educational process. When developing new approaches, it is advisable to distinguish and reshape certain methods that are priority for teaching science. On this path, it will be permissible to dwell on the state of effectiveness of certain methods in teaching physics.

**Research methodology**

In fact, there are a number of attitudes towards teaching physics in general secondary schools. The reason is, it is important that there are also laboratory exercises in science. In order to interest children in science in the school system, as well as solve behavioral puzzles through laboratory equipment, the fact that laboratory equipment in schools does not meet modern demand or does not exist at all is a challenge for the teacher. In these situations, it is definitely advisable to use the methods presented below.

The use of interactive methods in teaching high school physics helps students become deeply involved in the learning process, increases their interest in acquiring knowledge, and encourages their active participation. These methods allow students to apply theoretical knowledge in practice, develop independent thinking in solving problems, and shape skills in collaboration and communication.

**“Veer” method**

This method is aimed at studying complex, multidisciplinary, as much as possible topics of a problem nature. The essence of technology is that information is provided on different branches of the topic, and each of them is discussed separately. The "Veer" method provides an opportunity to develop critical, analytical, clear and logical thoughts and to express their ideas and thoughts in written and oral form, as well as to defend[1].

This method teaches students to think creatively, independently, figuratively. Drawing up a work plan will help develop critical thinking skills.

**“Cluster” method**

The cluster method is a certain form of pedagogical, didactic strategy, which helps students create conditions for free, open thinking and a leisurely statement of personal thoughts about voluntary problems. This method requires the identification of a structure that allows you to think about the connections between different ideas. The "cluster" method is considered a form of thinking that is not explicitly objectively oriented. Its use is carried out in connection with the principle of operation of human brain activity. This method serves to ensure that the thinking activity is at once until a particular subject is thoroughly and thoroughly mastered by the readers. The "cluster" method, developed according to the idea of style, is a well-thought-out strategy, it can be used with students either

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individually or in a group-based training process. In Group-based training, this method is manifested in the form of a set of ideas expressed by the members of the group. This makes it possible to harmonize the ideas advanced by each member of the group as well as to be able to find connections between them[2].

#### **BBB (I knew, I want to know, I found out) method**

This method can be used in a class of the “new knowledge giver” type.

**Step 1:** a new topic was written on the board, and readers were offered to write what they knew about the new topic, writing “I knew” in the notebook. (Given 3 minutes). A presentation is held. During the presentation, readers will tell what they know about the new topic. During the presentation, the rule of not repeating thoughts back by groups is strictly observed.

**Step 2:** readers are offered to write in their notebooks “I want to know” what they want to know about a new topic. (1 minute is given) a presentation is held.

**Step 3:** students are offered to open a textbook and write down their dreams by writing “I found out” in their notebooks. (Given 10 minutes). After the time has elapsed, a presentation is held. The new topic is told by readers. In all steps, the rule is observed that students listen to each other. The parts left unspoken by the teacher on the new topic and supplemented using materials found in additional literature[3].

#### **FSMU technology**

This technology helps to express its thoughts in a clear and concise State on a simple piece of paper distributed to the audience, providing corroborating evidence or negating points.

Transfer technology. This technology is carried out in several stages:

The trainer will determine the topic of the debate, or the problem to be discussed, or whether it has been studied, along with the audience;

The trainer will inform the audience that the training session will first have each listener working individually, then work in small groups, and finally work as a team at the end of the lesson;

During the session, it is mentioned that each listener can freely state their opinion in its entirety.

**Stage 1:** Papers are distributed to each listener with 4 stages of FSMU technology: F-state your opinion. S-indicate the reason for the statement of your opinion; M-give an example(proof) by proving your stated reason; U-summarize your opinion: Each thinker pays for the 4 stages of the FSMU on paper distributed individually with a written statement of their thoughts.

**Stage 2:** Once each listener has completed their papers, the trainer begs them to be divided into small groups, or he or she sends the audience into small groups using different group division methods: The trainer distributes large format papers of opinion and evidence on large format papers with 4 stages of FSMU technology written to each group: The trainer offers small groups to write in 4 stages, summarizing the opinions and arguments in the papers that each wrote in a large format.

**Stage 3.** In small groups, each listener is first introduced to the members of the group by their thoughts at each stage they write. Once all of the group members' opinions have been studied, the small group members begin to generalize them: The members of the group prepare to defend the fsmu by summarizing the 4 phases of the FSMU by each: At the time of generalization of opinions, each listener can defend, prove his faction. Small groups defend their generalized opinions: a group representative reads each step separately to prove certain sections without commenting as much as possible, that is, to mention what exactly the group came up with[4].

**Stage 4.** The coach will end the training, give his reaction to the comments expressed: Approximate copy of the distribution material: F-state your opinion. S-specify any reason for the

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statement of your opinion. M-give an example that explains (proves) the stated cause. He-summarize your opinion.

These interactive methods provide us with a number of advantages in education.

Here are some benefits of using these interactive methods:

- Makes learning more engaging: Students are not just passive listeners, but active participants. This increases their interest in learning and helps them remember information better.

- Develops practical skills: Students can test theoretical knowledge in practice and learn to think independently in solving problems.

- Enhances collaboration and communication skills: Students learn to help each other, discuss ideas, and work in groups.

- Allows teachers to assess student understanding: Through interaction with students, teachers can identify students' knowledge levels and difficulties in understanding problems.

#### **Here are some tips for effectively using interactive methods:**

- Consider students' knowledge levels.

- Give students clear assignments.

- Provide students with opportunities to collaborate and communicate.

- Monitor students' actions and provide them with the necessary support.

- Encourage students to actively participate.

#### **Conclusion**

Today, General secondary education in schools, the methods that we have analyzed in the understanding of the law and new concepts brought about in the subjects of physics to students are of paramount importance. In the process of analyzing topics through these techniques, the student is instrumental in freethinking in young people, analyzing and analyzing thoughts, as well as linking them to practical techniques.

Overall, interactive methods play a crucial role in engaging students in high school physics learning and developing their knowledge and skills. These methods teach students to think independently, critically, solve problems and collaborate.

#### **Literature**

1. Ismoilov, S. I. (2020). "Amaliy laboratoriya tajribalari orqali fizika fanini o'rganish samaradorligini oshirish." Samarqand Davlat Universiteti Nashriyoti, 3(2), 120-128. (Darslik)

2. Karimov, A. A. (2019). "Fizika o'qitish metodikasining zamonaviy usullari." Toshkent Davlat Pedagogika Universiteti Nashriyoti. (Darslik)

3. Makhmudov, K. A. (2020). "Metakognitivnye strategii i obuchenie fizike." Dushanbe: Izd-vo TNU. (O'quv qo'llanma)

4. Mamajonov, B. M. (2018). "Kompyuter asosidagi o'qitish texnologiyalari va ularning ta'limiy ahamiyati." Namangan Davlat Universiteti Ilmiy Jurnali, 15(3), 75-82. (Ilmiy maqola)