

METHODOLOGY OF TEACHING FIZIKA SCIENCE USING THE PRODUCTIVE
METHOD

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ABSTRACT

The article describes the use of a productive method in teaching physics, as well as based on the principles of didactics.

Key words: system, thought, thinking, interest, action, knowledge, skill, competence, competence, level, attitude, management, harmonious, active, responsibility, environment, tool.

Using the productive method in teaching physics requires fostering educational, moral, and developmental objectives in students. In the perspectives of foreign scholars on motivation, particular attention is given to students' aspiration (Motivation), emphasizing that they learn the subjects they are interested in with intrinsic engagement. In this process, the teacher takes into account students' aspirations by deeply understanding their behavior and guides activities accordingly.

The novelty of any lesson lies in its ability to captivate students' interest, which in turn generates motivated engagement. Lessons taught based on students' curiosity and inclination provide them with enjoyment. Through interest, phenomena and objects are studied in depth. Consequently, knowledge acquired through curiosity is retained in memory for a long time. Interest represents the emergence of the sense of aspiration; aspiration leads to learning, critical thinking, and exploration, while learning cultivates voluntary intellectual activity and ultimately contributes to success.

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The pedagogical skill of a teacher lies in their ability to engage students in the lesson, elevate their level of inquiry, and inspire passion for the subject. According to Miller, the theory of motivation comprises the following stages: need → encoding → reinforcement. In his motivation theory, Cattell attempts to integrate social and biological aspects, as well as physiological and psychological factors. He argues that establishing a proper teacher–student relationship fosters students' enthusiasm for learning and knowledge acquisition, which in turn contributes to the development of their thinking and cognitive skills.



Our classical scholars, such as Al-Biruni, Al-Farabi, Avicenna (Ibn Sina), and Alisher Navoi, paid special attention to the inner aspirations of humans. Aspiration is fostered through the productive method with the teacher's guidance as follows:

- teaching students to identify the most essential aspects of the knowledge being presented;
- employing various methods and techniques in instruction to stimulate interest;
- delivering knowledge in accordance with students' age and intellectual level;
- cultivating students' interest in the subject;
- developing philosophical and critical thinking;
- presenting each concept or word in a way that evokes students' feelings, thereby generating motivation.

In recent years, a number of scientific studies have been conducted on motivation and the role of motives in learning. Psychologists such as B. Kodirov, G. Shoumarov, V. Karimova, M. T. Davletshin, and E. Goziev, as well as physics professors B. Mirzaakhmedov and D. Shodiev, have made significant contributions to addressing this issue. In particular, B. Mirzaakhmedov and D. Shodiev emphasized that in order to achieve effectiveness in teaching physics, it is essential to first generate a need for knowledge in students—that is, to stimulate motivation. They also highlighted the necessity of renewing the relationship between teacher and student.

- In our view, for students to become active participants in lessons, learning must be transformed into a personal need, fostering a desire for knowledge. Aspiration, as noted above, brings curiosity to life. Professor N. Sayidahmedov recognizes that the didactic process consists of three interrelated components: motivation, the student's learning–cognitive activity, and its management [7; p. 6].

Indeed, similar situations stimulate motivated behavior in students, encouraging them to study topics with strong engagement and enthusiasm. Therefore, it is recommended that the teacher allocate approximately 25% of class time at their discretion to fostering student motivation.

In our study on interactive methods, of the 80 minutes allocated for the lesson, 20 minutes are devoted to the teacher's lesson management, 10–15 minutes to motivation enhancement, and the remaining time to students' active participation in the lesson.

Psychologist-researcher F. Haydarov recommends certain training sessions to create a motivated state in students and identifies strategies for stimulating student interest in lessons. He attributes the emergence of motivation to the following factors:

1. Personal participation, responsibility, and the sense of potential achievement.
2. High levels of curiosity.
3. Feeling the activation of energy.
4. Awareness of the need for sensory engagement.
5. Experiencing enjoyment from the activity [7; pp. 40–41].

Indeed, fostering the need for knowledge by teaching students to experience enjoyment and feel the activation of energy enhances educational effectiveness. In our view, motivation is a method of activity that stimulates learners to act, evokes and activates their emotions, encourages personal development, brings forth intellectual abilities, and develops thinking through engagement and curiosity.

In psychology, learning motives are divided into two categories. The first category includes motives directly aligned with the content, processes, and conditions of learning activity. The second category comprises motives that depend on students' broader interactions with their environment and their personal attitudes toward engaging with others.

When providing knowledge, motives should be clearly understood, and the means to achieve them must be identified. This requires examining specific motives and motivational



activities for each subject. To date, there has been no research on developing students' cognitive activity in connection with learning motives in physics education. Therefore, the main aim of our study is to identify how motivation emerges in students' activities through the teaching of physics and to develop a management system within interactive methods that shapes motives in learning activities.

Considering the above, and based on our own experience, we recommend the following technological methods to foster creativity and activity in students:

1. Organizing lessons based on didactic games.
2. Teaching the meanings of certain physics terms using innovative technologies.
3. Explaining the role of integration as a factor that develops thinking.
4. Utilizing interactive methods (such as educational games) to enhance cognitive development.

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