

## THE METHODOLOGY OF INCREASING THE MASTERY LEVELS OF STUDENTS' UNDERSTANDING OF ROTATION OF SOLID BODIES

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### ABSTRACT

*This article the main focus in the teaching of physics to students is the content of theoretical materials necessary for the formation of scientific thinking among students, the creation of opportunities for independent study of physics.*

**Key words:** *physics, modern educational technologies, levels of mastery, activity, feature, form, method, theory, experiment.*

Physics is a fundamental science, without a deep understanding of this science, it is impossible to achieve high results in today's demanding fields, not only teaching physics, but also training qualified personnel is a priority. It is necessary to teach students in the process of training in higher education institutions not only to teach the science itself, but also to inform them about the news of the science and to use it in the education of young people.

Therefore, it is important to improve physical training sessions, to provide them with up-to-date educational literature, as well as to develop recommendations for the effective organization of training sessions.

Teaching physics means teaching the structure of the Universe, introducing its founders, explaining the essence of understanding the physical processes occurring in nature.

In the teaching of physics, problems related to determining the moment of inertia of bodies of the correct shape are given.

When solving problems related to determining the moment of inertia of bodies of such a correct shape, it is necessary to perform the following tasks:

1. Study and analysis of the existing literature on the determination of the moment of inertia of the bodies of the correct shape.
2. Selection and ordering of problems in the sequence of learning the rotational movement of bodies of the correct shape, making additional problems.
3. To provide ways to solve problems related to the study of rotational motion of bodies of the right shape and to include questions for each problem to strengthen the

theoretical material.

4. Development of additional educational tasks and recommendations to strengthen the solution of problems related to the study of the rotational movement of objects of the correct shape.

5. For self-assessment of students in the process of solving problems and development of recommendations for their implementation.

6. Development of a methodology for the widespread use of ICT in the process of problem solving.

The conducted researches show that for students of non-physical education, it is an important and necessary task to effectively organize trainings related to the study of the rotational movement of solid bodies in physics, to improve the training process. In particular, improving practical training and developing its content is one of the important tasks of today's education system. In practical training, the following activities were carried out in order to increase the level of assimilation of the concepts of the rotational movement of solid bodies:

1. The implementation of the concepts of motion of solid bodies from physics in practical training was studied and analyzed.

2. The existing and foreign literature of our republic recommended for training was studied and analyzed.

3. A software platform containing lectures, practical exercises, control questions, test tasks and additional information was prepared to increase the level of mastery of the concepts of rotational motion of rigid bodies.

4. On the basis of Bloom's taxonomy, non-standard tasks were developed to strengthen the topics of practical training and self-assessment of students.

5. Methodological recommendations on the application of ICT to practical training on the movement of solid bodies were developed and put into practice.

Determining the moment of inertia of bodies of the correct shape in physics is interesting, complex, modern, and requires a high level of imagination to learn. Sufficient supply of new materials to students covering the current achievements of solid state rotation serves as a basis for students' understanding of innovations in this field, expansion of imagination and their independent assimilation. The newly improved and developed structure and content of practical training, its teaching methodology, and the created software platform will undoubtedly serve to develop students' deep and solid knowledge of the rotational motion of rigid bodies, i.e., the determination of the moment of inertia of the right-shaped bodies .

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