



## The Role of Problematic Types of Physics Questions in Directing the Reader to Creative Activity

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**Abstract:** When improving the content of school education in physics using the problem type, the article describes the psychological components of a student's cognitive activity, its namelessness, the need to know, the structure of mental abilities. Using the problematic type of questions in the lesson, the features, opportunities and tasks of directing a student to creative activity are widely covered.

**Keywords:** problem situation, heuristics, creativity, knowledge, skills, intuitive, creative, empirical, inductive, deductive, individual, independence.

### Introduction, Literature Review And Discussion

In order to create problematic situations when performing practical exercises from physics, it is necessary to put a problem-type task in front of the reader, which must be performed in such a way that unknown replaces the knowledge that the student learns in the process of performing this problem-type task. For example, a teacher may ask students the following question before transmitting the internal resistance of the source.

Why not use multiple batteries connected in series instead of a car battery? After all, their voltage is also equal to 12 V.

In order for the reader to answer this question, he must have a new, that is, an understanding of internal resistance. Thus, here the concept of internal resistance of the source manifests itself as unknown in the studied theoretical knowledge.

One of the main features of the unknown in a problematic situation is how accurately it is given. In addition, the degree of complexity of the problem situation is determined by the degree of accuracy of the unknown.

The second component of the problem situation is the need. Psychologists believe that the problem situation is based on addiction, which plays a certain role for the reader.

The properties of creative abilities are listed when solving problematic typological questions from physics, as well as when considering the structure of the reader's educational and creative



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abilities. A. Krutesky's research is considered scientifically valuable. V.A. Krutesky identifies the following physical abilities of a student:

1. Acceptable weight of physics data for solving problem problems.
2. The ability to understand the structure of materials from physics to solve problem types of problems.
3. Data processing for solving problem types of problems from physics is as follows:
  - a) The ability to think with a problem type and physical symbols within the framework of finite symbolic symbols;
  - b) The ability to quickly generalize physical objects, relationships and actions;
  - c) The ability to reduce the process of physical exertion and the system of corresponding movements.
4. Common synthetic components are the following:
  - a) Physical orientation of the mind; b) natural-scientific orientation of the mind; c) orientation of the mind in certain sciences.

The types and manifestations of the reader's creative activity are as follows:

1. The activity can be in a certain order, depending on the structure of the intuitive and problematic type of learning:
  - a) Intuitive - heuristic; b) normative, problematic type - creative activity.
2. In accordance with the specifics of the content of the problem experiment, you can specify:
  - a) Inventive activity; b) research activity; c) artistic activity, practical activity (creation of experimental laboratories).
3. Depending on the theoretical and empirical correlation of creative activity, you can specify:
  - a) Empirical; b) theoretical.
4. Depending on the degree of self-esteem and initiative to introduce and implement problematic experience:
  - a) Independent creativity; b) forced creativity.
5. depending on the order and proportion of the problematic type of creative activity:
  - a) Inductive creativity; b) deductive creativity.
6. The importance of innovation in the field (level of activity) and the result depending on the ratio of the object and subject:
  - a) Creative; b) scientific (or ordinary creativity).
7. depending on the area of predictability:
  - a) Individually; b) in partnership; C) in a group; D) in a team.

When solving problems in physics, the following problems arise in preparing the reader for creative activity:

The fact is that in the process of solving problematic types of questions from physics, a scientific and pedagogical system for preparing a student for creative activity was not developed;

Not the creation of educational and methodological complexes that serve the motivation to learn from the student;

The inadmissibility of developing the reader's creative activity by independently performing problematic questions from physics;



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The fact is that in the process of solving problems of a new problematic type from physics, the reader does not meet the modern requirements of his creative activity.

This indicates the need to improve the situation in the practice of solving the problem of preparing the reader for creative activity in the process of solving problematic types of problems from physics. To this end, the following tasks allow you to direct and develop the creative activity of the reader:

1. Develop the ability to prepare the reader for creative activity by solving problematic types of questions from physics.
2. Search for forms, methods, means and opportunities that serve to improve the quality and effectiveness of preparing the reader for creative activity by solving problematic types of questions from physics.
3. Determine the content and quality indicators of physical education by solving problems such as problems in physics.
4. To teach students the practical application of modern pedagogical, computer, information and communication technologies and technical means in solving problematic types of problems in physics.

Preparing the reader for creative activity by solving problematic types of questions from physics – serves as the basis for ensuring a clear and thorough definition of the goal.

The goals of achieving efficiency in solving problems of the type of problems from physics are as follows:

1. The reader in the process of solving problematic types of issues; creating conditions for the development of creative activity;
2. Organization of educational seminars among students dedicated to the disclosure of the content of the creative activity process in solving problematic types of questions from physics, more precisely, its scientific justification;
3. To achieve a deep and thorough integration of the scientific foundations of the introduction of science, technical innovations in the process of solving problematic types of questions from physics by the reader;
4. Formation of a student's new approach to the organization of creative activity, as well as practical skills and abilities in solving problematic types of questions from physics;
5. Designing a student's creative activity in the process of solving problematic types of problems from physics;
6. To improve the student's skills to work creatively in solving problematic types of problems from physics, to ensure the effectiveness of creative activity.

When preparing the reader for creative activity in the process of solving problems of the type from physics, it is necessary to pay special attention to the following:

1. Development of practical skills and abilities of the student in the field of modern pedagogical technologies, theory of creative activity, its content and essence, theoretical knowledge in the field of designing creative activity;
2. Effective use of new technical means in solving problems such as problems from physics;



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3. The organization of successful communication between the teacher and the team of students in the process of solving problematic types of problems from physics, the formation of a creative approach to creative activity;

4. Create psychological and pedagogical situations, evaluate them correctly, and organize appropriate behavior when solving problematic types of questions from physics;

5. To show the reader the content of his creative activity, ways and means of improving the quality and efficiency in solving problematic types of questions from physics;

6. Solving problematic typological issues in physics, I first developed my own project;

7. To control the student's creative activity in solving problems of a problematic type from physics, to evaluate his theoretical knowledge, practical skills and abilities, as well as to develop programs that allow him to determine the content, quality and effectiveness of the educational process.

It is important to prepare the student for creative activity by solving problematic types of questions from physics in order to effectively use every opportunity. To do this, it is necessary to develop the reader's creative activity in solving problematic types of questions from physics.

Based on this, the possibilities of preparing a student for creative activity when solving problems of the type from physics are as follows:

- development of theoretical knowledge, practical skills and competencies of the student at the level of choice in solving problematic types of problems in physics;

- improvement of the content of the problem experience previously prepared in physics, based on educational reforms;

- the use of modern pedagogical, computer and information and communication technologies, as well as new technical means to solve problematic types of questions from physics;

- to improve their cultural, spiritual, moral, economic, environmental and legal literacy in the development of creative activity of the reader based on solving problematic types of questions from physics;

- The use of scientifically based approaches to improve the content and quality of solving problematic types of questions from physics.

Inadequate formality of motivation often becomes an obstacle when solving problematic types of questions from physics. In such circumstances and situations, the reader is required to activate the rules for managing creative activity.

Conclusion.

The influence of internal and external factors on the student's creative performance in solving problems such as physics problems is great. In this case, internal factors include such factors as the student's internal motivation, sense of responsibility, diligence, control over the result of his work, the availability of skills and abilities, confidence in national and universal personnel, confidence in the problematic experience that he performs; external factors include the student's scientific potential, educational and methodological training, the availability of educational and didactic materials, their content and quality, external motivation (the student's desire to recognize the achievements of his work by other students; personal qualities, dignity or the desire to achieve recognition of students in the classroom, which is important to him), indirect motivation (encouragement, remuneration, gratitude, etc.), acquisition of skills and abilities in solving types of



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problems in the field of physics, as well as the introduction of other skills, the use of modern information and communication technologies is possible.

Solving physics problems is an important feature of preparing the reader for creative activity, manifested in a consistent and consistent approach to it. In the process of solving problematic types of tasks, it is necessary to follow the following didactic processes in preparing the reader for creative activity:

1. Honesty.
2. Humanization of the educational process.
3. Continuity of creative activity.
4. Scientific research and teaching.

However, in the process of solving problematic types of questions from physics, a teacher who has no experience of using pedagogical technologies in the application of innovations faces increasing difficulties. Thus, directing the reader to update the content of creative activity allows him to correctly evaluate and direct creative activity. It is necessary to create textbooks that include forms and methods that allow for preliminary diagnostics of theoretical knowledge, practical skills and abilities of the student, as well as intended for teachers and students.

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