

INNOVATIVE TECHNOLOGIES IN PHYSICS EDUCATION

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ABSTRACT

The article discusses pedagogical technologies used in physical education, the criteria for the use of pedagogical technologies and its role of pedagogical technologies in revealing the meaning of physical phenomena in the case of physics. Experience has shown that the use of pedagogical technologies has increased the level of physical knowledge.

Keywords: Pedagogical technology, educational process, educational system, teaching elements, interactive method, teacher and student.

INTRODUCTION

Innovative technologies in physics education are a driving force of the learning process or a set of activities that renew the professional activity of the teacher in the pursuit of a predetermined goal and guarantee the final result in education.

One of the ways to further develop and improve the reform of the education system in our country is to bring advanced innovative technologies into the educational process. Today, interactive methods, which are an element of advanced innovative technology, are widely used. Interactive is derived from the English word 'inter', which means 'between', 'in between', which means activity between two things. Interactive method is the development of personal qualities, activating the acquisition of theoretical and practical knowledge of physics by increasing the activity between students and the teacher in the process of teaching physics.

Materials and Methods

The interactive method helps to increase the effectiveness of the lesson through teacher-student collaboration, encourages the student to think independently. Each student tries to find the answer individually, in pairs, in groups, independently, actively participates in the set goal, thinks, writes, remembers formulas, speaks, try to cover the problem with evidence and bases appropriate to their experiments in physics. This will be remembered for a long time by the participants.

The main reasons why educational institutions today pay special attention to the use of innovative technologies in the teaching of physics are:

First, in the breadth of opportunities is to implement personality-enhancing physical education in innovative technologies.

Second, innovative technologies provide an opportunity to widely introduce a systemic activity approach to the process of teaching physics.

Third, innovative technology encourages the physics teacher to pre-design the technological chain, from the objectives of the science teaching process to the establishment of a diagnostic system and control of the process.

Fourth, because innovative technology is based on the use of new tools and information methods in the teaching of physics, their application ensures the implementation of the requirements of the "National Training Program".

The correct introduction of innovative technologies in the process of teaching physics leads the physics teacher to act as the main organizer or consultant in this process. This requires more independence, creativity, and willpower in the student's acquisition of physical concepts.

The application of any innovative technology in the process of teaching physical knowledge in different sections of a physics course depends on the individual character, to whom the physics teacher teaches physics and who teaches the student science.

RESULTS AND DISCUSSIONS

The use of innovative technologies in physics class will satisfy the desire of young people to express their attitudes to important life achievements and problems, give them the opportunity to think, to justify their views. The content of teaching physics courses can be expressed in different ways:

- The teacher's live speech, the main part of his research is devoted to the question of what should be the teacher's speech. The teacher performs this task in his or her written and oral activities. Because the fluency, conciseness, expressiveness and logic of the teacher's language is a guarantee for the conscious and thorough understanding of the teaching material by students "[2, 45].
- Questions, assignments, problems, cards, visual aids, chain words, programmed materials, tests, etc. are the forms of educational material.

It serves the purpose of adapting the process of mastering the topics related to the sections of the physics course to students, the organization, management, control of education. For example, according to the needs of teaching and learning, the subjects of the physics course enter into different forms of educational content and begin to act in the form of educational element, stage (consisting of several elements), period (consisting of several stages). Therefore, each of the learning element, stage and period can be considered as a specific independent didactic phenomenon.

In order to teach a didactic phenomenon in the process of teaching the subjects of the physics course, there must be three constant components:

1. Teaching topics for the department (teacher activities).

2. The student's mastery of the topics in the section.

3. Study material. As a result of the interaction of these components, the educational learning elements, the learning phase consisting of several learning elements and the learning period are formed. In turn, here are the types of interactions that play a role in the development of teaching materials on the topics of the physics course sections:

- The influence of the teacher of the topics of the section on the teaching material. In this case, the teacher brings the teaching material on the department in acceptable forms according to the need to study the knowledge of the department of physics. Describe the rules given in physics textbooks, bring the rules to the reader in as simple and interesting forms as possible, introduce the rules, definitions into formulas, diagrams, comparison tables, problem forms;

- The impact of each of the modified forms of thematic teaching material on the section is felt in teaching activities. Definitions of physical quantities and their units, representing different views of nature and natural phenomena, make the laws pertaining to the section easier.

As the explanation ensures the popularity of the teacher's speech, the presentation of drawings, tables, learning problems posed by the department and the choice of problem-based learning.

Along with the organization and management of departmental education, the teacher assesses the knowledge, skills and abilities of the student mastering the department, all these processes are carried out due to changes in content and form in the curriculum material. In this case, changes in the teaching process under the influence of the teaching material are considered as changes in content, and changes in the teaching material as a result of the influence of the teacher are considered as changes in form.

CONCLUSION

We have focused on changes in the content and form of educational activities in the process of teaching physics courses.

1. The impact of the study material on the student by section; usually in the transfer of any knowledge the learning material affects the learner who is mastering the material with ease or difficulty, simple or complex. The content of the student's mastery of the material changes due to various changes that occur in the student - the definition of the sections of the physics course, rules, interest in learning the laws, the desire to apply the knowledge gained in the course, the introduction of memory and thinking in the material, and processes such as transferring to the required learning situations.

2. The effect of the teaching material on the physics course for the student. In this case, there are changes in the form of teaching the subjects of the physics course, that is, the comments of the author of the textbook or the transformation of the teacher's speech into his own speech.

In short, in the application of the teaching of physics course topics as a social phenomenon, there are changes in content and form in both reading and teaching activities.

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