

METHODOLOGICAL SYSTEM OF USING NEW PEDAGOGICAL TECHNOLOGIES IN IMPROVING LEARNING OF THE ELECTROMAGNETISM PART

Ismailov B.B.

Assistant of the Termiz Institute of Engineering and Technology

<https://doi.org/10.5281/zenodo.8331046>

Abstract. *This article due to opportunities of physics and technological basics of nonconventional sources of energy teaching in the public schools programs. There are provides as well some recommendations of teaching physics and technological basics of solar energy transformation to electricity.*

Keywords: *electromagnetism, photo-effect, energetic, geothermal energy, construction, generator, photo electrical construction.*

The changes taking place in the higher education system of our country require innovations, research, and changes in the field of physics education. In particular, the issue of being able to educate a well-educated, well-rounded person requires pedagogical personnel to implement the principles of work based on the needs of modern times. By the methodological model of teaching physics taught in technical higher education systems, we can understand that it is a general model that includes the forms, goals, methods, content, means of teaching and the development of training projects in the course of the lesson. we need to understand the structure. The methodical system of teaching physics in higher education is subject to the laws and regulations of the subject, the work structure of the science, its elements are closely related to each other, work and external elements, the teaching process It can represent a general overview of complex dynamic education that can guarantee the quality of education [1].

V.P. Bepalko describes the methodical system of teaching in the course of the lesson as follows: "Pedagogical system is a system that requires specific purposeful, organized, pedagogical influence on the formation of a person with certain qualities. - a complex of interconnected methods, tools and processes. Therefore, the priority values of today's society can define general requirements and goals in the formation of a person in a general way, as a result of which the pedagogical system will change in sequence" [2]. So, the pedagogical process aimed at the development of a person in an individual form is indicated, and the relations between education and learning in all areas are carried out around the above-mentioned general structure [3].

The development factors of the science in all periods of the educational process are reflected in the general characteristics of the elements of the pedagogical system, their interdependence and changes in their structure. In the structure of the pedagogical system, there are two fundamental concepts of any type of scientific theory: the task and the technology used in its implementation are clearly visible. In the structure of the didactic task, as in any activity, the goal conditioned by information about the condition and condition of the person is reflected.

The didactic goal is the formation of certain individual views of a person, educational conditions, personal qualities of the learner at the beginning of education, and the information process is determined by the general content of the academic subject [4].

The main element of the teaching method system of the physics department of electromagnetism in the technical higher education institutions should be aimed at serving the

development of the society. For example, in the development of this methodical system, different from the methodical system of the traditional teaching process, plans of physical training are included as one of the main elements of the methodical system.

The methods of the first category are called "Traditional methods", with the help of which imparting knowledge to students is based on the principle of "Delivery". They include: informative-receptive or illustrative-explanatory; reproductive; problem statement; heuristic, semi-research and scientific research, "Tell", "Show", "Lecture presentation", "Question and answer", "Demonstration", "Debate" and others.

The second type of methods are non-traditional or "Interactive methods" and rely on the principle of "Activation" in the thorough acquisition of knowledge by students. These include Accelerated Learning, Problematic Training, Small Group Work, Round Table Discussion, Cluster Method, Confrontational Approach, and many others. .

The methods of this category are considered "advanced and modern methods", and the organization of the educational process is based on the principle of competence views "Acceleration and increase efficiency". They include: "Directed text", "Programming", "Technological map method", "Modular teaching method", "Intelligent map" and "Design method". [5]. The technologies based on the activation of students are also different, and one of them is used as an example of the pedagogue's skills according to the purpose of the lesson and the content of education [6].

1. Game technologies. 2. Problem-based education. 3. Design technology. 4. Interactive educational technologies. 5. Training technologies.

Game technologies. Taking into account the psychological characteristics of the student, their tendency to play, it is appropriate to use the method they like. This method is effective in forming student competencies. Games perform the following functions in human practice:

that's fun; communicative: mastering the dialectic of communication; that's how to show your identity in the game; play therapy: to overcome various difficulties that arise in various aspects of life; This is how to diagnose: to be able to determine that behavior exceeds the norm; to make corrections: to make positive changes to one's personal statements, etc. The structure of the game includes the ability to set a goal, plan, realize the goal, and analyze the results in a sequence as an activity process. The motivation of the game activity process is caused by the possibility of its voluntary choice and the presence of elements of competition, it manifests its identity [7].

In the process of game activity, the following are used: as an independent technology in mastering the general concept, topic, section of the academic subject; as a technology of the teaching process or a view of its fragment (explanation, reinforcement, introduction, exercise, training, control); as extracurricular activities [8].

When it is considered as game technologies in the lesson process, it should be implemented in three different ways: it is seen as a game problem for the didactic purpose of students; obeys the rules of the game in the process of educational activity; educational material is used as its tool, and an element of competition is included in the educational activity. The successful completion of the didactic problem is connected with the result of the game.

The following types of game technologies are widely used in TOTM practice: "Business games"; "Imitation games"; "Operational games"; "Role-playing games"; "Business theater". Studies have shown that through game technologies, students develop broad thinking skills [9].

Tasks such as having fun during the game, communicative dialogue show the identity of humanity in practice. Game therapy: while overcoming various difficulties, distribution develops students' characteristics and abilities during the game.

Active and creative activities in most games are carried out on the basis of cheerfulness, competition, contests. It is necessary to have direct rules that determine the content of the game, determine its logical and time development [10].

It should be noted that didactic games are fundamentally different from business games. Didactic games are educational, so all results are known in advance and are conducted for educational purposes [9].

The sequence of preparation for the didactic game: the educational purpose of the training. Description of the problem under study. Justification of assigned tasks. Making a game plan. The general content of the situation.

Conducting press: work with the given resources, training, brainstorming, group meetings, protection of results, discussion rule.

Analysis and generalization step: job evaluation, self-assessment, conclusions and generalizations, recommendations [11].

Improving the learning process in a playful way, independent skills, creative thinking ability, ability to manage the learning process in a collective way, to accept a common idea and to analyze the process that should be carried out, and strengthening. During the game, the following skills, qualifications and competences are formed: perception, collection and analysis of necessary information; taking advice in conditions of incomplete and insufficient reliable information; analysis of certain types of issues; working in a team, using the methods of group thinking, working out a jointly agreed solution; creative use of a systematic approach in process and phenomenon research [10].

Ensuring practical application of acquired knowledge. A game made once will be used effectively for many years. Formation of competences in students is an effective means of making the content of the activity interesting. Inquisitiveness among students makes it possible to develop research methodology. Putting a problematic issue forward can be manifested in the priority of personal views over the group's solution.

Another challenge is the objective assessment of each game participant and the discussion of the conclusion is important. The positive feeling of excitement created by students during didactic games protects them from depression. It increases their intellectual ability [12].

Using didactic games, we used general problems during the teaching of physics to young students, although these methods are widely covered in scientific and methodical literature, the main attention in them is focused on the process of solving problems and physical laws. However, it is natural that mastering physics is difficult for students and unconventional approaches are required to solve some of its problems. There are a number of methodical, didactic, scientific-theoretical issues that any skillful physics teacher will consider in the process of benefiting from them.

Therefore, in the process of teaching physics, we are required to use new pedagogical technologies, non-traditional teaching methods and forms in the course of the lesson. Didactic games are used to use the opportunities of young learners to independently search, to be responsive, to think, to be resourceful, to draw logical conclusions, to work on themselves, to compare known and unknown aspects, to observe based on existing knowledge. helps and realizes the competence of self-development as a person [13]. Students' interest in science can be increased through didactic

games in class and group activities. In this task, students are important in strengthening their knowledge of tool definitions.[14]

Task 1: 1. The area formed around the current when it passes through the conductor. 2. A device that measures current. 3. If the volume and pressure are equal to atmospheric pressure. 4. Two-electrode lamp. 5. Scientist who discovered that vines are dependent on irrigation. 6. Energy generated by bodies due to their own motion. By placing the first letter of the definitions in the boxes, a physical quantity called area is obtained (see Table 1). [15].

1-table

Physical password

1	2	3	4	5	6
M	A	Y	D	O	N

Answers: 1. Area. 2. Ammeter. 3. Arc discharge. 4. Diode. 5. OM. 6. Nanometer

Task 2: the linguistic game is important in physics. If you find the correct answers to the above questions and place the first letters of the answers in the empty cells, a wise word will appear in the end.

2-table

Physical linguistics

1	2	3	4	5	6	7	8	9	10
F	I	Z	I	K	A	F	A	N	I
11	12		13	14	15	16	17	18	19
M	O'	'	J	I	Z	A	L	A	R
20	21	22	23	24	25	26			
M	A	Y	D	O	N	I			

1. ferromagnet; 2. Induction vector; 3. Charge; 4. Inductance. 5. Condenser. 6. Ampere; 7. Faraday; 8. mixed transfer; 9. Point charge. 10. induction current; 11. magnets; 12 Conduction 13. Joule-Lents law; 14 Work. 15. Seebeck effect; 16. Ammeter 17. Lorentz force; 18. 19. Rheostat. 20. Magnetic field. 21. Echo 22. direction 23. Dipole moment; 24. Ohm's law. 25. Nonometer. 26. Inductance.

1. Substances whose magnetic absorption can be greater than one.
2. Magnitude characterizing the magnetic field
3. Electronic
4. The magnitude created between the magnetic induction current and the current
5. A device that accumulates a large amount of charge
6. Tok kushi unit of measure
7. Unit of electric capacity.
8. In semiconductors, conduction is formed when another semiconducting substance is mixed.
9. A charge where the distance between the charges is greater than the size of the charge.
10. Changes in flux lines of the magnetic field during Burke conduction.
11. A device that stores a magnetic field for a long time.
12. Electrical circuit breaker.
13. The release of heat when the current passes through the conductor,
14. Current is the product of voltage and time.

15. Electron separation.
16. A device that measures current.
17. Direction of induction current.
18. A device that can measure resistance.
19. The scientist who determined the structure of the atom.
20. A device capable of spreading sound
21. Reflection of sounds from the barrier.
22. Release of heat when current flows from a conductor.
23. Separation of high and low pressure.

In the organization of the independent educational process of students, interest in acquiring knowledge is aroused by giving homework.

Students are able to change the knowledge they have acquired and the skills of using them in the future process of professional training in a high order. The atmosphere that appears in the process of improving all subjects of the department of electromagnetism at a high level provides students with a convenient opportunity to achieve creative achievements of future technical personnel in the context of mutual trust and cooperation, their creative abilities are regularly is considered the basis for continuous development.

Self-development of students develops during the learning process of the subject, taking into account their intellectual work technology and taking into account the personal characteristics of the intellectual process. To the ability of students to know how to organize their time personally during the activities of self-development in terms of professional training, to be able to make their own personal plan for continuous self-improvement, and to implement it in a sequence should be related.

REFERENCES

1. Занков Л.В. Избранные педагогические труды. –М.: Педагогика, -1996.-432с.
2. Байденко В.И. Выявление состава компетенций выпускников вузов как необходимый этап проектирования нового поколения: Методическое пособие. – М.: Исследовательский центр проблем качества подготовки специалистов, 2006. – 72 с.
3. Краевский В.В., Хуторской А.В. Предметное и общепредметное в образовательных стандартах // Педагогика. – 2003. – № 3. – С. 3 – 10.
4. Delamare F. & Winterton J. What is Somretense? – Human Resource Development International, Vol. 8, No.1, Marsh 2005. pp. 27–46.
5. Гальперин П.Я. Введение в психологию. – М.: Феникс, 2003. – 332 с.
6. Имамова О.А. Методика развития деятельностной компоненты медиакомпетентности учащихся старших классов средствами информационных технологий. Автореф. дисс. ... канд. пед. наук. – Киров, 2010.
7. Бабанский Ю.К. Методика преподавания физики в средней школе. –М.: Просвещение. 1968 г.–199 с
8. Султонова Ў.Н., Холмуродов М. Физика ўқитишда янги педагогик технологиянинг дидактик асослари. Услубий кўлланма. –Термиз, 2012. -64 б.
9. Митина Л.М. Профессиональная деятельность и здоровье педагога: Учеб. пособие для студ. высш. учеб. заведений. – М.: «Академия», 2005.
10. Митрофанов К.Г. Проблема подготовки педагогических кадров к инновационно-экспериментальной деятельности. М.: Прометей, 2009.

11. Мусаева М. Физикадан аудиториядан ташқарии машғулотлар. /Ж. Халқ таълими. -2000. -2-сон. –Б. 32-35.
12. Мирзаахмедов Б., Гофуров Н., Тошмухаммедов Ф. Физика ўқитиш методикаси курсидан ўқув эксперименти. –Т: Ўқитувчи, 1989. 111 б.
13. Юсупов А., Юсупов Р. Физикадан савол ва масалалар тўплами–Т.: Ўқитувчи, 2000.– 64 б.
14. Султонова Ў.Н. Физикадан масалалар ечиш тўғараги машғулотларини ўтказиш технологияси. Услубий қўлланма. –Тошкент: “ТКТИ”, 2012. -151 б.
15. Занков Л.В. Избранные педагогические труды. –М.: Педагогика, -1996. -432с.