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SUBJECT AND RESEARCH METHODS IN THE IRRIGATION SYSTEM IN THE TEACHING OF PHYSICS

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Abstract
Physics occupies a special place among natural sciences, so it is said that it forms the foundation of all natural sciences. Because physics has made and continues to contribute to the achievements of all natural sciences. Examples of this are physical chemistry, chemical physics, biophysics, astrophysics, geophysics and other sciences.

Keywords: directive, goal, concepts, international, matter, complex, methodological, polytechnic, scientific evidence, methodology of teaching topics, general-theoretical issues.

It is no secret that even in medicine today, the role of physics is incomparable, since its contribution initially began with X-rays, while today the use of ultrasound and lasers continues, moreover, through computed tomography. Also in saving humanity from an energy crisis, physics is making and contributing its worthy contribution through its discovery of the use of atomic and nuclear energy. The purpose of teaching physics in the system of continuing education is to provide students and students with a thorough education, to educate and develop their knowledge. At the same time, the content of the methodological course of study of physics, the textbook relating to its teaching, is the identification of the tools of educational applications and, in the process of teaching, the finding of methods of their effective use.

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The concept of the teaching process should, in principle, answer the following questions.

l. Why do we train young people? This is determined through the purpose and function of teaching in each state, in Directive huijats (Constitution, Law "on education"and concepts of knowledge issuance, state educational standards, Charter of the educational institution, software documents, etc.) are displayed. The purpose of teaching physics in the system of continuing education is given in the normative documents of educational programs in the following way:

- on the basis of explaining the role and role of physics in the process of accelerating scientific and technical progress, educating students in a political-ideological, self-sacrifice and international, national spirit, revealing the level of development of Science and technology in a manner consistent with directive documents, introducing physics and techniques to the development of the contributions of scientists from our homeland and abroad;
- practical application of scientific evidence, concepts, laws, theories, research methods and knowledge of physical science and the formation of knowledge about the scientific landscape of the universe;
- revealing the unity of the structure of matter, its Infinity, The imiversality of conservation laws in nature, the dialectical nature of physical phenomena, the continuity and consistency of physical theories, the joint participation of experience with theory in the development of physics, the important role of practice in the study of physics;
- acquaintance with the main aspects of scientific and technical progress-introduction of students with complex automation, electronics and microprocessor techniques, roboto - techniques, atomic energy, production and information technology, as well as processes for the production of new materials;
- explanation of independent possession of knowledge, formation of methods of working with textbooks, teaching aids, informative scientific literature and chrestomatic literature;
- formation of certain experimental skills: working with equipment, measuring, using its results and drawing conclusions based on an experiment, compliance with the safety of the technique;

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• interest in knowledge of physics and techniques, develop knowledge opportunities. the formation of an effective approach to study, the preparation of students for the choice of a profession as a result of teaching physics directly in connection with life, and the strengthening of professional training of students.

2. What and how much do we teach young people? The answers to these questions are obtained from specialist study plans of general education schools, academic lyceums and professional colleges, as well as educational programs on physics.

3. How do we train young people? In practice, there is no directive document that clearly answers this question. It concerns the implementation through teaching methods, tools and forms of Organization of training. Develop them. selection and use requires a high level of creativity from teachers.

It should be noted that after the independence of Uzbekistan, the leadership of the Republic paid special attention to this area, in 1997 the law "on education"and the National Program for training personnel were adopted. On the basis of these important documents, a new system of youth training was transferred to Uzbekistan, which is now successfully implemented.

The methodology for teaching physics in higher education consists of the following sections: general-theoretical issues of teaching physics; methodology for teaching certain sections or topics of the physics course: methodology and techniques for performing a physical experiment.

General-theoretical issues of teaching physics include:

• objectives and objectives of teaching physics in different educational institutions;

• the content, structure and size of the physics course taught in educational institutions;

• methodological and psychological foundations of teaching physics;

•providing polytechnic education in the process of teaching physics and connecting it with practice;

•establishing interdisciplinary connection of the physics course and implementing consistency between different stages of teaching;

• in the process of teaching physics, students form a dialectical-materialistic worldview and cultivate their thinking:

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• adequate (similar, suitable) technology, methods and means of teaching, determination of organizational forms of teaching, criteria for checking and evaluating students ' knowledge, etc.

After the general issues of teaching physics, a teaching methodology of each department or topics in IT related to the content of the course is given, which is called a private methodology. In it, the content of each topic indicated in the program, the sequence of educational material, the ways of forming concepts in it, the disclosure of the meaning and essence of laws and theories, the practical significance of the educational material, what qualifications and skills students need to master this material, as well as the ways and methodological features of solving the issue,

The methodology of teaching physics in higher education, a branch of pedagogy or didactics, has its own research methods that develop and change in harmony with the progress of society.

As the Main Research Methods and Methods, the Following Can be Indicated

Theoretical selection of the problem; the study, use and generalization of the experience of advanced and creative teachers in teaching physics in higher education; experimental and test work carried out to check the effectiveness of the proposed recommendations, etc.

Theoretical Study of the Problem.

The essence of this method is to determine the content of the physics course as a result of reading special literature, as well as the degree of compliance of its teaching methods and forms with current requirements. When working with literature, the main attention should be paid to observing new thoughts, choosing it, giving its corresponding opinion. Comparison of opinions from several publications on one issue. generalization and systematization, generalization, writing articles form the basis of creative research.

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Implementation of Observation

Carrying out instant observation is a way to know the truth directly. It can be directly in the form of a polyhedron. In the first, the researcher can directly observe the process being studied. In the latter case, information about the process under study is obtained from other sources. The use of the second route allows for an increase in temporary efficiency. This means that observing any pedagogical phenomenon takes a lot of time from each researcher. For example, to observe that students ' knowledge of physics remains in practice, the researcher has to spend a lot of time. If this information is obtained from teachers and group leaders, it will not take much time. It should be said that direct observation of the educational process, in practice, positively affects the validity of the research and its quality.

The quality of the information received during the observation process directly depends on its planning. What is included in the observation implementation plan? When and how should the object of observation be observed, how should the results of observation be obtained? - questions arise. For example, when observing the activity of students during class, when their actions are recorded using technical means, and not just typing, each element of it is selected based on the goal set.

The type of Interview requires special qualifications from the researcher. They are: finding a language between students and teachers, understanding their personal qualities, noticing their psychological states, being able to turn the conversation in the appropriate direction, among others. The technique of conversation walking also has its own meaning. To do this, it is necessary to organize an atmosphere of reliability, maintain pedagogical ethics and tactics.

During the interview, the researcher asks the students or teachers the necessary questions and receives answers from them. In this case, the main issue is the choice of questions. For example, when a researcher wants to know the students ' interest in physics, he asks the student, "Are you interested in physics?"- the question does not give the desired result. Because to this question, the student can answer: "yes' or "no". To what extent this answer is true or false. it remains unknown to the teacher as before. What branch of physics is interesting from the student at such a time, what methods he uses in solving the issue. it is useful to

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ask questions about how much time it takes to carry out homework at all times, what difficulties it has to face.

Clarifying the outcome of a conversation also has a specific meaning. In some cases, the researcher keeps the course of the conversation in memory and records them all after the conclusion of the conversation. But when recording is conducted openly, there are also cases when the respondent cannot speak his mind openly, without feeling free. Therefore, in most cases, it is good to record the conversation on a magnetic tape and then select the necessary one specifically.

Questionnaire usili of the Study.

In this case, the researcher asks questions to students and teachers in writing. he also receives answers to them in writing. The positive thing about this method is that it is possible to communicate with many in a small amount of time. When drawing up questionnaire questions, it is proposed to take into account the following:

1. Questions are asked in an open form, and the options for the answers are not determined in advance. Students and faculty report and write down the answers in the form they want.
2. The answers to the questions are pre-programmed. Question sheet responders underline or tag the options for the proposed answers under what they believe is correct.
3. Responders have the right to write down their own thoughts, in addition to variants of the proposed responses.

The questions proposed in the questionnaire should be concise and understandable. The variants of the answers can be determined in advance and their result can be deduced by groups. A structured questionnaire can be offered to teachers or some of the students and distributed to many only after making the necessary corrections.

Study of Pedagogical Experience of Advanced Professors

Pedagogical experience-explains the practice of teaching and upbringing. It is accompanied by the work experience of the department or pedagogical team, ranging from the work experience of some advanced professors or educators. The

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experience of a separate teacher is learned by attending his lesson, talking and reading his articles published in scientific and methodological journals.

Participation in scientific and methodological seminars, conferences, pedagogical readings and publication of articles in various journals allows you to study the experience of several teachers, get acquainted with the results of research conducted by researchers. Through the opinions and lectures spoken at such events, teachers introduce others to their experience and learn the news.

Pedagogical Experiment

training, training and development work are, in other words, experimental work carried out with the aim of improving the effectiveness of teaching. In this case, corresponding to the purpose of the study and the established scientific hypothesis, appropriate changes are made to the teaching process, the results of which are selected in scientific content.

In practice, the defining, research, teaching and examination types of pedagogical experiment are used. Detection is the beginning of a pedagogical experiment, when conducting which various evidence (Truth, Proof), which is considered to be a deficit, belonging to many. For example, the state of mastering physical concepts is examined and the cause of the typical deficit that most students have is determined.

At this stage of the experiment, without identifying only some evidence, the reasons for the appearance of inverted manifestations on it are also determined. For these reasons, the Prevention of the appearance of such errors is determined, if allowed, ways to eliminate them. Such work is carried out at the research stage of the pedagogical experiment.

At the research stage of the pedagogical experiment, various methodological ways of improving the teaching process have been developed and the most scientifically based and methodically effective ones are selected for application in amalyot. The researcher offers a variety of guidelines to teachers who test the suggestions given in specially selected experimental groups. Depending on the result of the work, clarifications and corrections are made to the proposed methodological guidelines, some of which can also be processed again. As a result, the methodical work system tested in the experiment is formed. At the next

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stages, the types of teaching and verification of a pedagogical experiment are tested.

As the name of the experiment suggests, at these stages, the previously identified methodological proposals and recommendations are fully integrated into the training process, and the results of the Li are analyzed. When research and teaching experiments are carried out in a small number of educational institutions, the number of educational institutions where the research experiment is carried out may be higher. This increases the objectivity and reliability of the experiment's outcome.

It should be noted that the methodology of teaching Higher School physics is physics, which is taught to students. mathematics, philosophy, pedagogy and psychology are directly linked to academic disciplines. In particular, if mathematics is considered the main weapon of the physics course taught in higher education, then didactic principles serve as the basis for its teaching.

References

1.Karimov LA. Barkamol avlod- O'zbekiston taraqqivotining poydevori. - T.: Sharq, 1997.
2. Karimov I.A. Yuksak ma’naviyat - yeneilmas kuch— T.: Ma’naviyat, 2008.
3. Karimov LA. “Barkamol avlod yili” Davlat dasturi. - T.: O'zbekiston, 2010.
4. Avliyoquiov N.H. Zamonaviy o'qitish texnologiyaiari. - Muallif, 2001.
5.Архангельский С.И. Учебный процесс в высшей школе, его закономерный основы и методы—М.:В1П. 1980.
6.Ahmadjonov O.I. Oliy texnika o'quv yurtlarida fizika fanini o'qitish samaradorligini oshirish yo'fiari. Fed. fan. dok. diss. avtoref. — T., 1995
7.Турсунов Қ.Ш., Тошпўлатов Ч.Х. Физика таълими технологияси. Методик қўлланма. –Қарши, Насаф, 2012