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The Importance and Need for the Development of Technical Thinking of Students in the Field of Circuit Training From Physics

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Abstract: *This article covers the importance and necessity of developing the technical thinking of students in their exercise of circular from physics. The author, relying on pedagogical data and physical sources, made clear the problem on the basis of existing scientific and historical literature. In his lectures from physics to the circle, he made a comparative analysis of the existing specific approaches and theories on the importance and need to develop the technical thinking of students.*

Keywords: *Physics, circle, pupils, development, technical thinking, teaching, development.*

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Introduction:

All branches of Science, each Science acts with certain concepts. In the methodology, too, there are special concepts that others poorly understand or do not understand at all.

A form of reflection that reflects the important properties of things and phenomena, that is, the relationship between the internal parts of a single whole and the external relations of that whole, is called consciousness. The logical function of the concept is to mentally distinguish one thing or phenomenon from another. Consciousness is different from emotional forms of cognition and is not directly reflected in human thinking. It is formed by using logical methods such as comparison, analysis, synthesis, abstraction, generalization[5].

Main part:

Even as knowledge is considered the product of reflection, consciousness can be defined as the general knowledge that expresses the essential foundations (sides) of the class of subjects and phenomena in the whole being, the important connections, as well as the relationship between them.

The concept that arises at some stage of science's development can not remain unchanged. The knowledge of phenomena and the predicates of the true being occurs in a deepening and the development of more and more concepts. This development occurs differently:

1. Previous concepts are identified and enriched;
2. The previous concepts are thrown away because they are not convincing in a scientific relationship (for example, in physics the concepts “teplorod”, “efir”, “magnetic mass”);

3. As a result of the development of scientific knowledge, yagi concepts arise, which means that there are deeper connections between phenomena and subjects, a deeper penetration into the essence of matter (from the first orderly essence to the second orderly essence movement, etc.) [7].

The emergence of some concepts plays a decisive role at a certain stage of science development. New scientific theories and systems arise between them. For example, the concept of" quantum energy", which is considered as the basis for the occurrence of quantum theory in physics, is such. On the basis of the concept of" Eektron " electronic theory has not emerged. The emergence of new theories, in turn, accelerates the development of Science, and ultimately leads to the emergence of new concepts.

In the development of concepts, there is a great deal of mutual complex connectivity of the concepts of various sciences, which is connected with the general issues of comprehensive examination of the phenomena of nature and society.

As a result of the generalized theoretical views, the concept serves as a means of future cognition.

In educational cognition, consciousness arises on the basis of the element of the system of scientific knowledge that students possess under the guidance of the teacher. In the process of reading, the concepts that are widely used in scientific research work and the practical activities of individuals, are firmly confirmed and accepted in science are formed in the students of the educational institution.

The formation of concepts in the classroom in the circle is a complex and self-sustaining process, in which the students gradually approach the full possession of the contents of the concepts. in the process, as in the scientific cognition, the development of concepts - their enrichment, from the very beginning to the very beginning of this understanding-the multiplication of new connections takes place. This development has a complex dialectic harakter[2].

It is necessary to take into account all these sources in the formation of purposeful oriented concepts in order to avoid the mistakes that are generated in order to use the available knowledge and master the concepts. Ayniksa Mukhim is of great importance for the teacher to know the "pre-science" concepts that are characteristic of students in sorrow of the study of the basics of science on the basis of vital experience, daily observation. They play a dual role in the formation of concepts. If the imagination in the circle is dependent on the content of scientific concepts (if it does not suit them), and the teacher does not pay attention to this in due time, then they (pre-science imagination) slow down the process of formation of scientific concepts in students[11]. If the imagination in the circle training does not come to a standstill on scientific concepts, then in the formation of suitable concepts it is necessary to rely on them and build work.

The following typical errors are observed in the students assimilation of physical concepts:

1. Readers use the terms that define the concepts, but do not know the meaning of the concept (indicating its significant signs), the separation of its significant signs from those that do not matter;
2. Common signs of concepts are confused with signs of kurinma for example, signs of internal energy are confused with signs of mechanical energy (as a result of the differentiation of concepts by division);
3. Poorly assimilate the connection and relationship between concepts (previously dependent and subordinate relationship);
4. They do not know the classification of concepts, when choosing signs that can be poured on the basis of classification, tulle is impotent.

The presence of the mentioned shortcomings in the assimilation of concepts leads to the fact that students have difficulty dealing with concepts, solving educational and practical issues of different appearance.

Results and Discussions:

One of the main reasons for the appearance of shortcomings in the assimilation of students ' understanding is that the teacher does not know the specific features of the process of assimilation of concepts, the methods of formation, conditions that allow students to assimilate them, and the legalities by which these processes are subjected[6]. In some cases, teachers think that it is enough to give a definition to the concept so that the students can master the concept and practice it. But describing the concept will be only one of the initial stages of its formation, which will be completed by becoming an abstract concept. After that, the process of development of concepts that determines the content and volume of concepts, the sequence of their mastering, its connection with other concepts and their relationship goes.

Along with mastering the concepts shular, it is intended to formulate the reading of dealing with the concepts in the students, applying them to the solution of their teaching-learning and practical issues. therefore it can be confirmed that this process requires active thinking activity of readers.

It is important to study the main ways of forming concepts for the theory and practice of teaching, determine the optimal method of selection for the specific case of each method of formation, the specific characteristics of assimilation of concepts by students of different age-characteristic Circle team.

Dressing concepts in students is carried out in different ways. The way in which he or she formulated this concept, the alternation of the sequence of stages of formation, is determined depending on the content of the concept that is being formed, the degree of general development of the students, the size of their experience and knowledge of the Subject[9]. The formation of the concept in Aryim cases can (and should) begin with the analysis of facts and phenomena known to the readers from their everyday experience.

]At the first stage of the study of physics, the formation of a number of concepts occurs in this way, for example, concepts about diffusion, convention, electromagnetic induction. With further analysis of experimental indicators, demonstrastion and laboratory experiments are necessary in the formulation of concepts that characterize them, for example, in the formation of the concepts of “current strength”, “voltage”, “aging”, in the expression of complex properties of both objects and sizesalaydigan.

The methods under consideration presuppose the formation of concepts clearly-emotionally, for example, acceptance from the point of view of experiences. Experimental indicators are analyzed; the General important signs of bunda are distinguished, the non-significant ones are discarded. This is how abstraction occurs. This process usually ends with definitions through a word that embodies important signs of understanding[3]. this process forms the first stage of the formation of consciousness. Its essence is clear-from emotional acceptance to abstract thinking.

The content of the second stage in the formation of consciousness is the transition from abstract to concrete, general thinking. The content of this concept is enriched, its size is determined, it is connected with other concepts and its connection is revealed more and more. For example, the development of the concept of” atom " occurs as follows: about the atom molekula from the assumption of the quality of a very small particle of a substance, the sum of positively charged nuclei and negative charges is developed into the concept of an atom with a complex structure, consisting of an electron shell equal to the sum of the positive Along with studying the course of physics in circles, the concept of “atom” is “growing”with a system of other concepts that

characterize atomni harakter. This applies to both" matter"," Electronic"," Energy"," Action " and other concepts.

Relying on a clear-emotional acceptance in the formation of a number of concepts can not be overthrown in the sense of a brief understanding of this word. For example, the concepts" atom"," electron"," proton"," neutron " are such. In such cases, the seizure of concepts occurs in a different way. It starts with putting the problem and describing the classic experiences. Their results lead to the conclusion that there is a shortage of available knowledge in order to explain the new concepts, expressing them adequatelyalaydigan the need to introduce new concepts[14].

In some cases, due to the complexity of the experiments at the first stage of studying the subject, they themselves can not be looked at, with the results of the experiments and the conclusions drawn from them, the pupils just got acquainted.

At the second stage of the study of physics, cubes can begin with the formation of generalized concepts, for example, from the definition of the concepts "matter", "Action", "energy". But this does not mean that the stage of explicit-emotional acceptance in the dressing of concepts is not entirely involved. In academic lyceums, it was appropriate to study physics, to participate in intensive classes. Existing facts are developed and summarized in the minds of students by the time of the formation of generalized concepts. For example, in the formation of a generalized concept about" movement", we rely on the knowledge of readers about the various manifestations of motion: mechanical, thermal, field Shape of electric motion and cockroaches. The facts lying on the basis of these concepts were formed earlier in some way - either directly by observation, or with the help of instruments.

Conclusion:

In the analysis of the peculiarities of the action of a different appearance, a more general concept of "action" is formed, which occurs in material objects on the basis of which the quality of change as a whole, the quality of the method of existence of matter, the attribute of matter[8].

The academic Lyceum leads to the conclusion that different methods of forming concepts in the educational process should be used, depending on the analysis of the content of physical concepts formed in students, the content of concepts, the development of the level of thinking of students, the reserves of knowledge acquired in the previous stages of teaching.

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