DIDACTIC FOUNDATIONS OF COGNITIVE ACTIVITY AND ITS DEVELOPMENT IN STUDENTS

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Abstract. This article focuses on the nature of the cognitive process, the levels of the cognitive process, methods, means, types of training, the issues of enhancing the cognitive activity of students and improving the effectiveness of training.

Key words: cognitive activity, empirical, theoretical, abstraction, induction, idealization, analogy, comparison.

The issue of activating the cognitive activity of students and increasing the effectiveness of training is considered one of the main problems of academic disciplines. Activating the cognitive activity of students is understood as a conscious need for students to master a high level of motivation, knowledge and skills, a high level of result and the emergence of behavior corresponding to social norms.

Cognition is a type of mental, spiritual activity aimed at generating knowledge about nature, society and oneself. A person cannot successfully engage in any type of activity without having knowledge and an idea of the surrounding environment in which he is surrounded. The product of knowledge, the result of which is science, and the acquisition of knowledge in the acquisition of any specialist, profession is considered important. There are two levels of scientific knowledge, which constitute the empirical and theoretical levels.

Empirical knowledge is mainly obtained as a result of experimentation and is based on observation and experimentation. On the basis of experimental data, schemes and diagrams are drawn up, conclusions and hypotheses are developed, the relationship between the newly obtained data is determined. At the empirical level of cognition, methods in Qu are widely used:

Observation is a way of sensory cognition of things and phenomena in reality, aimed at a specific goal. Observation is carried out directly (without instruments) or indirectly (with instruments). In the process of observation, the subject perceives and identifies the quantitative and qualitative aspects of the object.

Measurement is a way of determining the quantitative description of a thing in the process of cognition. Measurement is usually carried out through the way in which the studied subject is compared with any other subject with clearly recorded characteristics and signs. Through the measurement method, it is possible to determine the properties of objects, for example, their strength, complexity and other aspects.

Comparison is a method that is applied in cognitive activity, forming a special stage in the formation, development of knowledge. Comparison is a way of studying the different and similar aspects of things and phenomena from another thing or event, as well as their relationships.

An experiment is a method of cognition of a higher level than observation, which helps to influence, assimilate, enrich knowledge of an object by applying the appropriate experimental devices to the object. In order for the researcher to study the sides of the object of interest to him through the method of experimentation, he actively influences it, creates artificial conditions for this, carries out verification under these conditions, collects data.

The theoretical level of cognition is a higher stage of generalization and idealization, reflecting the objective being with all its internal connections and laws, focusing on revealing the essence of the object under study.

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 11 Issue: 12 in December-2022
https://www.gejournal.net/index.php/IJSSIR

The levels of cognition can be conditionally divided into: lower, higher and higher. The lower level of cognition is characteristic of all living things and is called emotional cognition. Emotional cognition is cognition through the senses. The upper stage of cognition is inherent only in humans, it is called mental cognition (rational cognition). If a person, with the help of his senses, knows only the external features and properties of things and phenomena, then by the means of thinking he will know the inner essence of things and phenomena. Knowing through mental knowledge or thinking does not negate emotional knowledge, but through generalization, analysis, synthesis, abstraction of knowledge acquired through the senses, concepts are created from newly formed knowledge. Mental cognition requires confirmation or denial of the signs and characteristics inherent in things and phenomena. This ability to affirm or deny that is characteristic of thinking is called judgment. Conclusion-one of the important tools of mental cognition, a way to generate new knowledge. Inference can also be inductive and deductive, that is, by going from general to exceptional. At the theoretical level of scientific knowledge, methods in Qu are widely used:

Abstraction is a way of knowing the important properties, relationships, stages of development of objects in a particular relationship by thought. The abstraction method includes analysis and synthesis tools.

In analysis, what is being studied and the phenomenon is divided into small fragments, that is, parts, and the connections between them are studied by the relationship and influence.

Synthesis, relying on the results of analysis, studies one whole quality of things and phenomena.

Induction is a method of cognition that is used to draw general conclusions from certain types of thinking. With this method, privacy is studied and commonality is learned. The induction method also serves as a way to check the causal bonds of things and phenomena.

Deduction is a logical method leading from general to private. Theories in science arise as a result of the deductive method. This method is mainly used to study, systematize them in depth as a result of the collection of evidential information.

Anology is a method of studying the similarity of the properties of something and phenomena (compatibility, nausea, similarity). With this method, similar properties of two subjects are studied.

Idealization is a method of embedding an object in the process of cognition. In this method, the real object is replaced by an ideal object.

Cognitive activity in students does not always arise, but only due to the purposeful pedagogical influence of the teacher and the skill of organizing a favorable pedagogical and psychological environment. It will depend on the pedagogical technologies used by the teacher to provide a purposeful impact and create a favorable socio-psychological environment in teaching biology. Any technology developed in didactics serves to activate the cognitive activity of students and increase the effectiveness of education, but in the following technologies this issue occupies the main idea:

1. Didactic game technologies.
2. Problem learning technologies.
3. Modular educational technologies.
4. Collaborative teaching technology.
5. Design technology.

In combination with the fact that technologies that allow students to activate cognitive activity and increase educational efficiency have their own characteristics, in the educational process they perform such functions as educational, developmental, educational, creative activity, communicative, logical thinking, the formation of methods of mental activity, analysis of their activities, orientation to the profession, teaching to get the goal right, creating cooperation. However, when comparing the functions of pedagogical technologies, it turned out that these functions do not occupy the same level. The leading role in didactic game technology is occupied by educational, developmental, educational, communicative functions, and the rest of the functions are attached to them. In problem educational

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 11 Issue: 12 in December-2022
https://www.gejournal.net/index.php/IJSSIR

technology, the leading role is played by the formation of methods of mental activity, orientation to creative activity, the development of logical thinking, the rest of the functions are supposedly subordinate to them. Against this background, it is possible to analyze the didactic functions of other technologies. The intended goal and effectiveness is achieved only when the biology teacher chooses on a scientific and methodological basis which technology he uses, taking into account the educational, educational and developmental goals of the subject studied in the lesson and the didactic functions of pedagogical technologies.

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ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 11 Issue: 12 in December-2022
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