

**DIDACTIC METHODS OF FORMATION OF LOGICAL COMPETENCE IN THE PROCESS OF TEACHING MATHEMATICS TO PUPILS**

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**Kodirov Komiljon Rakhimovich**

*Fergana State University Candidate of physical and mathematical Sciences*

**Nishonboyev Azizbek Solijonovich**

*Fergana State University teacher of mathematics department*

**Tukhtasinov Tokhirjon Shokirjon o'g'li**

*Fergana State University teacher of mathematics department*

**Annotation:** *This article examines the criteria for the development of logical competence in students and the didactic conditions for their formation when teaching mathematics.*

**Key words:** *competence, intelligence, logic, methodology, didactics, pedagogical and psychological*

Before determining the didactic conditions of formation of pupils' logical competence in the process of teaching mathematics, it is necessary to solve the issue of assessing the formation of pupils' logical competence.

Competence includes knowledge, skills, education and life experience, attitudes that can be developed by the learner independently in specific life situations. The basis of any competence is knowledge that can be applied in various situations. It is possible to evaluate the developed knowledge and skills of pupils by methods developed by the science of psychology and pedagogy [1]. How to assess competence?

If competence is an ability resulting from acquired knowledge and skills, how can this "ability" be measured? Or how can life experiences and interests relevant to competence be measured? In order to develop an assessment system, it is necessary to consider the individual components (i.e. knowledge and skills) that form the basis for the development of a given competency. The range of situations in which the pupil can apply the knowledge and skills should be identified. To determine the formation of competence, it is necessary to monitor the formation of each component of competence, not "its individual components", because pupils' logical competence is formed by the end of the 6th grade, i.e. as a result of their knowledge and skills, logical thinking, abilities, personal activity and thinking framework [2]. Therefore, the criteria for the formation of pupils' logical competence should be considered the criteria for the formation of all its components, i.e. knowledge and skills, indicators of activity and mastery. Criteria for the formation of knowledge and skills (logical and mathematical) are formed based on the level of knowledge of pupils. To determine the level of formation of pupils' logical thinking, we can

use a diagnostic method to determine their theoretical thinking, in addition, being able to explain and discuss the correctness of their solution.

To determine the formation of learning activity, it is possible to use the diagnostics of formation and all its components developed by psychologists, i.e. such components as learning and cognitive interest, aspiration to a certain goal, learning activity, control and evaluation. It allows to measure the knowledge, skills and qualification of pupils in their activities by modern psychological and pedagogical diagnostic methods, for example, the technique of studying the level of subjective control of various life situations, and to determine the uniqueness of the personality or self-assessment method (the method of benchmarking). Thus, observing the formation of each component of the structure of logical competence, we will develop certain methods with which we can diagnose the level of logical competence of pupils in grades 5-6, and in general we will be able to assess the level of logical competence of pupils in grades 5-6. formation of logical competence in pupils. Consequently, didactic conditions of formation of logical competence should contribute to the formation of each element of the structure of logical competence of pupils of 5-6 grades in the process of teaching mathematics.

The first didactic condition for the formation of logical competence is, of course, the introduction of basic concepts of mathematical logic into the course of mathematics of 5-6 grades in order to develop pupils' logical thinking with the help of mathematics. But the inclusion of additional topics in the curriculum increases the amount of material to be taught and does not ensure the formation of logical thinking, despite the fact that logical thinking is the basis for its development. This means that it is necessary to create special conditions for the development of logical thinking.

The learning process in general secondary school can be divided into two unequal parts. One is from the modes of intellectual activity, and the other from the specific material of the subject being studied. In terms of total volume, the second part is much larger than the first, but to this extent inferior to it in terms of its importance in the development of thinking. Therefore, in order to improve the effectiveness of learning, it is necessary to pay more attention to the formation of pupils' logical methods of theoretical thinking.

In the process of teaching in the traditional system, there are such difficulties as the development of pupils' thinking, linking the process of assimilating a large amount of knowledge with pupils' mastering the methods of intellectual activity. Therefore, in the process of knowledge assimilation it is necessary to create conditions for the development of thinking and human development in general. Thus, the next didactic condition for the formation of logical competence is the clarification of the goals of pupils' learning activities in the process of teaching mathematics, their focus on the development of personal qualities of the pupil in this process. Issues related to the assimilation of educational material often conflict with the development of personal qualities of the learner. On the

one hand, the knowledge acquired by pupils serves as a necessary factor in the development of theoretical thinking, but can serve as a stop or obstacle to development.

Problem-based learning allows effective development of the pupil's personality. Problem-based education is development-oriented, and development is not the acquisition of the sum of knowledge and skills, but the process of reformation of the learner, in this process it is carried out in intellectual, personal, behavioral actions and independent actions. Foreign scientists (J. Lefsted, D. Raven, etc.) recognize education aimed at the development of the pupil's personality, based on the competence approach.

The purpose of developmental (intensive) education is to stimulate the special activity of the pupil and guide him/her to change himself/herself as an educational subject. What distinguishes intensive education from traditional education is the participation of the learner as an active subject. Developmental learning is learning based on the structural structure of science, methods and forms of its organization, and laws of development. In the framework of anticipatory development, the learner independently performs the task. In the framework of sequential development, today the pupil performs the task with the help of the teacher, and tomorrow he/she will be able to do it independently.

Formation of learning and cognitive interest leads to the development of special abilities of pupils, i.e. to the acquisition of creative features in learning activities. In this case, the pupil begins to go beyond the tasks set by the teacher, actively seeks new opportunities for the realization of his abilities, understands and evaluates the results of his activity in a new way. In the process of study is revealed, emphasized and begins to develop intensively a number of features of the subject, forming him as a person, that is, skillfully oriented attitude to existence, conscious choice of life goals, means and methods. of their achievement, a sense of responsibility for the chosen method and the results of their research. So, learning activity is a unique activity, the main purpose of which is the development of the pupil's abilities. Its full realization occurs only in the process of theoretical thinking based on theoretical problems. As a result, independent research and learning takes place in learning activities. If the pupil possesses the technique of learning activity, the teacher should only set him a task and thus arouse his interest in knowledge. Later, the mechanisms of learning activity and the mechanisms of theoretical thinking are formed. The learner gradually begins to master himself in the ways of solving the task and controls the process of its realization. At the same time, a number of processes related to the educational process are carried out automatically.

According to the system-structural approach, learning activity has a common psychological structure inherent in any activity, i.e. purpose-cause-method-result. We believe that this chain can be continued as follows: success-satisfaction-positive motivation-activity-development of personality. We believe that the pupil's activity should include all the above-mentioned components of the psychological structure. Naturally, educational activity has a subject content that distinguishes educational activity from any other activity. Under the activity in the educational process we understand the process of

interaction between the object and the subject, aimed at obtaining new knowledge and information about the activity, focused on the value of the object in relation to the subject.

Planning and realization of motivated learning activities are important components of formed logical competence. Therefore, initiation to activity, internal motives of learning activity, creation of problem situations in pupils' activity, development of pupils' experience of their activity and self-assessment are didactic conditions for the formation of logical competence. In activity not only knowledge and skills are formed, logical thinking is developed, but also personal qualities expressing logical competence, i.e. internal needs and motivation, evaluation of one's abilities in the course of activity, including in a team, communication and relationships. This theory specifies the conditions that ensure the formation of behavior and mental processes at a given high rate.

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