

## DEVELOPMENT OF INTELLECTUAL PROGNOSTIC COMPETENCE OF 8TH GRADE STUDENTS IN CHEMISTRY CLASSES

*Mirzamatova Shakhlo Tashpulatovna*

*The city of Angren is profession No. 1  
teacher of chemistry and biology at his school*

**Abstract:** *This article revealed the importance of developing intellectual prognostic competence in students and its role, as well as the need to develop prognostic competence.*

**Key words:** *prognosis, prognostics, pedagogical prognostics, pedagogical forecasting, intellectual ability, prognostic competence.*

The pedagogue of the 21st century should be a pedagogical researcher with prognostic competence, in addition to mastering the traditional pedagogical culture of teaching and upbringing. Today, special attention is paid to the prognostic thinking of the pedagogue and the development of culture as an important issue. According to I.P. Podlasiy [1], the main functions of a pedagogue include setting goals, diagnosis, forecasting, designing, planning, informing, organizing, controlling, correcting, and analyzing.

Prognosis is a Greek word that means predicting the course, development and consequences of an expected event or events based on available evidence and information.

According to B. S. Gershunsky[2], pedagogical prognostics is a branch of science that examines the objects studied by pedagogy in accordance with the principles, laws and methods of forecasting. Pedagogical forecasting is a scientific activity, which consists of a set of specially organized research aimed at determining future changes, development trends and perspectives of subjects and objects of pedagogical activity, obtaining reliable and future-related information in order to optimize the content, methods and tools, and organizational forms of educational and developmental activities.

As can be seen from the above points, the development of prognostic competence among teachers is of particular importance.

It is known that the 8th grade chemistry course includes two sections: a section dedicated to general chemistry, which includes topics such as the periodic law, atomic structure, chemical bonds, oxidation-reduction reactions, and VII, VI, V a section on the chemistry of the elements that covers topics related to group metals. Each of the topics is based on the transition of knowledge to a new theoretical level, and the study of the "basic" part of inorganic chemistry is required to be carried out on the basis of a prognostic approach.

(observation; learning; generalization; processing of received information);

The first stage is related to the organization of problem-based education in chemistry classes. For example, when studying the topic "General description of the elements of the main group of the sixth group", the teacher formulates a problematic question: "Why, unlike other representatives of the chalcogen family, oxygen cannot show a valency equal to VI?" We will consider the main stages of the development of students' abilities in the study of the "Metalloids" section in the school chemistry course.

The solution to this problem includes the following steps:

1. Activation of basic knowledge. In this regard, the basic concept of schoolchildren is the knowledge of atomic structure. They can be activated during the conversation.

2. Creating a problem situation. Together with the students, the teacher continues to consider the structural properties of atoms of chalcogen elements, more precisely, the electronic structure of their outer energy layer, and compiles its general formula:  $ns^2 np^4$ .

3. Statement of the educational problem. The teacher formulates a problematic question: "Why, unlike other members of the chalcogen family, oxygen cannot exhibit a valency equal to VI? "

4. Resolving the issue of education. Based on the knowledge of why fluorine does not exhibit a higher valence than VII, unlike other elements of the halogen family, students can easily answer the question posed. To confirm the proposed hypothesis, it is necessary to perform a comparative description of the electronic structure of atoms of oxygen and sulfur elements, this work should be done by drawing up the appropriate electronic formulas and diagrams. By determining the differences in the structure of the oxygen atom and the sulfur atom, the final solution to the problem is developed.

5. Proof and application of the found solution. Schoolchildren are given the task of justifying the most characteristic oxidation states of chalcogens with examples of compounds [4].

Here is an example of an experimental task used during the study of the topic "Non-metals and their compounds": "Determine which of the test tubes containing the given solutions (sodium hydroxide, sodium chloride, ammonium chloride) contains ammonium chloride. Based on the experiment, complete the table below and write the molecular and ionic equations of the reactions that occur. The numbered test tubes contain the following reagents: sodium chloride (I), ammonium chloride (II), potassium hydroxide (III) solutions.

Reagents	Test tube number, observational results		
	I	II	III
Check with quality reagent	there is no reaction	wet litmus paper turns blue when dropped	-
Checking with a universal indicator	pH: neutral	pH: Alkaline	pH: Alkaline

The formula of the substance	NaCl	NH <sub>4</sub> Cl	KOH
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In short, the development of intellectual prognostic competence in students develops a creative approach to various activities, cognitive interest, independent analysis and generalization of evidence, data, phenomena, the ability to defend one's ideas and give one's own suggestions.

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