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INITIAL SKILLS TO BE DEVELOPED IN STUDENTS IN CHEMISTRY

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ABSTRACT

This article argues that students' generalized skills in chemistry should be viewed as a feature of action. That is, it has been shown that the generalization and assimilation of each formed skill is based on a certain rule.

KEYWORDS

Students, chemistry, generalization, skill, teaching, sign, model.

Introduction

Approaches to developing generalized skills differ as follows: 1. Skills are not a specific object of study; they are formed indirectly through the process of problem-solving. 2. Skills are a special subject of study that fulfills the task of understanding the learning process and reveals its technology.

A theory for the purposeful development of generalized skills within the context of developmental education has been formulated. In developing theoretical principles for organizing educational activities in physics, emphasis is placed on identifying the main units of materials in this field of knowledge and defining rules for their integration. Additionally, focus is given to enriching students with methods for analyzing elements of educational knowledge. The stages of forming generalized skills are distinguished as follows:

The motivational basis of actions is the awareness of the importance of students acquiring the ability to perform actions.

2. Defining the purpose of the action.

3. Identifying scientifically sound actions.

4. Identify the main components common to a wide range of motion tasks and independent of the conditions for performing the action (such components act as sequential support for the action).

5.The construction of an action model, that is, an algorithm, the search for the most rational sequence of actions that organize the action.

6. Organizing the performance of a small number of exercises, the actions of which are controlled by the teacher.

7. Teaching methods of synergistic self-regulation.

8. Using exercises that require students to independently perform a given action in changing conditions; using this skill to acquire new, more complex skills in complex types of activity.

It is based on mastering the structure of activity to implement generalized skills based on conscious actions that constitute the semantic structure of the skill, formed as a holistic learning in a new form.

Specifically, if we talk about generalized chemical skills, it is characterized by the fact that students complete and independently perform all actions and actions as part of the skill in studying chemistry, establish connections between them, and perform them in standard and non-standard learning environments.

The process of mastering general chemistry skills encompasses three levels: they are aimed at developing completeness, generalization, and awareness of work. If they are formed, it can be said that students possess qualities such as effectiveness and consistency. An analysis of the practical activities of teachers shows that the process of teaching individual actions and actions is difficult.

Determining the composition of actions that make up the movement for the development of skills is a necessary condition for choosing a rational methodology and technology. Knowing the content of actions, the teacher determines the most rational sequence of exercises for the skill of performing each simple action, and then forms the skill of performing the action as a whole. By understanding the scientific foundations of performing individual actions and actions in general, students quickly acquire this type of skill.

When studying a process or phenomenon, it is impossible to "separate" it to its simple elementary formation, as they no longer contain the specific quality to be studied.[1] To facilitate analysis, it is necessary to remember that the phenomenon under study should be simplified, while its main features should be preserved.

A sufficient unit of analysis is an action that assumes the existence of a motive and a goal. If we choose simple procedural education as a unit, the information obtained as a result of the analysis does not reflect the important features of the phenomenon under study - the activity that exists.[2]

In this regard, the formation of activities for implementing the ability to determine whether a substance belongs to the class of electrolytes or non-electrolytes is preparation for the formation of activities for implementing the ability to construct the equations of electrolytic dissociation reactions, which in turn is preparation for the implementation of the ability to construct the equations of ion exchange reactions.

One of the main requirements for the formation of chemical qualification skills in state educational standards - the ability to construct equations of ion exchange reactions - is considered in the topic "Theory of Electrolytic Dissociation."

Knowledge and skills on this topic in general education schools:

They can know or understand: chemical symbols: symbols of chemical elements, formulas of chemical substances and equations of chemical reactions; the most important chemical concepts: atom, molecule, ion, chemical bond, substance, classification of substances, chemical reaction, electrolyte and nonelectrolyte, electrolytic dissociation; the law of mass conservation of substances.

They can: name compounds of the studied classes; explain the essence of ion exchange reactions; describe the relationship between the composition, structure, and properties of substances; determine the chemical properties of the main classes of inorganic substances; determine the composition of substances according to their formulas, the belonging of substances to a specific class of compounds, the types of chemical reactions, the type of chemical bo the ability to compile formulas for inorganic compounds of the studied classes, equations for chemical reactions. [4]

Development of knowledge and skills on the topic of the main level:
Know or understand: the role of chemistry in natural science, its connection with other natural sciences, its significance in the life of modern society; the most important chemical concepts: acid-base reactions in aqueous solutions, hydrolysis; basic theories of chemistry: acids and bases; classification and nomenclature of inorganic and organic compounds. [5].
The second stage of using chemical models with educational marks and three levels of their use as a multifunctional tool for developing generalized chemical skills have been identified.
The first stage of using chemical models with educational symbols is design, which is related to the teacher's own activity. This is determined, on the one hand, by the relationship "teacher - content," and on the other hand, by the relationship "student - content," according
The level of development of general chemical skills:
- component, in which students (actions, actions) are focused on mastering the structure of skills;
- Integral, which includes the integration of the studied components of the skill, based on the establishment of structural and content connections, into an integral system;
- focusing on the practical application of functional, acquired generalized skills in standard and non-standard situations, as well as transferring skills to different levels of generalization.
In conclusion, it can be said that the aforementioned methods of using chemical models with educational marks are aimed at the rapid formation of the composition of chemical skills, indicating the need to create chemical models with educational marks by generalizing their components into an integrated system based on establishing structural and content connections.

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