

## UNIVERSAL LEARNING ACTIONS IN THE LESSONS OF MATHEMATICS FOR STUDENTS OF PROFESSIONAL SCHOOLS

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Abstract:

Keywords:

**About:** FARS Publishers has been established with the aim of spreading quality scientific information to the research community throughout the universe. Open Access process eliminates the barriers associated with the older publication models, thus matching up with the rapidity of the twenty-first century.

The concept of the formation of universal educational activities was developed (UUD) on the basis of a system-activity approach. It reveals the patterns of their formation in children at different stages of age development. The priority task of the modern education system is the formation of a set of universal educational activities that provide the competence to "teach to learn", and not just the development of specific subject knowledge and skills of individual disciplines by schoolchildren.

The basis for achieving the developmental goals of education is the activity of students. In this case, knowledge is not transferred to students in a finished form, but is obtained by the students themselves in the process of cognitive activity. In this regard, in modern education, there is a transition from the presentation of a knowledge system to the active work of students on assignments. Therefore, the issue of independent and effective assimilation by students of new knowledge, skills and competencies, including the ability to learn, remains important for a vocational school. Good opportunities for solving this issue are provided by the development of universal educational actions.

Given the above, the **aim of the work** is to study the formation of universal educational actions in mathematics lessons when teaching problem solving.

**Material and research methods.** The object and subject of the study is the process of forming UUD when teaching problem solving to students in vocational school No. 1 of the Chilanzar district of Tashkent. The study group included students of the 2nd course, group RA-05-21 of 27 people. The methodological basis of the study was the fundamental ideas of the theory of leading activity, the systemic nature of knowledge, the psychology of thinking, developmental learning,

and a student-centered approach. In the process of work, a set of methods for theoretical analysis of scientific and methodological literature, the study and analysis of psychological and pedagogical literature on the research problem, pedagogical observation, questioning, conversations, and mathematical processing of experimental research data were applied.

**Research results.** For a better assessment and purposeful planning of classes, several types of classes were identified, each of which is focused on solving specific goals. The subject "Mathematics" has great opportunities for the formation of all types of universal educational activities. The realization of these possibilities at the stage of elementary mathematical education depends on the ways in which the educational activity of younger schoolchildren is organized.

Результатом формирования познавательных универсальных учебных действий будет являться умение учащихся профессиональных школ выделять тип задач и способы их решения, а также осуществлять поиск необходимой информации, которая нужна для решения задач.

Основным критерием сформированности коммуникативных действий можно считать коммуникативные способности учащихся профессиональных школ на уроках математики, включающие в себя умение организовывать общение, включающее умение слушать собеседника, умение решать конфликтные ситуации.

The criterion for the formation of regulatory actions can be the ability to plan the results of one's activities, to start and end one's actions at the right time. The result of the formation of personal universal educational actions should be considered the completeness of the orientation of students to the moral content of the situation. Analyzing various types of text tasks, one can notice that the main criteria in the development of universal learning activities for students of professional schools are the development of personal, cognitive, regulatory UUD.

A special place in teaching mathematics is occupied by plot-text tasks, which are a traditional means of teaching. The question of the goals of solving plot problems is central to the methodology of teaching mathematics. The educational functions of the tasks are aimed at the formation of a system of mathematical knowledge, skills and abilities. Through a system of tasks, students of vocational schools in mathematics lessons learn not only to apply the acquired theoretical knowledge, but also become convinced at the motivation stage of the need to acquire new knowledge; in the process of solving problems, they receive information about the methods for solving them. Thus, the goal of teaching problem solving in professional schools is to develop students' skills (general and individual), which is manifested in the ability of students to successfully solve a problem of any mathematical structure.

For the purpose of practical substantiation of the conclusions obtained during the theoretical study of the problem, we conducted a study in the group RA - 05 - 21. 27 students participated in the experiment. For the reliability of our experiment, one group was taken and the statistics of its development were recorded after a year of study in mathematics classes.

The first stage of experimental work was the initial diagnosis of 2nd year students, group RA-05-21. The students were asked to work independently. After the students completed the tasks, the work was checked by us and processed according to specially selected criteria. As criteria, we have chosen cognitive, regulatory and personal UUD.

We entered the results of the independent work of students in the table, where, using symbols, we indicated the presence or absence of each criterion. Analyzing the results of the primary diagnostics, we found that almost all students of the group find it difficult to verify the correctness of the result obtained (Personal UUD), 14 people did not cope with the ability to correctly formulate the decision process in the form of separate arithmetic operations, expressions or by compiling an equation (Regulatory UUD) . Also, the majority of students could not correctly perform the arithmetic operations themselves (Regulatory UUD). Cope with the task, correctly understand the meaning of what was read and imagine the current situation (Cognitive UUD), almost all students had no difficulty at this stage.

In order to change this situation in a year in the same class, we organized the second stage of experimental work - formative. To achieve this goal, we conducted classes aimed at developing skills in solving text problems. The system of work and the selected tasks were aimed at improving the learning process for the formation of students' skills to solve text problems, namely, to work out such skills as highlighting structural elements in a text problem; analyze the problem and search for a way to solve the problem; to implement the found plan for solving the problem and to control and correct the solution.

To compare the results achieved in the course of the formative experiment with the initial level of formation of the ability to solve text problems in students, we conducted a control experiment. After our experimental work on the introduction of the educational process of the traditional system for identifying the formation of universal learning actions (UUD) in the process of solving text problems, we found that students have well-developed cognitive, poorly developed personal and regulatory actions.

At the end of the experimental work, we carried out a second diagnostic, which was a way to check how effective the formative stage of our experimental work turned out to be. To do this, we again offered students a control work, with different levels of complexity. The tasks were selected in order to form the ability of

goal-setting, planning, control, correction, evaluation and volitional self-regulation of students in mathematics lessons. After analyzing the results, we conditionally divided all students into groups according to the levels of universal learning activities (UUD) and the ability to solve text problems:

A high level (5-6 points) was made up of 24 students who could independently choose the correct action when solving simple equations; correctly understand the meaning of what is read and present the current situation; correctly outline the way to solve a text problem; retell what was read or heard (for example, 11 conditions of the problem); correctly identified and named the components of basic arithmetic operations; determined the order of actions in this problem, independently composed the actions of solutions in the problem, carried out verification actions after solving text problems and correctly formatted their record.

The average level (3-4 points) was made up of students in the amount of three people who made a mistake when choosing actions when solving word problems; made a mistake in defining and naming the components of basic arithmetic operations; made a mistake in determining the order of actions in this problem; were mistaken in drawing up the correct path for solving a text problem; correlate the completed task with the model proposed by the teacher; did not perform verification actions after solving word problems.

The low level (0-2 points) did not affect the students; at the end of the practical experiment, everyone was able to independently choose the right action when solving word problems; found a condition in the problem; did not make mistakes in defining and naming the components of basic arithmetic operations; correlated the result of the solution with the initial condition of the problem.

The results obtained testify to the positive dynamics of the emerging skills of students of vocational school № 1 in the Chilanzar district of Tashkent. Thus, the implementation of the tasks proposed by us in the learning process contributed to an increase in the level of formation of the skills to solve text problems of students and the overall development of universal educational activities. During the year of study, students have increased interest in knowledge, motivation to study the subject, they began to work more actively in the classroom, ask questions more intensively, and answer more in detail, began to express their point of view more often and learned to find solutions to the problem in several ways

Conclusions: The implementation of the formation of ULD in students of vocational schools is provided with methodological recommendations for the formation of certain UUD, logic that helps students understand the content of the task and its structure. Teaching mathematics in professional schools lays the foundation for the formation of mental activity, and well-organized learning activities contribute to the development of abstract thinking skills in search of

problem solving. The priority direction is the development of universal educational activities that form the ability to learn in students of vocational schools, reveal the ability for self-improvement and self-development.

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