

# FORMATION OF A GENERAL APPROACH TO SOLVING PROBLEMS FOR PRIMARY EDUCATION ACCORDING TO THE REQUIREMENTS IN THE NATIONAL CURRICULUM OF UZBEKISTAN

<sup>1</sup>Ergasheva Gulshoda Amirovna, <sup>2</sup>Khudoyberdiev Dilshodbek

<sup>1</sup>Senior Lecturer of the Department of Methodology of Preschool and Primary Special Education of the National Center for Teacher Training on New Methods of the Samarkand Region

<sup>2</sup>Uzbek-Finnish pedagogical institution

<https://doi.org/10.5281/zenodo.7579079>

**Abstract.** *The issues of the national curriculum are considered according to the criterion of quality education at the same time, there are academic subjects – mathematics, physics, chemistry, where so-called text tasks are solved. The solution of text tasks in these subjects is considered as a subject of special study. Thus, the solution of tasks can be considered in a narrow and broad sense.*

*Mathematics has been identified in our country as one of the priorities for the development of science in 2020, and a number of systematic measures are being implemented to bring the development of mathematical science and education to a new level. As emphasized in the materials of the educational standard of the new generation, one of the main universal educational actions is the general method of solving problems, ensuring the formation of the ability to solve any problems or tasks.*

**Keywords:** *mathematics, geometry, problem solving, national curriculum, education, formation, training.*

On the development strategy of the new Uzbekistan for 2022-2026 — radical increase in the effectiveness of ongoing reforms, creation of conditions for ensuring the comprehensive and accelerated development of the state and society, the implementation of priority areas for the modernization of the country and the liberalization of all spheres of life.

As noted in the document, a comprehensive analysis of the stage of independent development passed by Uzbekistan, as well as the changing conjuncture of the world economy in the context of globalization, require the development and implementation of "dramatically new ideas and principles for further sustainable and advanced development of the country" [1].

The Action Strategy will be implemented in five stages, each of which provides for the approval of a separate annual State program for its implementation in accordance with the announced name of the year. Development of the social sphere, aimed at consistently increasing employment and implementing targeted programs for the development of education, culture, science, literature, art and sports, and improving the state youth policy. [2,49]

Mathematics is defined in our country as one of the priorities for the development of science in 2020, and a number of systemic measures are being taken to conclude the development of mathematical science and education. "The concept of development of the system of public education of the Republic of Uzbekistan until 2030" was adopted on the basis of the Decree of the President of the Republic of Uzbekistan PD-No.5712 "On approval of the concept of development of the system of public education of the Republic of Uzbekistan until 2030", Resolution PR-

No.4708 dated May 7, 2020 “On measures to improve the quality of education and the development of scientific research in the field of mathematics”. In particular, the "Concept for the development of mathematical education" contained in this program is designed to ensure the implementation of the tasks set for the comprehensive improvement of the above-mentioned mathematical education and bringing it to a new qualitative level [3].

The modern goals and objectives of teaching mathematics include:

- to form and develop a system of mathematical knowledge and skills necessary for pupils to apply in everyday activities, to study sciences and to continue their education;
- to form a person who is able to work successfully in a rapidly developing society, who is able to think clearly, critically and logically;
- to have careful attitude to national, spiritual and cultural heritage, rational use and preservation of natural and material resources, education of mathematical culture as an integral part of universal culture.

Currently, the so-called general approach to learning problem solving is becoming a priority, the purpose of which is to organize the process of learning problem solving in such a way that the child can solve any problem, including non-mathematical content.

The works of V.V. Davydov, L.M. Fridman, L.P. Stoilova, N.B. Istomina made a significant contribution to the improvement and dissemination of this methodological direction in teaching problem solving. Thus, L.M. Fridman [6] notes that in order to teach students to solve problems independently, it is necessary to develop a common approach to solving any problems and thereby form in children the ability to intelligently search for a way to solve problems of an unfamiliar kind. Thus, the purpose of this approach is to form in children the components of the general method of solving problems as a meta-objective universal educational action.

This approach became especially relevant with the advent of the second-generation FGOS, where the general method of solving problems began to be considered as a meta-objective action formed by means of various academic disciplines.

With the introduction of the above-mentioned educational standard, the most important task of the modern education system is the formation of universal educational actions that provide students with the ability to learn, develop the ability to self-development and self-improvement and self-realization [5].

As emphasized in the materials of the educational standard of the second generation, one of the main universal educational actions is the general method of problem solving, which ensures the formation of the ability to solve any problems or tasks.

At the same time, it should be understood that the concept of "task" has several synonyms: task, goal, problem and it is widely used in many sections of science and practice (pedagogical task, cognitive task, technical task). Despite such a variation in the use of the term "task", the process of solving it in any field has a commonality and a common structure :

- entering into a situation that requires a thorough analysis of the situation;
- modeling of the situation, accompanied by an analysis of the relations used in the task;
- task solution planning;
- implementation of the plan;
- checking the result for compliance with the set goal;
- evaluation of the decision process.

When teaching various subjects, tasks that are commonly called educational are used. The

solution of educational tasks acts as a means of learning. With their help, meta-subject and subject knowledge, skills, and qualifications are formed. The ability to set and solve learning tasks is one of the main indicators of the level of development of students, opens up ways for them to master new knowledge.

At the same time, there are academic subjects – mathematics, physics, chemistry, where so-called text tasks are solved. The solution of text tasks in these subjects is considered as a subject of special study. Thus, the solution of tasks can be considered in a narrow and broad sense.

If we approach learning to solve textual mathematical tasks as learning to solve any problem in its broad meaning, then the ability formed in this case can be used by students in solving various tasks (educational, practical, textual mathematical) and in any kind of mental and practical activity.

The actions formed, which allow solving any (including text) tasks, are called components of the general method of solving tasks, and the way to form this ability in the process of solving text tasks has been called a general approach to learning how to solve tasks.

The general method of solving tasks in the primary classes should be the subject of special training with consistent development of each of its constituent components. It is based on the formation of logical operations - the ability to analyze an object, make a comparison, highlight commonalities and differences, classify, make series, establish analogies. Mastering this technique will allow students to analyze independently and solve various types of tasks within the subject and transfer this skill to solve problems in any field of activity.

Thus, due to its systemic nature, this universal educational action can be considered as a model for the system of cognitive actions [8].

Thus, the general method of problem solving, formed in the process of solving textual mathematical tasks, should be used in solving educational tasks in mathematics lessons and in its general structure it should be transferred to any academic subject. In relation to the subjects of the natural cycle, the content of the reception does not require significant changes – the differences will relate to the specific, subject language of the description of the elements of the task, their structure and ways of sign-symbolic representation of the relations between them. The influence of the specifics of the educational subject on the development of the universal educational action under consideration is also manifested in the differences in the semantic work on the text of the task. For example, when solving mathematical tasks, it is necessary to abstract from the specific situation described in the text and highlight the structure of relations that link the elements of the text. When solving tasks of subjects of the humanitarian cycle, a specific situation is usually analyzed not for the purpose of abstracting from its features, but, on the contrary, in order to highlight the specific features of these situations for subsequent generalization of the received subject information [5].

So, the modern standard orients educational systems, teachers and practitioners to form a general method of teaching problem solving. As we have already emphasized above, learning the general method of solving tasks involves focusing efforts not on the process of getting the answer to the task, but on the solution process, i.e. the formation of components of the general method of solving tasks that provide a solution to any problem. Each of these components and the skills they consist of should be the subject of special training.

The general method of solving tasks, formed in mathematics, assumes knowledge of the stages of solving, methods and ways of solving, the grounds for choosing arithmetic actions with

which the solution will be carried out, as well as possession of subject knowledge: rules, formulas, logical techniques and operations.

The content and methodology of the formation of components of the general method of solving tasks

The first stage of work on the task and the first component of the general method of solving problems is the perception and comprehension of the text of the task.

It is carried out through reading and analyzing the text, repeating and modeling the text of the task.

In mathematics, there are three types of analysis of the problem text: semantic, logical and mathematical [7].

The purpose of these types of analysis is to ensure the assimilation of the content of the task text.

Semantic analysis assumes:

identification and comprehension of: individual words, terms, concepts, both everyday and mathematical in nature;

awareness of grammatical constructions ("if ..., then ...", "after", etc.);

fixing the quantitative characteristics of the object;

representation of the subject situation described in the task by reformulation or simplified retelling of the text with the allocation of only essential information for solving the problem;

highlighting the general meaning of the task, indicating the object and the amount to be found (cost, volume, area, quantity, etc.).

Logical analysis presupposes – the ability to replace terms that characterize concepts (processes, phenomena) with their definitions; the ability to deduce consequences from the data available in the task condition, unknowns and relations between them.

Mathematical analysis includes the analysis of the condition and the requirements of the task. The analysis of the condition is aimed at highlighting:

objects (things, processes);

consideration of objects from the point of view of the whole and parts, or the relationship between the quantities;

consideration of the number of objects and their parts or quantities characterizing each object;

analysis of the characteristics of quantities: homogeneous, heterogeneous, numerical values – known and unknown;

data changes: changed (specifying the logical order of all changes) or not changed;

identification of relations between known values of quantities.

Requirement analysis: identification of unknown quantitative characteristics of the quantities of the object(s) [7].

When implementing this stage, the very first moment is important – the initial reading of the task text. This point is underestimated in school practice. Often, the child does not have time to read the text, and not only to comprehend it, as the teacher already calls the student to the blackboard to destroy this task. It should be noted that a hasty transition immediately after receiving information to the transformation without prior analysis impairs the process of

cognition. At the same time, a careful preliminary reading of the text, the student's presentation of the situation described in the problem, allows us to draw many useful conclusions and assumptions about approaches to solving it.

### **REFERENCES**

1. Мирзиёев Ш.М. О стратегии развития нового Узбекистана на 2022 — 2026 годы. Указ Президента Республики Узбекистан, от 28.01.2022 г. № УП-60
2. Мирзиёев Ш.М. **Стратегия действий** по пяти приоритетным направлениям развития Республики Узбекистан в 2017-2021 годах. к Указу Президента Республики Узбекистан от 7 февраля 2017 года № УП-4947
3. Мирзиёев Ш.М. О мерах по повышению качества образования по математике и развитию научных исследований. Постановление Президента Республики Узбекистан №ПК-4708 от 7 мая 2020 года
4. Джумаев М.И. Реализация профессиональной компетентности педагогов как средство методико-математической подготовки в колледжах. Профессиональное образование Арктических регионов № 4/2022.7-9 ст.
5. Djumaev M. Mathematical regularity and development of creative thinking of students. Deutsche internationale Zeitschrift für zeitgenössische Wissenschaft / German International Journal of Modern Science. German International Journal of Modern Science. Edition: № 28/2022 (February) – 28th Passed in press in February 2022 №28 2022. 26-28 .
6. Джумаев М.И. Реализация профессиональной компетентности педагогов как средство методико-математической подготовки в колледжах. Профессиональное образование Арктических регионов № 4/2022.7-9 ст. [www.arctic-prof.ru](http://www.arctic-prof.ru)
7. Djumaev M. Formation of a general approach to solving problems for primary education according to the requirements in the national curriculum of uzbekistan. interdisciplinary research journal (GIIRJ) ISSN (E): Vol. 10, Issue 6, June 2022.) 771-781.
8. Djumayev M.I. Boshlang'ich ta'limda milliy o'quv dasturini amaliyotga joriy etishning didaktik asoslari xususida. Academic Research in Educational Sciences Volume 3 .| Issue 6 . 2022. 558-570 .
9. Крутецкий, В. А. Основы педагогической психологии. – М., 2000. – 412 с.
10. Крутецкий, В. А. Психология : учебник для учащихся педагогических училищ.– М. : Просвещение, 2003. – 442 с.
11. Петерсон, Л. Г. Математика. 1–4 класс. – М. : Издательство «Ювента», 2005. – ил. (программа: «Школа 2000»).
12. Теплов, Б. М. Способности и одаренность. II Хрестоматия по возрастной и педагогической психологии. - М. : Педагогика, 1981.
13. Фридман, Л. М. Как научиться решать задачи. - М. : Просвещение, 1984. - 175 с.
14. Шадриков, В. Д. Диагностика способностей и личностных черт учащихся в учебной деятельности. - Саратов, 2007. – С. 114.
15. Шкуратова, И. П. Когнитивный стиль и общение. – Ростов – на – Дону, 2014. – С. 147.
16. Эфроимсон, В. П. Загадка гениальности. - М. : Знание, 2011. – С. 124.
17. Юдин, Э. Г. Системный подход и принцип деятельности: методологические проблемы современной науки. - М., 2013. – С. 136.

18. Якиманская, И. С. Личностно – ориентированное обучение в современной школе. - М., 2014. – С. 158.