

## FUNDAMENTAL CONTENT AND LOGICAL ADVANTAGES OF NEW GENERATION TEXTBOOKS BASED ON THE 4 K MODEL.

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Cultural and educational development of humanity and nations  
how important it is the defining criterion is the books they produce.  
Dale Carnegie

**Annotatsiya.** Mazkur maqolada umumta'im maktablarining 1-4-sinf o'quvchilari uchun 2023-2024-o'quv yilida amalda foydalanilayotgan 4K modeliga asoslangan Yangi avlod darsliklari va xususan, matematika darsligining yaratilish maqsadlari, tuzilishi va mazmuni haqida keng ma'lumotlar berilgan. Shuningdek, yangi darslik bo'yicha pedagogika oliygohi talabalari va maktab o'qituvchilarining umumiy fikrlari hamda darslikka bo'lgan munosabatlari bildirilgan so'rovnomaga natijalari e'lon qilingan.

**Аннотация.** В данной статье освещается широкое понимание целей, структуры и содержания создания нового поколения учебников по математике для учащихся 1-4 классов общеобразовательных школ на основе модели 4К, применяемой на практике в 2023-2024 учебном году. Также были опубликованы результаты опроса студентов педагогических вузов и учителей школ по новому учебнику, в котором выражено их общее мнение и отношение к учебнику.

**Annotation.** This article highlights a broad understanding of the goals, structure and content of creating a new generation of mathematics textbooks for students in grades 1-4 of secondary schools based on the 4K model used in practice in the 2023-2024 academic year. The results of a survey of students of pedagogical universities and school teachers on the new textbook were also published, which expressed their general opinion and attitude to the textbook.

According to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 726 dated December 28, 2022, today's increase in the requirements for the quality of textbooks and teaching-methodological complexes, the application of the latest achievements of the printing industry in the process of their creation, the life of students and manufacturing health-safe and easy-to-use printed products, the need arises to revise the regulatory documents in the field of technical regulation of this activity.

The Law of the Republic of Uzbekistan "On Technical Regulations" and the Decree of the President of the Republic of Uzbekistan "On Measures for the Development of Education and Science in the Era of New Development of Uzbekistan" in accordance with Decree No. PF- The Order No. 6108 of November 6, 2020 establishes requirements for the safety of printed products used in preschool, general secondary and secondary special and vocational education in order to protect the life and health of users, to protect the environment and to improve the quality of printing of the published Textbooks and sets of teaching methods based on advanced foreign experience and, in accordance with paragraph 1 of this Decree, to develop a national education system capable of withstanding today's fierce competition at the global level. Introduction, improvement of textbooks and training manuals based on the requirements of the



time, creation of a new generation, optimization of training programs and standards are the main means of further development of the fields of education and science in the new period of development of Uzbekistan is referred to as one of the directions [1]. According to this clause and the methodology of an innovative approach based on the 4K model (which is aimed at the comprehensive development of children and includes the following key competencies: collaboration, communication, creative thinking and critical thinking, critical thinking, creative approach in students, forms teamwork and communication skills), new modern textbooks were created for grades 1-4 in the 2023-2024 school year.

Quality education in schools largely depends on the textbooks that are produced. That is, it should correspond to educational standards, interest the student and inspire his love for science. The fundamental renewal of primary school textbooks pleased not only students and teachers, but also parents. But there are also critical opinions about it. How do the textbooks presented in the 2023/2024 academic year differ from the previous ones? To get an answer to this question, we will get acquainted with the opinion of industry experts.

The opinion of experts about these textbooks is described as follows.

— According to Resolution 726 of the Cabinet of Ministers of the Republic of Uzbekistan, printed products of educational institutions are produced on the basis of technical regulations. New primary school textbooks are produced in a higher quality than the maximum level of this technical regulation. This in turn leads to a long service life for the textbook. They fully comply with European polygraphy standards in terms of quality and durability. The regulation on the weight, size and fonts of the textbook was approved and created based on these requirements, says Vahid Hamidov, director of the Republican Scientific and Methodological Center for the Development of Education. This is also taken into account. They make extensive use of images and illustrations to promote creativity and thinking skills. Scientific studies show that a child receives information faster through pictures than through text. Therefore, when creating new textbooks, special attention is paid not only to texts but also to images. There are six graphic characters in the new textbooks. They also mentioned that they talk to absentee students during class.

The new textbooks are about increasing vitality and teamwork and how mathematics is not just about examples and problems, but about making good decisions. To do this, the student must think logically and critically. The book contains games that teach students to work in teams. The ability to express one's opinion within a team increases a child's leadership skills. There were no topics about money in the previous textbooks. Such a topic is also included in the 3rd grade mathematics textbook. The fact that the issues contained therein are presented using practical examples increases the reader's interest.

- They pay attention not only to the numerical value of the money, but also to where it is made and what is depicted on it," says Norgul Ikromova, a top primary school teacher [2].

- Recently there have been critical comments about school books on social networks. Some parents write about the complexity of mathematics textbooks for primary school students and the problems they contain are difficult for parents. What do industry experts say about this? Here are some examples of common factors that some teachers and parents may object to:

- Teachers and parents often settle into a particular style of teaching and learning that they are comfortable with. When changes are introduced, they must step out of their comfort zone and adapt to new approaches. Some people cannot tolerate change and prefer the process to stay as it is, so they may resist new changes.



• News in the field of education seems frightening to some, especially changes and radical innovations in textbooks. Teachers and parents wonder whether the effectiveness of new textbooks and teaching methods will adequately prepare students for future challenges. It is expected that they will be concerned about this. They fear that methods that have not yet been tried in our country could cause many learning problems for students;

• The introduction of new textbooks and teaching methods often requires teacher training and extensive research. If teachers don't do this process well, they can get into bigger problems. They may also struggle with the difficulty of activating the skills to use new techniques effectively without appropriate guidance.

• When textbooks are redesigned, it can sometimes happen that the content of the curriculum differs fundamentally from the curriculum previously taught. Teachers and parents may also raise objections if they believe that the new material is poorly structured or does not provide enough theoretical knowledge. You can also discuss the quality, reliability, and technical errors of new textbooks;

• Teachers and parents often have little time and get used to the routines and habits they have established. In particular, there are additional demands on teachers to introduce new teaching methods and use newly developed textbooks, adapt lesson plans, collect new materials and develop new teaching strategies. This requires additional knowledge, work, effort, time and diligence from the teacher. This can lead to resistance that is perceived as an additional burden;

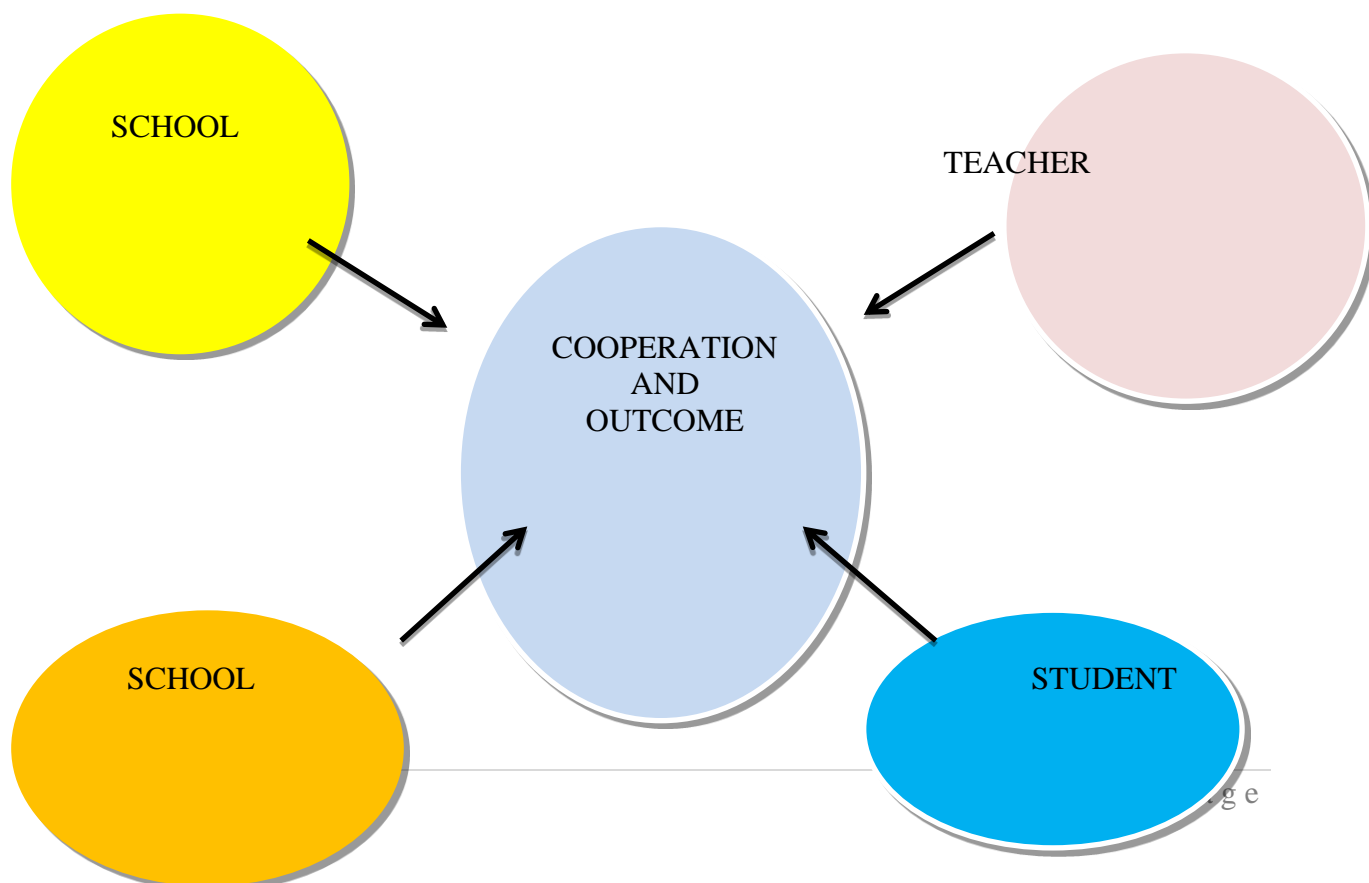
• The school system and old textbooks often relied on the same theoretical knowledge that was repeated. It is no exaggeration to say that everyone likes this type of teaching methods and textbooks. Over the years, teachers have developed personal and emotional attachments to particular textbooks or teaching methods. For this reason, the new textbook is perceived as a departure from tradition;

• Although the information in the new textbook is not so extensive, the number and variety of tasks set in it are not repeated, and the value of the exercises and problems is much higher than in the old textbook, i.e. a much higher level of knowledge, There are also many factors that promote new perspectives, such as the fact that it requires deep thought and reflection, that failure to find a solution requires a lot of time, that additional life- Related topics are indicated for each topic, and solving the given task requires precision may lead to objections;

• Each lesson requires the teacher to use a new method. The teacher proposes and requires that, while avoiding uniformity, he appear at each lesson particularly prepared, conduct this lesson on the basis of modern interactive methods and be equipped with the necessary visual aids. Because the textbook itself contains ready-made tasks for such methods. It's impossible not to use it. Some of the methods listed below are included.



It should be said that not all teachers and parents objected to the changes in textbooks and teaching methods. It's really gratifying. Many recognize the need to adapt education to the changing needs of learners in an innovative and rapidly changing world. Every teacher and parent, whose primary goal is to ensure high-quality education of students, is aware of the need for changes and new textbooks at the level of the times and should rationally approach the problems they face. When they find a solution, they will realize that their worries about new textbooks are unfounded. Of course, in such a situation it is very important that school management, teachers and parents work together and make unanimous decisions. Based on the following structure.





## ADMINISTRATION

## PARENTS

Today we present information about the content of mathematics textbooks used in the school education system of several countries of the world. Primary school mathematics textbooks vary from country to country and each country has its own approach and preferences. Primary school mathematics textbooks in the UK, USA, Russia, Singapore, Finland and South Korea have several advantages over other countries. For this reason, below we look at the peculiarities of primary school mathematics textbooks in these countries.

### Great Britain:

Emphasizes problem solving. Elementary English math textbooks often focus on developing problem-solving skills and encourage students to think critically and apply mathematical concepts to real-world situations.

Balanced curriculum. Textbooks in England aim to balance procedural fluency and conceptual understanding, providing students with numeracy skills and a deep understanding of mathematical concepts.

### United States of America:

Practical Guides. American elementary mathematics textbooks often contain practical applications of mathematical concepts to motivate students and demonstrate the relevance of mathematics to real life.

Focuses on multiple approaches. Textbooks in the United States encourage students to solve problems using a variety of strategies and encourage flexibility and creativity in problem solving.

### Russia:

Fixed content. Russian elementary school mathematics textbooks are known for their rigorous content and challenging problems that encourage students to think analytically and develop strong mathematical thinking skills.

It emphasizes logical thinking. These textbooks often emphasize logical reasoning and deductive reasoning, which help students develop a systematic approach to problem solving.

### Singapore:

A concrete-abstract approach. Singapore's primary mathematics textbooks adopt a concrete-to-abstract approach, using visual aids and manipulatives to help students understand mathematical concepts before moving on to more abstract thinking.

Focus on problem-solving heuristics. Singaporean textbooks teach problem-solving heuristics such as model drawing and the beam method, giving students systematic approaches to solving complex problems.

### Finland:

Student-centered learning. Finnish elementary mathematics textbooks often promote student-centered learning and encourage students to learn mathematical concepts independently and collaborate with their peers.

Integration of real contexts. These textbooks often incorporate real-world contexts and interdisciplinary connections, making mathematics more relevant and meaningful to students.

### South Korea:

Mastery-Based Learning. Korean elementary mathematics textbooks emphasize mastery learning, with extensive practice and an emphasis on strengthening mathematical skills and concepts.



Systematic development. Korean textbooks have a well-structured sequence of topics, allowing for a smooth transition from one concept to the next and providing a solid foundation for the key phases of mathematics. [3,4,5,6,7,8,9]

It should be noted that these data are based on general observations. These countries were chosen because their educational achievements are very visible on a global scale. In addition, several advantages can be expected in the textbooks of many countries, on the basis of which a new textbook for primary grades containing the most optimal options was introduced into the education system of our country, and teaching based on 4K model was introduced. So, it can be said that the “Yangi Avlod” textbooks for primary school classes developed in the 2023-2024 school year were created on the basis of the methods tested in several countries and have proven to be the most effective today. It also provides students with real-world lessons simultaneously with science and develops students' ability to approach the problem creatively in any situation, solve problems through critical thinking, collaborate, and make the right decisions.

- Based on the old textbook, in the first lessons of grade 1 mathematics lessons, students were taught to draw a line, zero, one or shapes. This forced the more playful children to write according to the kindergarten concept and still get used to the new school environment. The reason for this is that not all children have the ability to quickly adapt to different conditions and have not yet gotten used to the current class, the new teacher, unfamiliar classmates and a row of desks and are very excited. In such a situation, the student may write ugly and wrong things in the notebook in a hurry and in an awkward situation. This makes him feel like he is lagging behind his peers and his confidence dwindles. There are many such shortcomings and examples. Therefore, in elementary school it is not the student's ability to write that matters, but on the basis of common acquaintances, oral speech, speech culture and the ability to behave freely, based on what he learned before (in kindergarten). learned to think, be able to understand and understand the questions asked, be able to find the correct answer to the question and say it clearly, be able to get out of various situations, to think logically, to reason based on size, volume and other properties of objects realistically, including all mathematical processes, such as: B. the ability to distinguish Ra and get to know the heroes of fairy tales that they have often seen, heard and liked, and to analyze their role and the task they perform. Each character is presented in the form of pictures, graphs, tables, games and many other attention-grabbing tasks that reflect situations one may encounter in life, thereby increasing students' interest in science. There was a need to create a textbook and of course this work was done. In the 2023-2024 school year, new generation primary school textbooks were presented to students.

- The new textbook was created using the most modern technologies, based on the experience of the educational system of developed countries, which is considered a relevant topic today, and includes the following:

- young physiology students;
- Interests;
- Skills;
- Imaginations;
- various interesting games;
- skills and qualifications;
- listening, understanding, speaking, writing;



see, draw, paint;  
Creativity;  
critical thinking;  
Solve problems;  
work collaboratively;  
ponder;  
communicate freely;  
increasing self-confidence;  
Listen and respect other people's opinions.  
compare and analyze;  
make the right decisions;  
understanding about money and income;  
integration of disciplines;  
Association;  
reality, vitality;

Many knowledge and practices, such as practical applicability, are aimed at applying the student's knowledge in real life. [10,11,12,13,14,15,16]

The new edition of the mathematics textbook for primary school serves the following purposes:

1. Updated curriculum. Educational standards and curricula often evolve over time to reflect new research, pedagogical approaches, and societal needs. The reinterpretation of the mathematics textbook ensures that it is aligned with the latest curriculum guidelines and that the content is relevant for teachers, students and the education system.

2. Improved pedagogy. New textbooks include innovative teaching methods, teaching strategies, or learning resources that improve student engagement, understanding, and retention, and teach teachers to present mathematical concepts, clear explanations, and effective learning activities. Offers new perspectives for application.

3. Focus on diversity and inclusion. The new interpretation aims to address diversity and inclusion by introducing culturally sensitive and inclusive content. It includes examples and scenarios that reflect the experiences of diverse students, promoting inclusion and equity in mathematics education.

4. Accuracy and comfort. The new textbook presents mathematical concepts in a clear, concise, and easy-to-understand manner, incorporating visual aids, diagrams, or interactive elements to facilitate understanding, especially for students who learn best through visual or hands-on approaches.

5. Support and professional development for teachers. The new textbook includes additional supporting tools such as comprehensive teacher guides, lesson plans, and professional development resources. It provides insights into effective teaching strategies, common concepts, and assessment methods that enable teachers to provide high-quality instruction.

6. Technology integration. With the increasing use of technology in education, a new textbook can integrate digital tools, online resources, or interactive platforms to enhance the learning experience. May use educational programs, simulations, or adaptive learning systems to internalize learning and provide immediate feedback to students.



7. Beautiful design. Feedback from teachers and experts was incorporated into the new textbook, and necessary improvements were made to the content and design of the textbook. This means that colorful images, graphics, tables and diagrams quickly attract the reader's attention. This will help understand math faster and easier.

8. Strengthening friendly relationships. Because the students work together as a team to complete the tasks set out in the new textbook, they have the advantage of finding correct and simple solutions to problems together and strengthening mutual friendships.

9. Approach the topic. The approach to each topic in the new textbook, based on the constructions and life situations of our country, will be a great incentive for students to master the practical tasks, problems and examples of the main topic. It is also possible to study a particular subject in conjunction with other subjects at the same time. There is an integration of the disciplines.

10. Prepare visual aids. The availability of semi-finished forms and visual aids that can be cut out and prepared in the final pages of the textbook will further increase students' interest in science.

11. Workbook availability. In addition to the textbook, it also makes developing a suitable workbook for students easier and more convenient for students. It will be interesting for students to solve tasks using a workbook.

12. Contents. The textbook is divided into quarters, the mathematics textbook has four parts for one academic year and the teaching of this textbook is step by step. This process serves to keep the book clean and tidy and relieves young and adolescent students from the burden of carrying large amounts of books throughout the year. After reading one part, students read the next part with enthusiasm and great interest. There are also many amenities for students.

For various reasons, several dozen of the world's most successful schools in the field of education have emerged through the use of advanced modern pedagogical technologies, textbooks that require new, from simple to complex, some thoughtful considerations to improve the quality of education. Careful study of technologies, experiences and textbooks used in advanced countries, by relevant experts and in accordance with the state educational standard and national curriculum, the student's ability to learn about safety and psychological conditions, in addition, not little work, time, involving material provision and specialists, a new primary school textbook was created, which was developed based on the 4K model that is in demand today. For this reason, teachers, students, parents and the public are asked to consider this first. In addition, the fact that textbooks are provided to students free of charge at the expense of the state budget significantly reduces the burden on parents. Nevertheless, the objections and protests expressed by some teachers and parents against the new textbooks not only lead to the consequences of misleading society, even the minds of students, and in a sense also weaken the responsibility of students to learn science to go. And this may be a sufficient reason for not fully realizing the main idea and purpose of introducing new textbooks. Because the younger generation does not look at the book in their hands, but constantly listens to negative thoughts, such as: it is bad, it is incomprehensible, it is difficult, it is not necessary, why did they change it, the old book was good? is influenced by the sound and the reader thinks: If this book is not for me, if even my parents cannot do the tasks in this book, then how can I do it, read it? He is surrounded by such questions and of course makes himself a selfish person who thinks that even if I learn the lesson poorly and get a bad grade, someone should





do the assignment for me. We know that this situation can have enormous negative consequences.

Parents and some teachers need to understand one thing well. Of course, every space, every society, every country and many other human achievements did not arise by themselves, introducing innovations, making changes, overcoming difficulties, going out of the ordinary, great work and it was created at the expense of the time spent. Of course, as they say, where there is work there are flaws, and Yandi textbooks are not without flaws. For example, technical errors may occur in images, tables, graphics or fonts. “These defects are the fault of the technical staff, not the authors.” As you know, graphic and design work is a complex process. For this reason, the textbook contains some errors that are not too serious. “Errors will definitely be checked again and corrections will be made to take this into account in the next reissue,” commented First Deputy Minister of Preschool and School Education Usman Sharifkhojayev[17], who gave an interview in the kun.uz studio . For these errors in the textbook, it is not necessary to prove the opinion that, in the words of psychologists, “a single dot is visible to the human eye on a clean white paper of A4 size.” Because the new textbooks, which were created after so much research, work, effort and collaboration, are considered a great success for us. It is an unforgivable mistake to completely abandon the textbook with the excuse of errors that look like dots on the paper.

Overall, the aim of publishing a new elementary mathematics textbook is to provide an updated, effective and inclusive resource to support both teachers and students in the teaching and learning process of mathematics. If you are doing everything for the first time, you will definitely have difficulties. By doing this work repeatedly, the student develops skills and competencies. It has been 5 months since the new generation textbooks were used. Currently, teachers and students understand and are used to the content of the textbook. We hope that by the end of the academic year students will have fully mastered the textbook. Because intelligent and hard-working children are considered the scholars of their time. It should also be recognized that in the 21st century, in the advanced age of technology and technology, children have better abilities than adults in this regard. In order to find out to what extent the results expected from the presentation of new generation textbooks are effective and to learn how they are evaluated by teachers and young practitioners, it was conducted offline and nationwide among students of the Faculty of Primary Education of Jizzakh State Pedagogical University. We conducted the following online survey among the teachers of lim schools in order to determine their attitude towards the new textbook. You can familiarize yourself with the survey questions and results.

T/r	Survey questions	J1	J2	T <sub>+</sub>	T <sub>-</sub>	O' <sub>+</sub>	O' <sub>-</sub>
1	Did you like the new generation textbooks?	Yes	No	268	32	75	25

2	To what extent do math textbooks meet your requirements (disregard technical errors)?	Good	Medium	270	30	78	22
3	Are readers interested in the book?	Yes	No	275	25	80	20
4	To what extent are the students using the book materials?	Good	Medium	250	50	70	30
5	How do you evaluate the effect of your lesson using the book?	Good	Medium	273	27	72	28
6	Parents' attitude to the book?	Good	Medium	262	38	68	32
7	Have you ever had to review some material in a book before explaining it to your readers?	Yes	No	261	39	82	18
8	Do you think the book is innovative and based on the 4K model?	Yes	No	290	10	92	8
9	Does the book help you solve problems you face in real-life situations?	Yes	No	295	5	90	10
10	Do you think that this book is better if the teacher explains the new textbook material to the students in an easy way and they fully absorb it?	Yes	No	298	2	95	5
11	Answers as percentages of total %	-	-	91.4	8.6	79.7	20.3

The symbols included in the table are explained as follows:

J1 is the first answer option;

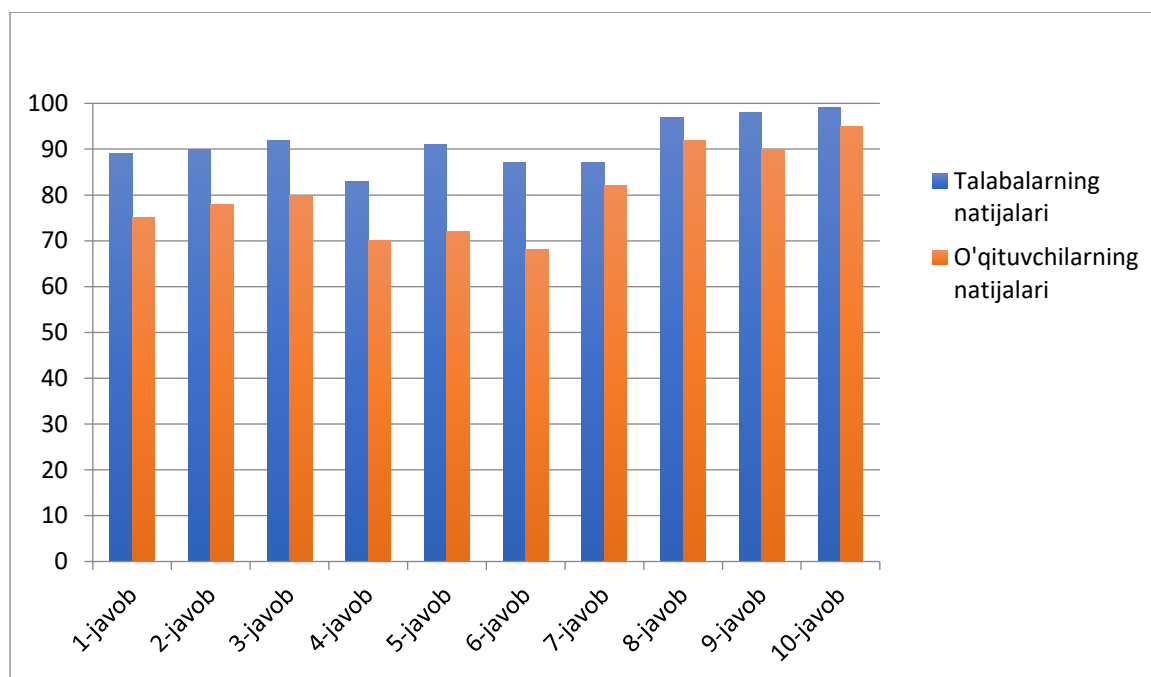
J2 – the second answer voucher;

T+ - the number of students who answered positively;

T\_ is the number of students who answered negatively;

O'+ - the number of teachers who answered positively;

O'\_ is the number of teachers who answered negatively.



91.4% of the 300 students who took part in the survey and practice the 4+2 program in primary school recorded a positive result. 79.7% of the 100 teachers working at a comprehensive school recorded positive results. It turns out that school teachers rate the new textbook positively, but have difficulties using it. That is why we offer the organization of short-term training, seminars-training and refresher courses by experts and textbook authors for teachers-educators who, as mathematics specialists, have difficulties teaching with new textbooks. In order to provide another convenient way to find a solution to such problems, we organized a working group with the participation of students of the Faculty of Primary Education of JDPU and studied the solutions of all tasks, problems and examples presented in the new mathematics textbooks of the Classes 1-4 and wrote them in the notebook. We wrote down. The textbook is very interesting, full of different ideas and has enough content to attract the student. In the future, we plan to introduce the answers to the tasks we developed as a methodological guide for teachers and parents.

## REFERENCES:

1. <https://lex.uz/uz/docs/-6330358>. O'zbekiston Respublikasi Vazirlar Mahkamasining qarori, 28.12.2022 yildagi 726-son. Ta'lim muassasalari uchun matbaa mahsulotlari xavfsizligi talablarini belgilashning umumiy texnik reglamentini tasdiqlash to'g'risida.
2. <https://daryo.uz/2023/10/14/yangi-avlod-darsliklari-boshlangich-sinf-darsliklarining-afzalliklari-va-jamoatchilik-etirozlari-haqida-video?ysclid=ls37acjyhg899381826>
3. <https://medium.com/@SwunMath/math-education-in-the-united-states-how-does-it-compare-94103eaf74>
4. <https://www.gov.uk/government/publications/teaching-mathematics-in-primary-schools>



5. <https://practicle.sg/school/primary-school-math-syllabus-singapore/>
6. <https://www.futureschool.com/south-korea-curriculum/mathematics-elementary-grade-1/>
7. <https://timssandpirls.bc.edu/timss2015/encyclopedia/countries/finland/the-mathematics-curriculum-in-primary-and-lower-secondary-grades/>
8. <https://nsportal.ru/nachalnaya-shkola/matematika/2023/11/27/programma-noo-matematika-1-4-klassy-2023-2024-god>
9. Leena Ha'nninen, Kirsi Malinen, Pekka Rainta, Rasse Vallo. MILLI 3A. Sanoma Pro Oy. Helsinki-2019.
10. U.B.Aydarova 2-sinf O'qish savodxonligil darsligi, Novda nashriyoti, Toshkent – 2023 1-qism.
11. M.E.Toirova 3-sinf O'qish savodxonligil darsligi, Novda nashriyoti, Toshkent – 2023 1-qism.
12. M.E.Toirova 4-sinf O'qish savodxonligil darsligi, Novda nashriyoti, Toshkent – 2023 1-qism.
13. Matematika. Umumiy o'rta ta'lim maktablarining 1-sinfi uchun darslik 1 va 2-qismlar. I.V.Repyova, Y. V. Zemina. – Toshkent: "Novda Edutainment", 2023.
14. Matematika. Umumiy o'rta ta'lim maktablarining 2-sinfi uchun darslik 1 va 2-qismlar. I.V.Repyova, Y. V. Zemina. – Toshkent: "Novda Edutainment", 2023.
15. Matematika. Umumiy o'rta ta'lim maktablarining 3-sinfi uchun darslik 1 va 2-qismlar. I.V.Repyova, Y. V. Zemina. – Toshkent: "Novda Edutainment", 2023.
16. Matematika. Umumiy o'rta ta'lim maktablarining 4-sinfi uchun darslik 1 va 2-qismlar. I.V.Repyova, Y. V. Zemina. – Toshkent: "Novda Edutainment", 2023.
17. <https://youtu.be/ZoGtnHbhQWg>. Yangi avlod darsliklari: jamoatchilikni qiziqtirayotgan savollar, xatolar va yaxshi natijalarga umid mavzusidagi intervyu.