IMPLEMENTATION OF INTEGRATED EDUCATION IN ELEMENTARY SCHOOL MATHEMATICS LESSONS IN THE PROCESS OF MODERN EDUCATION METHODOLOGICAL BASIS AND LAWS OF THE USE OF THE 4K MODEL

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Annotation: This article discusses the innovations and changes taking place in today's educational process, the methodology of conducting elementary mathematics lessons, the effectiveness of methodologies in lessons, the convenience and achievements of implementing integrated education in elementary mathematics lessons, and the methodological foundations and laws of using the 4K model of the above lesson processes.

Key words: Primary education, mathematics lessons, integrated learning, 4C model, modern educational technologies, critical thinking, creativity, communication, collaboration, pedagogical methodology.

Аннотация: В данной статье рассматриваются инновации и изменения, происходящие в современном образовательном процессе, методология проведения уроков элементарной математики, эффективность методологий в обучении, целесообразность и достижения внедрения интегрированного образования на уроках элементарной математики, а также методологические основы и закономерности использования модели 4К в вышеуказанных процессах обучения.

Ключевые слова: Начальное образование, уроки математики, интегрированное обучение, модель 4К, современные образовательные

технологии, критическое мышление, креативность, коммуникация, сотрудничество, педагогическая методика.

Annotatsiya: Ushbu maqolada bugungi ta’lim jarayonida bo‘layotgan yangilanish va o‘zgarishlar, boshlang‘ich sinf matematika darslarining olib borilish metodologiyasi, metodologiyalarning darslarda berayotgan samarasi, boshlang‘ich sinf maematika darslarida integratsiyalashgan ta’limni amalga oshirishning qulayliklari va erishiladigan yutuqlar, yuqoridagi dars jarayonlarining 4K modelidan foydalanishning metodik asoslari va qonuniyatlari haqida so‘z yuritiladi.

Kalit so‘zlar: Boshlang‘ich ta’lim, matematika darslari, integratsiyalashgan ta’lim, 4K modeli, zamonaviy ta’lim texnologiyalari, tanqidiy fikrlash, kreativlik, kommunikativlik, hamkorlik, pedagogik metodika.

In line with the rapid and innovative times we live in, our country is paying great attention to education, and the growing demand and need for learning English, Russian, and many foreign languages is noteworthy. In addition to classroom lessons, games and other various methods and techniques are used in educational institutions to help students learn these languages. Teaching English in school, starting in elementary school, creates even greater conditions and opportunities for students to learn the language. If this language is also used in the field of Mathematics, science will develop further in Uzbekistan. A new generation will be raised who will contribute to the future of Uzbekistan with their knowledge and potential. They study the educational process of foreign countries at the level of maturity and leadership all over the world, the growing economy, medicine and many fields in world markets, and ensure that this knowledge serves to develop our homeland, improve the quality of Education, flourish its economy. Integration (lot. integration — from the words restore, replenish, integer — whole) and has several meanings:

1) a concept that expresses the state of interdependence of certain parts and functions

of a system or organism, as well as the process that leads to such a state;

2) the process of convergence and interaction of sciences; it occurs together with differentiation;

3) It means the mutual coordination and integration of the economies of 2 or more countries.

It is no secret that pedagogical technologies have been used in elementary school mathematics lessons for a long time. But from year to year, there are changes in our time, and science is becoming more progressive. The lessons are also updated and become more special. Currently, the importance of kata in our country is attached to Science, Education. There are also great opportunities to engage in scientific creativity. Only a person with desire and interest in working on themselves can do this work. Nowadays, the demand for a foreign language and mathematics is much stronger. Mastering mathematics and a foreign language depends primarily on the person himself. But if this is started from a young age, from elementary school, knowledge will never leave a person. Our ancestors did not say in vain that "Knowledge acquired in youth is like a pattern carved in stone." When elementary mathematics lessons are conducted on the basis of integration with subjects such as English, native language, Natural Sciences, Reading Literacy, Technology, a significantly higher result is achieved compared to the result of traditional lessons, and the course processes will be interesting and students will show excellent interest in the lesson.

The ability to think creatively, receive information critically and communicate with others is important not only in school and work, but also in life. They help to achieve goals and develop strategies for solving various problems and difficulties.

What is 4K?

The 4Cs - creativity, critical thinking, collaboration, and communication - are four skills that help you succeed in any field. They originated in the United States in the 1950s. It was developed by specialists who train personnel for the armed forces. They realized that in order to achieve high results, students need more than just excellent machine skills and basic job skills - hard skills. The ability to communicate with colleagues and clients is equally important. These are also known as soft skills. The terms themselves come from IT, and the concept was fully developed in the 1960s.

4K is a general collection of approaches that are combined under the words Creativity, Communication, Critical, and Collaborative. Here:

CREATIVITY- CREATIVITY

COMMUNICATIVENESS- COMMUNICATION CULTURE

CRITICAL- CRITICAL APPROACH

COLLABORATIVE- COMMUNITY, COLLABORATION

Today, soft skills are becoming increasingly important. At the World Economic Forum in Davos in 2016, the most important professional skills of the future were divided into three categories: literacy, competencies, and character traits. Among the key competencies are the 4Cs: creativity, critical thinking, collaboration, and communication. Why develop the 4Cs?

These skills are in demand in any profession

In the Atlas of Emerging Professions, systems thinking is listed as one of the most in-demand skills of the future, and it is largely associated with the 4C concept. Creativity and the ability to critically evaluate information are essential. Modern employers say that developed soft skills are more important to them than skills directly related to their core competencies.

How to teach 4K?

CREATIVITY- CREATIVITY

Unusual uses of objects. Ask your child to come up with 10, 50, or 100 ways to use a simple object like a pencil.

Fill in the shapes. Draw two sticks or circles and ask your child to fill in the shape, then explain what they drew and why.

Task. During the assignment, your child will need to strategize, make choices when information is insufficient, and answer questions that require creative thinking.

CRITICAL-CRITICAL APPROACH

This means analysis, evaluation and reasoning. Encourage your child to reflect on their feelings and behaviors, work on their mistakes, and analyze the components of success. For example, if he did well on the test, researched the topic, or prepared a presentation, ask them to consider what led to this result: which methods worked and which did not, what helped them and what interfered with them.

COMMUNICATIVENESS- COMMUNICATION CULTURE

COLLABORATIVE- COMMUNITY, COLLABORATION

Brainstorming. This method helps you make the right decisions and teaches teamwork. Use brainstorming to solve important issues related to your child's future and career guidance. For example, you might brainstorm about preparing for upcoming exams. Invite friends and classmates who are worried about this issue. Let everyone share their preparation methods and experiences. Then, discuss and select the most promising methods. Brainstorming sessions can be conducted in person or online.

Asking questions. Asking questions is a very important part of collaboration and communication. Encourage your child to ask as many questions as possible about a particular topic. This exercise can also be done with the whole family: choose a topic, each participant asks questions and asks them in turn, then everyone chooses the best question. Social projects, volunteering. Participating in social projects and helping people in difficult situations teaches children to communicate and empathize, take

into account and reconcile different interests, and work in a team. Questions. Asking questions is an important part of collaboration and communication. Encourage your child to ask as many questions as possible about a particular topic. This exercise can be done with the whole family: choose a topic, each participant asks questions and asks them in turn, then everyone chooses the best question. Social projects, volunteering. Participation in social projects and helping people in difficult situations teaches children to communicate and empathize, take into account and reconcile different interests, and also work in a team.

The subject results of the integrated lesson are as follows: The Federal State Educational Standard requires the acquisition of knowledge about numbers and quantities, arithmetic operations, geometric figures, the ability to use and select convenient algorithms to achieve the set goal of the lesson, and the use of symbolic notation. I.P. Evlampyeva, O.V. Zudova, O.N. Korepanova emphasized that in their work, students use the knowledge and skills acquired to creatively solve simple design and organizational problems.

All of these goals, objectives, conditions, and outcomes can be achieved in an integrated mathematics and technology lesson. After completing primary school, as recommended by the National Curriculum (MOD), students will have achieved the required level of knowledge in mathematics and technology, which can also be applied in an integrated lesson, namely:

- understand the importance of these subjects (mathematics and technology) in later life;
- awareness of the role of mathematics, knowledge that can be applied in various lessons to more successfully master the proposed material;
- can conduct research on objects, phenomena and facts from the perspective of their mathematical and technological essence;
- can take measurements in educational and everyday situations;

- check the result and refer to additional educational or auxiliary literature;
- formulate, draw up an algorithm for performing actions.

In conclusion, it should be noted that the development of integrated teaching is based on the conditions for creating integrated lessons and the indicators of the development of knowledge and skills acquired in such lessons. After all, it is known that primary school students perceive the world around them holistically, so the problem of implementing interdisciplinary connections is especially relevant. Moreover, the integration of these two subjects helps not only to develop logical thinking and the ability to quickly switch between educational areas, but also to develop imagination and aesthetics.

Adabiyotlar ro‘yxati:

1.Alimov A.A. Interaktiv ta’lim metodlari: nazariyasi va amaliyoti. – Toshkent: Fan va texnologiyalar, 2010. – B. 216.

2.Asadov B. Boshlang‘ich ta’limda ijodiy fikrlashni rivojlantirishning innovatsion usullari // Pedagogikada yangi texnologiyalar. 2019. № 2. – B. 45-52.

3. 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

4. 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

4. Dzhumaev M.I. Competence- based approach to teaching mathematics to primary school students according to the requirements in the national curriculum of Uzbekistan Science and innovation. International Scientific Journal Volume 3 Issue

2 February 2024 Uif-2022: 8.2 | Issn: 2181-3337 | Scientists.Uz. https://doi.org/10.5281/zenodo.10694172

5. Dzhumaev M.I. Competence- based approach to teaching mathematics to primary school students according to the requirements in the national curriculum of Uzbekistan Science and innovation. International Scientific Journal Volume 3 Issue 2 February 2024 Uif-2022: 8.2 | Issn: 2181-3337 | Scientists.Uz. https://doi.org/10.5281/zenodo.10694172

6. Djumayev M.. Milliy o‘quv dasturini amaliyotga joriy etishning asosiy tamoyillari va mohiyati haqida. № 1 –son Fizika matematika , informatika jurnali/Toshkent 1 – son .2024 / 148-165 b. http://uzpfiti.uz/uz2/fizika,matematika, informatika.htm, E-mail: fizmat_ jurnali@inbox.uz

7. M.I. Dzhumaev Competence- based approach to teaching mathematics to primary school students according to the requirements in the national curriculum of Uzbekistan Science and innovation. International Scientific Journal Volume 3 Issue 2 February 2024 Uif-2022: 8.2 | Issn: 2181-3337 | Scientists.Uz. https://doi.org/10.5281/zenodo.10694172

8.Djumayev M.I Ta’lim Sifati - Pedagogik kompetensiyalarni shakllantirish vositasida Buxoro psixologiya va xorijiy tillar instituti ilmiy axborotnomasi" ilmiy-amaliy jurnal. buxpxti.uz 1(5)2024 163-168 http://buxpxti.uz