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USING INFORMATION TECHNOLOGIES IN TEACHING MATHEMATICAL LITERACY

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Annotation: This article highlights the theoretical foundations and practical significance of using information technologies in teaching mathematical literacy. It explores the opportunities for visualizing mathematical tasks in a digital learning environment, developing analytical thinking through interactive programs, and fostering independent learning skills with the help of online resources. Furthermore, the effectiveness of modern software tools and educational platforms is substantiated through examples.

Annotatsiya: Ushbu maqolada matematik savodxonlikni o‘qitishda axborot texnologiyalaridan foydalanishning ilmiy-nazariy asoslari va amaliy ahamiyati yoritilgan. Raqamli ta’lim muhitida matematik topshiriqlarni vizuallashtirish, interaktiv dasturlar orqali tahliliy tafakkurni rivojlantirish, hamda onlayn resurslar yordamida o‘quvchilarning mustaqil bilim olish ko‘nikmalarini shakllantirish imkoniyatlari tahlil qilingan. Shuningdek, zamonaviy dasturiy vositalar va ta’lim platformalarining samaradorligi misollar orqali asoslab berilgan.

Аннотация: В данной статье рассматриваются научно-теоретические основы и практическая значимость использования информационных технологий в обучении математической грамотности. Анализируются возможности визуализации математических заданий в цифровой образовательной среде, развитие аналитического мышления через интерактивные программы, а также формирование навыков самостоятельного обучения с помощью онлайн-ресурсов. Кроме того, обоснована эффективность современных программных средств и образовательных платформ на основе примеров.

Keywords: mathematical literacy, information technology, digital education, interactive programs, independent learning.

Kalit so‘zlar: matematik savodxonlik, axborot texnologiyalari, raqamli ta’lim, interaktiv dasturlar, mustaqil ta’lim.

Ключевые слова: математическая грамотность, информационные технологии, цифровое образование, интерактивные программы, самостоятельное обучение.

In today’s globalized world, mathematical literacy is regarded as one of the key factors that determine the intellectual potential of society. In the educational process, it is essential not only for students to acquire mathematical knowledge but also to develop the ability to apply it in practical life situations. From this perspective, the effective use of information technologies

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plays a special role in improving mathematical literacy.

The digital learning environment provides opportunities to present the abstract concepts of mathematics in a clear and visual way. For example, geometric shapes, algebraic graphs, or statistical data can be easily visualized through interactive programs. This helps students to understand the topic, retain it in memory, and apply it in practical activities. In addition, mathematical modeling software enables the simplification of complex processes, comparison, and analytical skills development.

Educational platforms based on information technologies, such as Moodle, Google Classroom, Khan Academy, and other online resources, support the process of independent learning. Through them, students can complete assignments remotely, take automated tests, and monitor individual progress. In this way, teachers not only supervise students' performance but can also provide personalized recommendations.

Moreover, innovative technologies such as mobile applications, interactive boards, and virtual laboratories serve as effective tools in developing mathematical literacy. Their main advantage is engaging students actively in the learning process, strengthening communication and collaboration, and directing them toward creative thinking.

Educational platforms based on information technologies, including Moodle, Google Classroom, Edmodo, Khan Academy, and other online resources, further support students' independent learning. They enable distance completion of tasks, participation in automated testing, and tracking of personal progress. Consequently, teachers not only control student activity but also provide adaptive feedback.

In addition, international PISA (Programme for International Student Assessment) studies also emphasize the necessity of using information technologies in assessing the level of mathematical literacy. In the modern economy, digital literacy and mathematical literacy are becoming complementary concepts. Therefore, the integrated development of both competencies ensures the success of future generations in the labor market.

Mobile applications, interactive whiteboards, and virtual laboratories are also effective tools for fostering mathematical literacy. Their key advantage lies in engaging students in the lesson process, enhancing interaction and collaboration, and encouraging creative thinking. Furthermore, AI-based educational tools (such as ChatGPT, WolframAlpha) are increasingly serving as interactive assistants in solving complex problems for students.

In modern education, the use of information technologies also allows for the creation of individual learning trajectories. Each student can complete tasks adapted to his or her interests and level of knowledge. This supports the effective implementation of differentiated learning, providing further development for strong students and assistance to those facing difficulties.

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Conclusion

In conclusion, the use of information technologies in teaching mathematical literacy plays a crucial role in increasing the efficiency of the educational process. The use of interactive programs, digital learning resources, and innovative platforms develops not only mathematical knowledge in students but also the skills of problem-solving, independent thinking, and creativity. Therefore, the broad integration of information technologies into the modern education system is one of the main conditions for enhancing mathematical literacy.

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