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THE ROLE OF DIDACTIC MATERIALS IN TEACHING COMPUTER SCIENCE AND INFORMATION TECHNOLOGIES

Madrakhimov Shukhratjon Shukurovich *- assistant-teacher,*
Madrakhimova Makhfuza Akhmedovna *- assistant-teacher,*
Jurakuziyeva Makhliyo Inomjon kizi *- student*
Kokand State University, Uzbekistan

Abstract: This article is dedicated to exploring the methodology of using engaging didactic materials in teaching computer science and information technologies in general education schools. It highlights the role and advantages of didactic materials in the educational process.

Keywords: digital education, computer science, didactic materials, interactive platforms, education effectiveness.

Аннотация: Ushbu maqola umumta'lim maktablarida informatika va axborot texnologiyalari fanini o'qitishda qiziqtiruvchi didaktik materiallardan foydalanish metodikasini o'rganishga bag'ishlangan. Unda didaktik materiallarning ta'lim jarayonidagi roli va afzalliklari yoritilgan.

Kalit so'zlar: raqamli ta'lim, informatika, didaktik materiallar, interaktiv platformalar, ta'lim samaradorligi.

Аннотация: Данная статья посвящена изучению методики использования увлекательных дидактических материалов при преподавании информатики и информационных технологий в общеобразовательных школах. В ней раскрываются роль и преимущества дидактических материалов в учебном процессе.

Ключевые слова: цифровое обучение, информатика, дидактические материалы, интерактивные платформы, эффективность обучения.

In our country, special attention is paid to the education and upbringing of today's youth, and all necessary conditions are being created to ensure they become competent specialists. Education and upbringing have always been the foundation of societal progress, standing at the center of all social relationships and communications. In the modern era, organizing the educational process requires teachers to possess not only deep knowledge but also pedagogical skills, familiarity with diverse teaching methods, and a commitment to continuous self-improvement. In this context, the use of engaging didactic materials in teaching computer science and information technologies in schools is highly relevant and significant in modern education.

To effectively organize the learning process for computer science and information technologies, it is essential to use various didactic materials. These materials increase students' interest in the subject, enhance comprehension of concepts, and foster the development of practical skills.

Didactic materials are tools used to organize the educational process effectively and simplify understanding. They help enliven students' learning experiences, facilitate quicker comprehension of concepts, and boost interest in the subject.

Traditional didactic materials include textbooks, manuals, posters, charts and diagrams, crosswords, flashcards, tests, and printed materials that explain theoretical concepts.

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Electronic didactic materials comprise digital presentations (PowerPoint, Prezi, Canva), interactive infographics, video lessons, and animations.

Using didactic materials in teaching computer science and IT makes it easier to explain topics, captures students' attention, facilitates an engaging and interactive classroom environment, and provides opportunities to develop practical skills.

Effective use of didactic materials is essential for organizing computer science lessons efficiently. The following methods are considered the most effective: diagrams, block-schemes, and tables to explain concepts clearly; infographics to convey complex information in a simplified and understandable manner; and slide presentations to make lessons more engaging. The gamification method allows students to reinforce their knowledge through fun games during lessons. Interactive quizzes can be conducted through platforms like Kahoot, Quizizz, and Gimkit. Visual programming environments such as Scratch and Code.org are effective for teaching students how to write code.

By using didactic materials and interactive methods, students' understanding and retention of lessons improve, which in turn enhances lesson effectiveness and learning outcomes. Engaging didactic materials contribute to developing students' practical skills, positively influencing their future academic and professional activities. Such materials and resources also increase students' desire for independent learning and self-development.

Engaging didactic materials simplify the learning process and significantly increase students' subject knowledge. They help students understand complex topics easily and quickly, which aids in grasping subsequent topics. The effectiveness of lessons increases through interactive and engaging didactic materials, as students actively participate and show greater interest in the subject. Teachers face fewer challenges when planning and conducting lessons on time. Students reinforce their practical skills, which benefits them in real life and future professional activities. They learn programming, web design, and other technological skills.

It is crucial in computer science to reinforce theoretical knowledge with practice. Through virtual labs and simulations, students learn programming via hands-on exercises. Working on real projects helps develop students' independent thinking and problem-solving skills. There are free and paid online courses available for both teachers and students on platforms like Coursera, Udemy, Khan Academy, and Codecademy. Lessons can also be organized online using platforms such as Google Classroom and Moodle.

Advantages of using didactic materials include:

- Enhancing student interest – interactive methods prevent lessons from becoming boring.
- Simplifying information comprehension – visual aids help grasp concepts faster.
- Developing practical skills – enabling students to work on programming and technology projects.
- Increasing lesson effectiveness – gamification and interactive techniques reinforce knowledge.
- Fostering independent learning – students gain access to resources for self-study.

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