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WAYS TO IMPROVE THE METHODOLOGY OF TEACHING THE SUBJECT OF "INFORMATION AND INFORMATION TECHNOLOGIES"

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Annotatsiya: Ushbu maqolada "Informatika va axborot texnologiyalari" fanini o'qitishdagi zamonaviy metodik yondashuvlar, innovatsion pedagogik texnologiyalar va ularni amaliyotga tatbiq etish yo'llari yoritilgan. Maqolada, shuningdek, o'quvchilarning fanga bo'lgan qiziqishini oshirish, mustaqil fikrlash va amaliy ko'nikmalarni rivojlantirishga xizmat qiluvchi metodik takliflar berilgan. Axborot texnologiyalarining jadal rivojlanishi sharoitida informatika fanini samarali o'qitish zamonaviy ta'limning muhim talabiga aylanmoqda. Shu sababli, ushbu maqola pedagoglar, o'quv metodistlari hamda axborot texnologiyalari sohasida ta'lim berayotgan mutaxassislar uchun foydali bo'lishi mumkin.

Аннотатция: В статье рассматриваются современные методические подходы к преподаванию предмета «Информатика и информационные технологии», инновационные педагогические технологии и пути их внедрения в практику. Также приводятся методические предложения, способствующие повышению интереса к предмету, развитию самостоятельного мышления и практических навыков учащихся. В условиях стремительного развития информационных технологий эффективное преподавание информатики становится важным требованием современного образования. Поэтому статья может быть полезна педагогам, методистам и специалистам в области информационных технологий.

Annotation: This article discusses modern methodological approaches to teaching "Informatics and Information Technologies", innovative pedagogical technologies and ways to implement them in practice. The article also provides methodological proposals that serve to increase students' interest in the subject, develop independent thinking and practical skills. In the context of the rapid development of information technologies, effective teaching of computer science is becoming an important requirement of modern education. Therefore, this article may be useful for educators, educational methodologists, and specialists in the field of information technologies

Keywords: Informatics, information technology, methodology, innovative education, digital skills, interactive learning, STEAM.

Login

One of the most urgent tasks facing the education system in the 21st century is to educate a young generation that is competitive, knowledgeable, and proficient in modern technologies in a digital society. In particular, the subject of "Informatics and Information Technologies" is today considered one of the main disciplines that not only provides technical knowledge, but also

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forms critical and algorithmic thinking.

However, existing approaches to effective and systematic teaching of this subject do not always meet the requirements of the times. Therefore, there is a need to introduce innovative methods, ICT tools, interactive platforms, and approaches based on practical exercises into the educational process.

This article discusses current aspects of improving the methodology of teaching computer science, effective methodological methods, and ways to increase their effectiveness.

Main part

1. The importance and tasks of computer science

Computer science is being introduced from the initial stages of school education. This allows students to develop technological literacy from an early age. The subject pursues the following main goals:

- Develop students' algorithmic thinking and logical thinking;
- **Programming basics**to develop skills appropriate to modern technologies by teaching;
- **Information security**, instilling awareness about cyber etiquette and personal data protection;
- **Artificial intelligence, robotics, data analytics**to provide initial understanding of advanced areas such as.

Example: For today's students, creating a small program in Python or Scratch may be more meaningful than preparing a Word document, as it develops their creative thinking and solution-solving skills.

Informatics is a science that teaches the scientific foundations of information processing, storage, transmission, and management. Today, this science:

- It forms students' algorithmic thinking;
- Teaches a technological approach to the problem;
- Instills information security and digital culture;
- Develops practical programming skills.

Therefore, it is advisable to teach computer science in an integrated manner with other subjects.

2. Advantages and disadvantages of current teaching methodologies

The following methods are used in teaching computer science in the current education system:

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Method	Advantages	Disadvantages
Traditional lecture	Provides a theoretical basis	Lack of practice
Laboratory work	Builds programming skills	Not always interactive
Multimedia presentations	Enhances visual perception	Can lead to passive learning

Therefore, existing methods need to be enriched with modern tools.

3. Ways to improve computer science teaching methods

A) Teaching based on the STEAM approach

The STEAM (Science, Technology, Engineering, Arts, Mathematics) integrated learning approach involves teaching computer science in conjunction with other subjects. For example, students can apply their math knowledge to Python programming.

B) PBL (Project-Based Learning)

In this method, students try to solve real-life problems using computer science tools. For example, knowledge is deepened through projects such as "Creating a mobile application" and "Developing a website."

C) Gamification technology

When learning programming and algorithms, teaching in the form of games through platforms such as Scratch, Code.org, and Tynker increases students' motivation.

D) Use of online platforms and digital resources

- Manage assignments via Google Classroom, Moodle;
- Independent learning through Khan Academy, Coursera;
- Code sharing and teamwork via GitHub.

4. Practical suggestions

- Incorporate algorithmic thinking exercises into every lesson.
- Organize a small project or hackathon every month.
- Conducting lessons using interactive whiteboards and mobile applications.
- Incorporating elements of robotics and artificial intelligence into lessons.

Conclusion

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Improving the teaching methodology of "Informatics and Information Technologies" in line with the requirements of the times is an important task of today's education system. By enriching traditional approaches to teaching the subject with innovative, interactive and project-based methods, students will acquire not only technical skills, but also the ability to think independently, solve problems, and analyze information.

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