



**AKADEMIK LITSEYLARDA “INFORMATIKA VA AXBOROT
TEKNOLOGIYALARI” FANINI O‘QITISH METODIKASI**

**МЕТОДОЛОГИЯ ПРЕПОДАВАНИЯ ПРЕДМЕТА «ИНФОРМАЦИЯ И
ИНФОРМАЦИОННЫЕ ТЕХНОЛОГИИ» В АКАДЕМИЧЕСКИХ ЛИКЕЯХ**

**METHODOLOGY OF TEACHING THE SUBJECT OF "INFORMATION AND
INFORMATION TECHNOLOGIES" IN ACADEMIC LYCEUMS**

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Annotatsiya

Ushbu maqolada akademik litseylarda “Informatika va axborot texnologiyalari” fanini o‘qitish metodikasining nazariy va amaliy jihatlarini tahlil qilinadi. Zamonaviy pedagogik texnologiyalar, axborot-kommunikatsiya vositalari hamda interfaol metodlardan foydalanish orqali ta’lim samaradorligini oshirish masalalari yoritilgan. Shuningdek, o‘quvchilarning mustaqil fikrlashi, raqamli kompetensiyasi va kasbiy tayyorgarligini rivojlantirish yo‘llari ko‘rib chiqilgan.

Kalit so‘zlar: informatika, axborot texnologiyalari, akademik litsey, o‘qitish metodikasi, interfaol metodlar, AKT, raqamli ta’lim, pedagogik texnologiyalar.

Аннотация

В данной статье анализируются теоретические и практические аспекты методики преподавания предмета «Информатика и информационные технологии» в академических лицеях. Рассматриваются вопросы повышения эффективности обучения за счет использования современных педагогических технологий, информационно-коммуникационных средств и интерактивных методов. Также рассматриваются пути развития самостоятельного мышления учащихся, цифровой компетентности и профессиональной подготовки.

Ключевые слова: информатика, информационные технологии, академический лицей, методика преподавания, интерактивные методы, ИКТ, цифровое образование, педагогические технологии.

Abstract

This article analyzes the theoretical and practical aspects of the methodology for teaching the subject "Informatics and Information Technologies" in academic lyceums. The issues of



increasing the effectiveness of education through the use of modern pedagogical technologies, information and communication tools, and interactive methods are discussed. Also, ways to develop students' independent thinking, digital competence, and professional training are considered.

Keywords: *computer science, information technology, academic lyceum, teaching methodology, interactive methods, ICT, digital education, pedagogical technologies.*

Introduction. Today, the rapid development of information and communication technologies is also having a significant impact on the education system. In particular, effective teaching of the subject "Informatics and Information Technologies" in academic lyceums is of great importance. This subject forms computer literacy, algorithmic thinking, information processing skills, and competencies for working in a modern digital environment in students.

Teaching computer science in academic lyceums should be focused not only on imparting theoretical knowledge, but also on the formation of practical skills. Therefore, it is necessary to effectively use innovative pedagogical technologies, interactive methods and electronic educational resources in the teaching process.

The main goal of the subject "Informatics and Information Technologies" is to form a culture of working with information in students, develop skills in the effective use of computer technologies, and prepare them for future professional activities.

- ✓ This goal is achieved through the following tasks:
- ✓ working with computer hardware and software;
- ✓ using office software and Internet technologies;
- ✓ teaching the basics of algorithmization and programming;
- ✓ forming the concepts of information security;
- ✓ developing independent learning and creative thinking.

Interactive methods play an important role in the modern educational process. In computer science, the use of methods such as "Brainstorming", "Cluster", "BBB", "Case-study", "Project method", "Problem-based learning" increases students' interest in the lesson.

For example, when teaching the topic of algorithmization, students are guided to find an independent solution by creating a problem situation. In the topic of Microsoft Excel, the project method based on practical tasks gives effective results.

Multimedia tools, electronic textbooks, virtual laboratories, testing platforms, and distance learning systems create great opportunities for teaching computer science. Lessons are organized more effectively using smart boards, projectors, internet resources, and online platforms.

This saves time, increases presentation, provides an individual approach, and develops independent learning.



A computer science teacher should be not only a science expert, but also a specialist who can use modern pedagogical technologies. He should take into account the individual characteristics of students, increase motivation, and be able to direct the lesson to practical activities. Shuningdek, o'qituvchi muntazam ravishda o'z ustida ishlashi, yangi dasturlar, platformalar va metodik yondashuvlarni o'rganib borishi kerak.

Analysis of literature on the topic. Scientific research conducted on the methodology of teaching "Informatics and Information Technologies" in academic lyceums is aimed at increasing educational efficiency, introducing modern pedagogical technologies, and forming digital competence of students.

N.N. Azizkhojyeva in her works on pedagogical technologies and pedagogical skills has widely covered the importance of innovative approaches in the educational process. The author emphasizes the need to use interactive methods to increase the effectiveness of the lesson, turn the student into an active subject, and develop independent thinking. These views also serve as an important methodological basis for teaching computer science.

N.S. Sayidahmedov deeply analyzed the issues of introducing new pedagogical technologies into the educational process. In his opinion, the educational process should not be limited to providing information, but should be aimed at organizing the student's practical activities. This is especially important in computer science, where the use of practical exercises, project work, and problem situations gives great results.

U. Begimkulov's work "Informatics Teaching Methodology" covers in detail the content, didactic principles, and teaching forms of computer science. The author recommends a step-by-step approach to teaching algorithmics, programming, information security, and office software. In particular, the need to reinforce theoretical knowledge with practical assignments is emphasized.

Also, scientific articles published in recent years have extensively studied the use of ICT tools in teaching computer science in academic lyceums. In particular, proposals have been put forward to improve the quality of education through electronic textbooks, virtual laboratories, testing systems, distance learning platforms, and multimedia tools.

Research shows that for effective teaching of computer science, not only the technical base, but also the methodological training of the teacher is important. The teacher must know modern pedagogical approaches, take into account the individual characteristics of students, and be able to direct the educational process towards practical activities.

Based on the analyzed literature, it can be said that it is advisable to improve the teaching methodology of "Informatics and Information Technologies" in academic lyceums based on interactive methods, ICT tools, and a competency-based approach.



Research methodology. This study is aimed at studying the issues of improving the methodology of teaching "Informatics and Information Technologies" in academic lyceums, and a comprehensive use of theoretical and applied research methods was made.

The methodological basis of the study is the Law of the Republic of Uzbekistan "On Education", the "National Program for Personnel Training", state educational standards, and regulatory documents on the subject of informatics and information technologies. Also, scientific sources on pedagogy, psychology, and computer science teaching methodologies served as the theoretical foundation of the study.

The following methods were used in the research process:

First, the method of analyzing scientific and pedagogical literature was used. Through this method, monographs, scientific articles, textbooks and dissertations on the topic were studied and their content was analyzed. This allowed us to identify existing problems and draw scientific conclusions.

Secondly, the organization of computer science classes in academic lyceums, the methodological activities of teachers, and the activity of students in the lesson were studied based on the observation method. This method made it possible to assess the practical situation in real conditions.

Thirdly, the attitude of teachers and students to computer science, existing problems, and suggestions were determined using questionnaires and interview methods. Qualitative empirical data were collected through these methods.

Fourth, pilot studies were organized, in which methodological recommendations developed based on interactive methods, ICT tools, and modern pedagogical technologies were put into practice and their effectiveness was evaluated.

Fifth, the results obtained through comparison and generalization methods were analyzed and scientific conclusions were drawn. Based on statistical data, the level of knowledge and mastery indicators of students were compared.

As a result of the research methodology, methodological recommendations were developed to improve the effectiveness of teaching computer science in academic lyceums and their practical significance was substantiated.

Analysis and results. During the research, the state of teaching of the subject "Informatics and Information Technologies" in academic lyceums was studied and the impact of interactive methods and modern ICT tools on the effectiveness of education was analyzed. The results obtained were summarized theoretically and practically.



Initial observations showed that in the traditional lesson process, student activity is relatively low, and a teacher-centered approach predominates. This creates some limitations in the development of students' independent thinking and practical skills.

During the experimental work, interactive methods (brainstorming, cluster, project method) and ICT tools (multimedia presentations, electronic tests, virtual laboratories) were used. As a result, a significant increase in student interest and activity in the lesson was observed.

According to the results of the comparison, the level of mastery in the group using interactive methods was higher than in the group taught in the traditional way. In particular, the performance of students in completing independent tasks improved and their ability to think logically developed.

The results of the survey showed that a large proportion of students rated interactive and practical lessons as more interesting and understandable than traditional lessons. Teachers, on the other hand, noted that ICT tools help to organize the lesson more effectively.

As a result of the general analysis, the following conclusions were drawn:

- interactive methods increase student activity;
- ICT tools facilitate the assimilation of educational material;
- practical exercises play an important role in consolidating knowledge;
- a competency-based approach increases the quality of education.

The results show that the use of modern pedagogical technologies in teaching computer science in academic lyceums significantly increases educational efficiency and helps develop students' digital competence.

Conclusion. Effective teaching of the subject "Informatics and Information Technologies" in academic lyceums is one of the urgent issues of today's education system. Organizing this subject on the basis of modern pedagogical technologies increases the level of knowledge, independent thinking and professional training of students.

Through interactive methods, ICT tools, and hands-on learning, the quality of computer science will be significantly improved. As a result, educated and competitive young people will be formed who can meet the demands of a digital society.

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