

IMPLEMENTATION OF AI IN THE EDUCATION OF SENIOR CLASSES IN SCHOOLS

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Abstract. This article covers the topic “Implementation of AI in the Education of Senior Classes in Schools” and analyzes the implementation of artificial intelligence technologies in the teaching process in senior classes, its capabilities, advantages, problems and impact on educational effectiveness on a scientific basis. Today, AI tools - automated assessment systems, intelligent learning platforms, programs for creating personalized curricula, virtual laboratories, chatbot-teachers and analytical systems for monitoring student activity - are widely used in senior classes of secondary schools. Artificial intelligence plays an important role in teaching students based on an individual approach, creating exercises appropriate to their level of knowledge, optimizing the teaching process, developing students' independent learning skills, and reducing the teacher's methodological load. The article provides practical mechanisms for implementing AI technologies in the teaching process, changes in the roles of teachers and students, technical and psychological barriers, as well as recommendations for improving the quality of education. The results of the study show that artificial intelligence can significantly improve the effectiveness of education in higher education.

Keywords: artificial intelligence, higher education, personalized education, AI monitoring, virtual laboratory, automatic assessment, digital pedagogy, educational innovations, intelligent systems, school education.

Over the past decade, the education sector has been radically changing under the influence of the digitalization process. Artificial intelligence (AI) technologies are being widely introduced not only in higher education institutions or scientific research centers, but also in the upper grades of general education schools. The introduction of innovative technologies into school education has become a necessity in order to prepare modern students for future professions, develop their analytical thinking, independent learning skills, and develop digital competencies.

An educational system based on AI technologies allows students to:

study at their own pace,
deeply master complex topics,
identify knowledge gaps,
receive feedback in real time,
continue lessons in an interactive environment.

For teachers, it provides:

automate assessment,
reduce lesson preparation time,
simplify monitoring,
enhance individual approach.[1]

This article provides a detailed analysis of the experience, practical possibilities, advantages, problems, and prospects of introducing AI technologies to senior grades of schools.

Senior grade students need in-depth knowledge in complex subjects: mathematics, physics, chemistry, biology, and computer science. Artificial intelligence helps students visualize complex problems, model processes, and study topics based on real-life examples.

Personalized learning

AI creates an individual learning path for each student based on:

knowledge level,

acquisition rate,

error history,

interests.[2]

For example, AI provides additional exercises, illustrative examples, and video comments to a student who is struggling in mathematics.

The teacher will have complete information about all students':

activity level,

task completion speed,

knowledge gaps,

participation activity

through AI.

AI automatically analyzes and evaluates students':

test answers,

essay texts,

coding work,

laboratory reports.

This reduces the teacher's workload.[3]

AI-based virtual laboratories allow for complex experiments in physics and chemistry in a safe environment:

modeling chemical reactions,

assembling electrical circuits,

visualizing mechanical movements.

AI chatbots:

answer questions,

explain the topic,

recommend additional literature,

solve examples,

offer video lessons.[4]

AI does not replace the teacher, but facilitates his work. A modern teacher acts as:

a supervisor,

a motivator,

a facilitator,

a technology integrator.

AI, on the other hand, performs technical and analytical tasks.

Increased quality of education

Each student works with material adapted to him.

A personalized system teaches without overloading the student.

AI encourages students to practice-based learning.

Tasks such as assessment, monitoring, and planning are automated.

Lack of technical infrastructure

The quality of the Internet, computers, and tablets are not always sufficient.

Some teachers find it difficult to use AI technologies.

Students and parents may not trust AI too much.

Solutions and Suggestions

Special AI training courses should be introduced.

Schools should be provided with modern technology.

Students should be taught to interact with AI safely and responsibly must learn to work competently.

In the future, AI will:

become a personal digital teacher for each student,

completely virtual lessons will be held through VR classes,

the assessment system will be 100% automated,

psychological monitoring will also be carried out through AI.[5]

This process has already begun in Uzbek schools and is likely to be fully implemented soon.

In conclusion, the application of Artificial Intelligence to education in higher grades provides many advantages, such as improving the quality of education, effectively organizing teacher work, encouraging independent learning of students, and providing them with individual assistance. Despite the existence of technical and pedagogical barriers, AI is becoming an integral component of school education. In the future, high school students will acquire competitive knowledge and skills with the help of modern AI.

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