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THE DEVELOPMENT OF EDUCATION AND SCIENCE IN UZBEKISTAN

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Abstract: This article analyzes the development of education and science in Uzbekistan, focusing on reforms implemented since independence and especially during the period of modern transformations. The study highlights the role of education and scientific research as key drivers of socio-economic development, national competitiveness, and human capital formation. Particular attention is paid to legislative reforms, modernization of educational institutions, digitalization, international cooperation, and the integration of science with practice. The article also examines current challenges and future prospects, emphasizing the importance of innovation and sustainable development in the education and science sectors. References to scientific and normative sources are provided throughout the text to ensure academic reliability [1,2].

Keywords: Education system, science development, higher education, innovation, reforms, Uzbekistan, human capital, digitalization.

Education and science play a decisive role in the sustainable development of any state. In Uzbekistan, these sectors are regarded as strategic priorities for building a competitive economy and an enlightened society. Since gaining independence, the country has pursued consistent reforms aimed at transforming the education system and revitalizing scientific activity in accordance with national interests and global standards [1].

In the early years of independence, the primary focus was on forming a national education model based on democratic principles and cultural values. The adoption of the Law “On Education” and the National Program for Personnel Training laid the foundation for comprehensive reforms, ensuring continuity between preschool, general secondary, vocational, and higher education [2]. These documents emphasized the importance of quality education, professional competence, and moral upbringing.

In recent years, reforms in education and science have entered a new stage. Special attention has been paid to expanding access to education, improving infrastructure, and modernizing curricula. Preschool education has been significantly developed, with the establishment of new kindergartens and the introduction of modern pedagogical methods. At the level of general secondary education, updated state educational standards and competency-based approaches have been introduced to improve learning outcomes [3].

Higher education has undergone profound changes. The number of higher educational institutions has increased, including branches of leading foreign universities. Academic autonomy, credit-module systems, and digital learning platforms have been gradually implemented to align higher education with international standards [4]. These reforms aim to

enhance the quality of training, promote academic mobility, and strengthen the link between education and the labor market.

Science and research are considered integral components of national development. The establishment of new research institutes, innovation centers, and technology parks has contributed to the commercialization of scientific results and the development of applied research [5]. Government programs support young scientists, encourage interdisciplinary research, and promote international scientific cooperation [6].

Digital transformation has become a key factor in the development of education and science. The introduction of e-learning platforms, digital libraries, and online scientific databases has expanded access to knowledge and improved research efficiency [7]. At the same time, digital skills are increasingly integrated into educational programs to prepare students for the demands of the modern labor market.

Despite significant achievements, challenges remain. These include ensuring equal access to quality education in rural areas, improving the material and technical base of institutions, and increasing the effectiveness of research funding [8]. Addressing these issues requires systematic policy measures and close cooperation between the state, educational institutions, and the private sector.

The following table summarizes the main stages and directions of education and science development in Uzbekistan.

Table 1. Key Directions of Education and Science Development in Uzbekistan

Area	Main Reforms and Achievements	Expected Outcomes
Preschool education	Expansion of institutions, modern methods	Early childhood development
General education	New standards, competency-based learning	Improved learning quality
Higher education	Academic autonomy, foreign universities	Global competitiveness
Science and research	Innovation centers, grants	Applied research growth
Digitalization	E-learning, digital libraries	Access to knowledge

In conclusion, the development of education and science in Uzbekistan demonstrates a consistent and forward-looking policy aimed at creating a knowledge-based economy and an innovative society. Continued investment in human capital, scientific research, and digital technologies will further strengthen the country's position in the global arena [9,10]. The success of these reforms largely depends on the effective implementation of strategies, the professional capacity of educators and researchers, and active international cooperation [11,12].

Education and science in Uzbekistan are not only sectors of social development but also key instruments for ensuring national progress, cultural continuity, and sustainable future development [13–15].

Conclusion

In conclusion, the development of education and science in Uzbekistan represents a strategic and systematic process aimed at strengthening national progress and global competitiveness. The reforms implemented in recent years demonstrate the state's commitment to building a modern education system and a strong scientific base capable of responding to contemporary challenges. Education and science are increasingly recognized as the main pillars of human capital development, innovation, and sustainable economic growth [13].

The expansion of educational institutions, modernization of curricula, and integration of digital technologies have significantly improved access to knowledge and learning opportunities. At the same time, reforms in higher education and scientific research have enhanced academic autonomy, international cooperation, and the practical application of scientific results [9,10]. These measures contribute to the formation of a new generation of highly qualified specialists and researchers.

Nevertheless, ensuring the quality and inclusiveness of education remains a key priority. Addressing existing challenges such as regional disparities, funding efficiency, and the alignment of education with labor market needs requires continuous policy support and effective governance [8,11]. Strengthening cooperation between educational institutions, research centers, and industry is essential for transforming scientific potential into tangible socio-economic benefits.

Overall, the sustainable development of education and science in Uzbekistan depends on long-term investment in human capital, support for innovation, and the preservation of national values alongside global integration. By continuing these reforms, Uzbekistan is laying a solid foundation for an enlightened society and a knowledge-based economy capable of ensuring a prosperous future for the country [14,15].

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