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EDUCATIONAL CAPITAL DEVELOPMENT – THE WAY OF UZBEKISTAN FOR SUCCEED

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Abstract. It is no secret that a good education has the power to change a life. The global challenge for education is not just about providing access, but also ensuring progress. This paper focuses on the educational capital formation trends, especially the legal, organizational and economic aspects which determine the quality and development of the educational system of Uzbekistan. The relationship between government expenditure on education, education index and GDP has considered. Also, in the article has been offered the ways of education capital formation for all levels of the educational system of Uzbekistan.

Keywords. human, education, capital, formation, development, investment, index, expenditure, economic growth, trends.

Introduction.

Education is a basic element of the country's socio-economic development. The development of society, ensuring its safety, the quality of life, achieving a world economic level, mastering new technological capabilities and social progress primarily depends on the capital of education and the quality of teaching process.

The most important strategic goal of Uzbekistan is become one of the developed countries of the world and ensure a decent life for its citizens. The organizational, legal and practical aspects, consistent and systemic measures taken fully contribute to the implementation of democratic, political and economic reforms, social transformations aimed at creating broad opportunities for the comprehensive implementation of the professional, intellectual and spiritual potential of a citizen and society as a whole.

Education is one of the fundamental factors of development. Countries can achieve economic development without investment in education capital. Education enriches people's understanding of themselves and world. It improves the quality of their lives and leads to broad social benefits to individuals and society. Education raises people's productivity and creativity and promotes entrepreneurship and technological advances. In addition it plays a very crucial role in securing economic and social progress and improving income distribution.

Literature review.

"There is no salvation in the world except science." This word, noted 12 centuries ago by the Sultan of Hadith, the Imam of the world, Imam Bukhari, has literally become the motto of the modern world. Over period, the relevance of this phrase grew and never diminished. This statement, equal to gold, is relevant today, as has been said at all times.

“The success of the reforms, our gaining a worthy place among the modern developed countries of the world, are primarily associated with the development of science, education and upbringing in the country. If we give good knowledge in kindergarten, secondary and higher education, we will be able to solve the problem of poverty by 60-70%”, - noted the President of the Republic of Uzbekistan Shavkat Mirziyoyev [1].

According to Nelson Mandela “Education is the most powerful weapon you can use to change the world”[2]. In the earlier neoclassical models, education was not considered a major input for production and hence was not included in growth models. In the 1960s mounting empirical evidence stimulated the human investment revolution in economic thought. The seminal works of Schultz in 1961 and Denison in 1962 led to a series of growth accounting studies pointing to education’s contribution to the unexplained residuals in the economic growth of western economies. Other researches of Becker in 1964 and Mincer in 1964 looked at the impact of education on earnings or estimated private rate of returns.

From the concept of "educational capital", we turned to the analyzing the concept of "human capital", presented in the works of G. Becker. According to the G. Becker, "investments in human capital are made throughout life, from the time a person is born until his death; these include, first of all, the cost of education, health maintenance, migration associated with a change of job [3].

Research methodology.

The principles of scientific knowledge, the works of scientists which reflected in the publications in field of human capital formation and innovative economic development. Methodological base was the researches of modern economists, legislative and regulatory acts of Uzbekistan and Decrees of the President of the Republic of Uzbekistan "On approval of the concept of development of the public education system of the Republic of Uzbekistan until 2030" and "On approval the concept of development of the higher education system of the Republic of Uzbekistan until 2030 "; Resolution of the President of the Republic of Uzbekistan "On approval of the concept of development of the preschool education system of the Republic of Uzbekistan until 2030".

There has been used the methods of logical, statistical, comparative, economic and mathematical analysis, correlation and regression analysis, expert assessments as well.

Analysis and results.

Education has a significant impact to solution of the entire spectrum of economic, political, social and humanitarian problems as an essential element of human development. Our well-being and future in general depend on the quality of education. During the twentieth century, education, skills, and the acquisition of knowledge has become crucial determinants of a person’s and a nation’s productivity.

According to World Bank report "Changing the level of welfare of nations" will be only through human capital, which include knowledge, talents, skills and abilities of people constitutes the main wealth of the country. Thus, the well-being of developed countries is provided by human capital by 68%, and in developing countries - only by 41% [4].

Currently, education is facing with a global problem of Pandemic COVID-19. It led to the largest failure in modern history in the education system around the world. As of mid-July 2020, schools have closed in more than 160 countries, affecting nearly a billion students. At least 40 million children worldwide were denied education during the critical preschool year. Parents, especially women, had to shoulder the heavy burden of caring for and homeschooling their children. The pandemic had a profound impact on education, closing schools almost everywhere on the planet, in the biggest shock to all education systems in our lives. The damage will be even more severe as the health emergency escalates into a deep global recession. School closures nationwide affected more than 1.254 billion students worldwide (72.9% of the world's students), while school closures in some regions affected more than 283 million students. [5] Due to the closure of schools and universities due to the spread of COVID-19, every fifth student in the world did not attend school [6]. School closures have led to loss of education, increased dropout rates and increased inequality, while the economic shock exacerbated the damage, reducing the supply and demand for education. Together, these factors have caused long-term damage to human and educational capital.

Moreover, the corona virus pandemic threatened educational progress around the world through two main factors: the near-total closure of schools at all levels and the economic downturn triggered by the response to the pandemic. The corona virus pandemic is hitting education and training systems with such devastating impact that it will be felt for decades to come, including an economic loss of 44 billion USD in Central Asia. This is not the most pessimistic scenario [7]. Despite the delivery of lessons on radio, TV and the Internet, as well as the best efforts of teachers and parents, many students are still out of reach. Students with disabilities, members of minorities and low-income communities, refugees, and residents of remote areas are most at risk of hopelessly falling behind in education "[8]. We live at a turning point for the future of children and youth around the world. The decisions that individual countries and international organizations are making now will have long-term implications for the lives of hundreds of millions of young people and the prospects for the world's development for decades to come. If countries move quickly to support lifelong learning, they can mitigate the damage and even turn recovery into new opportunities. The experts propose measures to achieve this goal, dividing them into three overlapping stages: "coping policy", "continuous management" and "improvement and acceleration". In the first phase, the government successfully dealt with school closings, protecting health and safety and doing everything possible to prevent student learning losses through distance education. At the same time, countries need to start planning for school reopening. This means preventing dropout, ensuring a healthy school environment, and adopting new methods to promote rapid recovery of learning in key areas after students return to school [9].

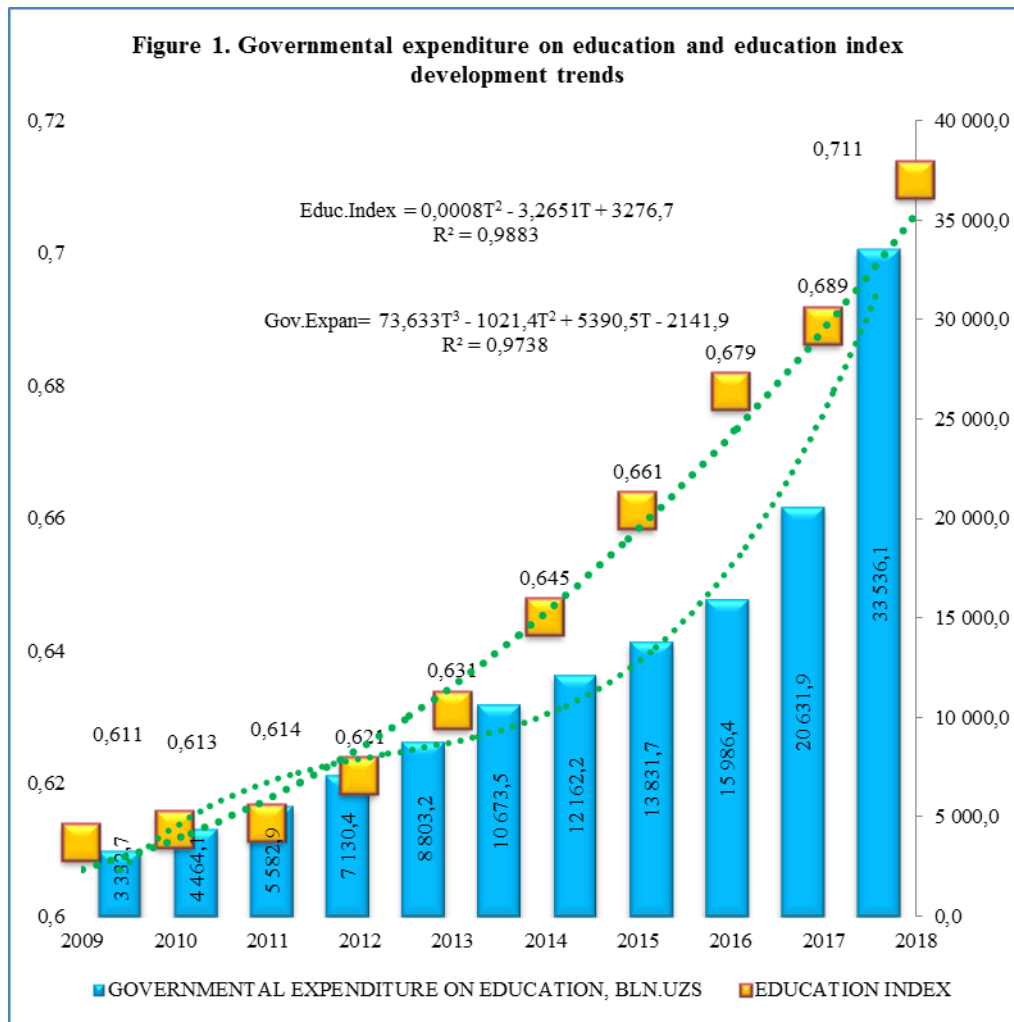
In this research analyzed the education capital formation trends, particularly, the legal norms, organizational and economic aspects which determine the quality and development trends of the educational system of Uzbekistan. Nowadays, the education system of Uzbekistan is renovating, the preparation of qualified and developed generation has been

raised to the level of the main priorities of state policy. When we are analyzing the current situation of education capital in Uzbekistan, it is important to increase its position in international rankings. According to the annual report of the United Nations, Uzbekistan ranks 7 in the education index (adult literacy index and the index of the cumulative share of students which are receiving education) among the CIS countries, and 73rd among 189 countries of the world [10].

Educational capital is the main component of human capital and includes the following as below:

- it is the main value of society and the main factor of economic growth;
- the formation of the capital of education requires significant costs from the person himself and the whole society;
- educational capital in the form of skills and abilities is a certain reserve;
- educational capital can be worn out morally, economically change its value and amortized;
- investments in educational capital provide a higher income in the future;
- investments in educational capital give a rather significant volume, long-term, integral economic and social effect;
- investment period for the capital of education is much longer than that of any other capital.

Governmental expenditure on education and education index. Prior to the nineteenth century, systematic investment in human capital was not considered especially important in any country. Expenditures on schooling, on-the-job training, and other similar forms of investment were quite small. This began to change radically during this century with the application of science to the development of new goods and more efficient methods of production. During the twentieth century, education, skills, and the acquisition of knowledge have become crucial determinants of a person's and a nation's productivity. No country has achieved constant economic development without considerable investment in education. Previous studies have shown handsome returns to various forms of human capital accumulation: basic education, research, training, learning-by-doing and aptitude building. In 2019, to the social sphere of Uzbekistan spent 79.7% of state budget expenditures, 28.4% are for education and 12.7% for healthcare. The annual increase in state budget expenditures on education is from 6-8%. More than 70% of government expenditure allocated for secondary education [11]. Annual government expenditure on education ranges from 6.4 - 7.3% of GDP, since this figure reaches 7.7% in countries with a high education index [12]. The trends of government expenditure on education in Uzbekistan is described by the nominal correlation-regression model [13] (*Figure1*):



Source: The statistical data of the State Committee of the Republic of Uzbekistan.
Available at: <https://stat.uz/ru>

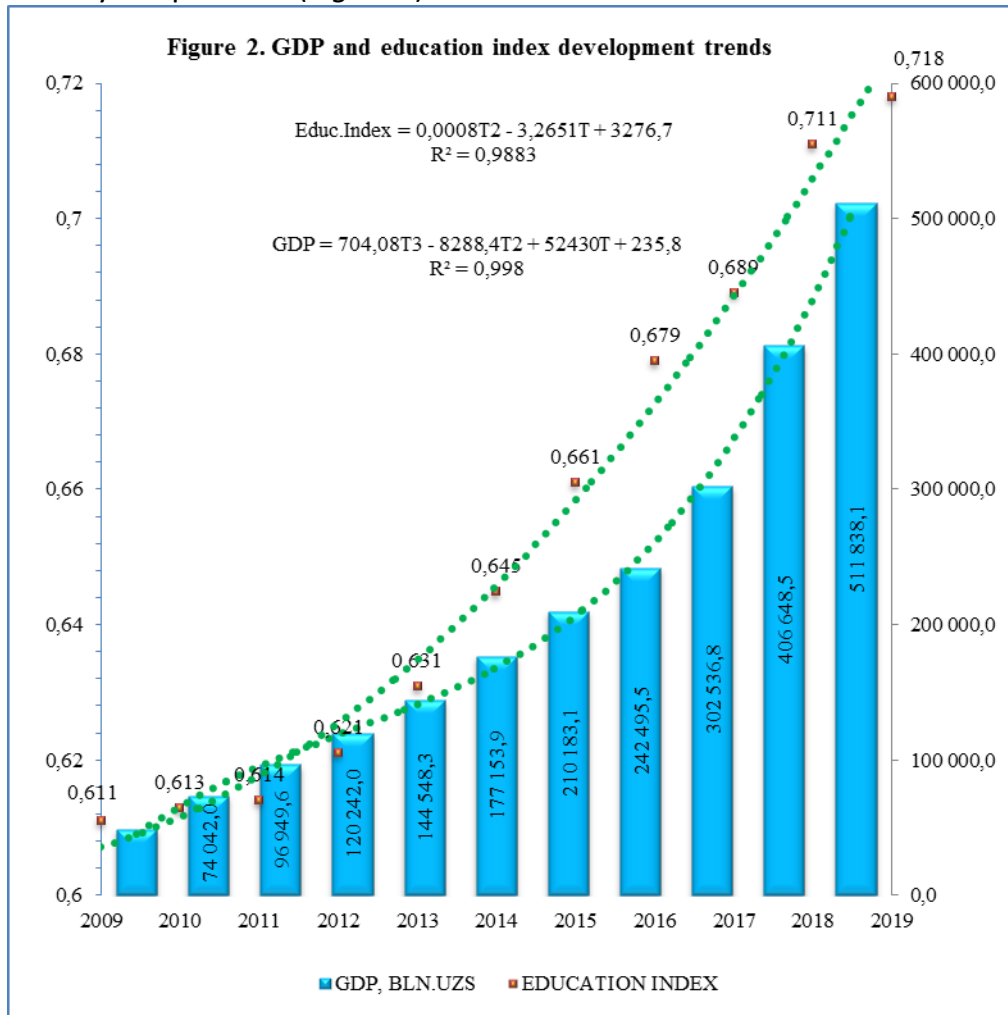
- $\text{Gov. Exp} = 73.633T^3 - 1021.4T^2 + 5390.5T - 2141.9$ is the estimated value of the state budget expenditures on education in Uzbekistan, T - year.
- Correlation coefficient = 0.91.
- Coefficient of determination $R^2 = 0.9883$.

In 2019, the education index of Uzbekistan amounted to 0.718, if compare with 2009, it increased by 17%, the average annual growth is 1.6%. The change in the education capital index of in Uzbekistan is described by a polynomial correlation-regression model [14]:

- $\text{Educ.Index} = 0.0008T^2 - 3.2651T + 3276.7$ is the calculated value of the education index of Uzbekistan, T is the year;
- Correlation coefficient = 0.97.
- Coefficient of determination $R^2 = 0.9883$

Governmental expenditure on education is directly proportional to education capital formation. A paired regression and correlation model of the influence of government

expenditure on education capital formation shows that an increase in government expenditure on education by 1 percent will lead to an increase in education capital by 1.2 percent. A paired regression and correlation model of the impact of the education index on the country's GDP shows that an increase in the education index by 1 percent will lead to an increase in GDP by 1.6 percent. (Figure2).

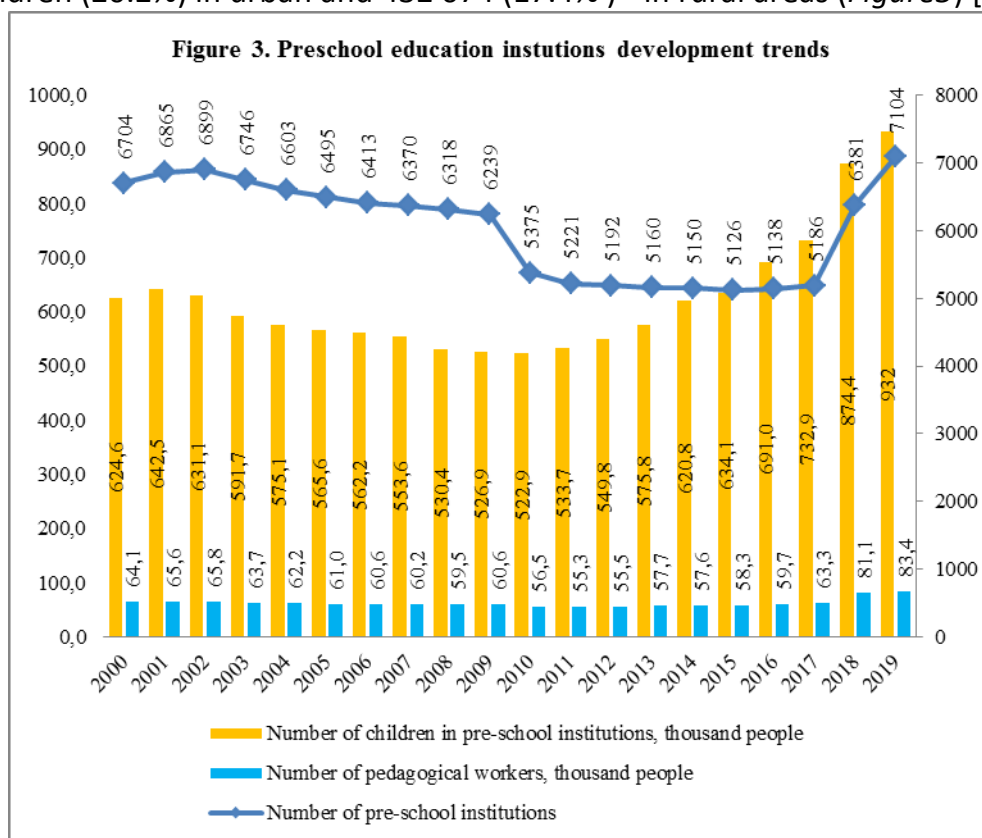


Source: The statistical data of the State Committee of the Republic of Uzbekistan.
Available at: <https://stat.uz/ru>

Preschool education is the primary step in the continuous educational system, which has a great importance in the formation of a healthy and comprehensively developed personality of the child, preparing them for school. Improvement of the activities of preschool educational institutions is designated by the President as one of the priority directions of state policy. In Uzbekistan, the preschool education system implements programs of all kinds, providing care, careful supervision, upbringing and active rehabilitation of children from 2 to 7 years old. Since the establishment of the Ministry of Preschool Education, a number of major changes have taken place, one of the main achievements are the increase in the network of public and private preschool educational institutions.

Together with UNICEF international experts, on the basis of the best foreign practices and the experience of South Korea, the State Requirements for the Development of Children of Early and Preschool Age and the State Curriculum of the First Step Preschool Educational Institution were developed and approved. The latter is already being implemented in all preschool educational institutions in the country. Its main feature is that each kindergarten has the right to develop and apply its own programs.

Uzbekistan is implementing the developing concepts of preschool, public and higher education until 2030, which is aimed to improving education in Uzbekistan. This concept became the basis for the development of programs and complexes of measures aimed at modernizing the sphere. The concept for the development of preschool education until 2030 provides for eliminating the shortage of qualified teaching staff, improving the material and technical condition, the provision of educational and methodological materials of governmental preschool educational institutions. Today, there are 7,104 preschool educational institutions in Uzbekistan, which 5,604 (79%) are governmental, 63 are departmental and 1,437 (21%) are non-governmental. The total number of children which aged 3 - 7 years (2.5 million), 932 310 (37.7%) are covered by preschool education, including 500 236 children (20.2%) in urban and 432 074 (17.4%) - in rural areas (Figure3) [15].



Source: The statistical data of the State Committee of the Republic of Uzbekistan.
Available at: <https://stat.uz/ru>

Every year, according to the State Committee on Statistics, more than 700 thousand children are born in the Republic of Uzbekistan, which increases the burden on preschool educational institutions. So, if the overall congestion of preschool educational institutions in the republic is 12%, then the greatest congestion is observed in the Republic of Karakalpakstan (21%), Jizzakh (35%) and Bukhara (21%) regions, the smallest - in Surkhandarya (9%) and Fergana (9%) regions, as well as in the city of Tashkent (6%). In the country as a whole, there are 28.1 places in preschool educational institutions for 100 children aged 3 - 7 years. At the same time, it should be noted that earlier, before the start of the reforms, the number of preschool educational institutions decreased by more than 45 percent. As it turned out, the decline affected areas with a high birth rate the most. Today, more than 55 percent of all preschool educational institutions in Uzbekistan are located in five regions - the city of Tashkent (14.8), Fergana (12.6), Tashkent (9.8), Namangan (9) and Samarkand (8.9 percent) regions. The percentage of children covered by the preschool education system has significantly increased. At the end of 2019, there are 13,500 preschool educational institutions of various forms of ownership in the republic, while in 2017 there were only 5,211 of them. For the first time, work has begun to expand the private sector and develop public-private partnerships in the field. Today, 52 percent of the total number of children from three to seven are covered by the preschool education system.

Funds in the amount of 5.178 trillion UZS have been allocated for 2020. The first step towards increasing the coverage of children was the investment program of the Ministry, more than 20 thousand new places were created. Substantial support is provided by the government, including in the provision of soft loans for entrepreneurs. For the development of governmental private entrepreneurship attracted 3.7 trillion. UZS. A new model of family kindergartens has been created, there are more than 4600 today. They covered over 111 thousand children with preschool education [16]. At the end of 2019, more than 900 thousand boys and girls from three to seven years old attended kindergartens, which is 37.7 percent of the total number of children of the corresponding age. In view of the low mortality rate among preschool children refers to all age groups in the country, the growth rate of children aged 3-7 is higher than the growth of the population as a whole. Out of more than 2.5 million children aged 3-7 years, 67.8% live in Samarkand (12.1%), Fergana (10.8%), Kashkadarya (10.5%), Andijan (9.3%), Surkhandarya (8.5%), Namangan (8.4%) and Tashkent (8.2%) regions. Every year, according to the State Committee on Statistics, more than 700 thousand children are born in the Republic of Uzbekistan, which increases the burden on preschool educational institutions. So, if the overall congestion of preschool educational institutions in the republic is 12%, then the greatest congestion is observed in the Republic of Karakalpakstan (21%), Jizzakh (35%) and Bukhara (21%) regions, the smallest - in Surkhandarya (9%) and Fergana (9%) regions, as well as in the city of Tashkent (6%). In the country as a whole, there are 28.1 places in preschool educational institutions for every 100 children aged 3 - 7 years [17].

However, the analysis shows the lack of quality and results of measures taken in the preschool education system. There are still a number of systemic problems and shortcomings that hinder the successful implementation of governmental policy for the development of preschool education:

- the existing material and technical base of preschool educational institutions does not meet modern requirements.

- in the current system of preschool education there are no variable programs, alternative, flexible educational models for preparing children for school are not sufficiently developed, and special governmental educational programs, following the example of developed countries, have not been introduced, providing for social and personal, emotional, speech, mathematical, physical and creative development, familiarization with the surrounding world.

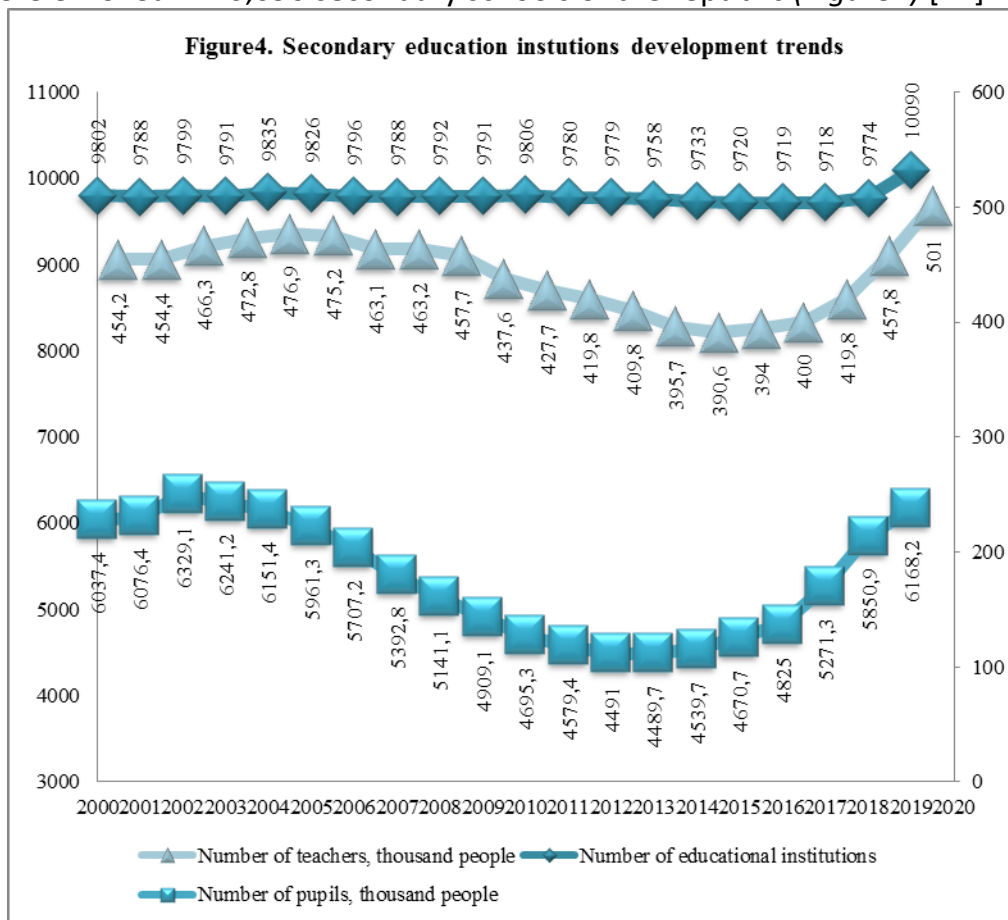
- the majority of the teaching staff of governmental preschool educational institutions have secondary specialized education, which does not ensure proper preparation of children for school education.

- in addition, due to the lack of systemic structural and organizational monitoring of the quality of preschool education, the effectiveness and quality of the learning process in preschool educational institutions does not meet modern requirements.

The public education system of Uzbekistan includes educational institutions of secondary education that provide free services for children 6-16 years old. In the system of public education, there are institutions aimed at children with various needs - educational institutions that provide education at a level higher than educational standards (specialized schools), and educational institutions for children with disabilities. In Uzbekistan, the concept of development of the public education system of the Republic of Uzbekistan until 2030 is being implemented, which is aimed at improving the system of public education of Uzbekistan, in particular, the entry of the Republic of Uzbekistan by 2030 into a number of the first 30 leading countries in the world according to the rating of the PISA student assessment program (The Program for International Student Assessment), a qualitative update of the content of the continuous education system, as well as training, retraining and advanced training of professional personnel. The development of the intellectual and creative potential of young people, as well as the creation of the necessary conditions for their support and stimulation, the Presidential schools were established. In the new educational institutions, gifted children who have passed a competitive selection will study. They will begin work this fall. The STEAM (S-science, T-technology, Engineering, Art and Mathematics) education system operates in schools. These disciplines - mathematics, physics, chemistry, biology, computer science, design and technology, art - will be taught in English starting from the fifth grade. STEAM assumes a research approach to subjects, a lot of practical tasks and projects [18].

As of January 1, 2019, there are 9 691 secondary education schools in the Republic of Uzbekistan (including 350 specialized institutions with in-depth study of individual subjects)

[19]. The number of secondary education schools in comparison with 1991 increased by 17.3% (8333), but 79.6% of them work in two and 0.2% in three shifts. In the regional analysis, the largest share of this indicator was observed in Samarkand (85.1%), Kashkadarya (84.2%), Surkhandarya (87.6%), Tashkent (81.2%) and Fergana (72.7%) regions. The total number of students in primary and secondary education schools is 5.8 million. Also, about 13.8 thousand students study in 86 non-governmental educational institutions. In secondary educational institutions 7971 pupils study in the second and third shifts [20]. In some schools of the Republic of Uzbekistan, the number of students in classes reaches 45-50, which prevents them from obtaining a quality education [21]. In the 2019 academic year, 6168.2 thousand children were enrolled in 10,090 secondary schools of the republic (Figure4) [22].



Source: The statistical data of the State Committee of the Republic of Uzbekistan.
 Available at: <https://stat.uz/ru>

In the system of secondary education of the republic, primary vocational education has been introduced, in vocational colleges and secondary education schools 1,748 educational and production complexes have been formed for 51 names of blue-collar occupations. There are 86 specialized schools and 21 boarding schools for children with disabilities in physical or mental development in the system of public education, where 20 610

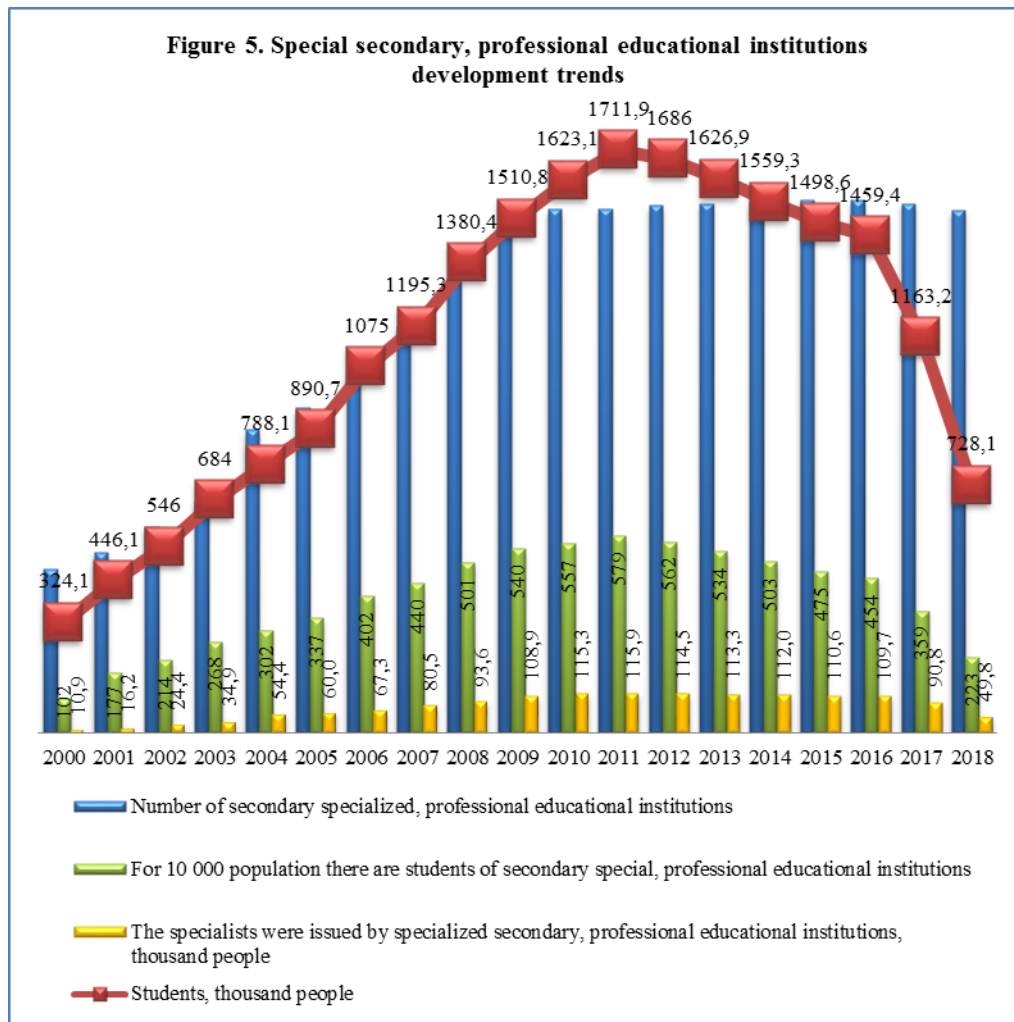
children study. Also 13 437 children with disabilities in physical or mental development and needing long-term treatment receive education at home.

The education of children which need the special conditions for upbringing and education is carried out in two specialized educational institutions. In 19 house of mercy and 3 children's townships, 2,557 orphans and children left without parental care are brought up. Consequently, the expenditures of the governmental budget for the maintenance of schools in the future will increase in proportion to the growth in the number of children and adolescents, since the calculations are based on their one hundred percent coverage of school education, as well as in the vocational training system. Analyzes show that the coverage of school-age children with secondary education in 2019. was at the level of 98-99.8%. According to analyzes, during 2018, the ratio of the number of students to teachers decreased from 12.8 to 11.2 and this has a positive effect on the quality indicators of the education system.

Today, the average cost of education per student in the Republic of Uzbekistan is significantly inferior to similar indicators in other developing countries. Lack of investment in education negatively affects the material and technical base of educational institutions. According to experts, the lack of water and electricity supply, as well as the lack of computer classes in educational institutions in all regions of the Republic of Uzbekistan, remains a big problem. In the last decade, funding for education has not increased, and less and less money is being invested in schooling. We are still a very educated nation - but largely due to the spread of higher education among older generations, and among young people, the share of people with higher education in many developed countries is already much higher [23].

In 2004-2019, the share of classrooms equipped with modern laboratories in such subjects as physics, chemistry and biology increased by an average of 5 times and reached 84%, the equipment of computer classes - by 79%. Out-of-school educational institutions have been created in all regions of the country. In order to improve the system of out-of-school work with children, 211 children's centers were established, where 4485 circles are currently operating in 36 areas of technical and artistic creativity, local history and ecology. More than 107 thousand children are involved in the work of the circles [24].

Analyzes show that in 2000-2018 the number of institutions of secondary specialized vocational education increased from 287 to 1537. In particular, the number of academic lyceums increased from 46 to 123, vocational colleges - from 241 to 141421. In 2018, the number of students in academic secondary schools special vocational education in the Republic of Uzbekistan amounted to 71,800, and in vocational colleges - 656,300 (*Figure5*) [25].



Source: The statistical data of the State Committee of the Republic of Uzbekistan.
 Available at: <https://stat.uz/ru>

Over the past 4 years, a number of decrees and resolutions of the President have been adopted that raise the higher education system to a new, higher level. Particular attention is paid to the issues of reforming the higher education system with an emphasis on increasing the level of scientific and pedagogical potential, compliance with modern requirements of educational, methodological and information support of the educational process.

The Senate Chairman of the Oliy Majlis of Uzbekistan Tanzila Narbaeva at the sixth plenary session of the upper house of parliament criticized the system of higher education in Uzbekistan and said that corruption in this area worsens the quality of education and reduces the authority of universities in international rankings. “We need to completely cleanse the education system, especially higher education. According to research, corruption exists at almost all levels of higher education. Corrupt cases are widespread at the stage of entrance examinations, during training, in the process of transferring from one university to another”. Corruption affects not only the quality of education, but also negatively affects the position of the country's universities in international rankings. Not a single university in Uzbekistan is

included in the top 1000 universities in the world. "The largest educational institution in the country, the National University of Uzbekistan, ranks 3971 in the global ranking, which includes about 30 thousand universities from all over the world. In another rating, the National University of Uzbekistan occupies the 4080th place, "the Chairman of the Senate emphasized [26].

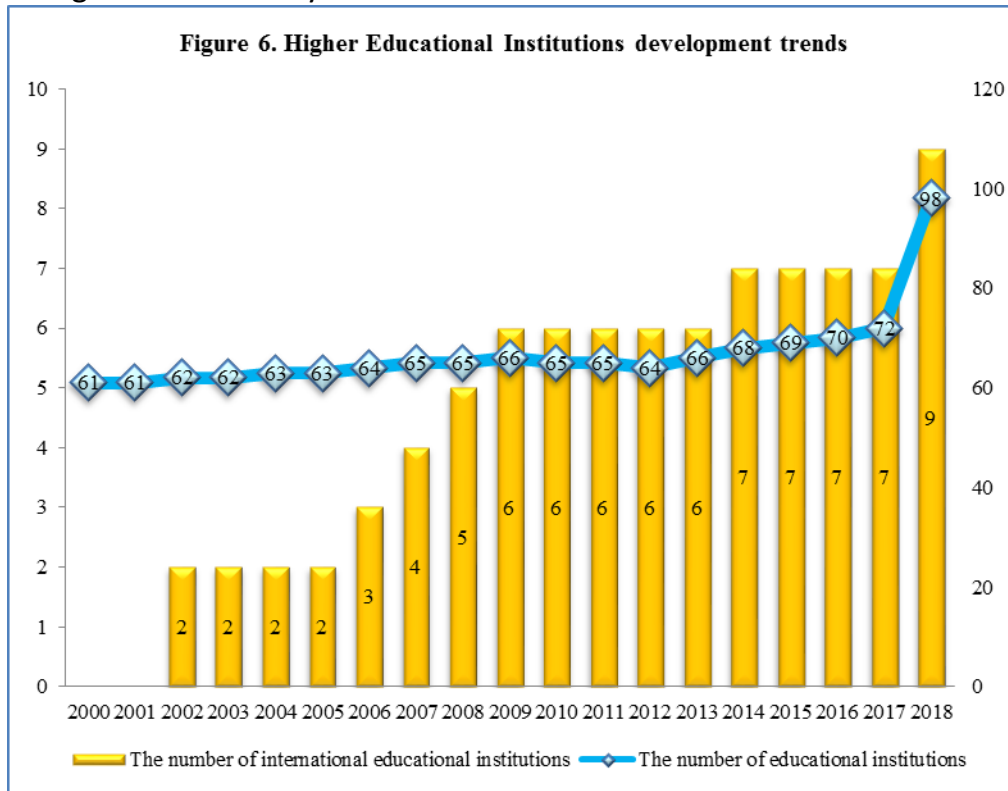
Uzbekistan is implementing the concept of development of the higher education system of the Republic of Uzbekistan until 2030 ", which is aimed at improving the system of higher education in Uzbekistan, in particular the development of public-private partnerships in higher education, increasing the level of enrollment in higher education by more than 50 percent based on the organization in the regions of operation governmental and non-governmental higher educational institutions, creating a healthy competitive environment in the field; ensuring the formation of the National University of Uzbekistan and Samarkand State University as flagships of the country's higher educational institutions; inclusion of at least 10 higher educational institutions of the republic in the first 1000 positions of the list of higher educational institutions in the ranking of internationally recognized organizations (Quacquarelli Symonds World University Rankings, Times Higher Education or Academic Ranking of World Universities), including the National University of Uzbekistan and Samarkand State University - in the first 500 positions of this list.

Furthermore the reforms in the field are being implemented in cooperation with many large international organizations and projects, including Erasmus (European Union program), JICA (Japan International Cooperation Agency), KOICA (Korea International Cooperation Agency) and others. In recent years, the number of new higher educational institutions has increased. Many of them are foreign branches. Agreements were reached on cooperation with a number of large universities of the planet, which intend to assist Uzbekistan in training personnel. For example, Bucheon University was established in Tashkent, a branch of the Indian Amity University, specializing in the training of IT specialists, a branch of the Yeosu Technical Institute. Quotas have been increased for the areas of undergraduate and graduate programs. Part-time and evening forms of education are open.

Significant changes have affected the procedure for enrolling students in the country's higher educational institutions. One of the main innovations is a change in the procedure and timing of the entrance tests, which made them more streamlined and transparent. Also, starting this year, applicants could apply not directly to universities, but through public service centers. In addition, the children received the right to choose up to three areas of undergraduate studies with the same block of subjects for which tests are conducted. After passing the exam, applicants were previously forced to wait weeks for results. Now they have the opportunity to find out the points they have earned the very next day - they will be published on the website of the Governmental Testing Center.

Analyses show that if in 1991 the number of higher educational institutions was 52, then by 2018 this the indicator increased by 34.6%, that is, it was 78. If in 1991 there were 12.1 students per teacher in higher education, then in 2018 this number was 14.3 students

[27]. For many years, branches of leading domestic and foreign universities have been opened in the regions, and personnel training in new specialties has been established. In 2018, the share of such universities is no more than 9.2% (Figure 6). We consider it purposeful to treat such universities in Uzbekistan, because it is these universities that positively affect the quality of the higher education system.



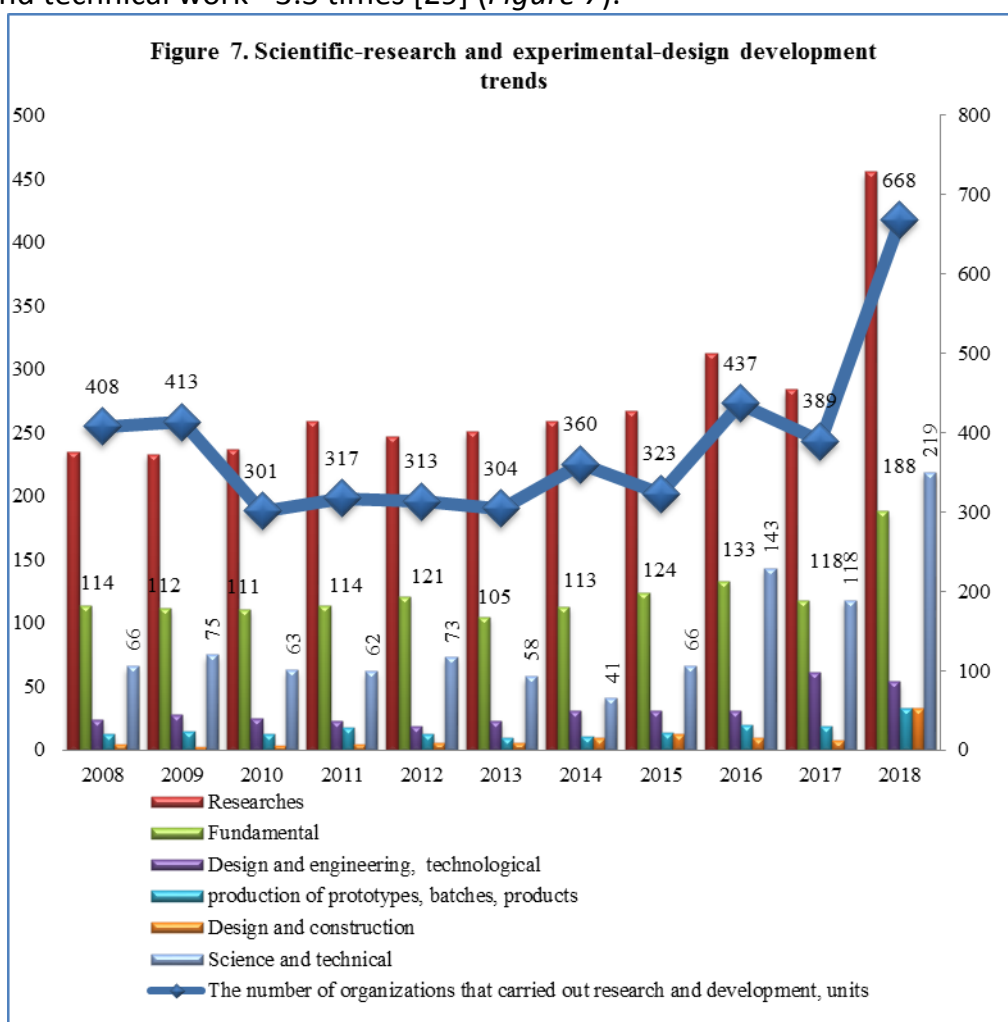
Source: The statistical data of the State Committee of the Republic of Uzbekistan.
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In general, in the period from 2017 to 2021, more than 1.7 trillion UZS (more than 203 million US dollars in equivalent) were allocated for the implementation of measures to improve the higher education system, of which 1.2 trillion UZS (about 144 million US dollars). USD equivalent) - for the construction, reconstruction and overhaul of educational and laboratory buildings, gyms and student accommodation, over 500 billion UZS (about 60 million USD in equivalent) - for equipping with educational and laboratory equipment, furniture and inventory, the creation of interuniversity laboratory complexes for joint use, as well as the development of information and communication technologies.

Scientific research and scientific potential. As the leader of Uzbekistan has repeatedly stated, it is science that should become the fulcrum of the development of the entire state. In order to achieve high economic indicators, the main role is played by qualified specialists, whose training by the country's leadership today pays special attention. Thus, in accordance with the presidential decrees, the basic salaries of teachers of schools and universities, managers and researchers of research institutions involved in the implementation of

fundamental, applied research and innovative work have been significantly increased. Such attention on the part of the country's leadership reflects the desire to strengthen the human resources of Uzbekistan, to return the former status and prestige to the fields of education and science [28].

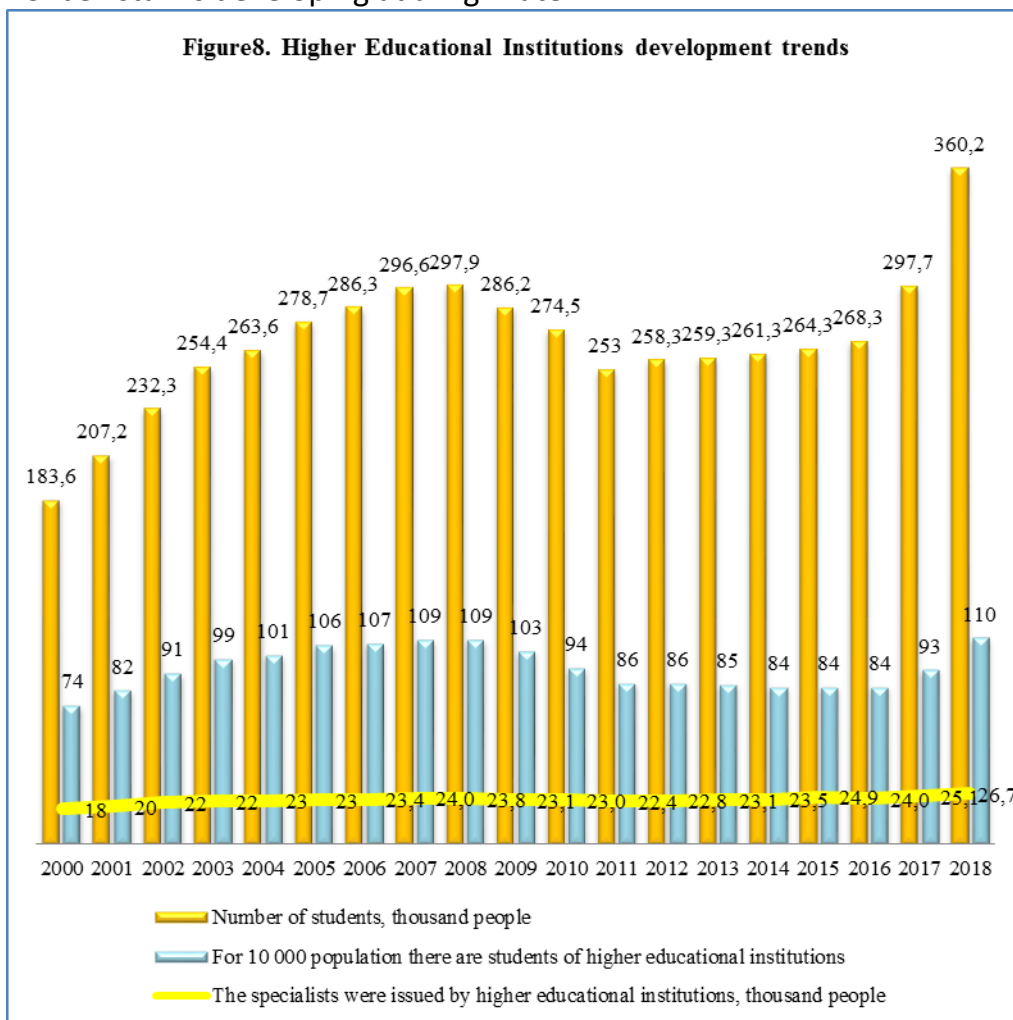
In Uzbekistan, a two-tier system of postgraduate education has been introduced, including "basic doctoral studies" with the defense of a thesis and the award of the scientific degree of Doctor of Philosophy (PhD) in the relevant field of science and "doctoral studies" with the defense of a thesis and the award of the scientific degree of Doctor of Science (Doctor of Science) in relevant branch of science. In recent years, there has been a constant increase in the number of senior research fellows in the fields of science. By 2018, the number of institutions and organizations that carried out research and development activities is 668 units, compared to 2008, increased by 64%. And also research work increased - 90%, of which fundamental - 60%, design and engineering and technological - 2.25 times, production of prototypes, batches, products (products) - 2.5 times, design work for construction - 60%, scientific and technical work - 3.3 times [29] (Figure 7).



Source: The statistical data of the State Committee of the Republic of Uzbekistan.

Available at: <https://stat.uz/ru>

By 2018, the volume of work performed by institutions and organizations that carried out research and development activities amounted to 680 billion UZS, compared to 2008, increased by 9.2 times. Of these, research work increased - 7 times, fundamental - 12 times, design and engineering and technological - 5.6 times, production of prototypes, batches, products (products) - 7.8 times, design work for construction - 9, 5 times, scientific and technical work - 21.5 times (*Figure 8*) [30]. This indicates that the scientific and technical potential of Uzbekistan is developing at a high rate.



Source: The statistical data of the State Committee of the Republic of Uzbekistan.

Available at: <https://stat.uz/ru>

Conclusion and recommendations:

- educational capital is the main component of human capital and includes the following features: in modern conditions, it is the main value of society and the main factor of economic growth;

- it is necessary to develop a concept of educational capital and include it in the theoretical foundations of education. In modern conditions it is educational capital are basic factor of competitiveness, economic growth and efficiency. The concept of educational capital can be seen as an extension of the general theory of investment to the sphere of human resources. We assume that each person, making a decision to enter, for example, a university, knows that his future income depends on the level of education, and makes his choice consciously;
- due to the closure of schools and universities in connection with the spread of COVID-19, every fifth student in the world did not attend school. School closures have resulted in learning losses, increased dropout rates and rising inequality, while the economic shock has exacerbated the damage, reducing the supply and demand for education. Together, these factors have brought long-term damage to human capital and education capital, welfare. The damage must be mitigated and even turned recovery into new opportunities. Measures need to be developed to achieve this goal, dividing them into three overlapping stages: coping policy, continuous management and improvement and acceleration;
- government spending on education is directly proportional to the formation of education capital. A paired regression and correlation model of the impact of government spending on education capital formation shows that an increase in education spending by 1 percent will lead to an increase in education capital by 1.2 percent;
- steam regression and correlation model influence on education index shows that an increase in the education index of 1 percent would result in an increase of GDP by 1.6 percent;
- the analysis shows the lack of quality and results of measures taken in the preschool education system. There are still a number of systemic problems and shortcomings that hinder the successful implementation of governmental policy in the development of preschool education. In the current system of preschool education, there are no variable programs, alternative, flexible educational models for preparing children for school are not sufficiently developed, and special governmental educational programs, following the example of developed countries, have not been introduced, providing for social, personal, emotional, speech, mathematical, physical and creative development, familiarization with the surrounding world.
- teaching personnel of public preschool educational institutions have specialized secondary education that are not adequately prepare children for school. In addition, due to the lack of systemic structural and organizational monitoring of the quality of preschool education, the effectiveness and quality of the learning process in preschool educational institutions does not meet modern requirements;
- for the further development of the preschool education system, we consider it expedient: the introduction into the preschool education system of fundamentally new approaches to training, retraining, advanced training, selection and development of workers in the preschool

education system; the formation of an effective innovative system of preschool education that provides all children with equal opportunities to receive quality preschool education; implementation of institutional transformations of the preschool education system based on the typical and species diversity of preschool educational institutions, the formation of a healthy competitive environment in this area; ensuring full coverage of six-year-olds with compulsory free one-year preparation for primary education;

- the volume of the average cost of education per student in the Republic of Uzbekistan is significantly inferior to similar indicators in other developing countries. Lack of investment in education has a negative impact on the material and technical base of educational institutions;

- raising the content of higher education to a qualitatively new level, establishing a system for training highly qualified personnel; ensuring the academic independence of higher educational institutions;

- today's theoretical knowledge is largely divorced from practical activities. Most people who have graduated from a university say that they do not feel ready to start practice. Thus, according to the sociological survey 2019–2020, only 18% are satisfied with the knowledge they have acquired and can confidently apply it. This is due to poor practical training, a weak link between the theoretical material taught and practice, and an outdated education system that no longer meets the rapidly changing labor market conditions;

- corruption in the education system is a multifaceted and multi-level phenomenon. Many laws have been adopted against corruption, but their effectiveness has not yet been assessed; low continuity between all "stages" of the educational process negatively affects the quality of education and interferes with the deep mastery of knowledge by students. "Today, none of our universities is included in the list of the 1000 best universities in the world. The National University of Uzbekistan, the country's largest university, also ranks 3971 in the international Web metrics ranking, which makes a global ranking of about 30,000 universities around the world. In other ratings, it takes 4080 place.

- 78% of those surveyed in 2020 said that the knowledge gained at school is not enough to successfully pass the entrance exams to universities;

- constant underfunding of educational institutions, which negatively affects the level of salaries of workers in the field of education and the prestige of professions.

- today's contingent of students is aimed at reading information. As a consequence - the inability to use it in solving production and social problems. It is necessary to reorient the educational process towards reflection and research. So, in high school, students are not taught, but prepared through a tutor. As a result, applicants come to the university with high test scores, but the depth and quality of their knowledge do not show positive results.

Thus, there are problems at almost every level of the system, and their solution is the most important strategic task of Uzbekistan. The new era requires new reforms that can improve the educational level of the citizens of Uzbekistan, increase the number of qualified employees and raise the quality of education in Uzbekistan to international

standards. Achieving the set target parameters requires an increase in both quantitative and qualitative indicators of the entire education system. Despite the various levers of government at the disposal of the state, the effectiveness of regulation of the education system remains low, as evidenced by the unresolved problem of the quality of education. This requires a systemic reform and radical improvement of the education system in the country, raising the process of training highly qualified personnel with modern knowledge and high spiritual and moral qualities to a qualitatively new level.

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