



Competitiveness of Higher Education in Azerbaijan: Comparative Analysis with Former USSR' Countries

Gulshen Zahid qizi Yuzbashiyeva,¹ Samira Huseyn qizi Abasova,^{1*} Israfil Habib oglu Yuzbashiyevev²

¹Economy institute of Azerbaijan Ministry of Science and Education, Azerbaijan

²SOCAR Company office, Geneva, Switzerland

Abstract

Nowadays, human potential has become the main resource for the country's development, increasing the importance and quality of education, which is the main prerequisite for the well-being of the state. Consequently, the active working population with higher education is the productive force of the economy in the conditions of international competition. In this process, higher education can become one of the main factors in increasing the country's competitiveness, since the new policy - the policy of forming highly qualified specialists with an innovative, non-standard level of thinking in the field of education is closely related to the competitiveness of the economy. The purpose of the article is to study the competitiveness of higher education in Azerbaijan, taking into account a comparative analysis of data from the countries of the former USSR.

The objectives of the study are:

- 1) Study of factors influencing the increase in the competitiveness of education
- 2) Comparative analysis of former USSR countries in terms of competitiveness of higher education
- 3) Expert assessment of the competitiveness of higher education in Azerbaijan in the context of globalization (PEST and SWOT analysis)

This article used the method of observation, statistical analysis and statistical grouping of economic indicators for 2010-2023. in percentage and thousand US dollars, also SWOT and PEST analyze of expert assessment of the current state of higher education over the past 5 years, including the period of the pandemic.

Based on the study, it was revealed:

- 1) A significant contribution of higher education to the competitiveness of the national economy
- 2) High-quality higher education helps improve the labor potential of any economy and increase its productivity
- 3) Higher education directly affects the quality of the productive forces in society
- 4) Higher education as a factor in reducing the impact of negative consequences, especially during a pandemic
- 5) Higher education is a guarantor of the implementation of ICT technologies in various sectors of the economy
- 6) The introduction of ICT technologies contributes to the emergence and implementation of new teaching methods that increase not only the level of development of education and its quality component
- 7) Existing studies have shown the dependence of labor productivity on education

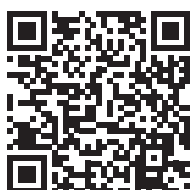
Keywords: Higher education, Competitiveness of higher education, The impact of higher education on the productive forces in society, Higher education and the competitiveness of the national economy of Azerbaijan, Government spending on innovation in the field of higher education in Azerbaijan and in the countries of the former USSR, Higher education and the ICT sector

Introduction

A distinctive feature of developed countries is that science is the most important productive force in the innovative development

of these countries. Applied and fundamental sciences, the level of R&D development influence all industries and sectors of developed countries, create conditions for identifying and real use of the

Quick Response Code:



*Corresponding author: Samira Huseyn qizi Abasova, H.Javid av. 131, Baku city, AZ 1145, Azerbaijan

Received: 14 October, 2024

Published: 25 October, 2024

Citation: Qizi Yuzbashiyevev GZ, Qizi Abasova SH, Oglu Yuzbashiyevev IH. Competitiveness of Higher Education in Azerbaijan: Comparative Analysis with Former USSR' Countries: Investigative paper. *J Psych Sci Res.* 2024;4(3):1-8.DOI: [10.53902/JPSSR.2024.04.000571](https://doi.org/10.53902/JPSSR.2024.04.000571)

intellectual potential of countries in which the relationship between science and education is strong.

According to the general opinion of the authors, human capital is the totality of knowledge, skills, motives, interests invested in a person, creating the feasibility of investing in the development of a person's existing potential; but intellectual capital is the totality of the knowledge of employees of organizations and firms that contribute to obtaining scientific, technical, technological and organizational advantages, creating the basis for sustainability in the economic development of the country and increasing its competitiveness.

The concept of "intellectual capital" has been updated due to the rapid development of scientific, technical and technological progress and is the intellectual component of human potential, and human potential is a set of components of the capabilities of human resources, as it creates potential opportunities for development and adaptation to changing conditions.

What is important is not just the presence of knowledge and abilities, but their actual use and implementation, that is, the real use of existing human potential. As for the concept of intellectual potential, according to the authors, this is a set of existing abilities that create not only new knowledge, but also benefit from it both for oneself and, for general purposes, since it is influenced by two interrelated factors - education and science.

As is known, the World Bank prepares ratings, among which there is a rating of the intellectual development of countries of the world "Knowledge Index" and a rating of the use of scientific achievements in the economy "Knowledge Economy Index".

These indices show the level of competitiveness of the country taking into account the current situation in the field of education. Changes in the organization of the education sector are important in order to increase its efficiency, contributing to increased competitiveness, that is, a new policy (formation of highly qualified specialists with innovative, non-standard thinking) in the education sector, which is related to the country's competitiveness.

This is based on the fact that human capital has now become the main resource for the country's development, creating the foundations for sustainability and increasing competitiveness, contributing to the growth of the importance and quality component of education sector.

Innovative changes in the education system itself are important, since the existing capabilities of the scientific and production sphere are not fully used in the socio-economic development of the country and, naturally, productivity decreases, which is reflected in the level of its competitiveness.

Intellectual potential is becoming the main resource for increasing competitiveness. Technologies of the information society influence the modern education system, as the speed of spread of innovations modernizes existing structures.

In this regard, it is advisable to form a system of quality education that creates the basis for a rapid transition to an innovative path in the economic development of the country. The priority of education should become the main prerequisite for the well-being of the state. Consequently, the competitiveness of higher education directly affects the competitiveness of the economy, forming new approaches to improving intellectual potential.

Factors Influencing the Increase in the Competitiveness of Education

Based on the country's priorities, the main attention is focused on the transition from resource priorities to radical and organizational and managerial innovations (up-to-date equipment and technologies, digital transformations). In 2000 British Prime Minister MR. Anthony Blair noted at the Davos Forum that "the most obvious challenge is the "new economy." Reflecting on it, we can remember the sad experience of the 70s. More than 10 years of economic problems were caused by an increase in oil prices by 5 times. 20 years have passed since then and oil, as most economists will tell you, has ceased to be the most important raw material for the world economy. Now such raw material is information. In the USA, the effect of this phenomenon has improved all economic indicators. The electronic sector of the American economy is still 8%, but it has already given the country 35% of all economic growth. And falling computer prices cause inflation to fall by at least 1% per year."¹

Information becomes a strategic resource, since the effectiveness of management depends on the possibility and degree of use and provision of information, which is one of the factors in increasing the competitiveness of the country's economy. Also, it is important to correctly and promptly use existing information, how to turn it into knowledge, and the adaptation of specialists to new technological conditions. Therefore, it is advisable to consider the factors influencing the increase in the competitiveness of the country's economy. Singapore's success clearly demonstrates to us that:

1. The country's wealth is not necessarily built on its own natural resources, it is achievable even in their complete absence
2. The most important resource is people
3. The state only needs to create the basis for the flourishing of people's talent [p.141-144]²

Higher education influences the national economy, and innovations in higher education influence the country's competitiveness in the context of globalization. Therefore, qualitative changes in the education system are important to improve the country's competitiveness.

Existing competitive advantages largely depend on the quality of labor resources and investments in human capital. The changes taking place in the technological world indicate that the main factor

in the competitiveness of the economy is the level of education and the ability to use knowledge as an advantage. As is known, a developed education system is considered one of the factors influencing the level of competitiveness of a country, since it is information and educational factors that determine the intensity of economic growth and development.

As stated above, in the context of globalization, the importance of education increases. Emerson R.W. noted "it is not the population census, not the size of cities, not the harvests that truly speak about the level of civilization - no, it is the quality of the person the country produces that speaks about it."³

The priority of education should become the main prerequisite for the well-being of the state. "...As one of the US presidents said, "America has strong universities not because America is rich, but America is rich precisely because it has strong universities"⁴. External factors affecting the competitiveness of education include:

- International competition
- Sources of financing
- Government regulation

The education system is gradually taking leading positions in the global services market. Education in the West is increasingly developing as an export industry.⁴ More and more countries are joining the competition to attract foreign students, graduate students, and interns to study. Many developed countries attract foreign students and interns in order to further use their creative resources in favor of their countries, choosing the most capable and enterprising. These countries include the USA, Canada, Australia and a number of Western European countries. They receive approximately one million highly qualified employees per year in the profile they need.⁵

"Governments in developed countries are also developing various types of financing for higher education. As you know, the possibilities of state budgets of both developed and developing countries are not limitless. For example, in the USA direct budget financing is 25%. In total, US public universities receive from 40 to 60% of their funding from the federal and state budgets, including student scholarships. And private US universities receive funds in the amount of 20-25% of the budget from the direct budget. Another 25% of financial resources are received from business structures as charity. But the main source of financing remains funds from the sale of products and services."⁶

Assessing the potential of the regional market for educational services provided by higher education institutions is the most important factor determining the attractiveness of the territory, creating a competitive advantage for the region.⁷ Highest R&D intensity in 2022 was recorded in Belgium (3.44% of GDP), Sweden (3.4% of GDP), Austria (3.2% of GDP) and Germany (3.13% of GDP).⁸

Underdevelopment and inability to effectively promote knowledge-intensive, high-tech and intellectual products in the domestic and foreign markets contribute to a decrease in the country's competitiveness. The most adaptive to change are the economies of those countries that have a high average level of education of the population.

Technologies of the information society influence the modern education system, as the speed of spread of innovations modernizes existing structures. The return on investments in human capital ensures sustainable development and the degree of adaptation of human capital contributes to the creation and development of new sectors of the economy, the implementation of necessary changes and the provision of highly qualified specialists, which ensures an increase in labor productivity, the introduction of new equipment and technologies, and access to world markets.

The Impact of Higher Education on the Competitiveness of the Economy: A Comparative Analysis of Former USSR Countries

"Using UNESCO estimates of different countries' spending on education, three groups of countries can be distinguished according to the following groups:

- Group 1 – fairly developed Western European countries (Austria, Belgium, Germany, Denmark, Italy, the Netherlands, Norway, Great Britain, Finland, France, Sweden)
- Group 2 - all industrialized countries, including Canada and the USA (Australia and often even more "generous" New Zealand are at the level of the latter) and for health care - Japan
- Group 3 - former socialist countries of Europe⁶

Since the object of study is the former countries of the USSR, we will consider the competitiveness indicators of higher education. The former countries of the USSR and the socialist countries of Europe formed an education system based on complete secondary education for the entire population. The system of higher and special education differed from the Western one in that they did not have a bachelor's or master's degree level.

If universities trained generalist specialists, specialized institutes of higher education trained specialists for certain areas of the national economy. All students received a higher education diploma after five years of study (there were exceptions). But, obtaining academic degree diplomas took 2 levels - obtaining a Candidate of Science (PhD) and Doctor of Science (DSc) diploma.

Despite the fact that many former USSR countries renamed institutions of higher education into universities and adopted Western European standards for awarding diplomas (bachelor and master), in the field of obtaining an academic degree, many countries still adhere to a two-stage qualification assessment

system. And this also affects the quality of education at universities, since students are mainly taught subjects by lecturers with PhD and (DSc) diplomas. Similarly, the level of literacy is of great importance in shaping the intellectual ability of the population of any country.

In terms of literacy levels, all countries of the former USSR have high rates. Ukraine in 2021 had a literacy rate of 100.0%, Latvia – 99.98%, Estonia – 99.87%, Lithuania – 99.83% Table 1. It should be noted that the main goal of the Soviet Union was to increase the literacy level of the population. There was a good education system, which was fully funded by the state.

But with the transition to market relations the situation became more complicated. There is a low potential for applied science, the development of which determines the sources of economic development. Increasing the level of literacy of the population helps to improve its quality component, specialists with higher education.⁹⁻¹¹

As can be seen from Table 1, the best positions in the ranking are occupied by Lithuania (18th place), Estonia (20th place), Latvia (21st place), Georgia (33rd place), Kazakhstan (38th place) and Belarus (47th place). There is a relationship between the level of education and the level of competitiveness of a country. Thus, the higher the level of education, the higher the competitiveness and the higher the level of economic development. The competitiveness index for 2019 is higher in the Baltic countries: Estonia (70.91), Lithuania (68.35), Latvia (66.98), Russia (66.74).

The expected duration of study is lower in Tajikistan (11.7 years), Uzbekistan (12.5 years), Kyrgyzstan (13.2 years), and

Azerbaijan (13.5 years). The expected duration of study is higher in the Baltic countries - Lithuania (16.3 years), Latvia (16.2 years), Estonia (15.9 years), Russia (15.8). This is due to the fact that these countries have switched to the European standard of education - 12 years of secondary school, 4 years of bachelor's degree (BA), 2 years of master's degree (MA) and / or 3 years of master's degree (MSc).

The average duration of education is lower in Azerbaijan (10.5 years), in Ukraine (11.1 years), in Tajikistan (11.3 years). The average duration of education is higher in the Baltic countries - in Lithuania and Estonia (13.5 years), in Latvia (13.3 years), in Russia (12.8), in Georgia (12.8) Table 2.^{12,13}

As evidenced by the data in Table 2, the number of the population with higher education is growing. But this indicator is low in the share of the population with higher education in GDP by country. In Azerbaijan in 2020, the share of the population with higher education in GDP was 3.2%, in Belarus - 4.5%, in Georgia - 3.2%, in Kazakhstan - 3.1%, in Kyrgyzstan - 6.2%, in Latvia - 5.7%, in Lithuania - 5.6%, in Moldova - 9.1%, in Russia - 4.1%, in Tajikistan - 4.0%, in Ukraine - 5.3%, in Estonia - 5.7%.

Azerbaijan lags behind the Baltic countries, Kyrgyzstan, Moldova, and Ukraine in this indicator. The number of people with higher education is growing in 2020. in Azerbaijan (1.39), in Georgia (1.44), in Kazakhstan (1.53), in Latvia (1.28), in Uzbekistan (1.94), and in other countries there are minor changes. Increase in labor qualifications in 2020 high in Russia (155.63), in Uzbekistan (66.41), in Kazakhstan (28.69), in Azerbaijan (14.03), in other countries this figure is lower.¹⁴⁻¹⁶

Table 1: Rating of former USSR countries by education level index (2022)

		Average duration training (in years)	Place in the ranking (2022)	Literacy level ness, % (2021)	Competitiveness Index (2019)
Azerbaijan	14	10.5	85	99.8	62.72
Belarus	15	12.1	47	99.7	-
Georgia	16	12.8	33	99.7	60.61
Kazakhstan	16	12.3	38	99.8	62.94
Kyrgyzstan	13	11.4	76	99	54
Latvia	16	13.3	21	99.89	66.98
Lithuania	16	13.5	18	99.83	68.35
Moldova	14	11.8	55	99.6	56.75
Russian Federation	16	12.8	29	99.7	66.74
Tajikistan	12	11.3	101	-	52.4
Uzbekistan	13	11.9	80	99.6	-
Ukraine	15	11.1	58	100	56.99
Estonia	16	13.5	20	99.87	70.91

Table 2: Comparative economic indicators of higher education in the former USSR countries in 2010-2020

Country/year	Population with higher education, (N), %			Share of population with higher education in GDP, %	Growth in the number of people with higher education, (GN)			Increase in labor qualifications, (LQ)		
	2010	2015	2020	2020	2010	2015	2020	2010	2015	2020
Azerbaijan	19.26	25.48	35.25	3.2	0.98	1.33	1.39	8.87	12.84	14.03
Belarus	80.18	89.57	86.6	4.5	1.19	1.12	0.97	11.29	10.6	9.1
Georgia	32.58	46.48	66.69	3.2	0.64	1.43	1.44	2.43	5.34	5.33
Kazakhstan	46.25	46.37	70.68	3.1	0.8	1.01	1.53	13.06	17.72	28.69
Kyrgyzstan	42.18	46.67	46.45	6.2	0.99	1.11	1	5.9	6.62	6.59
Latvia	69.05	74.3	94.86	5.7	0.92	1.08	1.28	1.83	2.14	2.44
Lithuania	86.57	69.74	72.01	5.6	1.09	0.81	1.04	3.17	2.35	2.91
Moldova	-	52.13	57.98	9.1	-	-	1.12	-	-	2.94
Russian Federation	76.18	79.94	86.4	4.1	1.05	1.05	1.08	150	151.31	155.63
Tajikistan	22.9	26.59	14.23	4	1.12	1.17	0.54	8.24	9.89	5.16
Turkmenistan	-	-	15.61	-	-	-	-	-	-	-
Uzbekistan	9.38	8.22	15.95	-	0.94	0.88	1.94	26.85	27.55	66.41
Ukraine	80.18	-	-	5.3	1.14	-	-	52.3	-	-
Estonia	68.18	72.17	74.23	5.7	1.01	1.06	1.03	1.35	1.4	1.37

Innovative Transformations in the Higher Education System of Azerbaijan

The formation of a system of quality education, which creates the basis for a rapid transition to an innovative path in the economic development of the country, is important in the context of globalization. During the pandemic, the programs zoom.as, "Coursera for Campus" program of Stanford University, "Blackboard Collaborate" program, "MS Teams" platform, "Moodle", "Google classroom" were widely used for distance learning in universities. Education, especially higher education, is becoming digital and actively using up-to-date information technologies, gadgets, and smart technologies.¹⁷⁻¹⁹

In the ranking of the best universities in the world (2024 and 2023), Moscow State University named after M.V. Lomonosov is ranked 87th and 75th, respectively. Other Russian universities were also included in the QS ranking. The best of them and their places in the 2024 ranking: 87 - Moscow State University, 315 - St. Petersburg State University, 319 - Moscow State Technical University after named N.E. Bauman, 342 - Peoples' Friendship University of Russia, 396 - Kazan Volga Federal University, 399 - Higher School of Economics, 415 - Moscow Institute of Physics and Technology.

The 2024 QS World University Rankings included 11 Ukrainian and 12 Kazakh universities. As you know, many countries, in order

to increase the competitiveness of their country, pay attention to the development of education, since one of the problems is the lack of competent specialists.

The existing low level of relationship between the education system and the labor market, the low level of integration of scientific, innovative and educational activities, and virtually no structural changes in the personnel training system and at the level of interaction with the state and with the employer, reduce the level of competitiveness of the country.

The Azerbaijan State University of Economics (UNEC) was included in the ranking for the first time, which included 1,403 universities from 95 countries. UNEC became the 1st university in Azerbaijan, 327th in Asia and 1051-1100 in the world. (QS Sustainability Ranking 2024) Table 3.

The state's attention to the development of higher education in Azerbaijan is growing. Since 2005, Azerbaijan joined the global educational space - the Bologna Process. As part of the State Program for Education of Azerbaijani Youth Abroad, thousands of young people were sent to the most prestigious universities in Turkey, Germany, France, Canada, Russia, Singapore, USA, Lithuania, Great Britain, Italy and other countries. period 2007-2022.

In the higher education system, more flexible and optimal content has come to the fore, as well as the implementation of

teaching strategies and the expansion of initiatives related to the promotion of innovation. In the field of higher education, attention is paid to the use of distance education, solving and developing issues of technological equipment and ensuring high-quality Internet connection. Improving the legislative framework related to the new form of education is one of the important directions of the state strategy.^{20,21}

In this regard, higher schools of Azerbaijan should move to new areas of activity, including:

- Ensuring a high-quality educational process based on distance learning technologies
- Ensuring the remote functioning of the educational organization itself as an object of management

The new situation significantly changes the legal, economic, organizational and managerial regime of their functioning. On the one hand, significant investments are needed in new distance educational technologies that ensure the transfer of the educational process to the format of indirect (remote) interaction between teachers and students. On the other hand, to organize the remote functioning of educational organizations as management objects, the formation of fundamentally new content, and the retraining of teaching and administrative personnel.

When introducing IKT into the process of distance education, it is necessary to take into account not only psychological and organizational factors, but also regional, national, cultural characteristics, spiritual and moral values of the population of Azerbaijan.

Table 3: PEST analysis of the implementation of ICT in higher education in Azerbaijan over the past 5 years, including the period of the pandemic

Positive aspects	Negative aspects
Political factors	
➤ The following training systems are used in the field of education around the world	➤ In pandemic situation in Azerbaijan, the learning process is carried out mainly through Microsoft Teams and Zoom programs with the support of the Ministry of Science and Education
➤ Open meetings	➤ The decision to introduce distance learning forms and technologies is possible only on the part of the legal regulator (Government, Ministry of Science and Education)
➤ Web CT	➤ The state mainly supports universities (including non-state ones) only legally
➤ Adobe Connect	
➤ Electronic Nokta	
➤ Moodle	
➤ Black board	
➤ Azerbaijan is witnessing the development of a national platform for online courses and an increase in the number of online courses posted on this platform	
➤ Ensures the development of a digital learning environment for all	
Economic factors	
➤ Creation of national services for providing remote work (for example, a service for distance learning for students in universities)	➤ Problems of organizing quality education during a pandemic
➤ Joining forces with technology companies, and stimulating the creation of competitive services (through grant competitions for potential suppliers)	➤ Risks of reducing the revenue base of Universities (decrease in the solvency of potential applicants/students, etc.)
	➤ Lack of own resources for the constant development of the educational and methodological base and material and technical infrastructure of distance education
Social factors	
➤ Mutual communication via the Internet	➤ Social isolation during a pandemic
➤ Creation of virtual project teams that jointly perform tasks	➤ Problem of adaptation of students and psychological barriers
	➤ Lack of self-motivation and time management

	➤ Limited opportunities to study some subjects related to technical equipment
	➤ With the increase in the share of distance education, it is necessary to pay special attention to the issues of socialization of students
	➤ Lack of volunteering - providing assistance in distance learning to both students and teachers
Technological factors	
➤ The presence in the world of such virtual learning spaces as U-Demy, Coursera, Khan Academy, Quora, EdX platform	➤ Dependence of Internet connection on electrification capabilities
➤ Application of technological solutions to ensure security in the digital environment	➤ There is "technological" inequality during the transition to a distance learning format (poor Internet connection, lack of electricity)
➤ Development and implementation of programs for the development of digital tools for organizing and conducting online courses	

Table 4: SWOT analysis of the implementation of ICT technologies in higher education in Azerbaijan during the pandemic

Strengths	Weaknesses
➤ Experience in distance teaching using ICT technologies	➤ Недостаточная техническая оснащенность (нехватка компьютеров и качественного интернет-связи)
➤ The presence of a special unit responsible for the quality provision of the educational process based on distance educational technologies	➤ Insufficient preparedness of adult teachers for distance learning
➤ Availability of modern information and communication infrastructure at universities (including software and hardware) for the implementation of educational programs in a remote format	➤ Insufficient technical equipment (electricity problems, lack of equipped computer, weak Internet connection, etc.)
➤ Availability of highly qualified teaching staff with knowledge of modern information technologies	➤ Insufficient technical equipment (lack of computers and high-quality Internet connection)
➤ Constant monitoring of the quality of implementation of the educational process	➤ Psychological barrier for some students in a remote format;
➤ Studying the degree of student satisfaction (feedback from students)	➤ Psychological problems (for teachers and students) during the transition to remote learning
Opportunities	Threats
➤ Availability of certain accessible (including free) domestic and foreign positive experience in the development and application of modern distance educational technologies (educational programs, guidelines, etc.)	➤ Decrease in the quality of education, level of training and qualifications of specialists
➤ Increasing the readiness of potential students to study remotely	➤ Insufficient development of the regulatory legal framework for regulating distance education
	➤ "Washing out" from the educational space of small (especially non-state) universities that are unable to withstand competition with large state universities

Let's consider a SWOT analysis of the use of the capabilities of the ICT sector in higher education in Azerbaijan Table 4.

The lack of such skills indicated in the table limits the possibilities of using high technologies, programs and modern techniques, and creates serious obstacles to learning and activity. In this regard, one of the main directions of action should be to expand the scope of measures aimed at developing digital skills.

Conclusion

1. The higher the level of education, the higher the competitiveness and the higher the level of economic

development of the country. Competitiveness is assessed based on the level of formation of one's economic future and, given the current situation, measures to increase competitiveness are important

2. Due to underdevelopment and the inability to effectively promote knowledge-intensive, high-tech and intellectual products in the domestic and foreign markets, there is a decrease in the level of competitiveness of the country.
3. Education should be a priority in the country's budget. The economic growth and development of the country,

competitiveness in the domestic and world markets depend on investments in higher education

4. The existing low level of relationship between the education system and the labor market, the low level of integration of scientific, innovative and educational activities influences structural changes in the personnel training system and, consequently, reduces the level of competitiveness of the country
5. Based on the country's priorities, the main focus should be on innovation, modern technologies, and digital transformation
6. The main objective of the ongoing reforms in higher education should be the gradual introduction of new teaching methods and information technologies in the educational process

Acknowledgments

None.

Funding

This Investigative Paper received no external funding.

Conflicts of Interest

Regarding the publication of this article, the authors declare that they have no conflicts of interest.

References

1. Literacy rate, 2021.
2. Thatcher M. The Art of Statecraft. Strategies for a changing world/ Trans. *Alpina Publisher*. 2003:pp.504.
3. Emerson RW. Wise thoughts. 1836.
4. Two years of radical innovation. Conversation between Izvestia-Kazakhstan correspondent V. Sankovich and the rector of KazNU, academician. B. Zhumagulov. 2010.
5. Recruitment of foreign students to Russian universities is increasing.
6. Plaksiy SI. Investments in education. J-l "Knowledge. Understanding. Skill". 2015;3:18-29.
7. Nesterova DV. Investments in education as a factor of economic growth. 2004.
8. R&D expenditure levels in countries around the world.
9. Which Countries Have the Highest Literacy Rates?! Top 10.
10. <https://take-profit.org/statistics/competitiveness-index/>
11. Tajikistan Economic Indicators.
12. <https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS?view=chart>
13. https://ru.theglobaleconomy.com/rankings/Education_spending_percent_of_government_spend
14. Levashov VK. Intellectual potential of society: sociological measurement and forecasting. *Psychological Science and Education*. 2009;14(4):41-49.
15. <https://data.worldbank.org/indicator/BX.GSR.ROYL.CD?view=chart>
16. <https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS?view=chart>
17. <https://data.worldbank.org/indicator/SP.POP.SCIE.RD.P6?view=chart>
18. <httpsh/nettpeftegaz.ru/news/standarts/805987-raskhody-na-niokr-v-stranakh-evrosoyuza-uv>
19. <https://www.knowledge4all.com/country-profile?CountryId=1007>
20. Azerbaijan: Innovation index.
21. <http://zakoniporjadok.my1.ru/publ/11-1-0-22434>