

## TRANSFORMATION OF THE SYSTEM OF EDUCATION IN KAZAKHSTAN

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**Abstract:** Since Kazakhstan joined the Bologna Convention in 2010, the national education system has undergone significant changes. Qualitatively updated training standards, implemented a three-tier system “Bachelor’s-Master’s-Ph.D” and a Unified National Test. In education, private sector was introduced. Within the framework of the presidential scholarship program “Bolashak” the best students were awarded to study in foreign universities. Furthermore, educational grants of CIS and SCO were ratified allowing Kazakhstani students free higher education and free internships in the Russian Federation and China.

Education is one of the three main factors of subjective ranking of the United Nations Development Program (hereinafter - UNDP). In 2015, Kazakhstan joined the group of countries with high levels of development, taking 56th position among 188 economies in the world.

In 2013, Kazakhstan was ranked as 27th among 170 countries in the Global Youth Development Index. International experts highlight positive youth employment and participation trends in political life of the country.

2016 was marked by the ratification the Convention against Discrimination in Education and the Convention on the Rights of Persons with Disabilities introduced in Kazakhstan. All the provisions of the conventions are identified in national legislation, including the Law of the Republic of Kazakhstan “On Education”.

**Keywords:** Kazakhstan, education system, innovative development, university ranking, private sector, technical personnel, professional education, public order, Multilinguism, Research potential.

### INTRODUCTION

Based on the abovementioned, the study of the current state of the education system of Kazakhstan, which in geopolitical conditions acquires new quality, analysis of educational opportunities and risks, that is of particular interest for the authors, is the main purpose of the study. One of the objectives of the paper is to explore education as a whole, legal and regulatory framework, access to quality educational services, as well as regional differences. There has been a partnership of universities with enterprises of the country, as well as targeted training of specialists.

The regulation mechanism of regional imbalances of manpower through educational migration “Mangilik el zhastary - industriyaga!” have been launched.

The trends in university research have been marked as an effective measure of innovative economy. The integration progress of universities and businesses aims at designating the format of mutually beneficial opportunities and identifying the existing and potential risks, giving suggestions on harmonization of cooperation between the countries.

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The authors in the study in order to achieve their goals in assessing the state of education apply historical, systemic and comparative approaches. In addition, the main place among the research methods take legal and institutional levels of regulation of the Kazakhstan education system as a whole.

The novelty of the work is, above all, the need to continue research in this area. In general, we can note the lack of study of the problem. In particular, in our opinion, in Kazakhstan, there is no analytical work that characterizes the state and assess this sector of the economy. Note that the reforms have radically changed the social base of education and its qualitative and quantitative indicators, system transformation continues.

### **METHODS**

Monographs on education, research articles, reports, surveys, official statistics constitute the sources for this study, which are generally allowed to highlight the main aspects of the article.

Taken into consideration the great importance in the state development, the authors applied factual, documentary and historical materials used as the case studies. Various methods were used:

1. Due to an analytical method the main changes in Kazakhstan's modern educational environment have been reviewed.
2. On the basis of the comparative method quantitative and qualitative parameters of this field have been studied and analyzed.
3. In terms of the historical method, we studied the legal framework in the field of education

### **RESULTS**

Summing up the results of our study, we note that during the period of reforms Kazakhstan education system has succeeded in its development: the mechanism of governance of education has been put in the right way; a national model in this area is being formed; the Republic participates in international rankings; pilot project of per capita funding of the student has been launched; increased funding for regions, specifically the teacher training is being implemented. Regarding TVET, new colleges in all regions have opened their doors to students, professional standards were developed, independent certification of college graduates is implemented, continuous update of material and technical resource is obvious.

It should be noted that the priority of higher and postgraduate education in Kazakhstan indicated trinity of education, science and industry. The process of institutional transformation of graduate schools in the country has been started. The first research institution, Kazakh National Research Technical University named

after Satpayev has been founded, which formed a pool of leading scientists of the country, carrying out fundamental and applied scientific and educational research. Moreover, 16 commercialization offices, 3 Technoparks and 4 business incubators have been functioning. The flagship of global education and scientific discoveries has become an autonomous organization of education “Nazarbayev University” (hereinafter - Nazarbayev University).

Training of specialists is carried out in view of the social order. Eleven higher education institutions have been appointed as major institutions in preparation of highly qualified specialists for the successful implementation of projects on State Program for Industrial and Innovative Development of Kazakhstan. (hereinafter - SPIID).

Academic mobility of students and faculty has been developed significantly. In 2011-2015, 4913 students of Kazakhstani universities were enrolled in leading universities of the world.

However, secondary education faces the problems, among which we mention: the lack of development of school infrastructure; not effective procedure of examination of educational literature; innovative learning technologies are not fully applied. Furthermore, the limited ability to access to school information technology, thus, low figures of school accessibility to international educational Internet resources. Only 1075 schools are involved in e-learning system; subject teachers with English language proficiency are still in demand; the issue of three-shift education in schools has not been solved yet; there is a significant disparity in access to quality educational services according to different criteria; there is not sustainable funding of the regions; the school teacher status needs to be highly recognized, teachers’ salary needs to be increased to the level of the republican average wages; health insurance to improve living conditions need to be provided.

Concerning higher education it should be noted, that the factors slowing down the entry of the republic into the international market are as follows: the lack of the university faculty with degree, since only 2% of the total are PhD.

1. 66.3% of Kazakhstani employers participating in the survey indicated the lack of experience of cooperation with universities in R & D.
2. The low number of graduates in technical disciplines.
3. prestige of the teaching profession leads to a set of at-risk students.

IMD ranked Kazakhstan in 44th position in terms of “imports of students” indicator among the 56 countries of the world. The share of foreign students is only 2.5%, their share reaches 9-10% in the OECD countries; infrastructure and leisure activities at universities do not meet the needs and expectations of nonresident and foreign students.

## DISCUSSION

During the years of independence, the Republic of Kazakhstan as a whole has not lost the achievements of the Soviet period in the field of education: mass literacy, high availability of free higher education, human resources. In 2014, 31% received higher education among the economically active population, 33% - secondary vocational education, 24% - secondary education 6% - basic vocational education, 4% - incomplete higher education (National report on the status and development of the Republic of Kazakhstan education system (based on 2014)).

A modern regulatory framework has been formed: the laws “On Education” (1992; 1999), “On Higher Education” (1993), “On Science and Scientific and Technological Policy” (1992). Recent amendments to the law “On education” were adopted in 2011. (On amendments and additions to the Law of RK “On Education). It is worth noting the adoption of the law “On the commercialization of scientific and (or) scientific and technical activities” in 2015 designed to encourage the promotion of the achievements of Russian science in the international market of educational services.

In accordance with the new laws of Kazakhstan, education system must perform the following tasks:

1. Formation, development and professional formation of a person on the basis of national and universal values, the achievements of science and practice.
2. Expansion of the autonomy and independence of educational institutions, democratization of educational administration.
3. Functioning of the national evaluation system of the education quality that meets the needs of society and the economy.
4. Implementation and effective use of new educational technologies, including credit, online, information and communication, facilitating rapid adaptation of vocational education to the changing needs of society and labor market.

### **School And Technical Vocational Education And Training**

In a new national model of education, as well as all over the world, pre-school education and training plays a major role. In 1999, a mandatory free preparation of 5-6-year-olds was introduced, aimed to provide children with equal opportunities to start school. Over 12 thousand one-year preparatory classes in schools and kindergartens started to work. Over 75% of the country’s schools are located in rural areas. There are maintenance and expansion of their network, priority to provide with computers and textbooks of new generation, restoration of benefits for the teachers of the village workers were considered. In terms of the State program of system of secondary education, in 2001-2002 computerization of schools was implemented.

The main objective of the program “Balapan” is to provide pre-school education with 100% coverage of pre-school children by 2020, average annual expenditure per child in pre-school education organizations according to “Balapan” program is about 249 thousand KZT. (On approval of the program to provide children with preschool education and training “Balapan” in the 2010 - 2020 years).

At the beginning of the 2012-2013 school year, 7636 day schools functioned in the Republic of Kazakhstan, including 7529 (98.6%) state schools. The number of students amounted to 2533.9 thousand people (0.4% less than in the previous academic year) (Daily secondary schools in the Republic of Kazakhstan at the beginning of 2013/2014 academic year).

In the country at the beginning of 2015-2016 academic year, 7511 school functioned, including 7160 comprehensive schools. 181014 students were educated in 3817 schools with Kazakh medium of instruction, 857680 students with Russian medium of instruction. 102628 students get their education in the language of national groups: Uighur - 4, Uzbek - 11, Tajik - 14, German-7, Ukrainian - 1, Turkish - 33 schools. Mixed schools with different languages of instruction amount 2138, in which 1.146.769 students get their secondary education (Data on the distribution of schools by language of instruction for the 2015-2016 academic year).

The report of the Organization for Economic Cooperation and Development (OECD), the results of PISA (Programme for International Student Assessment) for 2012 were marked by the successful performance of the Republic of Kazakhstan. Kazakhstan has experienced the highest growth of the average score among 65 countries in “mathematic and scientific competence” conducted among 15-year-old participants, which is quite a good improvement in the dynamics in the international PISA program. In the ranking of the UN Human Development Index (Human Development Index), Kazakhstan rose in 2015 by 14 positions to 56th place. HDI - 0.788 (in 2014 - 0.757); life expectancy - 69.4 years (2014 - 6.5 years); the average number of years spent on education - 11.4 years (in 2014 - 10.4 years); and the rate of school life expectancy remained unchanged and amounted to 15 years (Kazakhstan has risen in the ranking of the United Nations Human Development Index by 14 positions).

In the ranking of competitiveness of the World Economic Forum for 2015, Kazakhstan took the 42nd place among 140 countries, having improved its previous position by 8 points. Among the CIS countries, Kazakhstan in the ranking is on the second place after Azerbaijan (40th place). (Kazakhstan improved by 8 points in the ranking of competitiveness of countries in the world)

The Republic of Kazakhstan is still characterized by inequalities in access to quality educational services for a variety of reasons: economic (rich / poor families), territorial (urban / rural), ethnicity (schools with different languages of instruction), health (children with limited development opportunities). From 1 September 2015,

the four regions of the country launched a pilot project on the basis of per capita financing “money follows the student”. The goal is to provide the conditions under which a decisive role in the allocation of funds will play a great role in the needs of students for quality education.

In 2011 no regions suffered from the decline in expenditure on education relatively to 2010. In most regions, funding for education varied by increasing funding for one year and decreasing for another. Hence, equitable funding is observed in the field of education funding from local budgets. The cost per student in Kazakhstan is growing every year. Thus, in 2005 they accounted for 49.6 thousand tenge (382 USD) per student in 2010 163 100 KZT (in 1101 USD). In 2015 total public expenditure per student amounted to 13% of GDP per capita, *i.e.* 544 300 KZT (in 1615 US dollars). In general, in the Republic from 2005 to 2015, the cost per student has become 4-fold greater, despite that Kazakhstan is the only among the 52 OECD countries and OECD partner- countries (A comprehensive review of the country of Kazakhstan).

One factor affecting the quality of education is the cost per student. Kazakhstan spends the lowest amount (12% of GDP per capita) on education per student among countries of Europe and Central Asia - participants PISA 2012. Kazakhstan participated in PISA in 2015, but since statistics requires qualitative analysis of the data is expected to be published at the end of 2016. To compare, in Russia 21% is allocated for education, among OECD countries the average amount is 27%. OECD indicators are shown in Table 1.

**TABLE 1: OECD INDICATORS**

<i>Level of education, % of GDP</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>Average in OECD</i>	<i>Minimum in OECD, % of GDP</i>
Preschool	0,4	0,6	0,6	0,6	0,1 (Ireland) 0,4 (Holland, Slovakia, Italy)
Secondary school	1,8	1,9	2,1	3,6	2,4 (Turkey), 2,6 (Slovakia), 2,7 (Hungary), 3,3 Poland
TVET	0,3	0,2	0,2	3,6	
Higher education	0,4	0,4	0,4	1,4	0,8 (Italy), 1,1 (Australia, Hungary, Poland)
Others, % of GDP	0,9	0,3	0,2	–	–
% of GDP	3,8	3,5	3,6	5,6	–

Source: MoES RK, OECD “Education at Glance” 2014. OECD Indicators 2014

In addition to the underfunding of ungraded schools, there is funding discrepancy in the regional aspect. Pilot ungraded school of the northern region receives almost two times less (2.5%) on the development than a similar school in the southern region (4.4%). One reason is the large utilities in the North (5.4% of the total budget), while in the south of Kazakhstan are equal to 0.3%.

To comply with international standards in the field of education, preparation of teaching staff, including a component of this number is very important. The country's teaching staff in 2014 accounted for 297, 2 thousand people, which is significantly higher than in 2011 (10,923). Comparative analysis of the educational level of school teachers shows a slight increase in the proportion of teachers with higher education (1.8%). In terms of regions, a high proportion of teachers with higher education recorded in schools of South Kazakhstan (96%) and Kyzylorda (92.6%) regions, Almaty (93.3%) and Astana (91.2%).

In 2014, the proportion of teachers with higher and first qualifying category amounted 50.2%. Moreover, for 4 years the proportion of teachers with higher category, has increased by 3.2%. In this regard, we note that for 73,3 thousand of teaching staff the training courses will be held in Kazakhstan up to 2020. Increasing school teacher status is only possible when solving social problems: an increase in wages, the solution of housing problems, health insurance. However, civil society has to be responsible for younger generation. Teachers agree and in turn understand their responsibility to the state in the development of personality in the renewal of the country. The gross enrollment ratio in secondary education was 97.5% in 2003, and in 2014 - 103. 5%

At present, the system of vocational education has reached the level of sustainable development, having a profound process of modernization. It formed a network of 888 technical and vocational education institutions (TVE), with an enrollment of more than 587,000 people: about half of them study by state order, 52.8% master technical, technological, agricultural majors.

It is worth noting that in the Republic the number of colleges amounted in the 2003-2004 academic year- 357, and in 2015-2016 - 780. The increase was due to the state support, new colleges were opened in all the regions, whereby the issue of training mid-level professionals was and still under the consideration. In this connection, the number of students increased from 250 935 to 498 965 people, as well as the number of teachers increased from 21.642 to 37.489 people.

A key role in the establishment of the National Qualifications Framework (NQF) has played the project "Modernization of TVET", implemented due to the World Bank loan. In its term 13 sectoral qualifications frameworks were developed, as well as professional standards for 81 specialties for 10 sectors of the economy (Implementation of the National Qualifications Framework). Ministry of Education and Science of RK launched independent certification of qualifications of college



graduates. 123,500 people were certified on the basis of 737 TVET educational establishments. From the very beginning, this process took place among 88,400 young people (72%). Overall in 2012, 98 200 graduates (80%) received their certificates. Compared to 2011, the number of graduates has increased by 1670 people.

In addition, on the basis of three industry associations, independent proficiency testing centers were established in the pilot mode - Kazakhstan Association of Oil-Gas and Energy Sector of KazEnergy, Republican Association of Mining and Metallurgical Enterprises, Kazakhstan Tourist Association.

In 2012, 6382 TVET teachers passed training course in the inter-regional centers, joint-stock company “Orleu” training centers abroad.

Much attention is paid to updating the material and technical base of the TVET system. In 2010, for these purposes, the government allocated 896 million KZT and in 2012, five times as much - 4.7 billion KZT, it led to significant reduction of complaints from employers regarding the quality of training of graduates. Every year funding for the TVET system increases: in 2012, it increased by 72.2% compared to 2010 and amounted to 91.1 billion KZT.

In accordance with the request of the Head of State Holding “Kasipkor” was established which coordinates the work of four inter-regional centers, four world-class colleges and nine partner colleges in all regions, as well as forming a new VET infrastructure and implements recognized in the world of innovative learning technologies. (On approval of the Strategy of development of the non-profit joint-stock company holding “Kәсіпқор” for 2012 - 2021 years)

In 2013, in Atyrau started the first college-network holding the Interregional Professional Center for training and retraining of personnel in the oil and gas industry (APEC Petrotechnic). College was created in collaboration with the world leader in training for the oil and gas industry - the Canadian Institute of Southern Alberta Technology (SAIT Petrotechnic). Training is conducted in English with the issuance of certificates according to Kazakhstan and international standard.

In the field of TVET partnerships with countries, Norway, Germany, Singapore, the Republic of Korea were established, as well as with international and foreign organizations - the European Training Foundation, the German Society for International Cooperation, the British Council, the World Bank. Several projects are being implemented to support the development of vocational training.

Kazakhstan has introduced free vocational education, and starting a new project will be implemented in 2017 “Free professional education for all”.

### **Higher Education**

Analysis of Kazakhstan’s accession to the Bologna Declaration shows that our country has resulted in compliance with international standards of the system of higher education.



However, the quality of higher education assessment requires a balance between innovation and tradition, academic excellence and social necessity, standardization programs and freedom of choice.

From 1999-2000 academic year, admission to higher education institutions was carried out on a new model of the formation of the student number through complex testing.

In 2003, the number of universities amounted to 180, in 2016 - 127. This shows the increasing requirements for higher education institutions. The number of students reached 658 in 2003.106 and in 2016 - 459.369. The decrease was due to the introduction of the Unified National Test (UNT), as well as setting a threshold score in the national and state higher educational institutions. The teaching staff accounted 40.972, in 2016 - 38.087. The index of higher education higher education enrollment in 2003 amounted 5.085, in 2016- 4.837. The implemented reforms have improved the quality of teaching.

According to the Ministry of Education and Science of the Republic of Kazakhstan (MoES) in the country's universities introduction multilinguism was launched in 2008. Among 360 thousand full-time students enrolled, 1.4% study with foreign language of instruction, and out of 40.5 thousand faculty, 8.3% speak in foreign language. (Multilingual education at the Kazakh Technical University)

In Kazakhstan, private education has taken its place. Whatever opponents and supporters think about this change, we must admit that it has definitely changed the education system, opening up new opportunities. It should not be the case the existing discrimination of the private education sector. The state must equally take care of the students and teachers of public and private universities.

Therefore, among the leading universities of the country, every fifth is a non-state. They are Kazakhstan Institute of Management, Economics and Law (KIMEP), Kazakh State Law University (Kazakh State University), Kazakh Economic University KazEU (KazEU), Karaganda Economic University of Kazpotrebsoyuz, Almaty Technological University, Innovative Eurasian University, the University "Turan", University of international business, Eurasian Institute for the Humanities, Suleiman Demirel University etc. Ranking figures demonstrate an increase in the authority of private higher education in the country. Many of these institutions, despite the tough competition, unequal starting conditions, not only survived, but also held a well-known educational institutions. (Private education: problems, priorities and prospects). The privatization of the education system made possible for the students from ore vulnerable category to study, as the cost of training is acceptable for this category of citizens. However, the threshold is very different which varies from 50 to 80 points for applicants of national, public and private universities. With regard to social equality in education, in Kazakhstan as well as in any other country, there are groups with different incomes.

Presidential scholarship “Bolashak” has been launched on November 5, 1993 aimed to improve the quality of educational activities, integration in the world educational space. Over the years, 11.126 Kazakhstans were awarded scholarship “Bolashak” to study in the top 200 universities of 33 countries (Bekishev 2013).

In 2008, access to the program was expanded in order to increase the level of education of the rural population (introduced category of “rural youth”), reform of the state apparatus (introduced the category of “public servant”) and the development of the research potential of the country (introduced the category “science teachers at the Masters “and” scientist for training”).

Since 2011, priority is given to the preparation of master’s and doctoral students rather than bachelor’s, the amount of research internships for scholars and university faculty has increased. The fact that Kazakhstan universities have training experience to the collapse of the USSR, and in view of the entry into the Bologna process encountered some difficulties associated with the preparation of master’s and doctoral PhD, according to international standards.

This deliberate policy of improving implementation of the mechanisms for “Bolashak” scholarship resulted in the recognition of the best scholarship program among the 11 similar scholarships at the VIII International Conference Going Global in Miami in 2014.

The universities of the country introduced the procedure of state accreditation, which allows the system to enter higher vocational education in the world educational space.

In the 2006-2007 academic year, it made an attempt to determine 60 leading universities in the country, as well as the creation of the general rankings in areas of training. Eurasian National Gumilyov University and the Al-Farabi Kazakh National University became in the top rating. It should be noted that such private universities as Innovative Eurasian University and the University “Turan” also participated and its follow-up took the sixth position, Kazakh-American Free University - the seventh, Suleiman Demirel University - at the eighth position. (Alshanov 2007).

In the 2013-2014 year, according to research by independent agency for accreditation and rating IAAR (Independent Agency for Accreditation and Rating) accredited 29 Kazakhstan universities. (A list of accredited educational organization). Two university Gumilyov Eurasian National University and Al-Farabi Kazakh National University in 2012 entered the top 400 most successful universities according to QS version of the British agency of the world (Omirbaev 2009).

According to Independent Kazakhstan Quality Assurance Agency in Education, National (General) Ranking - 2014 was drawn up where the best universities of Kazakhstan, formed on the basis of the analysis of academic statistics, expert assessment and a survey of employers.

The National (General) Ranking of multidisciplinary universities of Kazakhstan includes 13 universities, including: Al-Farabi Kazakh National University, Gumilyov Eurasian National University, M.Auezov South Kazakhstan University.

### **Education And Research**

Based on the experience of leading countries in the Republic of Kazakhstan landmark to bring together educational institutions and research institutes to improve the quality of training and attracting young people to research activities from college is taken into consideration, that is, implements the principle of “education through science”, in the structure of universities set up research centers. Thus, in December 2015, K. Satpaev Kazakh National Technical University and Kazakh-British Technical University became unified research centers.

During 2001-2008 expenditure on education as a whole, and higher education has increased in 5.8 times. The share of spending on higher education in the total expenditure of the state budget for education increased significantly. That radical structural changes in the funding of higher education institutions to further sources identified the development of the higher education system and had a significant influence on the formation of the education market. (Economic science vector)

Based on international experience, mechanism for funding research and innovation work, based on the program-oriented principle is considered to be the most effective.

A new system of financing research was implemented: basic, grant and program-target. public funding for research has been constantly increasing - from 20.1 billion KZT in 2010 to 52.9 billion KZT in 2013 (an increase of 2.5 times), it amounted 48.1 billion KZT in 2014. In 2015, within the framework of grant funding 1933 projects worth 16.4 billion tenge program-oriented - 72 scientific and technical programs in the amount of 14 billion KZT were implemented. The newly established mechanism of competitive selection of scientific projects and programs has successfully functioned. By the examination of research, projects attracted 1,758 foreign researchers from 70 countries and 1229 Kazakhstan scientists (Greg, et. al. n.d.).

Nonetheless, funding for science in Kazakhstan remains high, spending on research from the budget 0.15% of GDP. According to UNESCO, the global economy highlights the science of 1.7% of GDP.

In countries with developed market economies and social infrastructures, the improvement of living standards depends mostly on the practical implementation of industrial innovation in production. State deprived of the opportunity to provide with direct support, does not break the existing balance of forces on the market (Zvjagincev 2013).

Best practice shows the development of innovation is directly related to the state of fundamental applied science and commercial demand for scientific and technical developments. At the same time one of the indicators that characterizes the state's attitude to scientific and technical progress, is funding research.

In 2007 - 2013 research and development expenses increased by 31% in the world and reached 1.478 billion USD in 2013, whereas 28% of this amount is spent in the United States. In other countries, constituting 67% of the world population, spending on research amount only 23% of global spending on research and development (R&D). Russia allocated 24.8 billion USD in 2013 that is 1.7% of global spending on research and development. (National rating of the best universities of Kazakhstan)

It is worth noting the financing of research has been growing. In 2015, 49 billion KZT was allocated on the development of the sphere. In addition to the basic and grant funding, the method of program-oriented funding has been implemented, which is widely spread in Western countries and the United States (Ibraeva and Tursynkulova 2014, p.30).

In Kazakhstan, there is an outflow of scientists: the main reasons are the lack of opportunities for practical implementation of the knowledge obtained, including abroad and apply them in practice. Since the introduction of PhD program, the significant decline in the proportion of graduates, staff replenishing the body of scientific and pedagogical workers have been observed. About 700 PhD students have undergone their viva, whereas before, due to traditional system, each year about 1500 candidates and 300-500 doctors of sciences were registered (Zhanbulatova, et. al. 2015).

Kazakhstan heralded the objective of entering within the next 10 years in the top 50 most competitive countries of the world, which is determined by the World Economic Forum ranking, based on the Global Competitiveness Index (GCI). Among ten indicators, two GCI indicators are related to the development and quality of education in the country (Kusainov, 2007).

## **CONCLUSION**

Thus, the development of national education in modern conditions is aimed at raising a qualitatively new level of training corresponding to international standards. This is justified by the validation of updated training programs in 30 pilot schools. New mechanisms for professional development of teachers have been implemented in the country. A key aspect of the teacher is to become a scholar.

According to the new three-level training program, developed by the Center of Excellence NIS in 2012 - 2015 conducted the training courses for 52,500 teachers. For the past 5 years, more than 2,000 online lessons for pupils, 188-online workshops and 400 workshops for secondary school teachers have been conducted.

The problem is the use of scientific personnel. According to the Agency for Statistics, the total number of doctoral students who received a degree in science, only a third is employed (223 people). It is necessary to strike a balance between research, the quality of which is the main criterion for the award of an academic degree, and focus on the broader market of intellectual labor.

The analysis of the content of PhD programs shows that on average 60% of the time is allocated for research, and 40% for taking courses in the specialty and methodology. Disciplinary features affect the duration of the program. For instance, studies related to the conduct of complex experiments or field trials of engineering and science disciplines, require quite a long time. As you can see, the educational component of the national doctoral does not meet modern representations on the higher education. Training program in foreign countries for highly qualified specialists usually do not set strict time frames. As a rule, it is three to four full years of training or steady five to six years part-time study.

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