Abstract

Implementation of innovative forms of integration of science and education, as international experience shows, enhances the effectiveness of research. The ultimate goal of integrating research and education in Kazakhstan should be staffing the national innovation system and the economic situation. The essence of the integration of science and education is to build sustainable relationships between scientific and educational sphere, on the basis of project of financing, management, promotion and interaction. Science and education enriches new knowledge, developing new, innovative methods of teaching and education. It is a source of feeding the young science personnel. The solution of many problems of the development of scientific and educational activities depends on their effective interaction.

1. Introduction

High education is an important priority and the main feature of development in all foreign countries of the world.

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High education will be one of the most necessary parts in a personality's life, especially in the world with its fierce competition on the labor sphere. It is claimed by the experience of the state of Kazakhstan, where 35% of adults have a college degree - a rate (30-35%) is characteristic of the advanced economies.

The high education in Kazakhstan, as a symbol of education, means the top of stages of education in the three-tier system (after secondary or vocational education) and includes a set of knowledge and professional skills that help people to discuss theoretical and practical problems.

Kazakhstan joined to the Bologna Declaration in March 2010. Today our country is the 47th member of the European High Education Area. Sixty Universities of Kazakhstan signed the Great Charter of Universities. So, there was a transition to a three-tier type of training: Bachelor - Master - Doctor PhD which is based on the principles of the Bologna Declaration (also known as the Great Charter of Universities, June 19, 1999).

2. Method

Bologna Declaration contains seven key provisions:

1. Acceptance comparable degrees, including through the introduction of the Diploma Supplement to enable European citizens and the international competitiveness of European education system.

2. Introduction two-cycle study: preliminary (elementary) and outlet (undergraduate). The first stage continues three years. The second stage will lead to the master's degree or degree of doctor.

3. Introduction of the European Transfer System ECTS complexity to support large-scale student mobility (credit system or credit technology courses). It is also giving choice to a student to learn many new disciplines. A basis of high education is invited ECTS (European Credit Transfer System), making it funded system, capable of operating under the concept of «learning throughout life».

4. Significantly develop mobility of students (based on the two preceding paragraphs).

The mobility of professors plays a great role in integration of science and education. They spend the time on their work in the European regions and establish standards of international education.

5. Development of European interrelation with comparable criteria and methodologies.

6. Ultrahigh introduction of quality control of educational systems and the involvement of external evaluation of institutes of high education, cooperation of students and employers.

7. Promotion of the European sizes in higher education, mainly in the area of teaching development, cooperation, mobility schemes and process of integration of studying programs, practical classes and research.

Today Bologna process is actively involved in Kazakhstan.

Joining Kazakh universities to the Magna Carta of universities, which currently signed by more than 650 universities in the world, will bring the domestic education to European standards.

In the learning process of universities introduced advanced technologies and learning systems: in 135 universities introduced credit technology training, in 38 - realized two diplomas education, in 42 - distance learning.

In 16 universities there are preparation doctors of PhD in partnership with leading foreign universities.

Meanwhile, in Kazakhstan there are specialties including medical, veterinary, military profile, retained Soviet system of higher education. So undergraduates are qualified specialists, they are not a bachelor.

3. Problem

There are some forms of higher education (HE) in Kazakhstan:

- Education in Kazakhstan can be reached on the general secondary education (11 classes), initial vocational, secondary vocational (post-secondary education) and higher education in full-time, part-time, evening and distance form of external studies, both free and paid, etc.

Vocational education is on the basis of secondary, if higher education receive related services (legal education in college and in high school), and higher education (as one higher education already exists, then you can come to any other) receive higher education to reduce the time training (at the college, usually about 3 years, on the basis of higher education - 2 years). It does not apply to income unrelated specialty post-secondary vocational education (he studied at the College of Medicine, have been reported on the economic profession) and those specialties are not provided for a shorter period, the second higher education (after the first technical education enroll in medical school).

Full-time – is the most traditional form of HE at least for the first higher education. As follows from the term
"intramural", the student is "before the eyes" of teachers and the dean's office all 4/5 years, that is the learning process - is the main occupation for student learning all the time. The educational process is organized in such a way that the discipline and clock evenly distributed throughout the year into semesters or trimesters, classes are conducted during 5 days a week for several hours a day, with mandatory lectures, workshops and other types of training sessions, holidays, etc. (Yilinsky, 2011, p. 28).

Extramural studies, usually implies that the student for 2 times in a year ago for intensive training lasting about a month. At the present time in Kazakhstan higher education consists on correspondence courses since 2008 in some specialties on the basis of general secondary education (after 11 classes) ruled in absentia can study only on the basis of secondary vocational and higher education (3 or 2 years).

Evening classes, also known as part-time, is that the educational process moved to the evening, that is, the student is ready to work during the day (usually), and after 18 hours attending classes at the university. On the evening form of education comes after any level of education, but also provides a shorter period, training in related specialties, or on the basis of higher education, and a ban on receiving some specialties in this form.

Distance learning - a set of technologies for delivering the great part of the trainees studied material, interactive method of communication between students and teachers in the teaching process, providing training conditions for the development of independent work of the material, as well as in the learning process. Usually learning process is implemented through distance with the help of Internet technologies: web posted lectures, tasks for independent work, which is controlled by the teacher, hold online consultations and lectures; learning material is checked and also carried out in the form of online testing. State examinations and knowledge of thesis students take in the usual manner, directly at the university.

Externship as method of learning involves independent study of higher education programs (also used in general secondary education) education and intermediate state (final) certifications (Sychev, 2004, p.125).

4. Result

The essence lies in the possibility of external studies of secondary or higher education, not attending school, the university every day, based on individual educational path with a combination of education and work or study in two universities. The two-year (or more) of the program can be traversed in one year with the delivery and intermediate state (final) certification.

In the current standards of higher education indicate no form of training that is mentioned only in the diploma school, specialty, and license-holder data.

Population of Kazakhstan has the chance to obtain a first higher education of free of charge on a competitive basis, by state order. Information about educational grant students can found on a special page of Portal.

Table 1. Growth dynamics of the state educational order

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<td>31210</td>
<td>32490</td>
<td>33190</td>
<td>33490</td>
<td>34840</td>
<td>35425</td>
<td>36046</td>
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Source: Ministry of Education and Science of the Republic of Kazakhstan

We have educational grants quotas:
- for the Kazakh people, who are not citizens of Kazakhstan - 2%;
- disabled groups I and II, disabled children, children with disabilities - 0.5%;
- for orphans and children left without parents care - 1%;
- rural quota - 30%;
- for people treated for benefits and guarantees to war veterans and disabled veterans - 0.5%.

In addition to educational grants, practiced grants to regional governors, university rectors, the institutions, partners, universities, private grants.

For other citizens remains negotiated form of education that is paid form of education. By the way, the vast majority of students enrolled in Kazakhstan charge, which also indicates their desire to pursue higher education. Reasons for the disorder in this, as 2 times a year distributed grants released, this information can be tracked on the website of the Ministry of Education and Science and the university about the second half of January and July (Kunhuzhaeva, 2012, p. 11).
Table 2. The main indicators of undergraduate and postgraduate education

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<td>144</td>
<td>145</td>
<td>148</td>
<td>146</td>
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<td>Students</td>
<td>717053</td>
<td>633814</td>
<td>610264</td>
<td>620442</td>
<td>329507</td>
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<td>Trained on the state order, %</td>
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<td>118629</td>
<td>141852</td>
<td>140533</td>
<td>134036</td>
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<td></td>
<td>17,5</td>
<td>18,7</td>
<td>25,2</td>
<td>22,6</td>
<td>21,3</td>
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<tr>
<td>Trained in Kazakh, %</td>
<td>334998</td>
<td>301815</td>
<td>303720</td>
<td>319940</td>
<td>342539</td>
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<td></td>
<td>47,0</td>
<td>47,6</td>
<td>49,8</td>
<td>51,5</td>
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<td>Contingent of full-time, %</td>
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<td>330970</td>
<td>318712</td>
<td>329408</td>
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<tr>
<td></td>
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<td>52,0</td>
<td>52,2</td>
<td>53,1</td>
<td>57,3</td>
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<td>Contingent of correspondence department, %</td>
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<td>48,0</td>
<td>47,8</td>
<td>45,9</td>
<td>41,2</td>
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Source: Ministry of Education and Science of the Republic of Kazakhstan

Every young person must look for picking up of higher education - is the selection his future profession and university.

In our country universities are with different forms of ownership: state - a controlling stake (or 100 % of the shares of high school), or ownership or certain stake (corporatized) which belongs to the state; private - 100 % owned by private individuals (SAPP, 2011, № 7, p.14).

State institutions still have a special status of national universities. It is worth noting unique Nazarbayev University, which was opened in 2010 in the capital Astana, for which in the same year was approved by the state order of 500 places for training students at the preparatory department and on the same principle is planned to conduct the educational process.

Table 3. Network of higher educational institutions of the Republic of Kazakhstan

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<tr>
<td>Total</td>
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<td>Civil universities</td>
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<td>90</td>
<td>92</td>
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Source: Ministry of Education and Science of the Republic of Kazakhstan

Process of studying in the universities of Kazakhstan is held in Kazakh, Russian and English, there are 520 specialties in HE. There are many universities which have the achievements; it should be noted, for example, the following.

On the basis of KarSTU together with 27 companies of Central Kazakhstan and Russia created a corporative university.

In 15 universities (KazNTU n. Satpayev University, Kazakh National University n. Al-Farabi, EKSTU n. D.Serikbaev, KarSTU, KarSU n. Buketova, ENU n. L. N. Gumilyov etc.) operate laboratory of engineering profile. In these great universities opened national scientific laboratories for public use: (Kazakh National University n. Al-Farabi, EKSU n. S. Amanzholov, KazNTU n. K.I. Satpaev).

At 9 universities created technology parks, which are still in the 2 universities. Applied research is carried out of 325 projects, 78 of them runs 24 universities (%) (Law «About Science», 2007, p.5).

Opened:
- Kazakhstan-Japan Innovation Center at KazNAU;
- Kazakh- French educational center KazNTU n. K.Satpaev;
- Welding Institute at KSTU.

In the Republic of Kazakhstan state universities have agreements with business sphere.

Several universities are in partnership with foreign universities or university in implementing the program two
diplomas education.

5. Conclusion

Effective method development of education is its integration with science and industry. Integration provides a synergistic effect and intensifies the development of all components of the triad. Unfortunately, in Kazakhstan, processes of integration: science, education and industry not so developed. Today in the Republic in the process of incorporation of scientific organizations with very vague objectives in terms of the needs of science, commercialization of universities that promotes, competition rather than cooperation and integration (Nazarbaev, 2004, p.6).

Figure 1 - Integration of science, education and industry, international experience and prospects of its use in Kazakhstan

Integration of education system, science and production is becoming a critical factor in the elaboration and growth of the country’s economy competitiveness. The development of economic level depends on degree of development of innovations. And this indicator is currently characteristic of economic and scientific height and growth of industry of the country. European experience shows that all structures provide training qualitatively new specialists which are demanded at market of labor. Also technological progress in the industry based on the modern knowledge, it contributes to the high level of the country’ economy.

World experience is a necessary aspect in improving and implementing the national essence of the integration of science, education and industry. This process is long and multidimensional and is caused by a variety of forms of integration on the example of the American university model, Japanese (Asian) model and the European model of mixed types.

A special place in the world occupies the research universities, where the walls are located campuses as auditoriums for lectures, where students get theoretical material and laboratories, which, in fact, going directly research activities. The main feature of the concept of universities such forms of integration is to have strong links with industry. Of particular interest in the elaboration of the idea of the university is the experience of USA universities (University of Texas, Stanford University, Manchester Metropolitan University, etc.). For example, MIT has connections with about 300 corporations (more than half of them - the largest USA corporations). For research universities is characterized by a multiplicity of funding sources: federal and local budgets, grants, charitable foundations and trustees, business, income from educational, research, production and consulting activities. In the USA the federal government accounts for 13.3% of all financial resources, the government states - 30.3% , local authorities - 2.7%, and the private sector - 4.9% students - 33.1% . Another 15 % of the budget of the higher school includes the universities through their funds and income.

The most striking example of cooperation between business and science can serve parks, enclosing a major process of integration of science, education and industry. Techno Park is the foundation of a business venture, promotes continuous formation of a new business and its support. Venture method allows research organizations to maximize the potential of scientific personnel and to protect them from losses in the starting areas of the innovation
process. The main advantages of a business venture are: flexibility, mobility, ability to reorient mobile, modify the search direction, quickly capture and test new ideas.

Particularly acute at the present stage becomes insufficient orientation of the teaching staff on the innovative development of the country and their adaptation to the market realities of science and economics. The current education system in Kazakhstan implements basically the traditional model of education that focuses on mastering subject-disciplinary knowledge. Meanwhile, in the new environment specialist should focus not on what would be needed today, and that will be in demand tomorrow.

Serious problem for the current education system is the lack of scientific training of trainers of higher school due to poor participation in research projects. The reason for this lies in the over-commercialization of higher education. Here are some details: in 2009 there were 145 in Kazakhstan higher education departments, 55 public, 90 private universities, as well as there are 5 branches of Russian universities. Thus, the number of private universities is 1.6 times more than the number of state. The predominance of private commercial universities in Kazakhstan, having no scientific schools and modern scientific equipment (mainly universities in the humanities), with understaffed all these factors do not contribute to the high quality of training personnel. Aspiring to European standards of higher education, it should be noted that in Western Europe, only 10% of students enrolled in private schools.

This raises the question of demand for young professionals. Currently, most universities in Kazakhstan turned into a kind of «diploma mills» that produce specialists, excluding demand some occupations in the labor market. As a result, the situation is exacerbated by a sufficiently high level of unemployment among people with higher education, employment or not their specialty, acquired in college.

References