



## MODELS OF INTEGRATION PROCESSES IN HIGHER EDUCATION INSTITUTIONS

**Adizov Sanjar Rashidovich**

*Independent researcher of Tashkent State Technical University, Uzbekistan*

### ABOUT ARTICLE

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**Abstract:** In the article, the issues of the theory, methodology and practice of the integration of science, education and business, especially the need for the socio-economic development of its innovative aspects, the models of the organization of integration processes in higher education institutions are studied.

### INTRODUCTION

It is no secret that the use of various forms of integrated cross-activity in the innovative development of the country's economy is an important driving force for increasing the economic potential of our country and effectively using competitive advantages. The more the potential of mutual cooperation and integrated development between the economic subjects of Uzbekistan and its regions is used, the more active the processes of adaptation to modern business strategies of the regional economy will be, and accordingly, new opportunities will appear to realize the potential of the regions. It is an important theoretical and practical problem to develop more rational mechanisms for strengthening the integration of education, science and production in our country as well as in the whole world.

The experience of the last 70-80 years of highly innovative developed countries shows that the driving role of higher education institutions in the innovative reform of the country is becoming increasingly stronger, and as a social phenomenon, it supports the improvement of the conditions for deeper integration of higher education institutions with business, science and even state power. - strengthening the consistency of support.

### LITERATURE REVIEW

Scientific research on the development of innovative activity and management system in Uzbekistan K.Kh. Abdurakhmanov, O.K. Abdurakhmanov, A.Sh. Bekmurodov, H.M. Imamov, N.K. Yoldoshev, N. Makhmudov U.Sh Yusupov, H.M. Abdusattorova, G.K. Tarakhtieva, I. Ismatov, B.Sh. Usmonov, M.Q. Kadirov, J.D. Eltazarov, T.Z. Teshaboev, T. Shodiev, Sh.A. Atamuradov, Conducted by M. F. Hakimova, A. O. Ochilov, Sh. Otajonov and other scientists.

### ANALYSIS AND RESULTS

It is natural to ask questions about what is the state of training of specialists in higher education institutions of the republic now, whether competitive personnel are trained in Uzbekistan that meet world standards or not. To answer these questions, we draw your attention to the following information from the World Bank. Not a single higher education institution from Uzbekistan was included in the list of 500 most famous universities in the world based on 2 global ratings. This fact alone makes it possible to train personnel with deep professional knowledge in Uzbekistan's higher education institutions, to engage in modern research and development and to organize work on the main tasks set for the development of society. It shows that the issues of turning them into economic, cultural-educational and scientific centers have not been resolved so far.

There are many reasons for this problem. Here are some of the systemic flaws:

- educational and laboratory bases of higher educational institutions do not fully meet the requirements of the time. In addition, for various reasons, students are not able to complete practical training in enterprises and organizations equipped with modern equipment and facilities. This situation causes the quality of education in the higher educational institutions of the republic to remain in a low state. However, as foreign experience shows, laboratories in higher education institutions should be at least 5-10 years ahead of production and equipped with appropriate modern equipment, that is, they should play the role of a real locomotive that "pulls" higher education forward;
- the number of students per 10,000 inhabitants and the indicators of the Human Development Index in the republic are much lower than the average indicators of the countries of the Commonwealth of Independent States in the next decade (enrollment of young people in higher education institutions decreased from 17% in 1991 to 9% in 2017 (general education schools, academic lyceums and vocational - regarding graduates of vocational colleges)). In the academic year 2018/2019, the coverage of higher education institutions increased to 15 percent. As a result, there is no real competition in the employment of graduates. In such conditions, employers are forced to hire graduates not on the basis of selection, but only on the basis of their diploma;
- most students enrolled in higher education institutions have a low desire to learn. They are more interested in getting a degree than getting an education. This situation is related to the admission of applicants to higher education institutions. Their existing admission process was related to nepotism, nepotism, abuse of their positions by some officials, corruption, and the system was not allowing to select young people with real knowledge and talent. These negative situations were put an end to in the 2018/2019 admission;
- the tests conducted in most cases do not allow to determine the ability of logical thinking of the applicants, because there are many questions related to dates in the tests. The State Test Center under the Cabinet of Ministers of the Republic of Uzbekistan has done some positive things in this regard, the experience of some foreign countries has been studied, the test database has been revised, the tests are held outside of higher education institutions, in buildings that do not belong to them, for 15 days, and their results are published the day after the test. to be announced. However, updating the content of the tests is a permanent process, which requires constant, uninterrupted updating of its database. For these reasons, the work done by the State Test Center on this front can be said to be the first steps;
- there is no modern system for evaluating the activity, knowledge and pedagogical skills of professors and teachers. In this regard, the attestation of leaders and professors conducted by the management and control bodies, the "Regulation on recruitment of teaching staff to higher

education institutions on the basis of competition", and various ratings conducted at the end of the year do not give the expected results;

- effective public control over the educational process in higher education institutions is not established;
- higher education institutions have not become communication centers where innovative and technological ideas can be exchanged, the necessary conditions have not been created for professors, teachers, young scientists and students to take initiative in order to systematically study and analyze existing problems and shortcomings in relevant fields and make proposals for their solutions. 1);
- the internationally recognized educational standards have not been thoroughly studied in the republic, state educational standards have not been developed and put into practice, taking their positive aspects into account. As a result, the acquired knowledge, qualifications and skills of most graduates do not meet the internationally recognized educational standards, including foreign companies, organizations and firms that do not employ graduates as much as possible;
- the process of organizing teaching in the higher education system, the system of evaluating the knowledge of students receiving education does not meet today's requirements. The number of subjects in the state educational standards introduced in the republic is extremely large, and this should be recognized as one of the main reasons why the current rating system for evaluating student knowledge does not work well. If the students' knowledge is not evaluated correctly, they will not be interested in learning (disinterest), and an unhealthy atmosphere will appear between the professors and the students. Therefore, it is necessary to completely change the assessment of student knowledge. In this regard, it is appropriate to make extensive use of the experience of higher education institutions operating in the republic, such as Tashkent International University of Westminster, Singapore Management Development Institute, Turin Polytechnic University in Tashkent;
- graduates of higher education institutions are not only required to acquire general professional, specialized, scientific-technical, theoretical-practical knowledge, that is, to "fill" the "brains" of graduates-students with this knowledge, but they are not required to think independently, make correct and quick decisions . In teaching students, while increasing the volume of independent education, it is necessary to form deep knowledge, skills and abilities in them, such as quick thinking and adequate decision-making. In this regard, most of the graduates of republican higher education institutions cannot compete with the graduates of higher education institutions of most developed and developing countries;
- intellectual property of higher education institutions - scientific and pedagogical competence, knowledge and experience of professors and teachers, consulting and professional retraining services are not being used effectively in enterprises and organizations. As a result, rich professional knowledge, qualifications, and skills accumulated in higher education institutions for many years (it takes an average of 10 years to become a candidate of science, and at least 20 years to become a doctor of science) do not go out of this institution;
- the number and weight of professors and teachers with scientific degrees and academic titles working in higher education institutions has decreased in the last 5 years. This is primarily related to reforms in the system of training highly qualified scientific and scientific-pedagogical personnel. As a result, professors-teachers who do not have high qualifications and do not have academic degrees and titles are teaching students in higher education institutions;

- most professors and teachers with academic degrees and titles in higher education institutions are not sufficiently engaged in science. This situation can be partly explained by the fact that the doctors of science are getting older (on average they are around 70 years old and above). Publication of monographs, scientific articles, creation of inventions, and implementation of the results of scientific research work in departments cannot be considered satisfactory. For some pedagogues, the main goal is to get a candidate of science or doctor of science diploma. After reaching this point, most graduates end up doing science;
- lack of highly qualified, experienced leaders and employees of ministries, enterprises and organizations operating on the basis of secondment in higher education institutions;
- students are not involved in scientific-research works or the weight of those involved is very low;
- training of highly qualified scientific and scientific-pedagogical personnel through basic doctoral studies and doctoral studies in higher educational institutions is slow. About 10 percent of researchers who have completed basic doctoral studies defend their theses on time. These processes are related to various bureaucratic obstacles and vacancies in Scientific Councils imposed by the High Attestation Commission under the Cabinet of Ministers of the Republic of Uzbekistan. Such bureaucratic obstacles and bureaucrats discourage young people from scientific research work and prevent the effective conduct of scientific research work in higher education institutions;
- the state of provision of literature in the republic's higher education institutions from specialized subjects fully meeting the requirements of the time is also not up to the level of demand. Departments are free to write textbooks and manuals. Due to the fact that professors and teachers who are old and have high professional training do not know a foreign language, mainly English, using (or translating) Western literature created in this language, 10 - 15 years pass before they create textbooks or training manuals, and they become obsolete;
- the use of new pedagogical and information technologies in the educational process is slow, most classes are still conducted in the old style, without visual aids, information technologies and handouts;
- in most cases, mutually beneficial cooperation between higher education institutions and employers has not been established;
- some subjects (subjects) are taught repeatedly in general education schools, academic lyceums, vocational colleges and higher education institutions in the country;
- established only in the name of mutually beneficial cooperation between higher education, science and industry, etc.

Despite the multitude of models, the main trend defining the changes in the modern university is its transition from the University 1.0 model to the University 3.0 model.

University 1.0 is only engaged in educational activities, it carries out the transfer of knowledge, personnel training and social development.

University 2.0 is a research university that simultaneously fulfills two missions - teaching and research. University 2.0 functions include the creation of new knowledge through research activities and consulting services for market participants. University 2.0 carries out research and development works on industrial orders and creates "custom" technologies. The main task of such a university is the reproduction of new knowledge, and personnel training is included in the scientific process.

University 3.0 has a higher status because it has a third mission - commercialization of knowledge and technologies. Such a university manages intellectual property rights, forms an entrepreneurial ecosystem, promising technological markets, and becomes a platform for creating the country's

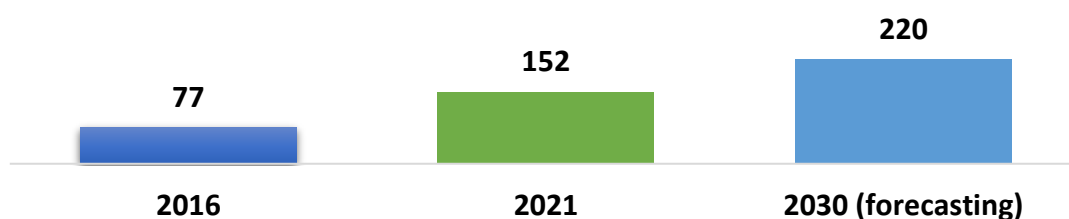
economic superiority on a global scale. It is these universities that define the face of the modern technological revolution.

Despite the popularization of the concept of the 3.0 mission of universities and the solidarity of researchers and representatives of the scientific and innovative sector at various levels that universities should develop as centers of innovative entrepreneurship, at this stage there is a lack of scientific and methodological developments for the effective transition of higher educational institutions to the 3.0 model.

According to the general conclusion "University 3.0", experts understand a higher education institution that studies the world, conducts project work and creates new practices. The educational process in it ceases to be static, with the rapid obsolescence of standard training courses. In addition to classrooms, libraries and laboratories, University 3.0 has business incubators, technology parks, project offices and special platforms for communication with external representatives. However, this is a rather "structural" view, and it still does not answer the question of how the management system of a higher education institution should develop in this case.

In terms of methodology, education is divided into two levels - context and model. The socio-economic reality of the modern higher education of the first level and the strategic systems of the concepts of social development are analyzed, and these systems show the general changes of the university in the context of management policy. At this level, socio-economic analysis methods of the development of institutional systems, elements of cultural and historical epistemology and axiology are used as methodological tools. The description of University 3.0 is constructed at the second level as a set of interrelated models with key features identified in the context analysis phase. It uses methods of socio-economic simulation of inter-institutional interaction and the theory of innovation processes, cultural and historical reconstruction, structural-functional analysis of institutional systems and social movements. Comparative analysis of source data is used during the research.

Within the framework of the University 3.0 model, new formats of universities such as entrepreneurship, innovation, network are emerging in the world, they perform not only educational and research functions, but also the functions of the main process integrator within the innovative ecosystem. The university becomes an active participant in processes related to technological entrepreneurship, business development and formation of new markets.



**Figure 1. The number of higher education institutions in our republic**

The "Education and Skills-2030" project of the Organization for Economic Cooperation and Development revealed some innovative features of the 21st century education model compared to the traditional system.

In the period of transition of society from industrial to post-industrial, information age, universities are experiencing deep changes, especially, which ensure their institutional changes.

Experts identify five main models of universities that exist now and are likely to remain in the future (Table 1):

**Table 2**  
**Five models of present and future universities**

University models	Characteristics
Elite universities	Universities with a strong global brand, significant endowment, centuries of rich history and world-class professors.
(the elite university)	Universities that provide quality education for the growing "middle class" around the world. One of the results of studying at this type of university will be the opportunity to employ graduates in the world's leading companies.
	Universities with a narrow specialization that have managed to take their place in the international distribution of intellectual labor and become world leaders in certain areas of research or education.
Public universities	Universities that play a key role in the development of the economy at the city or regional level — by training qualified personnel or organizing practical research at the request of regional companies, authorities and local communities.

**Source: "Greenfield" era in education. SEDeC study. Center for Educational Development (SEDeC) of the Moscow SKOLKOVO School of Management, 2013. B. 13.**

- ✓ In the modern world, the importance of education as the most important factor in the formation of a new quality of economy and society is increasing along with the influence of human capital. "Uchinchi Avlod" universities form entrepreneurial ecosystems, promising technological markets and ensure global competitiveness of the local economy.
- ✓ University 3.0 is an educational institution of the post-industrial society, which embodies the synergy of education (training students), science (creating new knowledge) and innovation or entrepreneurship (application of knowledge in practice, creation of business structures). That is, the essence of a new type of university is that the university simultaneously implements three missions: 1) education, 2) scientific research, 3) innovation, focused on the commercialization of knowledge. University 3.0 is an organization that is a source of entrepreneurial talent for innovative business [4]. University 3.0 is an educational institution that contributes to the achievement of the UN's global sustainable development goals.
- ✓ In the world, there are different approaches to determining the evaluation criteria of the University 3.0 model. But despite the differences, they all note the increasing role of the modern university in the development of society. In many ways, it becomes the main factor both in terms of ensuring the stability of society and in terms of providing directions for its development. Unlike in recent times, this role is growing significantly. Such a university will turn from a social institution limited by its functions into a central link of the development of the innovative economy and social sphere - a scientific-educational and innovative center producing the socio-economic development of a specific region, the entire country, as well as global processes.



- ✓ In University 3.0, the third mission (innovative activity and commercialization of knowledge) seems to be as important as the first two (education and science). Therefore, in the knowledge economy, such universities become an instrument of economic growth, working closely with business and government. That is, the scientific activity of universities ceases to be a "special thing". Redirected to obtain results that can be sold (commercialized), used outside, introduced into production.
- ✓ Countries around the world are trying to encourage and support these processes. In many countries, this is facilitated by a trend against the reduction of independent basic and applied research in favor of collaboration with universities on basic research projects by high-tech companies.
- ✓ Within the framework of the innovative activities of the University 3.0, the activity of entrepreneurship, local and regional authorities is included in expert-analytical and consulting support, it opens its fields and infrastructure for citizens, controls the development of the territory, provides lifelong education services to citizens, supports entrepreneurial projects of students taking into account the interests of the region. powers up.
- ✓ The university regional innovation system model shows that universities play a key role in interactive innovation processes [6]. In this model, higher education institutions are important producers of knowledge that can play the role of a link in the innovative and manufacturing sector at the regional level.
- ✓ The inclusive university model implies the need to adapt university functions to regional needs. Involved universities demonstrate localized development rather than knowledge production, the university directs its activities to industry and society, and actively shapes regional identity.
- ✓ One of the main goals of the University 3.0 development is to increase the relevance of its entrepreneurial activities and turn it into an entrepreneurial university. This is based on the following factors:
  - ✓ the need to ensure innovative development and successful competition of their countries at the world level;
  - ✓ socio-cultural, economic, technological changes caused by the needs of digital transformation, robotization, creative economy;
  - ✓ the need to develop the basic competencies of the XXII century, including entrepreneurial skills;
  - ✓ increased competition in foreign and domestic markets of educational services;
  - ✓ reducing state funding of universities.
- ✓ The main areas of implementation of the university's entrepreneurial model are:
  - ✓ commercialization of knowledge and research results
  - ✓ entrepreneurial education, formation of entrepreneurial competence
- ✓ The concept of the entrepreneurial university states that higher education institutions are increasingly supplementing their traditional missions (research and teaching) with a third one - economic development.
- ✓ Entrepreneurship University is becoming a driver of small and medium business development in its country, as it is a center of youth entrepreneurship, which is an important factor of economic growth.
- ✓ In general, the entrepreneurial university acquires the character of a business unit, turns into a business technology company through the system of scientific, innovative activities and personnel training.

Important features of the University of Entrepreneurship:

- ✓ use of business-oriented approaches in education;

- ✓ existence of a coaching institute for the development of entrepreneurial skills;
- ✓ participation of students in solving real business problems together with various companies, business and government structures, educational and scientific organizations.

## CONCLUSIONS

The emergence of the university model with a new form of knowledge production (knowledge economy) shows that scientific systems are undergoing a radical transformation, which provides the context for the changing role of universities.

The most popular approach is the theory of "production of new knowledge". This model includes new forms of knowledge production: interdisciplinary interaction, transdisciplinarity, heterogeneity, reflexivity.

Currently, the university is actively changing under the influence of many influential factors. Since such a transformation affects the entire set of its main functions, there are changes in the models of modern universities.

## REFERENCES

1. Abdurakhmanov K.Kh. and others. Modern management and reform of the education system in Uzbekistan. – Tashkent, 2005. – 133 p.;
2. Yuldoshev N.K., Yusupov U.Sh. Innovative management and entrepreneurship (Textbook). – Tashkent: Innovatsion rivojlanish nashriyot-matbaa uyi, 2022. – 320 p.
3. Yoldshev N.Q., Akbarkhodzhayeva Z.Z. Innovative management. - Tashkent: ÍQTÍAODÍYOT, 2019. - 321 p.;
4. Abdusattorova H.M. Innovation strategy. Study guide. - Tashkent: TDÍU, 2011. - 280 p.;
5. Tarakhtiyeva G.K. Innovative management. - Tashkent: Science and technology, 2013. - 208 p.;
6. Yuldoshev N.K. Management [Text]. - Tashkent: "National Society of Philosophers of Uzbekistan" publishing house, 2018. - 245 p.;
7. Khudoyberdiev Z.Ya. Razvitie sistemy podgotovki kadrov dlya sfery predprinimatelstva (na primere malogo i srednego biznesa): Autoref. diss. ... doc. economy science - Tashkent, 2002. - 44 p.
8. Ismatov I. Regarding the integrity of science and production // Problems of mutual integration of sciences in the continuous education system. Proceedings of the republic scientific-practical conference. - Tashkent, 2010. - P. 9-11.;
9. N. Makhmudov, D. Akobirova, Strategy of innovative development of the Republic of Uzbekistan. Monograph. T. 2011 g. 330.str.
10. B.SH. Usmanov, M.Q. Kadirov, J.D. Yeltazarov The role of human capital and innovative infrastructures in the training of competitive scientific personnel // Education, science and innovation. Tashkent, 2015. - 23 p.;
11. Teshaboev T.Z. Ways to improve innovative activity in higher educational institutions: Iqt. science. name ... diss. - Tashkent, 2009. - 25 p.,
12. Shodiev T. Qualitative vectors of economic development. Atamuradov SH.A. Models of venture innovative design in foreign countries. "Economy and innovative technologies" scientific electronic magazine. – 2019. – No. 2.;
13. Hakimova M.F. Improving the quality and effectiveness of education in higher education institutions - the demand of the times // Collection of scientific articles and theses of the republican scientific-practical conference on the topic "Higher education: problems and solutions". May 25, 2020. - B. 41.;



- 14.** Ochilov A.O. Ways to effectively manage the integration between science, higher education and production // Economy and education. - Tashkent, 2012. - No. 6. - P. 146-148.;
- 15.** Ismatov I. Regarding the integrity of science and production // Problems of mutual integration of sciences in the continuous education system. A collection of articles and theses of the republican scientific-practical conference. - Tashkent, 2010. - P. 9-11.
- 16.** Sh.I. Atajonov. Improving the effectiveness of the organizational and economic mechanisms of innovation activity infrastructure management: Autoref. diss. ... doc. economy science - Tashkent, 2018. - 44 p.