DOI: 10.5281/zenodo.15017719
Link: https://zenodo.org/records/15017719

MODERN DIRECTIONS OF ORGANIZATION OF DUAL EDUCATION SYSTEM IN HIGHER EDUCATION

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Abstract: *The formation of any country as a developed (innovative) state and the emergence of a stable economy are associated with the integration of education, research and innovation sectors. This article discusses the main features and prospects of developing and implementing a project to introduce a dual education system in Uzbekistan.*
Keywords: *innovative technologies, technologies with a scientific capacity, acceleration of the processes of reducing the “life cycles” of knowledge, model of a dual education system in higher education.*

INTRODUCTION

The formation and development of countries as states with stable economies in the modern world is directly related to the use of an innovative development strategy. In the countries that are leaders in technological development, developing and using the latest innovative technologies - Western Europe, the USA, and Japan - the contribution of the results of the Scientific and Technological Revolution to GDP growth has increased from 70 to 90%. As is known, the Global Innovation Index (GII) is a study that assesses the level of innovative development of countries, developed by the Bloomberg Agency in collaboration with Cornell University (USA), Insead Business School (France) and the World Intellectual Property Organization (World Intellectual Property Organization-WIPO). The GII consists of 81 indicators that characterize the innovative development of countries at different levels of economic development. This index is calculated based on the average value of two groups of indicators. The first group includes the resources and conditions available for the introduction of innovations (innovation input) - institutions, human capital and research, infrastructure, internal market and the level of business development.

In the current conditions of globalization, the world is developing so rapidly that the innovations created today are losing their essence in a short time, because this very innovation, when perfected, is being created in other countries, by other people. In such conditions, there is no time to wait, there is no opportunity to act in a hurry. We just need to look for ways not to lag behind. Because the current education system is also somewhat outdated. Studying theory in educational institutions, then going into practice and gaining experience. It takes a while until it gives the appropriate results. Therefore, currently, it requires the organization of an education system that ensures the harmony of theory and practice. Such education is usually called dual education.

The instructions for the introduction of dual education in our country began several years ago. In particular, on February 1, 2019, the President of our country signed the resolution “On measures to further expand multilateral cooperation between

the Republic of Uzbekistan and the Federal Republic of Germany”. Later, this document was improved and the task of organizing dual education was also set. Dual education was mentioned in a separate article of the newly adopted law “On Education”. Also, the Decree “On measures to develop education and science in the new era of development of Uzbekistan” was adopted on November 6, 2020. Dual education is also reflected in this document. It is clear that special attention is being paid to the issue of introducing and improving the dual education system. This also shows that today, conducting research on dual education is becoming an objective necessity. Therefore, this topic is one of the most urgent issues.

The second group includes practical results (innovative product) achieved in the implementation of innovations - development of technology and knowledge economy, as well as results of creative activity. In 2015, Uzbekistan ranked 141st among 122 countries, but after a long break, it returned to the ranking in 2020 and rose to 131st among 29 countries, taking 93rd place. In 2022, Uzbekistan rose 4 places, rose 7 places in the “innovation share” subindex to 68th place, and rose 9 places in the “innovative product” subindex to 91st place. In this year’s ranking, Uzbekistan ranked 10th among middle-income countries and 3rd among Central and South Asian countries after Iran and India. Uzbekistan rose from 86th to 82nd place and, according to international experts, entered the top three in innovative development in Central and South Asia, along with India and Iran. Among the countries of Central and South Asia, Uzbekistan occupies a leading position in such indicators as institutions, human capital and scientific research, infrastructure, and the level of development of the domestic market. Innovative activity is increasing in the country. Its main competitor in the region is Kazakhstan, which is one place lower in the rating - 83rd place. Kyrgyzstan ranked 94th in the ranking, while Tajikistan ranked 104th. Among the countries of Central and South Asia, Uzbekistan ranks first in terms of indicators such as Human Capital and Scientific Research, Infrastructure, Level of Development of the Internal Market, High-Tech Production, Number of Students per Million Population, Human Capital and Researchers, University-Industry Cooperation, Creating Favorable Opportunities for Startups, Environmental Protection, Use of Information and Communication Technologies, and Quality of Regulation for Doing Business. According to the ranking, Uzbekistan shows high results in the following indicators on a global scale: “Number of Graduates in Science and Technology” -6th place, ”Gross Fixed Capital Stock” -6th place, “Growth in Labor Productivity” -7th place, “Entrepreneurship Support Policy” -22nd place, “Cluster Development” -27th place. [1]

According to the coordinates of this international rating, the reasons for the increase in the number of students per million population in Uzbekistan are as follows: today, there are 159 HEIs operating in Uzbekistan, including 107 universities - 28, institutes - 47, academies - 3, conservatories - 1, branches - 26, foreign HEIs and their branches - 30, non-governmental HEIs - 24. State higher education institutions are managed by the following ministries and departments: - Ministry of Higher Education, Science and Innovation - 53, Ministry of Agriculture - 5, Ministry of Health - 11, Ministry of Culture - 9, Academy of Arts - 1, Ministry of Development of Information Technologies and Communications - 7, Ministry of Justice - 2, Ministry of Transport -

1, Navoi Mining and Metallurgical Combine - 2, Ministry of Foreign Affairs - 1, Ministry of Religious Affairs committee - 1, Ministry of Construction - 2, Ministry of Tourism and Sports - 4, State Committee for Veterinary and Livestock Development - 3, State Geology and Mineral Resources Committee - 1, State Tax Committee - 1, Agency of Presidential Educational Institutions - 1. [2]

In order to accelerate the innovative development of the republic, widely introduce innovations and technologies into all sectors of the economy, and develop human capital, science and innovation, the Strategy for Innovative Development of the Republic of Uzbekistan for 2022-2026 has been adopted. According to the Press Service of the Ministry of Higher Education, Science and Innovation, the main goal is to make the country one of the leading countries in the world by 2026 according to the Global Innovation Index.

MAIN PART.

Since the Soviet era, Uzbekistan has had uneven and disproportional development of various components of innovation and factors of increasing economic efficiency. Even in the first decade of independence, on the one hand, Uzbekistan had a high level of education, training and scientific infrastructure, and the qualifications of scientific workers, but on the other hand, there was a low level of institutional and organizational components of doing business, including attracting foreign and newly created local companies to innovation processes, competition and regulation in the domestic market. That is, innovative, intellectual and creative potential does not affect the development of the economy. Today, a large part of the results of scientific and research activities are poorly applied in practice and do not bring income due to the lack of effective organizational and economic mechanisms for commercializing developments that have the potential for practical use. All this determines the economic development of Uzbekistan according to the scenario of the transition from an inefficient extensive model to an intensive model. In recent years, a mismatch has formed between the traditional forms of higher education in Uzbekistan and the modern requirements of the innovative development of society. In modern conditions, the life cycles of innovative knowledge in the leading technological sectors of the economy are decreasing from one to three years. Studying at a university, according to existing higher education standards, lasts 4-6 years. That is, during the process of training students at a university, there may be a repeated renewal of generations of technological knowledge. Therefore, when a graduate arrives at an enterprise, he will need a lot of time to adapt to the relevant production conditions. This means that higher education objectively lags behind the current level of innovative development of society within the framework of existing traditional standards. On the other hand, an enterprise that is oriented towards innovative technologies, but does not have them, must spend a certain amount of time and money on training personnel to acquire, implement and use them. It often happens that this period is so long that the implemented technologies are no longer relevant and there is a need to use new ones. Another problem, which to some extent follows from the previous one, is the low efficiency of training various scientific and engineering personnel. That is, in the process of training students at the university, there may be a repeated change of generations of technological knowledge. Therefore,

when a graduate arrives at an enterprise, he will need a lot of time to adapt to the relevant production conditions.

RESULTS.

This means that higher education, within the framework of existing traditional standards, objectively lags behind the current level of innovative development of society. On the other hand, an enterprise that is focused on innovative technologies, but does not have them, must spend a certain amount of time and money on their acquisition, implementation and training of personnel for their use - this period takes a long time, as a result of which the implemented technologies become obsolete and the need to use more advanced technologies arises. The next problem, which to some extent follows from the previous ones, is that the effectiveness of training various scientific and engineering personnel lags far behind the requirements of the times. The formation and development of any country as a developed (innovative) state with a stable economy in the modern world is primarily associated with the formation of synergy in the education, research and innovation sectors. Indeed, the strategy of innovative development ensures the development or acquisition and preservation of technological advantage (i.e. competitiveness). However, factors such as high-quality higher education, high-level scientific research and professional experience taken separately do not automatically lead to such a strategy. Together, these factors, which are called the “knowledge triangle” and are in constant contact with each other, not only create opportunities, but also ensure the technology of innovative development in a timely manner. [3]

It is the mutual integration of higher education, innovative and scientific research activities, the interaction of all its components - higher education institutions, scientific research organizations, as well as representatives of business companies focused on the use of innovative technologies - that allows for the effective implementation of the concept of the knowledge triangle. The formation and development of an innovative society within the framework of the concept of the knowledge triangle are aspects that ensure the fulfillment of such necessary conditions: - the motivation of universities to train highly qualified specialists with modern innovative technologies; - the interest of business systems in the creation, implementation and effective use of modern innovative technologies with the help of highly qualified specialists who are university graduates. The implementation of these goals on both sides is possible only within the framework of the integration of higher education, research and innovation, through the effective use of the results of relevant scientific and innovative research in enterprises, scientists and employees of enterprises, university professors, teachers, students in online mode [4].

One of the effective ways to implement the concept of the “education triangle” while ensuring the quality training of modern specialists can be the use of a dual education system model in higher education. The word “dual” is derived from Latin and means that something belongs to two parts, represents two things, consists of two parts. Dual education is a system that allows a student to combine education with work in an organization that is relevant to their field. In this case, young people acquire theoretical knowledge in an educational institution for 2-3 days and practical skills in

real work processes in enterprises and organizations for 3-4 days. When a student studying in the form of dual education is hired by an enterprise and organization, they are assigned a mentor by the enterprise and paid a monthly salary. The dual education system is a synergistic, harmonious combination of academic research at an educational institution and internships at enterprises. This ensures the direct participation of enterprises in academic, scientific and professional education, including the monthly payment of the student. The dual education system is currently widespread in a number of countries, especially Germany, Austria, Switzerland, Great Britain, the Netherlands, France, Italy is being used. At the same time, it is interesting that in the 70s-90s this was mainly associated with vocational schools and college-level education. However, today this form of education is widely used in the training of bachelors and masters. Germany introduced dual education into its education system several years ago. The main factor in the development of dual education in Germany is the clear definition of the tasks and obligations of dual education participants (enterprise, student, educational institution) in the legislation. In this country, 350 professions are taught, 500 thousand companies provide training. The total cost of dual education in Germany is approximately 30 billion euros annually, of which 80% are business costs. On average, the cost of training one student within the dual education system is 18 thousand euros per year. Today, 1.4 million young people in Germany are studying in the form of dual education. In Germany, 500,000 students sign contracts with companies to participate in dual education every year, and 74 percent of young people sign an employment contract with an employer after completing their studies. The company matches the student(s) with a qualified, specially tested and certified mentor. Organizing dual education and attracting employers is one of the main tasks of the Chamber of Commerce and Industry and sectoral chambers of commerce. In order to guide young people towards a career and gain an understanding of professions, students from the 7th grade undergo a 2-4-week internship at companies every year. After young people get acquainted with the activities of the enterprises and organizations they visit and acquire information about professions, they sign a contract with the enterprises and organizations in the profession they are interested in and submit their documents with this signed contract to the educational institution to study in dual education. In Germany, students participating in dual education are paid an average monthly salary of 930-1200 euros by the employer.

Participants of the educational process: advantages of using the dual education system for students, potential employers, universities.

Students:

-Acquiring professional competences at the initial stages of training -Motivation for obtaining the necessary specialty and obtaining employment opportunities; -Formation of personal qualities, ability to work in a team, responsibility for the assigned territory; Potential Employer: -Participation in the formation of state policy and decision-making in the field of education; -Participation in the development of educational programs, qualification requirements and professional standards; -Training personnel that meets the requirements of employers as much as possible; -Reducing financial costs for the search and selection of specialists, their retraining and

adaptation; University: -Taking advantage of new ideas and impulses emanating from students and teachers and having access to timely information about the current state of production processes; -Obtaining relevant information on problematic issues of specialist training; -Ability to make adjustments to educational programs and update individual disciplines; -Training highly qualified personnel create additional opportunities to increase efficiency.

The main thing here is the following: 1. In this situation, there is no need for professional adaptation, since the initial use of innovative technologies can immediately work effectively in conditions of rapid change in production during the transition from one generation to another, more developed one. 2. New approaches to the professional orientation of students and management of their further career growth will emerge between education and partner enterprises.

In the formation of theory and practice, it is necessary to use a number of factors. From this we can conclude that it is not enough to educate a single cadre (specialist) to be a mature person who will benefit society. In short, society must educate the necessary personnel for itself. Therefore, the entire society must begin to serve in the preparation of a single highly qualified cadre. Because the future specialist must grow up maturely in the family, receive appropriate knowledge and manners at school. In the later stages of life, one or another person from our society will participate in its formation. In fact, everything has a return. Goodness and progress return to such a society as progress with goodness.

Therefore, to educate a specialist to maturity, it is necessary to have mature teachers. In order for such teachers to mature, there must be a mature society, mature specialists must be raised in a mature society, and the society in which mature specialists are formed must also mature. These are interconnected. The maturity of a mature specialist is manifested in the fact that he fully meets the demands of the times. However, times are developing rapidly. Today’s mature specialist may not be able to meet the demands of tomorrow’s society. Therefore, specialists must also constantly improve their qualifications. Only then will specialists not lag behind the times and such a state will not lag behind world development, but will have the opportunity to advance and advance. Therefore, the training of modern personnel is extremely important for today’s New Uzbekistan. One of the directions of training modern personnel is the introduction of dual education in our country, which can simultaneously provide theoretical knowledge and prepare a practical specialist. Now, it can be said about the formation of spiritual virtues in a specialist with intellectual potential, which ensures spiritual maturity, that a number of factors also participate in this. Here, too, education begins with the family. The environment in which children grow up is also an important factor in the formation of their thinking and character. From this it follows that parents should not be indifferent to who the child spends time with in his youth. Another important factor is preschool education, then school education, then professional education that teaches a profession, and finally higher education. As we have noted above, in all of them, the harmony of theory and practice must be ensured.

As a result of the research, we came to the conclusion that it is advisable to use the dual education system in higher education institutions. Because in higher education, the main attention is still paid to theoretical issues. This is certainly very necessary for a student in higher education. However, if at the same time he also forms practical skills, then he will be able to work in practice immediately with a higher education diploma. To implement this in higher education, it would be advisable to organize “Educational Clusters”. This can be done in two directions: Firstly, if it is necessary to open enterprises and organizations appropriate to the specialty under higher education, and secondly, it is advisable to establish activities on the basis of contracts with relevant enterprises and organizations suitable for specialists preparing higher education. In this case, highly educated personnel will simultaneously study practice and receive a diploma.

In the higher education system, dual education can be used in mechanical engineering, engineering, architecture and construction, economic sectors, industry, agriculture, services, tourism, social security, etc. As noted above, each higher education institution can organize appropriate enterprises and organizations in its areas. For example, the Samarkand Institute of Economics and Service trains specialists in tourism. A travel company operated under the institute. There is a catering enterprise in the service sector. It works using advanced methods using digital technologies to receive and prepare food orders. In the banking sector, close cooperation has also been established with commercial banks located in the city of Samarkand. These circumstances are the basis for the introduction and development of dual education. We believe that at a time when higher education institutions are now being granted academic independence, this mechanism can be fully used. Another important point. It is appropriate to slightly adjust the strict quotas set from above for universities that have been granted academic autonomy. In this case, in some regions where universities are located, the need for personnel is over-planned for some specialties. At the same time, there are also cases where there is a shortage of some specialists. Therefore, we consider it appropriate to plan specialties and their number based on the needs of the region and the country. We believe that these proposals fully meet today’s requirements.

CONCLUSION.

By the resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated March 29, 2021, the Regulation on the procedure for organizing dual education in the vocational education system was approved. Based on the Regulation, this educational experience is currently being applied in places. -In accordance with Article 15 of the Law of the Republic of Uzbekistan "On Education", "Dual education" was introduced as one of the forms of education. A separate article on dual education (Article 17) was also included in the law, and it was indicated that the procedure for organizing dual education will be determined by the Cabinet of Ministers of the Republic of Uzbekistan. Currently, relevant work is being carried out to make amendments and additions to legislative documents, studying foreign experience on the further development of dual education. Dual education is new in the education system of our

country, and a number of works are being carried out to develop this system step by step. As is known, the role of middle-level personnel in the development of the economy is considered to be special. The demand for working professions and specialties in production, industry and services is very high. In the traditional form of education, a student acquires more theoretical knowledge in a higher or vocational educational institution, and then spends a very short time in enterprises and organizations. Therefore, the education system of developed countries has been studied and a dual education form is being implemented, which provides the opportunity to work in enterprises and organizations while studying on modern technologies and equipment. The dual education form has been introduced in the professional education system. Starting from the 2021-2022 academic year, more than 3 thousand young people were admitted to vocational educational institutions in the form of dual education in order to train middle-level personnel in such fields as preschool education, railways and construction. In the 2022-2023 academic year, more than 4.5 thousand young people were admitted to vocational educational institutions in the form of dual education, and in addition to the above-mentioned fields, training of personnel in the form of dual education was also established in such fields as information technologies, light industry, agriculture and services. Today, based on the socio-economic development of the regions, more than 7.5 thousand young people are receiving dual education in vocational educational institutions in our republic and are working in about 1.5 thousand enterprises and organizations. In the higher education system, only the Tashkent Institute of Textile and Light Industry has established dual education (for students of the 3rd and 4th levels). Starting from the next academic year, it is planned to gradually introduce training of personnel based on the dual education format in other higher educational institutions. Experimental areas will be identified in accordance with priority sectors (i.e. areas where pilot projects on the introduction of dual education elements will be implemented). Accordingly, it is necessary to identify educational, research and entrepreneurial entities that will participate in the experiment on training employees and scientific and technical personnel for relevant enterprises aimed at using innovative technologies in this complex of higher educational institutions.

We believe that it is advisable to train mature, intellectually capable specialists at all stages of the education system in our country. In this case, while ensuring the harmony of practice and theory, we believe that the systematic use of all factors affecting the formation of spiritually mature and confident specialists is beneficial for each specialist and society. We believe that the introduction of dual education in the field of higher education and its implementation should be carried out in two directions. Firstly, it is necessary to organize enterprises and organizations appropriate to the specialty within higher education, and secondly, we believe that it is advisable to organize an educational cluster to establish activities on the basis of contracts with relevant enterprises and organizations appropriate to the specialists trained by higher education. If our recommendations are implemented, along with the graduation of educational institutions in our country, mature specialists will be produced at once, and they will have the opportunity to effectively work in the economic and social spheres.

This situation will not only ensure the sustainable development of our country, but also increase its competitiveness.

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