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Experience Of Foreign Countries in The Integration of Sciences

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Annotation. International cooperation in the field of science is a complex system that includes the interaction of scientists, organizations, a set of events and contacts of a scientific and diplomatic nature.
The authors' conclusions about international practices of internationalization and support of international competitiveness in science are based on analyzing the real-time data on publication activity, current strategic documents and programs for scientific development.
Key words: Experience, foreign countries, scientific development, scientific activity, competence, integration, international cooperation.

Introduction.

An analysis of the definitions of the concept of «interdisciplinary integration» proposed by scientists and their own research suggest that interdisciplinary integration in an average professional institution is a complex, complex, systemic and multilevel phenomenon involving the use of integrated classes, the content of which becomes a new discipline that appears in the process of synergy of fundamental topics of the subjects being developed, and the result is professional competence a future specialist.
For participants in this process, research cooperation is a way to solve major scientific problems, often to compensate for a highly specialized fund of knowledge, lack of experience or high—tech equipment in a particular scientific field. One of the results of cooperation is the internationalization of science.

Literature review.

The mechanism of formation and implementation of scientific, technical and innovation policy in the countries of the world community is different, since the ratio of state and market functions varies in different countries, and the organizational structures of science management are different. However, in countries with market economies, the patterns of production development are similar and approaches to innovation are the same, in particular, to taking into account its long-term trends and consequences.
In Europe, the state actively helps innovative businesses through education, training of professional personnel and the formation of management advisory services by increasing labor mobility, creating scientific and technical infrastructure. In recent years, Western European countries have faced an acute problem of shortage of their own personnel in the field of information technology.
Foreign countries note the great role of research centers and universities in their innovative development. The contribution of universities to the development of the economies of countries is considered in the following areas:
In most countries, universities are the main base for conducting fundamental scientific research, creating conditions for technological, socio-economic development;
Applied research is being conducted in universities, and intermediate structures (technoparks, business incubators) are being created for their industrial implementation;
University research is an important part of the process of training scientific personnel, accumulation of scientific and pedagogical potential of the country;
The university often becomes a «pole of attraction» for enterprises from high–tech industries (Leuven – Belgium, Cambridge– Great Britain, Stanforth- USA).
The cluster approach to its formation belongs to the general trend of innovative education in foreign countries. Governments are concentrating their efforts on supporting existing clusters and creating

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new networks of companies. Most European countries started developing cluster programs in the mid-nineties. Gradually, other countries such as New Zealand, Portugal, China, India, Pakistan, Brazil, etc. began to join this process.

In the EU countries, the priority tasks are the development of knowledge-intensive industries and the innovative expansion of the service sector. In this regard, the EU has developed a special RITTS program (Regional Innovationand Technology Transfer Strategies and Infrastructures Project) – a program for the development of regional strategies and infrastructures for technology transfer and innovation, covering 21 regions. The projects are financed from the budget of the Innovation Program and relate to a specific region, taking into account only its needs.

In the context of globalization, the ability of countries to introduce innovative developments into industrial production is considered one of the main factors of their competitiveness.

In world practice, the most common forms of innovative education are currently: student mobility, mobility of teaching staff, transnationalization of education.

Student mobility involves the departure of a certain number of students to study abroad. Most European countries have been providing a constant influx of students from other countries for many years. In particular, a significant proportion of students from Latin American countries seek to obtain a degree at universities in the United States and Canada. Over the past 40 years, the rate of increase in these student flows has exceeded the rate of spread of higher education itself. According to UNESCO, the level of international student mobility has increased by 300% over the past 25 years. There are also positive and negative aspects of science integration.

SCIENCE INTEGRATION	
Positive aspects	**Negative aspects**
scientific and technological achievements,	increased false information,
data abundance,	increased cyberbullying,
the ability to quickly find the	heightened laziness,
the increase in research activity,	data openness
inventions and discoveries,	data storage problems,
educational business,	Internet threats,
qualified specialists.	forgetting national values,
desired information,	popular culture
the growth of scientific potential	spiritual threat

All this confirms the importance of universities as a factor in the development of the country on an innovative basis. The peculiarity of the innovation policy of foreign countries lies in its clear focus on stimulating research and technological cooperation. At the same time, the state often plays the role of an intermediary between research organizations, universities and firms. Various structures are being created: centers for cooperation between universities and industry, interdisciplinary centers, innovation centers for the transfer of new technologies to small and medium-sized businesses, centers for the commercial implementation of inventions.

Result and analysis.

Pedagogical research points to the differentiated nature of various complementary types of integration – horizontal and vertical. Thus, horizontal integration involves the study of problems or solving practical problems of two or three disciplines within one, and vertical integration, complementing the horizontal one, includes scientific and applied problems in the content of the integrated disciplines and thus solves interdisciplinary problems. The essence of interdisciplinary integration is reflected in the systemic structure of this complex pedagogical phenomenon. The transition to each next level is carried out only as the possibilities of the previous level are exhausted.

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An analysis of modern research on interdisciplinary integration has shown that scientists consider the essence of this pedagogical phenomenon based on an educational goal, which involves the development of motivation for learning and creativity, the preparation of graduates for systemic humanitarian thinking and a high level of research competence. At the same time, scientists note that interdisciplinary integration in vocational education should not only reduce academic disciplines into blocks, complexes or modules, but coordinate all components of the educational process, including goals, results, content, forms and methods of teaching and be characterized by the connection of academic disciplines with the professional activities of future specialists.

At the first level, interdisciplinary connections are constructed, the timing and sequence of curricula of integrated disciplines are coordinated, the content is coordinated and streamlined, taking into account the formation of a unified terminological and conceptual apparatus. The teaching activities of the teacher and the educational work of the student are aimed at ensuring that the competencies acquired during the study of an integrated discipline can be applied in other disciplines.

The second level of interdisciplinary integration involves the development of formed competencies and includes the process of combining, merging and interpenetrating the content of integrated disciplines to increase the educational level and readiness for professional actions.

In order for a holistic educational and professional competence to arise, according to the scientist, it is necessary to move to the next level of interdisciplinary integration, which involves full interdisciplinary integration in terms of the content and methods of educational, as well as professional actions. The knowledge acquired in the study of special disciplines should be transformed into professional competence.

For students, participation in an interdisciplinary project should result in the achievement of the set educational goals. Students should have interdisciplinary skills, that is, know and understand the problem from the point of view of different disciplines; be able to critically evaluate knowledge in a wide range of disciplines; have the ability to engage in interdisciplinary research and solve problems using various ways of cognition; have a meta-disciplinary understanding of the nature of knowledge and disciplines; to be able to integrate, synthesize, balance and adapt knowledge from several disciplines in order to produce something more than would be possible from the point of view of any one discipline; to have the skills to apply the knowledge gained in practice.

The task of increasing the efficiency of the national economy of our country is inextricably linked with scientific and technological progress in society, which is primarily provided by a competent and productive policy in relation to the scientific and research sphere. Currently, the issue of organizing effective cooperation between science and business is a priority task for both state regulators in the field of science and business itself: high-quality economic development in the digital economy is impossible without developing an intellectual basis and stimulating scientific circles to solve acute socio-economic problems

Discussion.

The main sources for analyzing the process of internationalization of science were strategic documents, official plans and programs in the field of science development of the countries under consideration and their associations. The subject of the analysis is activities aimed at supporting international competitiveness and integration of science. Strategic documents, as a rule, indicate the main development guidelines, and programs and plans offer specific mechanisms for achieving goals and options for solving tasks.

Today, foreign universities, as mentioned above, are trying to combine the recruitment of foreign students with the expansion of their departments and branches, which are completely subordinate to the main university. For example, the Dutch Institute of Hotel Management from Leeuwarden has created an entire network of its programs, which it called the «global campus».

Of particular importance is the obligation to involve students in real scientific research and commercialization of their results. This is the solution to one of the most important tasks – the training of an innovatively oriented specialist who is able to study throughout his life and has the skills not only to find and apply knowledge in his work, but also to independently receive and use it in order to generate income, i.e. capitalize.

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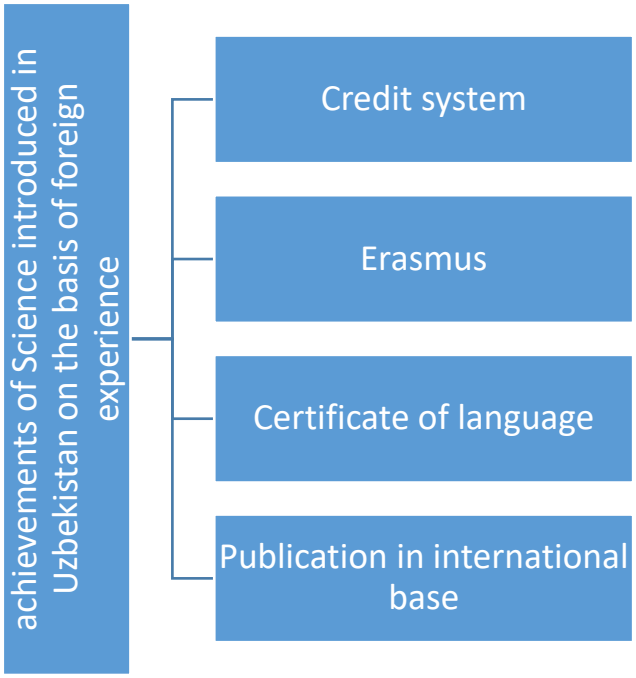

Today, innovation in the activities of Uzbekistan universities is manifested in the ability not only to transform intangible resources in the form of scientific ideas, scientific methods, methodologies, software products, inventions or «know-how» into material resources in the form of structures, materials, technologies, formulations, machines, equipment, devices and their involvement in commodity and economic turnover but also in the ability to transform intangible resources directly into goods in the form of intellectual property products (patents), contributing to the acceleration of the involvement of innovations in the economy. Thus, markets of ideas, patents, and innovations are added to the traditional markets of goods and services.
Uzbekistan is currently making significant attempts to introduce innovative education in order to ensure the economic development of the country.

Conclusion.
In world practice, there are many factors linking higher education and economic growth. A review of international studies shows that there is a close relationship between the level of higher education and science, productivity and economic growth of the country as a whole. Research confirms the importance of investing in the development of education, as more educated economies are more sustainable. In countries investing in education, economic growth rates are better.
Thus, summing up all the above, we can conclude that today there are many positive aspects of world experience that can be applied, including in Uzbekistan.
The development of innovative education is impossible without integration and international cooperation, especially in the context of a constantly changing market and its ever-increasing requirements for the qualifications of specialists. The application of foreign experience in innovative education in the form of integration of education, science and production will be the main factor in increasing Kazakhstan's competitiveness and economic growth.

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