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ECONOMIC COOPERATION IN HIGHER EDUCATION BETWEEN CHINA AND EUROPE

The article deals with the scientifically substantiated analyses of the problem of economic cooperation in the field of higher education between China and Europe based on its essential importance for the world problem of developing new innovative sides of higher education. Taking into account the scientific and innovative development of China it is necessary to conduct analyses of the problems of educational-research cooperation between universities of China and EU.

This article examines the following analytical questions and identifies factors affecting the development of the education system in modern economic conditions. Factor analysis makes it possible to form the concept of development of economic cooperation in the established macro- and microeconomic conditions; predict educational potential using quantitative assessments and taking into account structural changes and the number of students; to combine supply and demand for highly qualified specialists in popular specialties for the innovative economy. To do this, using a factor approach, it is necessary to monitor the state of scientific and educational cooperation between Chinese and European universities according to key indicators.

The general provisions on analysis for solving this problem are given and it is estimated that the analytical approach is the most acceptable, since it allows you to build a diagram for comparing percentage of the quantity of Chinese students in European universities and the quantity of European students at Chinese universities. It is advisable to consider the process of developing and financing the exchange programs for students as the most important factor for educational cooperation. This research paper reveals the fact that China owes its economic growth mainly to the intensive development of its innovations and investments into the education cooperating with foreign countries, using own human resources and raw materials.

The article analyzes economists' views on the process of solving the educational problems of cooperation in the field of education. It should be noted that various educational and scientific programs and initiatives have been established within the framework of cooperation between China and Europe in the field of higher education. One of the key benefits of collaboration is that each party can access the best practices and technologies used by the other party. In order to create an innovative economy, it is necessary to create a human resource reserve for high-tech and knowledge-intensive industries of the future. Therefore, the task of universities is to provide education at the level of world standards.

The research has been developed to estimate that China is a leading country in the educational sector of the economy, which include improving public funding through the creation of a system of subsidies and educational loans, attracting social partnership resources, and using distance learning. The EU and China have agreed to promote the study and teaching of Chinese and European languages, which will allow expanding contacts between people, reaffirming their commitment to multilingualism. The process of cooperation between China and European countries in the sphere of high education, which is currently unfolding, aims to facilitate the development of industrial 4.0 and technology hub in China.

Keywords: economic cooperation; higher education; educational problems; framework of the cooperation program; scientific research; exchange programs; quantity of Chinese students; quantity of European students; scholarship program ; e-commerce in higher education; entrepreneurship in colleges; industrial 4.0 and technology hub

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ЕКОНОМІЧНЕ СПІВРОБІТНИЦТВО У СФЕРІ ВИЩОЇ ОСВІТИ МІЖ КИТАЄМ ТА ЄВРОПОЮ

Стаття присвячена науково обґрунтованому аналізу проблеми економічного співробітництва у сфері вищої освіти між Китаєм та Європою з огляду на її істотне значення для світової проблеми розвитку нових інноваційних аспектів вищої освіти. Враховуючи науково-інноваційний розвиток Китаю, необхідно провести аналіз проблем освітньо-дослідницького співробітництва між університетами Китаю та ЄС.

У статті розглянуто такі аналітичні питання та визначено чинники, що впливають на розвиток системи освіти в сучасних економічних умовах. Факторний аналіз дає можливість сформулювати концепцію розвитку економічного співробітництва в сформованих макро- та мікроекономічних умовах; прогнозувати навчальний потенціал за допомогою кількісних оцінок та з урахуванням структурних змін і кількості учнів; поєднати попит і пропозицію на висококваліфікованих спеціалістів затребуваних спеціальностей для інноваційної економіки. Для цього за допомогою факторного підходу необхідно провести моніторинг стану науково-освітньої співпраці університетів Китаю та Європи за ключовими показниками.

Наведено загальні положення щодо аналізу для вирішення цієї проблеми та оцінено, що аналітичний підхід є найбільш прийнятним, оскільки дозволяє побудувати діаграму для порівняння відсотка кількості китайських студентів у європейських університетах та кількості європейських студентів в китайських університетах. Доцільно розглядати процес розробки та фінансування програм обміну для студентів як найважливіший фактор освітньої співпраці. Ця дослідницька стаття показує той факт, що Китай своїм економічним зростанням завдячує головним чином інтенсивному розвитку своїх інновацій та інвестиціям в освіту і співпрацю з іноземними країнами, використовуючи власні людські ресурси та сировину.

У статті аналізуються погляди економістів на процес вирішення освітніх проблем співробітництва в освітній сфері. Слід зазначити, що в рамках співпраці між Китаєм і Європою у сфері вищої освіти започатковано різноманітні освітні та наукові програми та ініціативи. Однією з ключових переваг співпраці є те, що кожна сторона може отримати доступ до найкращих практик і технологій, які використовує інша сторона. Для створення інноваційної економіки необхідно створити кадровий резерв для високотехнологічних і наукомістких галузей майбутнього. Тому завдання університетів – дати освіту на рівні світових стандартів.

Дослідження було розроблено для оцінки того, що Китай є провідною країною в освітньому секторі економіки, що включає покращення державного фінансування через створення системи субсидій та освітніх кредитів, залучення ресурсів соціального партнерства та використання дистанційного навчання. ЄС і Китай домовилися сприяти вивченню та викладанню китайської та європейських мов, що дозволить розширити контакти між людьми, таким чином країни підтвердили свою відданість багатомовності. Процес співпраці між Китаєм та європейськими країнами у сфері вищої освіти, який зараз розгортається, спрямований на сприяння розвитку індустріального 4.0 та технологічного хабу в Китаї.

Ключові слова: економічне співробітництво; вища освіта; освітні проблеми; рамки програми співпраці; наукові дослідження; програми обміну; кількість китайських студентів; кількість європейських студентів; програма стипендій; електронна комерція у вищій освіті; підприємництво в коледжах; індустріальний 4.0 і технологічний хаб

Problem statement. Global transformations of the technological, economic and social development of the world civilization have turned higher education into a strategic factor in the progress of society. Increasing the scientific, technical, socio-cultural and spiritual potential

of society is related to the level and general state of the higher education system, raising the level of education and professional skills of the entire population. Economic cooperation in the field of higher education between China and Europe has become an important element of modern

international relations. The field of education has a great influence on the economy of China and Europe. Taking into consideration the fact that education is a key factor in the development and competitiveness of the economy in the modern world it is necessary to conduct a research of analyzing the problem of developing economic cooperation in higher education between China and Europe. This process began in the 1980s, when China began to reform its economy and open its doors to the world community. Today, China is one of the largest economic partners of Europe, and cooperation in the field of higher education is becoming more and more intense. The problem of high education in any country is associated with many aspects of the political, economic, cultural life of society. The process of cooperation between China and European countries in the sphere of high education, which is currently unfolding, aims to prepare future specialists to find the solutions for many worldwide problems.

Actual scientific researches and issues analysis.

According to European researchers specializing in the study of China, A. Fuld and H. Fabian, due to language and cultural differences, building EU cooperation with China is not easy and the risk of misunderstandings in everyday life and politics remains high. Many disputes and misunderstandings between the parties today, according to the authors, are related to the low level of cross cultural knowledge and trust between Europe and China. In this regard, the importance of developing contacts between citizens of the EU member states and China is emphasized, which should be considered as a basis for cooperation between the two sides. China owes its economic growth mainly to the intensive development of innovations and investments of the foreign countries, using own human resources and raw materials, but in the future, sustainable economic development of the country cannot be ensured only using raw materials. The year 2021 was marked by signing the Memorandum of Understanding between Nuovo Circondario of Bologna (Italy) and Yangzhou Green Design Centre in the field of green city and sustainable urban development. The University of Bologna (Italy), the Academy of Fine Arts of Bologna and Imola International Music Academy hold the online working session on December 13, 2022 with the Director of the Division of Planning in Yangzhou DRC (China). They agreed to carry out cooperation in joint research, knowledge exchange and joint project in the future, where innovation is assigned the leading role, which will determine the competitiveness of the national economy.

Research objective. Today, the topic of economic cooperation in higher education is very important for every citizen of EU. China and Europe have different education systems, but they also have a lot in common. One of the key benefits of collaboration is that each party can access the best practices and technologies used by the other party. In addition, cooperation in the field of higher education can help improve mutual understanding and cultural interaction between China and Europe.

In order to create an innovative economy, it is necessary to create a human resource reserve for high-tech and knowledge-intensive industries of the future. Therefore, the task of universities is to provide education at the level of world standards. Diplomas of the leading

universities of the country should become recognized in the world, and the government should guarantee every citizen of China a real opportunity to receive higher education.

World experience has proven that the solution of the main tasks of modernizing the economy and developing organizations can be achieved through the implementation of innovative projects and project management, characterized by an effective impact on the sustainable development of the economies of states. Modern socio-economic trends in the development of society are determined by dynamic changes in all areas and form a competitive space. Higher education throughout the world is one of the most rapidly developing and promising areas of the economy. According to experts, at the present stage of human development, the volume of demand and supply of educational services is experiencing a steady growth, especially in higher education, and in the most dynamically developing countries, their annual growth rate reaches 12-15%.

Presentation of the material. For China, as a dynamically developing state, the formation of intellectual resources is the most important strategic task. Therefore, in China, the higher education system must solve the problem of training highly qualified personnel in a wide range of technical specialties for priority industries: oil and gas engineering, food, textile industry, metallurgy and building materials, transport. Of the total amount of state grants, up to 50% are allocated for the preparation of bachelors of a technical profile.

In December 2003, the European Commissioner for Education, Culture, Youth and Mass Media and Sports, V. Reding, and the Minister of Culture of China, Sun Jiazheng, declared their readiness to develop cultural and educational relations. Both sides emphasized that strengthening dialogue between cultures and peoples is one of the priorities for the European Union and China and agreed to hold regular high-level meetings to promote mutual understanding and identify possible areas of cooperation.

There are several most important conductors of cultural and educational relations. Among them, there are the Directorate General of the European Commission for Culture and Education, the Ministry of Culture and the Ministry of Education of China, the Representation of the European Union in China and the Mission of China to the European Union, as well as individual cultural and educational institutions.

The field of education has become an important element in the system of humanitarian cooperation between the EU and China. In a joint statement following the results of the summit in Helsinki in September 2006, the parties noted, "strengthening cooperation in the field of education is the socio-cultural basis for the sustainable development of the comprehensive strategic partnership between the EU and China." In confirmation of this, on October 22, 2007, in Beijing, the EU Commissioner for Education, Training, Culture and Youth J. Figel and the Minister of Education of China Zhou Ji signed a Joint Declaration on Strengthening Cooperation in the Field of Education and Vocational Training. In this document both sides recognized that expanding cooperation in this area is necessary for the purpose of "improving mutual

understanding and strengthening their positions in the world economy and the international community in general."

One of the forms of cooperation is the creation of joint educational programs between Chinese and European universities. This enables students to get an education that combines the best practices and methods of both regions. In addition, joint programs can help universities increase their international reputation and attractiveness to international students.

Exchange of students and scientists between China and Europe is also an important form of cooperation. One of the most famous exchange programs is the "Europe-China" program, which was launched in 1982. Within the framework of this program, exchanges of students and

teachers are carried out, as well as joint research and scientific projects. Since 2014, the program has been updated. Nowadays it is named "Europe - China Plus". This enables students and researchers to learn about another culture and gain experience working in a different environment. The exchange also enables universities to establish long-term relationships and cooperation in the field of scientific research.

The number of Chinese students studying in European universities is growing every year. In the period from 2017 to 2020, this indicator increased from 290,000 students to 365,000. From which we can conclude that European universities are quite popular among the Chinese population and are among the leading places for obtaining higher education (Figure 1.).

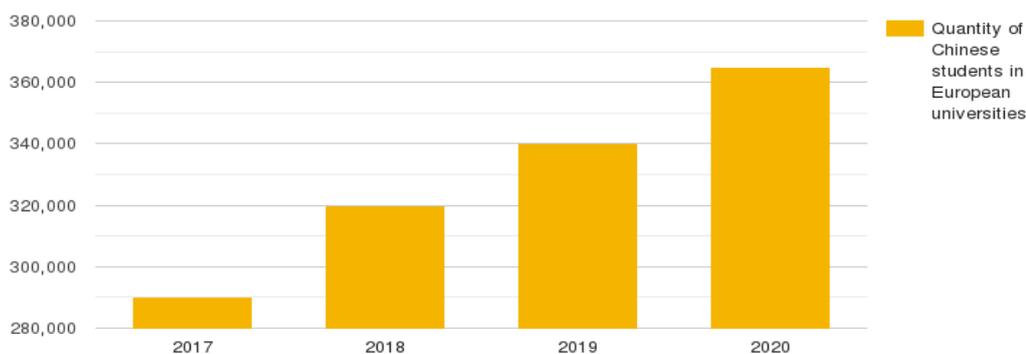


Fig.1 - Quantity of Chinese students in European universities between 2017 and 2020.

Unlike the popularity of European universities among Chinese students, Chinese universities do not enjoy such high rates of European students. Between 2017 and 2020, the number of European students increased from only

55,000 to 70,000, which is almost 5 times less than the number of Chinese students in European universities (Figure 2.).

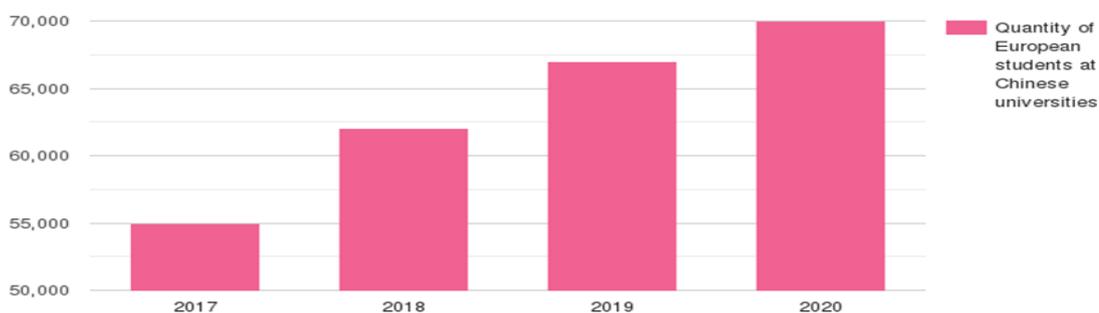


Fig.2 - Quantity of European students at Chinese universities between 2017 and 2020.

Economic cooperation in the field of higher education between China and Europe has a long history and is constantly developing. China and Europe cooperate in the

field of education in order to strengthen the trade relations, scientific and cultural relations, as well as to ensure quality education for students and scientists.

At the present stage of development of the world community in different countries, there are various options for overcoming social restrictions for higher education, which include improving public funding through the creation of a system of subsidies and educational loans, attracting social partnership resources, and using distance learning. For example, distance learning is widely developed in China and approximately one in twelfth students has the opportunity to receive education remotely.

The Chinese side also actively finances academic exchanges. The China Scholarship Council supports the Ministry of Education of China in the implementation of exchange and cooperation programs in the field of higher education. The main programs in which students and young scientists from EU member states and China participate are the scholarship program of the Chinese government. The postgraduate programs allow China students to study abroad. Within the framework of this program, outstanding Chinese students receive funding to study at the best universities in the world since 2007. The "EU Window" language exchange program (a program funded by the Chinese government since 2007) allows Chinese language teachers in EU member states to improve their knowledge.

One of the examples of economic cooperation between China and Europe in the field of higher education is the establishment of the "Erasmus Mundus" consortium. The "Erasmus Mundus" program was created with the aim of developing international cooperation and improving the quality of higher education. It is funded by the European Commission and provides scholarships for students and scholars to study or conduct research at universities in Europe and beyond. China is one of the main partners of the Erasmus Mundus program, and many Chinese students and scholars have already used this program to study and do research in Europe.

The following educational institutions were established by the efforts of specialists from the EU and China: the

China-European International Business School (CEIBS) at Shanghai Transport University, the China-European School of Law at the China University of Political Science and Law (Beijing) and the China-European Institute of Clean Renewable Energy to the Central Chinese University of Science and Technology (Wuhan). The CEIBS Zurich Campus is situated on the shore of Lake Zurich in Horgen. It hosts the participants from MBA, EMBA, GEMBA and HEMBA programs. It is the department of CEIBS' main campus in China and it serves for cooperation between Europe and China.

In addition, various educational and scientific programs and initiatives have been established within the framework of cooperation between China and Europe in the field of higher education. For example, in 2014, the "Internationalization of Higher Education" initiative was created, which promotes the strengthening the cooperation between Chinese and European universities and promotes the exchange of students and scientists.

EU-China Educational Platform for Cooperation and Exchange was created afterwards. In addition to supporting the development of academic relations, the task was set to promote the activities of three joint educational institutions, which in 2012-2016 Chinese side announced as the provision of 30,000 scholarships, 20,000 of which were allocated to Chinese students and scientists and 10,000 to students and scientists from EU countries. The European Commission, for its part, has undertaken to provide 5,000 scholarships to Chinese students and scientists for study and research in EU countries and 2,000 scholarships to European students and scientists for study and research in China. The parties also reaffirmed their commitment to multilingualism. The EU and China have agreed to promote the study and teaching of Chinese and European languages, which will allow expanding contacts between people (Figure 3).

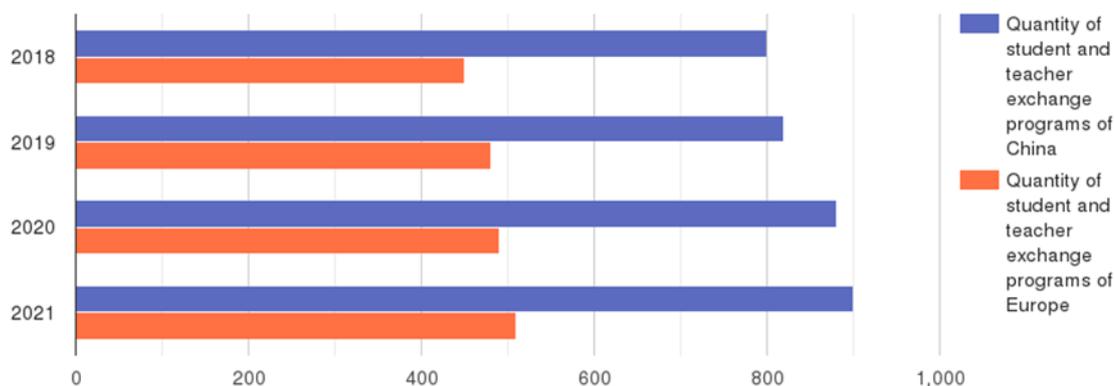


Fig.3 - Quantity of student and teacher exchange programs between China and Europe.

Moreover, there are many agreements and arrangements between China and certain European countries in the field of higher education. For example, Germany and China have close relations in the fields of education and science, and many Chinese students and scholars get educated and do research at German universities.

In recent years, China has made great efforts to develop the education system. The Chinese authorities believe that quality education is a key factor for achieving economic growth and modernization of the country. China is now one of the largest importers of foreign technology and knowledge, and quality education plays an important role here.

In Europe, the field of education is also of great importance for the economy. European countries occupy high places in international rankings of educational institutions, which contributes to the attraction of students from all over the world. Education is also a key factor for development and innovation in the European economy.

In addition, the development of international education and cooperation in this field can contribute to the development of economic relations between China and Europe. Universities and research institutes are important places for establishing connections between business and industry, which can lead to the creation of new innovative projects and cooperation in the field of science and technology.

On April 1, 2014, the President of China, Xi Jinping, during his visit to Europe, visited the College of Europe in the Belgian city of Bruges. In his speech at this educational institution, the leader of China emphasized the need to build "a bridge of general cultural prosperity that connects two cultural civilizations: European and Chinese." According to Xi Jinping, "China is primarily an Eastern civilization, while Europe is the cradle of Western civilization." He also welcomed the opening of the first Chinese library on the territory of the EU. In a few days, the European-Chinese Research Center was opened at the College of Europe. The tasks of this center include conducting research, issuing publications, organizing conferences and promoting the development of cooperation between scholars who specialize in the study of the EU and China.

Despite existing cooperation, relations between China and Europe in the field of education have recently become more complicated. This is due to the deterioration of political relations between the two regions and the growth of competition in the field of science and technology. However, many universities and scientific institutes of China and Europe continue to cooperate in the field of science and education, which contributes to the development of mutual understanding and cultural exchange between the two regions. Western China

Science and Technology Innovation Harbour was introduced to EU as a way of cooperation in both higher education and vocational training. It aims to facilitate the development of industrial 4.0 and technology hub in western China.

Studying the cooperation between the EU and China in the field of education, one can understand that it is to the benefit of the Chinese side to participate in academic exchange programs. Close cooperation with the EU in the field of higher education allows the Chinese to increase the level of well-being and competitiveness of their country. In particular, academic exchanges are important for the leadership of the PRC, according to the researcher, for the following reasons: first, China gains access to new knowledge and markets. Secondly, the country gains experience in solving social problems. Thirdly, China is getting a new highly educated generation that understands the cultural characteristics of both sides and knows how to apply this knowledge to the benefit of their country. Fourth, China can benefit from academic exchanges with the EU, improving the level of its higher education and developing new industrial and technology hub.

Conclusions. Taking into consideration all the above mentioned, we can conclude that the implementation of such a large-scale strategy requires significant investment. The training of highly qualified specialists is the most important condition for the country's competitiveness. To achieve it significant reforms in the field of education are necessary, when it is important to improve the quality of the teaching staff, it is necessary to introduce modern methods and technologies into the learning process, like e-commerce in higher education and talent pool, "learning by doing", supporting entrepreneurship in colleges. It is important to strengthen the standards of basic pedagogical education, the requirements for advanced training of teachers at the universities. It can be achieved with international cooperation.

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