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Fundamentals and conditions for training of foreign experts in the field of digital economy at Pacific National University

Abstract: In the present article the conditions for training of foreign experts in the field of digital economy at Pacific National University are considered. International cooperation is implemented in various forms - educational, scientific and social projects that form personal and technological communications. The basis and the result for training of experts in the field of digital economy is formation of their technical and socio-economic competencies.

Key words: digital economy, principles of the digital economy development, Pacific National University, international cooperation.

Introduction

Relevance and necessity in training of experts, including foreign ones, in the field of digital economy do not require special substantiation and proofs, as the problems of the digital economy development are on the agenda of the President and the Government of the Russian Federation. [1; 6]

Transformation and development of economic systems, and, first of all, national economies of any countries, are conditioned by the general trends of globalization and formation of new economy. Integral and, perhaps, the main feature of new economy is the digital economy, which is often considered as a form of new economy manifestation. [2, p. 177]

To understand primary methodological foundations for creation of the training system for experts in the digital economy, it is necessary to present a brief description of regularities in the development of new economy and its foundational form - the digital economy.

Hypothesis

Attributes (features and regularities) of the digital economy act as the basis for formation of modern educational environment - technological upgrade and account of the influence, exerting by the development of economy and the world community.

Research methodology

According to the analysis of specialized literature, modern researchers single out more than ten attributes, distinctive features, regularities and rules of the digital economy functioning and, consequently, doing business in these conditions. These regularities and rules give grounds for modernization of education system at least in two aspects: in the technical (technological) section and socio-economic understanding. Presence of digital technologies and socio-economic manifestations in modern society are indicated in nearly all definitions of the digital economy. The main features and regularities in development of the digital economy as a form of new economy development are described below.

1. A principle of "disappearance" of material constituent and its replacement by "non-material" component: human capital, ideas, knowledge, artificial intelligence, Soft Ware, etc.
2. A principle of space "contraction" and lessening of distance importance in the conditions of the digital economy globalization. This is the most important principle of modern economy. Globality of the digital economy unites manufacturers, consumers and competitors regardless of their geographic localization.

3. A principle of time "contraction" means increase in the speed of all economic relations, changes and, most importantly, management decision-making. In the conditions of quick communication in public production time becomes a great advantage and responsibility simultaneously.
4. A principle of "smart" organization and management is equally important principle in the digital economy. Human capital, people, knowledge, ideas and artificial intelligence are the leading value of the digital economy.
5. A principle of "network" growth and development in the conditions of the digital economy is related to a special "viral" nature of communications and, first of all, because of electronic network (Network).
6. A principle of technological platforms (including digital forms) and standards value. This principal is caused by the rapid spread of successful single solutions that afterwards turn into the basis for large-scale production, generally ensuring the gaining of a larger market share.
7. A principle of information work "efficiency" directs participants (subjects) of the digital economy to the ordering of large information array. All participants require "filtering" of information with the purpose to single out particularly important and useful information in each specific case.
8. A principle of market "virtuality" leads to irrelevance of physical manifestation or presence at the market. Comparison of prices and competitive advantages of production can be made without visiting of shopping centers; special programs can provide search of production with optimal price-quality ratio. Physical barriers in competition disappear.
9. A principle of expense structure change in the digital economy is significantly relevant. The information component in the cost of goods increases, and the material constituent decreases. Operation or consumption of high-technology products (per unit of advantageous effect) costs cheaper for consumer, brings greater sense of satisfaction and admiration.
10. A principle of "impulsive" motivation. This principle means that, because of the Internet, the choice of goods and purchasing is often done impulsively, as a single and instantaneous process.
11. A principle of the digital economy "internationalization" can be explained as manifestation of the international division of labor on the one hand, and development (globalization) of international economic relations, on the other hand. Thanks to the digital technologies, globalization of economy lifts the barriers and restrictions related to manufacture and consumption of products. International standardization and the movement of human capital also contribute to the internationalization of the digital economy.

Results and discussion

All conditions for high quality training of students are available at Pacific National University. PNU actively develops international cooperation. The Program of Internationalization of the University Activity until 2020 was developed at PNU and now is being implemented. In 2017 National University Rating PNU ranked 50th position by parameter "Internationalization". Currently PNU has 173 signed Agreements on Cooperation with foreign universities, mainly from Asia-Pacific Countries: China, Republic of Korea, Japan.

In 2016/2017 academic year 874 foreign students from 21 countries of the world studied at PNU. This number includes 771 foreigners studying under the Degree programs and 103 foreigners studying under the Russian language program and Pre-university Russian language program. Specific weight of foreign students in PNU general student body was 8.73%.

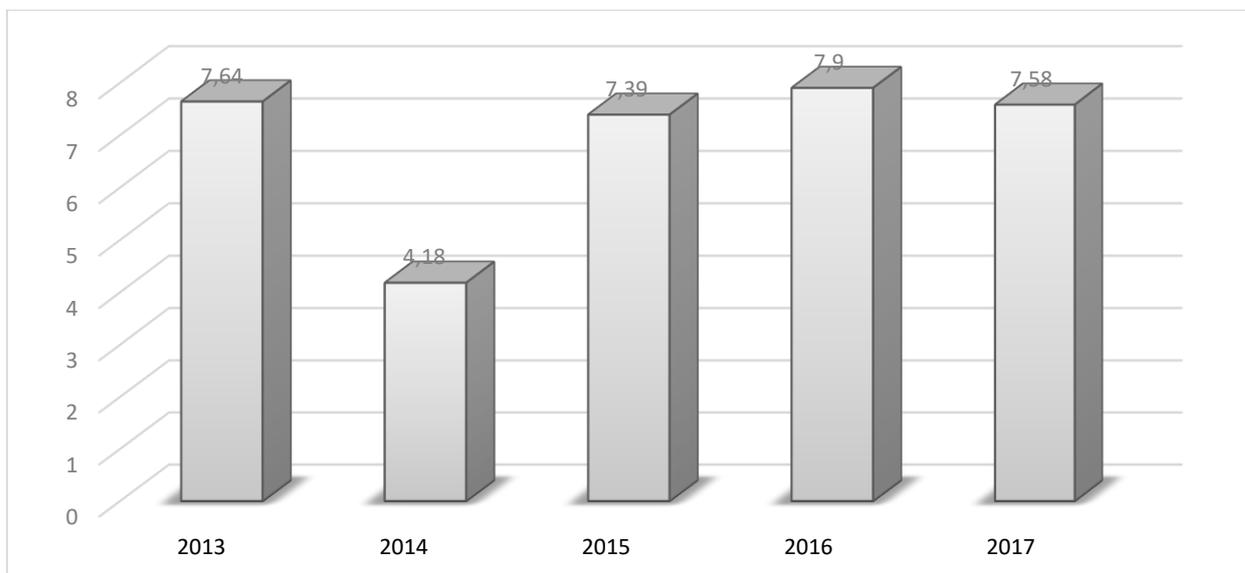


Figure 1. Specific weight of the number of foreign students (except the citizens of CIS countries), who completed the study under principal educational programs of Higher professional education in the general number of graduates, in %, for the period from 2013 to 2017 years [4]

Nowadays, in the field of international education, an educational institution requires to satisfy individual unique demands of the foreign students by offering a wider range of educational services that take into account ethnic, national and intercultural differences [3], as well as to provide a modern level of teaching technologies. In the latter case, such demand is performed by the requirements of the possibility to use the electronic educational environment that includes a complex of elements, providing sufficient information base - from curricula to methodological support of certain subjects.

PNU is a member of the following international university associations and unions: the Association of Sino-Russian Technical Universities (since 2011), the Association of the Universities of the Russian Far East and Siberia and North-Eastern Regions of China (since 2012), the University of the Shanghai Cooperation Organization (since 2012), the Association of Asian Universities (since 2013), the Association of Sino-Russian Economic Universities (since 2013), the Russian-Kyrgyz Consortium of Technical Universities (since 2013), the Euroasian Universities Association (since 2009), the Association of Institutions of Higher Education of the Russian Federation and Japan (since 2016).

Table 1. Evaluation of PNU international cooperation according to the monitoring of higher education institutions [5]

Year	Value of indicator	Threshold value	Changes in comparison with the last year
2017	8,071	1	- 2,9 %
2016	8,31	1	+ 9,2 %
2015	7,61	1	+77,0 %
2014	4,3	1	+225,9 %
2013	1,68	1	-

Large-scale international projects take place at PNU on the constant base. Among the projects are: International Forum of the University Presidents of the Russian Far East and Siberia and North-Eastern Regions of China, International Forum of Students of the Universities of the Russian Federation and the People's Republic of China "Youth of Russia and China: a Vector to the Future", International Russian and Chinese Volunteer Camp "Flowers of Memory", Russian and Chinese business incubator, International Forum in Architecture, Design and Urban Planning "The New Ideas of New Century", Far Eastern Student Sports Festival "New Generation", summer

schools for studying of the Russian language and culture. All the projects in varying degrees form both personal and technological communications.

Nowadays PNU realizes the programs of joint training with issuance of two and one diplomas with the universities of China and France. PNU also realizes international exchange programs with the universities of Republic of Korea, China, and Japan.

Under the agreement with Khabarovsk City Administration, the university conducted seminars for heads and experts of Harbin Mayor's Office (China) in the field of development of government workers' economic and digital competencies.

One of the priority fields of the university development is formation of a partner pool. Cooperation with this pool allows to implement the training of staff in the field of digital technologies application for companies and organizations. Implementation of regional and all-Russian projects allowed Pacific National University to get the official status of Far Eastern "Center for Innovative, Technological and Social Development of the Region".

In the field of scientific research, the main areas for adoption of the digital technologies are crowdsourcing, robotics and artificial intelligence technologies.

In the book "Crowdsourcing" Jeff Howe points out that the collective intelligence is more productive than individual, even the most genius person [7]. In the field of scientific research, availability of Internet networks allows to involve specialists and experts in the performance of work within the research groups, working entirely in the field of their scientific specialization. For example, the representatives of Chungnam National University (South Korea) are strongly interested in carrying out of the university scientists' research in the field of metallurgy and the use of nanomaterials in industrial production and there are plans to implement a joint project in two national territories.

Within the framework of the open regional robotic festival "Robofest- Khabarovsk Krai" the festivals of Pacific National University high technologies "Robomech" are held. Here are presented the results of development, made by the teams with involvement of foreign participants. The PNU Scientific Training Center in Robotics implements the project "Togudev", focused on transfer of practical skills in the field of robotics and information technology. The students from China and South Korea are also interested in it.

In 2017, 30 projects of PNU participants, including "The System for Automated Drawing Up of Vehicle Collision Report" and "Intelligent Automated System for Control of Urban Passenger Transportation" were presented at the All-Russian Scientific and Practical Conference of Young Scientists, devoted to the issues in practical implementation of the development results in priority areas of science and technology development. Competent experts pointed out the high level of the development results, the novelty of decisions and the original approaches, as well as the economic viability of the projects.

Conclusion

Thus, it can be easily detected that the basic component for training of experts in the field of digital economy can not but base on two groups of competencies: technical and socio-economic. The first group of competencies presupposes sufficiently profound training in the block of technological subjects, and the second - in the subjects of economic, managerial and social competencies. In our opinion, training of high-quality experts in this field requires use of engineering and economical approach in education, as well as designing of five-year training trajectory based on the balance of the digital technology competences and the competences of the digital economy itself.

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