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ABSTRACT

The authors give an overall assessment of transport education in the leading countries of the world, highlight the most characteristic features of university programs and forms of education, trends in development of scientific and educational activities of universities against

the background of increasing globalization of production and economic relations. The significance of education internationalization is emphasized, and with regard to labor market problems of logistics training in universities, including through joint training programs of domestic and foreign universities are underlined.

Keywords: transport, higher education, university, logistics, logistician specialty, labor market, international cooperation, joint training programs.

Background. Focus on full Russian presence in multilateral investment programs and applied scientific projects, deepening cooperation with foreign transport companies, joint ventures stipulate the need for restructuring of transport education towards its broad internationalization. This is required by implementation of tasks to modernize transport education by improving the quality of training of high-qualified specialists, corresponding to the world standards of qualification, support for professional innovative programs. And here we should carefully study transport education systems abroad, conduct a comparative analysis with national counterparts for the purpose of thoughtful selection of partners and rational use of their best practices towards development of compatible parameters of training, development of international specialization, reaching an agreement on mutual recognition of diplomas.

Objective. The objective of the authors is to consider international trends in transport education and directions of its development.

Methods. The authors use general scientific methods, comparison, analysis, evaluation approach.

Results.

I.

In the developed countries, transport education is included in the list of popular specialties. It can be represented in the programs of profiled higher schools, as well as within traditional university centers.

In Germany training specialists for transport industry focuses on new technologies in the field of management, electronics and telecommunications, computer science, economics and logistics. In German universities attention is paid to the humanitarian aspects of transport education, since the use of different modes of transport cannot be considered without knowledge of issues such as environmental protection, psychological affordability and safety, legal support, reliability, comfort, services, health, social mobility and social responsibility.

Since 2002, the country has been developing cooperation in the field of education and research with other countries, especially France. The railway networks in Germany and France are amidst most dense in the world. States pioneered development

and introduction of innovations in transport systems. Their joint research is focused on improving efficiency of rail transportation, labor productivity, conquest of new markets, environmental concerns, compatibility of technical standards, creation of green corridors on freight routes, noise reduction in operation of transport facilities, improvement of their conservation conditions.

In France, transport education develops at different academic levels. For example, the Business School in Toulouse opened MBI program in «transport logistics». In the famous School of bridges and roads, there is a master's program in transport engineering. In the country there are specialized universities and research institutes. For example, the National Institute of Transport, the Institute of International Transportation and bridges, the National Institute for Transportation Research. Topics of scientific research of these institutions focus on issues such as improving reliability of vehicle control systems, effectiveness of transport infrastructure management and others. In the Normandy School there are two master's programs «Logistics and international procurement» and «Logistics and maintenance of transport systems». At the University of Provence Aix master's program in management, logistics and transport strategies is amidst most popular among the students.

Swiss transport companies pay more attention to vocational training of young specialists and retraining of working staff, which is dictated by design and technological complexity of transport facilities, deepening innovation processes. Many skills that are obtained in universities, relate to economic and management specialties, first of all – personnel management in transport enterprises. The University of St. Gallen, for example, opened Higher School of Economics, Business and Public Administration in the field of transport.

In the UK, training of specialists for transport sector is carried out in the University of Westminster. There are courses on comparative transport policy, logistics, planning, management, land management and land use. There are specialized master's programs. At Bristol University, transport specialists are trained to get bachelor's degrees. Their training programs, along with technical

disciplines include study of geography, statistics, advertising, PR. In many universities of England doctors in the field of transport sciences are trained. For example, the University of Leeds organized the Research Institute of Transport. Its educational mission is based on understanding of the value of global development of transport routes, the extent of growth of international and domestic transportation, requiring a substantial increase in not only professional but also academic qualifications. Research projects relate to improvement of navigation systems, ecology and functionality of transport facilities, development of new measurement technologies. In Cambridge training of personnel for the transport sector is also conducted. There is a department of the railway transport.

All of these, as well as other countries make a considerable contribution to implementation of the European strategy for development of transport education. This strategy reflects the presence of four modern trends in society development – strengthening the position of transnational economy, global reconstruction of transport systems, global integration of education, new principles of international relations. A key role in formation of a new generation of professionals belongs to getting competencies in economics and management, planning, innovative technologies and informatics. «Declaration on strengthening European cooperation in vocational education and training» was adopted by 31 countries in Europe on November 30, 2002 to coordinate action. According to it the EU annually allocates subsidies, in particular – for joint master's program on training personnel for development of environmental, technically sustainable and economically efficient transport facilities. Grants are awarded to support and create research universities (institutions) in the transport sector, joint engineering and consulting services engaged in marketing and transport logistics.

Transport universities have their place in education systems of the US, Canada, Australia and Japan.

In Washington, there is Transport University. Training for railway transport is carried out at the Technical University of Virginia, where there is a department of civil engineering, as well as a department of planning policy and management of transport systems. Here studies are dedicated to vehicles, transport infrastructure, transport ecology, safety, management of transportation and traffic flows. Louisiana State University supported by the Department of Transportation of the state organized Transport Research Centre responsible for improving of training quality and development of projects involving system transfer of knowledge about new transport technologies and creation of intelligent transport systems. Transport engineers are graduated from University of Kentucky. This university is making great efforts to raise the prestige and popularity of railway specialties among the youth. The main

task is connection of science and education, as well as association with industrial structures. At the University of Massachusetts emphasis in profiling transport specialists is put on inclusion of courses that provide a broad knowledge of current political, economic and social processes. The university has even a special council on transport education, which has become a focal point in dealing with educational and practical issues. Target bonus for promotion of innovation in the field of transport engineering education was established.

The United States cooperate with other countries. So, together with China, a research centre of transport education problems was set. In its views sustainable development of transport can be carried out only with comprehensive training of personnel, which will be able to create and use modern transport equipment, know the software of engineering and management processes in production. According to the results of comparative analysis the Center concluded that today the most attractive professions today are as follow: rail transportation, logistics in transport systems, maintenance of railway facilities and transport design.

Universities in Canada, specializing in training of transport engineers are focusing on training professionals able to understand modern engineering and fundamentals of transport safety. At The University of Toronto and Calgary transport education programs are interdisciplinary. They combine humanities and technical disciplines. Social and humanitarian block includes: law, economics, sociology, psychology, accounting. There are programs to support research activities in the field of transport. Every year, the government allocates for its implementation over 13 million dollars.

Monash University (Australia) focuses its curriculum on training on such specialties as transport services, transport, finance, transport advertising.

Great attention is paid to training of transport specialists in Japan. Since 1996 a special committee has been operated that aims to study and regular monitor the state of education in the field of railway transport. The Committee, in particular, is responsible for coordination of work on creation of textbooks and methodical literature. The «strongest» programs in this area are developed in the Tokyo State University, which trains personnel, receiving qualification of «transport engineer».

To sum up, transport education in the world is not only an important national resource, affecting the prospects of an economic complex of different countries, but also a special sphere of integration of processes of international cooperation. Growing inter-university contacts can maintain a high professional level of staffing of a modern transport system. Continuously deepening diversification of means of transport, new technologies, intellectualization of management and further computerization of transportation activities require growing compatibility and certain unification of training programs.



II.

Russian transport education cannot remain aloof from integration processes. This means that in development of existing or opening of new areas of training it is necessary to take into account an international factor, which allows to engage in programs of double diplomas, to seek recognition of educational modules, to raise a level of knowledge of foreign languages. Specialized universities should focus on needs in people, able to work under the conditions of modern dynamics of technological changes.

To this end, for different learning profiles is frameworks of sectoral qualifications are established. Their development is a result of interaction between professional and educational environment. The quality of education, based on receipt of competences sought by the market, is becoming a major factor in supporting the competitiveness of future specialists. The need to follow the trends of economic development makes higher schools be in conditions of permanent structural and content modernization of educational programs proposed to the applicants. Training of some specialists to a certain extent has an outpacing character (such as nanotechnology specialists), and others (such as logistics specialists) – overtaking, compensating character.

Demand for logistics services originated 20 years ago in connection with emergence in Russia of open, operating on the principles of global mobility transnational economy, unable to develop effectively without the use of logistics platforms, specifically designed for specific areas of business. The Ministry of Education and Science of the Russian Federation belatedly realized that the demand for professionals in this field will continue to grow and only in 2000 adopted a standard for new specialty first 062200 «Logistics», and then 080506 «Logistics and Supply Chain Management». It was at that time that pilot training of logistics experts began in 6 Russian universities. The number of those universities has since more than doubled. In 2018 logisticians, as expected, can enter the top ten most popular professions in the labor market.

Initially, training of domestic logisticians was constructed using a combination of management and general economic disciplinary modules without a distinct branch link. Conceptually, this was due to the backbone role of logistics in ensuring activity of any business unit and organization of business as a whole, its features of universal integrated mechanism, functionally applicable in whatever field. Over time, drawbacks of this approach became apparent, because efficiency of logistics strategies depends on conditions of professional environment, which has its own specifics, infrastructure, technical and organizational features. Due to a new understanding of the role of logistics in higher education logistics training programs appeared in trade and transport sectors.

This dramatic progress in education had a particular importance for transport system of the

country with its large-scale geopolitical, geographic and investment potential, implementation of which is directly linked to the influx of highly qualified personnel in the industry, owning modern logistics knowledge and competences.

Of course, the involvement of Russia in multilateral international business projects and investment programs relating to the transport complex, sets a task to match global standards of logistic services quality. Despite a steady growth of the domestic market volume of logistics services, which is now focused on development of 120–140 billion dollars a year, Russian companies, working in this field are still markedly inferior to Western firms, to a large extent due to the lack of qualified specialists. In an effort to make up for the obvious deficit in 2003 MADI developed a training program on «Logistics and supply chain management». The realization of transport logistics programs started in MIIT and other specialized universities. Transport logistics is becoming the most developing area of not only a real economy but also of the education system, as it provides a comprehensive study of all the operations related to movement, storage, distribution and delivery of global and regional material flows.

MIIT as a head methodological center of transport education focuses on support of logistical programs implemented by universities in accordance with the third generation educational standards. In 2009, two master's programs were opened: «Logistics in transport» and «Management of logistics systems», with respectively, full-time and part-time modes of study. At the same time it is in the constant search for innovation, based on the study and comparison of logistics training systems existing both in Russia and abroad.

Leading transport companies, primarily JSC Russian Railways, strongly support a comparative study of the experience of leading foreign specialized companies, use their production capacity for professional training of domestic experts. Russian Railways attach equal importance to modernization of educational and laboratory facilities of universities that train logisticians.

Partners of Russian universities in implementation of joint educational programs, can be found among the universities of countries, actively cooperating with Russia in the sphere of transport. They, of course, include France. On March 23, 2010, speaking at the Paris Exhibition of Transport and Logistics, Secretary of State of the country in charge of transport Dominique Bussereau has identified logistics as a priority in cooperation between EU and Russia. French logistics companies, transport networks of which make up the core of the European economy, are interested to work in the Russian market. The situation makes it actual to attract to Russia not only practical, but also scientific and educational experience in the field of professional logistics. It is primarily a question of acquiring knowledge in the field of international logistics, oriented on

intermodal transport systems. That is why MIIT at the initiative of the Institute of international transport communications had developed and five years ago opened the country's first international master's Russian-French program «International Management of logistics systems» (in specialty 080500.68 – Management).

French partner of MIIT in implementation of the program is the University of Nantes, second largest French university, whose educational programs in logistics are supported by national association of logistics in France and many specialized European companies. Development of a joint curriculum in Master's study was based on official inter-university agreement. The program is built with inclusion of international module in the curriculum of state educational standard with the issuance of Russian diploma «Master of Management» and the French diploma of «Master in International Logistics». Form of education is full-time. Duration of training is two years. It takes place in two countries.

The curriculum of the program «International Management of logistics systems» includes all disciplines of federal and 60% regional (institutional) components, as well as special disciplines of the profile «Management». Their study contributes to development of theoretical and methodological foundations of fundamental training in the field of management and logistics in transport, developing research and analytical skills of strategic management, planning, organization, control and execution of freight transport operations. The total amount of 40% of courses is an international module implemented on the basis of partner university educational program, involving the development of knowledge about world transport logistics systems, international outsourcing strategies, management of global traffic flows and intermodal logistics centers, as well as innovative technologies related to logistics infrastructure of cities and regions.

Distinctive features of the program are: in-depth study of foreign languages of professional communication (English and French); writing a master's thesis in two languages (Russian and foreign language of choice); lectures and seminars, master classes by invited lecturers from the University of Nantes, as well as leading experts of foreign firms; exchange courses in partner university; mandatory training in the European logistics company. The main purpose of training is to train specialists of international level with professional, managerial and administrative skills, owning methods and tools to optimize transportation, routing and drawing up scenarios of prompt delivery and distribution of goods,

improvement of efficiency and quality of logistics services.

Despite the fact that program of international logistics specialists still asserts itself, large French transport and specialized logistics companies operating in Russia, for example, Michelin, have drawn their attention to it. A landmark event for master's students of 2010 was a visit of representatives of the company FM Logistic, who held individual interviews with students, some of whom immediately received an invitation to work in the company. In the 2011/2012 academic year, the master's students of the joint program were trained in France, two of them received French diplomas. In 2014, French master's student from Nantes arrived in MIIT to participate in exchange education and training in the company FM Logistic-East.

Taking into account the fact that logistics is a factor of successful work of the entire transport system, graduates of profiled master's program are consistently in demand by international and Russian companies, multinational corporations, logistics centers. Main place of work of graduates is associated with the management of operating chain and integrated logistics of international level (intermodal transportation, storage, procurement, marketing, information systems, risk management, freight forwarding services, etc.). That is, all areas where demand for logistics remains still for a very long time.

Conclusion. One conclusion: training of the world-class logistics specialists objectively becomes one of the main activities of transport universities. It should be well understood that today the country needs large-scale international investment projects aimed at creating an innovation economy, based on modern transport and logistics centers, fully secured by highly qualified specialists.

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