PROSPECTS FOR A SINGLE EDUCATIONAL COMPLEX OF TRANSPORT AND LOGISTICS IN KAZAKHSTAN

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ABSTRACT

The author considers the problems of formation of a single educational complex of transport and logistics in Kazakhstan taking into account the factors of internationalization of higher education in the countries of the post-Soviet space, as well as those qualitative changes in the economy, corporate ties, research practice that creation of the Eurasian Economic Union brought with it. The directions of interaction of transport enterprises and universities in the sphere of training personnel and providing them with a transport and logistics complex are shown, with special emphasis on international cooperation, growing cooperation with European and Asian transport companies.

Keywords: education, development strategy, transport, logistics, personnel training, internationalization, EEU.

Background. *At the stage of formation of a single economic and transport information space within the framework of the Eurasian Economic Union, accompanied by qualitative changes in the economy, complete reform of the transport system and integrative processes in all sectors of the economy, particularly high training requirements are required to ensure the success of the ongoing reforms.*

In today's crisis (both economic and demographic) conditions, a number of problems arise in education in general and training of personnel for the transport industry – in particular. First and foremost, this is the need for corporate support for transport education. It is obvious that such a need arises not only for transport higher education institutions of the Russian Federation, but for other countries of the former USSR, including Kazakhstan.

Objective. *The objective of the author is to consider prospects for formation of a single educational complex of transport and logistics in Kazakhstan.*

Methods. *The author uses general scientific methods, comparative analysis, statistical data, economic assessment method, scientific description.*

Results. *In terms of solving this problem in the Republic of Kazakhstan, directions for joint actions of transport enterprises and educational organizations have been determined.*

Transport education in the country today is represented by several universities. Personnel training for railway and road transport is carried out by KazATC, air transport – Almaty Academy of Civil Aviation, for water and sea transport – Aktau University of Technologies and Engineering n.a. Sh. Esenov. In addition, some specialties of transport profiles are available in multi-faculty universities, where transport education is not the main one.

According to the instructions of the President of the country, a unified transport and logistics company of an international level is created on the basis of the national railway company Kazakhstan Temirzholy, which will unite all types of transport – rail and road, aviation and water transport. Kazakhstan began implementing the idea of identifying itself as the Eurasian transport and logistics hub (Pic. 1).

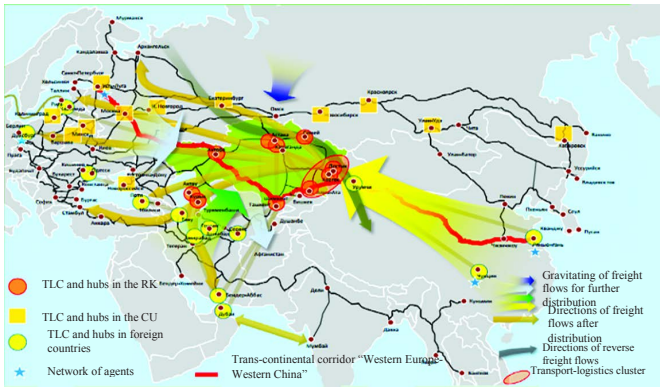
Under the program «Nyrylyzhol», the transport and logistics infrastructure is developing. New roads, railways are being built, sea ports and airports are being modernized.

A number of projects have appeared in this direction, in particular new railway lines: Zhezkazgan–Beineu, Arkalyk–Shubarkol, Zhetygen–Khorgos, Uzen–state border with Turkmenistan.

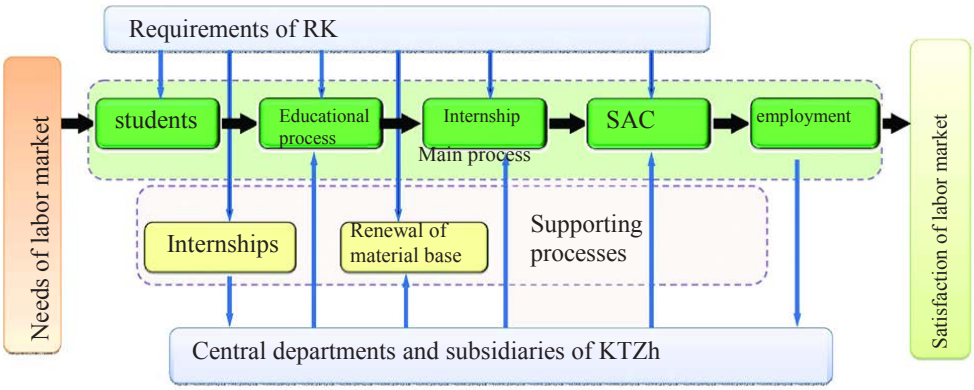
And it is precisely such programs and projects that need full-fledged competent, innovative-minded staff, which universities are training. Including KazATC, which is a universally recognized center for training of transport personnel, in fact, an industry university, which provides the need of railway and road transport enterprises in specialists.

Corporate support for transport education, implemented in joint activities by the university (KazATC) and enterprises, is represented by the following forms.

1. Orientation of transport enterprises not only to solution of production problems, but also to the problems of educational institutions. So, starting from 2012, the Academy is a part of JSC NC KTZh, which since 2015 became the owner of 100 % of KazATC shares, which allowed to maintain the level of financing and the volume of training and retraining of personnel, to ensure KazATC's priority participation in scientific, design, research and development work on the orders of KTZh.



Pic. 1. Eurasian transport and logistics hub.



Pic. 2. Integrated model of sectoral training of personnel.

Now in the JSC NC KTZh there are structural changes related to changes in the technology of the transport process support – division of enterprises into repair and maintenance, consolidation of organizations, establishment of diagnostic centers (blocks) in each enterprise and a unified system for diagnosing the state of technical means. These changes require also adequate changes in the training process. Therefore, curricula and programs take into account the functional features of enterprises in the content part of the training.

2. Increase in the volume of targeted training. In KazATC, the corresponding sectoral model has already been developed using the example of LLP Kamkor Management.

3. Realization of the simplified scheme of transfer to KazATC of modern equipment for educational process and scientific research (GE, Alstom, Frausher, Bombardier, etc.).

4. Internship of students in the workplace, including the revival of student construction teams.

5. Joint work on drawing up of professional educational standards that take into account the requirements of employers for the content of educational programs.

6. Creation of branches of departments at industrial enterprises, where practical and laboratory classes are held.

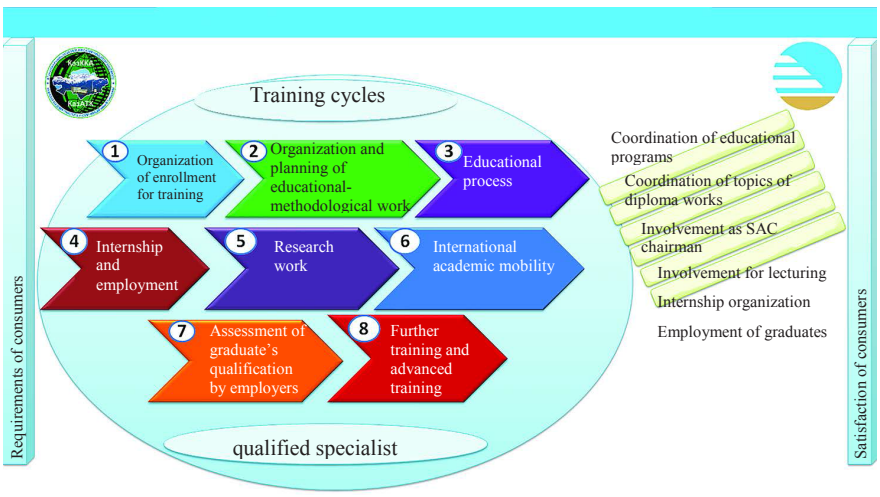
7. Lectures of heads and top-managers of departments of the central apparatus of JSC NC KTZh, which are held for students and teachers.

These joint actions contribute to the acquisition by the Academy graduate of professional competencies necessary to adapt to modern transportation production. An important aspect in this case is the upbringing of the corporate spirit of the future production worker.

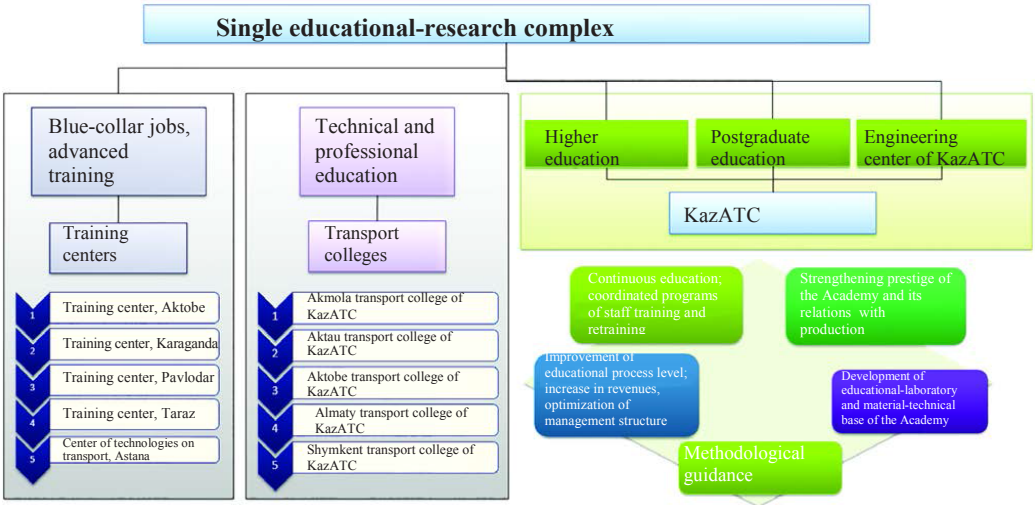
In order to improve the training of engineering personnel for innovative development of rail transport and transport engineering, the main transport companies of Kazakhstan, Russia and Belarus signed a memorandum on formation of a system of interaction with employers, business structures in the field of training specialists and workers, creating professional standards for a new generation, developing targeted training of specialists, enhancing the prestige of engineering and technological education and scientific and engineering activities.

The above forms of interaction make it possible to talk about an integrated model of sectoral training of personnel (Pic. 2).

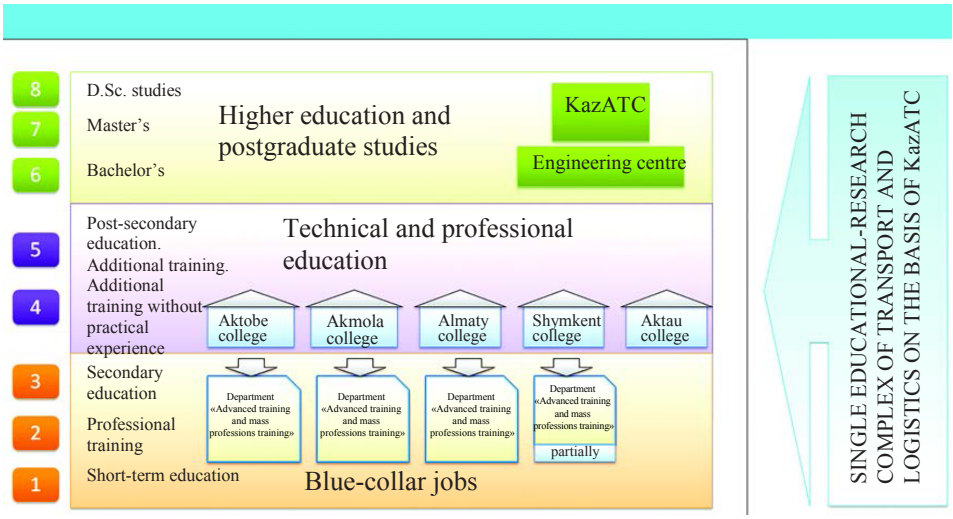
The integrated process of training and trajectory of training of students and undergraduates in the specialties in the academy are coordinated with all services and subsidiaries of JSC NC KTZh. This is done



Pic. 3. Training of a qualified specialist.



Pic. 4. The structure of a single educational and research complex of transport and logistics on the basis of KazATC.



Pic. 5. Sectoral framework of qualifications.

in accordance with the sectoral model (Pic. 2). In KazATC, quality management systems in education and energy management system have been implemented, and procedures for institutional and specialized accreditation have been completed. In order to assess the effectiveness and results of the integrated management system, the Academy successfully passed the first inspection audit.

Qualitative training of qualified specialists is impossible without an interested participation of employers.

Participation of employers in all cycles of the educational process (Pic. 3) is of particular importance, including:

– coordination of the content of working curricula and programs of disciplines, catalog of elective disciplines of specialties;

– development and actualization of educational programs in the field of transport logistics;;

– qualitative coordination of diploma papers with the employers;

– involvement of the first heads from the central office of JSC NC KTZh as the chairmen of the State Examination Commission (SEC) and the State Attestation Commission (SAC), and the heads of the linear enterprises of subsidiaries and affiliates and branches – as their deputies in these commissions;

– involvement of the main specialists of the linear enterprises of JSC NC KTZh to the role of reviewers of the thesis papers;

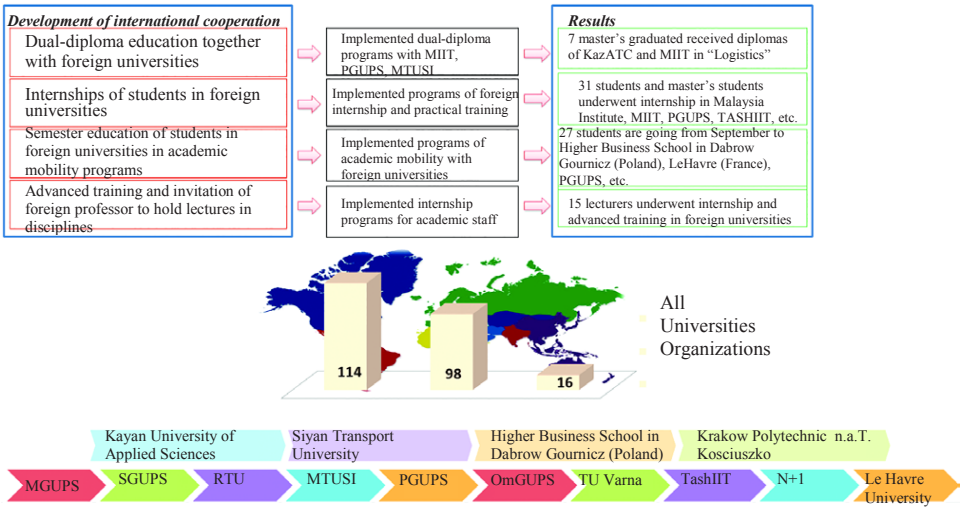
– introduction of the new discipline «Ensuring traffic safety in transport» in the 2nd year of study;

– carrying out the defense of the thesis work in the branches of the departments of JSC NC KTZh;

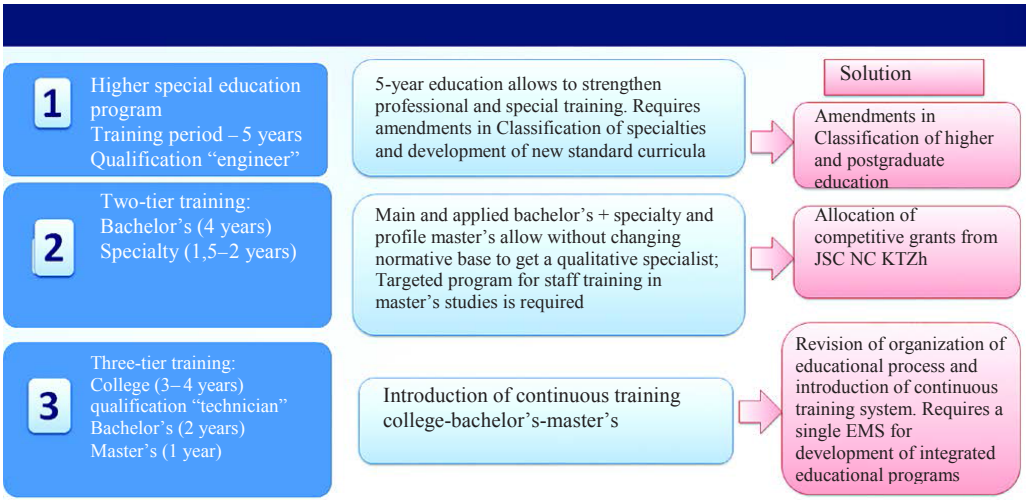
– employment of graduates after the defense of the thesis (according to the recommendations of the chairmen of the SAC.

The presented model is implemented in the form of a single educational and research complex of transport and logistics on the basis of KazATC, in the conditions of which it is possible to more effectively ensure the continuity of training of personnel, improve the quality of professional education of specialists of all levels.

In order to fulfill the model idea, a harmonious educational system is created – a complex on the basis of KazATC, which will include: five transport



Pic. 6. International activity and academic mobility.



Pic. 7. Development of the system of engineering education in KazATC.

colleges (Astana, Almaty, Aktobe, Shymkent, Aktau), five training centers of JSC NC KTZh with property and assets (Astana, Pavlodar, Karaganda, Aktobe, Taraz), LLP KazATC Engineering Center and LLP Research Institute of Transport.

Together with the Ministry of Education and Science, it is planned to create a single Republican educational and methodological council to develop programs for technical and vocational education, higher and postgraduate education, advanced courses for railway specialties. At the same time, KazATC receives the status of an industrial higher education institution (Pic. 4).

In 2013, by the order of the Minister of Transport and Communications, the Sectoral Qualification Framework was approved. It includes eight levels of qualifications and defines three areas of professional activity.

Work is under way to develop professional standards.

The next steps will be development of educational standards and creation of a certification system for qualifications in the field of transport and communications.

KazATC pays special attention to international activities and academic mobility.

Programs of two-diploma education, academic mobility and semester abroad in leading foreign universities were realized.

Within the framework of the two-diploma education program this year for the first time seven undergraduates received diplomas of KazATC and MIIT in the specialty «Logistics».

Also within the framework of the academic mobility program, students and undergraduates of the specialty «Logistics» (31 people in all) were trained in such foreign universities as Malaysia Institute, MIIT, PSTU, TashIIT, etc. Almost as many students from September had to go to the Graduate School of Business in D brow Gournicz (Poland), LeHavre (France), PSTU and other famous universities.

In German universities, where our students also go, the duration of training varies depending on the type of educational institution and the academic degree awarded. At the initial stage the student receives basic knowledge in the chosen specialty, develops skills of scientific research work and their practical application. At the next level, the student is

taught more in-depth knowledge of the chosen specialty, he conducts independent research and chooses one or several areas of specialization. Great importance is attached to the acquisition of practical skills in production with the introduction of the dual system of education.

In order to improve the system of engineering education, KazATC continues to modernize working curricula and teaching methods, taking into account the interests of employers. At the same time, the distinctive feature of engineering training is the desire to equip students with broad natural-science and fundamental knowledge.

Specifically, working curricula were revised for the specialties «Transport, transport equipment and technologies», «Transport construction», «Organization of transport, traffic and operation of transport», «Automation and control», «Power engineering», «Radio engineering, electronics and telecommunications».

Since the transition of higher education to a three-tier system of study (bachelor's, master', doctoral studies), according to employers, the level of special training of graduates is declining, which is unacceptable for JSC NC KTZh. In connection with this, three options for improving the quality of educational services have been developed on the instructions of the railway authorities (Pic. 7).

The first model provides for the revival of the system of training engineers and requires the introduction of changes in the classifier of higher and postgraduate education.

The second model envisages the preservation of the bachelor's studies and the introduction of a specialty (applied bachelor's degree, following the example of German universities) for further training in a narrow focus (transport technique and technology, transport construction, man-made structures, etc.), taking into account employers' interest.

And the third (existing) model is oriented towards the introduction of continuous training of personnel in the system of «college-bachelor's-master's».

The main difference between the scheme for training highly qualified engineering staff, implemented in KazATC, was the involvement of students in scientific activities. This includes testing, development of normative documents, and much more.

In KazATC two research laboratories have been accredited: «Environmental safety and assessment of working conditions» and «Testing of track and artificial structures».

In 2016–2017, it is planned to accredit a testing center in the following areas:

- *traction-energy, braking tests of rolling stock;*
- *dynamic-strength tests of rolling stock;*
- *expertise of the software of railway transport;*
- *testing of means of automation of railway transport.*

When performing scientific research, KazATC cooperates with foreign universities, research institutes and testing centers.

Together with the «Third Railway Design and Research Institute» (Tianjin, China) a project «Feasibility Study for Construction of a Logistics Terminal in the Sea Port of Lianyungang» has been implemented. On the order of the Third Water Design and Research Institute (Shanghai, China), a feasibility study for construction of the SCO logistics zone in the seaport of Lianyungang has been carried out.

Together with the Russian test centers IC VEiP and NTC Privod-N, KazATC plans to conduct dynamic tests of rolling stock and tests on impact on the track. Gyprostomost supported in the implementation of the project «Analysis of the efficiency of construction of a trans-Caspian bridge of mixed type connecting the Republic of Kazakhstan and the Republic of Azerbaijan».

KazATC constantly interacts with foreign manufacturers of railway equipment.

In order to develop the educational laboratory base of KazATC, the German company Alstom donated basic equipment of electric locomotives and an electric drive of switch gear to the academy on a free basis.

Alstom and KazATC cooperate in the following areas:

- *Creation on the basis of KazATC of a training center for the training of Alstom service workers;*
- *Creation of a joint testing center for railway products for compliance with the technical regulations of the Customs Union;*
- *Organization of students' internships at Alstom enterprises.*

The company GETransportation handed KazATC training equipment, work is in progress to establish a training center for the training of GETransportation service employees, as well as a joint testing center for the company's products.

The company Frausher donated the axle counting system to KazATC both for use in the educational process and for research purposes. It is a prototype of the system installed on the sections of the railways of the Republic of Kazakhstan.

The company Bombardier Transportation plans to equip the training laboratory in KazATC with the system of inter-train regulation of train traffic.

A memorandum on cooperation in the use of innovative solutions has been signed with LLC IBM Eastern Europe / Asia.

Conclusion. *As a result, implementing the continuous model of education-science-production, KazATC builds a flexible and long-term system for consolidation of the interests of transport and logistics, trains highly qualified scientific and pedagogical and profile staff focused on modern creative thinking and development taking into account the internationalization of education. Such a strategy has firm foundations and reliable prospects.*

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