

Development Prospects for the Maritime Transport Complex of the Kaliningrad Region and Professional Training

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Abstract Last years a steady tendency of the maritime transport complex development in the Kaliningrad region has become obvious. At the same time, many problems should be solved for intensifying development processes of the transport complex. Among such problems are the following ones: optimization of strategic plans for the transport development, ports and infrastructure, attraction of cargo flows and integration of the transport-logistic regional system in the world and European transport systems. The regional transport strategy covers construction of a new deep-water port, modernization of existing ports and terminals, setting-up of information-logistic centers and infrastructure objects because of innovative technologies application. The paper represents the requirements and principles of formation to an educational system of self-development of specialists. The paper shows the integrated model and technologies of the personality-oriented selection of the content of professional self-development and self-improvement of specialists. Basic elements and the system structure of organizational and educational management of the self-development and self-improvement process are defined in the paper.

Keyword: *Transport complex, Port of Kaliningrad, Preparation of specialists, System of professional improvement, Educational content determination*

1. Introduction

Given to the world economy globalization, transport as an economy function is the most important tool of integration processes. One of the key links of the Russian economy development is modernization of the transport system and realization of its high-capacity transit potential for providing the Euro-Asian trade-economic links. Russia has a developed transport system. Many seaports locate on the Baltic, the Azov-Black, the Caspian, the North and the Far-Eastern Sea basins. Railroads and inland water routes, a stretched highway road network, a complex of international airports, air ways crossing the air space in latitudinal and meridian directions above the territory of the country provide the effective domestic, international and transit traffic. It is an enormous transport potential that can use the national transit resources for providing the Euro-Asian links meeting the country needs for traffic of passengers and goods in all modes of connection. Transport logistics becomes one of key elements of increasing competitiveness of the national economy and unlocking the transit potential of Russia. Logistics as a methodology for organizing and optimizing processes of goods circulation allows to reduce transport costs. In many cases, the level of logistic costs and risks determines the attractiveness of Russia for international freight flows. Therefore, development of transport-logistic complexes and their integration in intercontinental transport systems is considered as the priority field of the Russian economy and, in particular, for the Kaliningrad region. Taking into account unique geopolitical features of the Kaliningrad region, issues on functioning and development of the regional transport complex have come into a sharp focus in the Federal government. The transport complex is an important part of the industrial infrastructure and service trade of the Kaliningrad region. Sustainable and effective functioning, dynamic development and a balance of the transport complex are necessary conditions for the high rate of economic increase, rising of a quality of the population

life, a rational integration of the Kaliningrad region in the Russian and world economies. This way for the Kaliningrad region, the integration to the Baltic Sea macro-region is a key process in which the transport is a driving force of the integration [1]. In particular, the issue on the transport corridor that will cross the territory of the Kaliningrad region and contribute to the regional economic growth is under discussion. The intermodal transportation on the international corridors crossing the Russian territory stipulates logistic centers creation locating along corridors. The Fig. 1 shows the main “East-West” and “North-South” corridors on Russian territory and logistic centers along them. Such a logistic center, i.e. transport hub has to be created on the territory of the Kaliningrad region taking into account its profitable geographical location and important role in the transit possibilities [2].

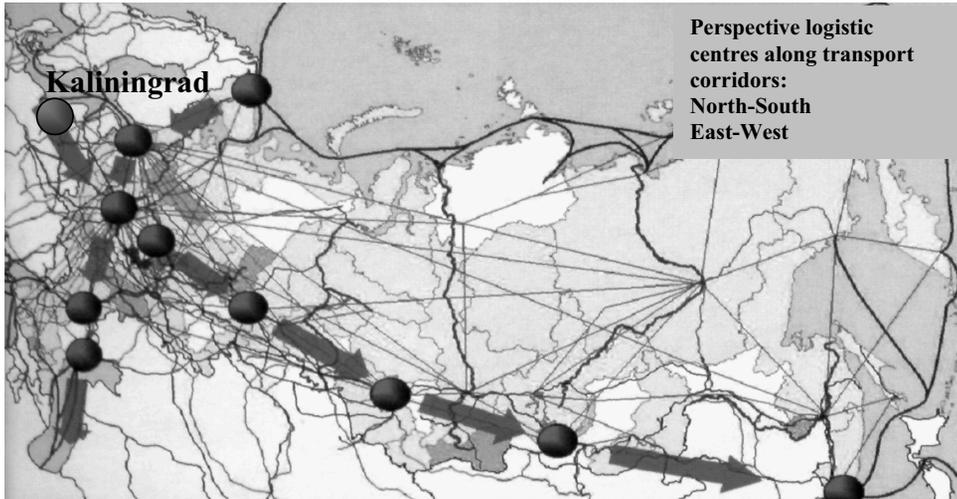


Fig. 1 Logistic centres located along transport corridors

Nowadays the “Transport Strategy of the Russian Federation until 2030” [3] determines main parameters of the transport complex for a short-term and long-term development. In particular, some categories of ports are specified for increasing competitiveness, specialization and prospects of the further development. The first category is represented by ports that provide basic volumes of handling of foreign trade and transit freight and that are able to compete with ports of neighboring countries. Construction of infrastructure objects in these ports should be held at the expenses of the state. One of the first category ports is the port of Kaliningrad. The port of Kaliningrad is favorably situated on transcontinental directions the Asian-Pacific region – Europe, South and Central Asia – Northern Europe. Presently cargo transportation between Asia and Europe performs mostly on deep-sea routes, via the Pacific, the Indian, and the Atlantic oceans. Transit time of cargo delivery from Japan and South Korea to Europe via the Suez Canal reaches 35-40 days. Via the Trans-Siberian Route (TSR), it only takes 16-18 days. The development of the Kaliningrad transport complex makes actual the problem of staffing for the main logistic objects, such as logistic centres, port terminals, multi-purpose freight-forwarding companies, specialized ships, service companies, etc.

2. Features of the Kaliningrad Maritime Transport Complex

2.1 Main Description of the Transport Complex

The transport complex is an important part of the industrial infrastructure and service trade of the Kaliningrad region. Sustainable and effective functioning, dynamic development and balance of the transport complex are necessary conditions for the high rate of economic increase, rising of standard of living, rational integration of the Kaliningrad region in the Russian and world economies. The transport complex of the Kaliningrad region contains motor, railway, sea, river, air transport and units of the corresponding infrastructure: roads, railway stations, ports and an airport, trans-border points at

the national border [4]. Specific features of the economic-geographical situation of the Kaliningrad region as an enclave, presented in Fig. 2 are:

- geographic isolation from the mainland of Russia;
- neighbourhood with European countries members of EU and the “Schengen Agreement”;
- special economic zone regime;

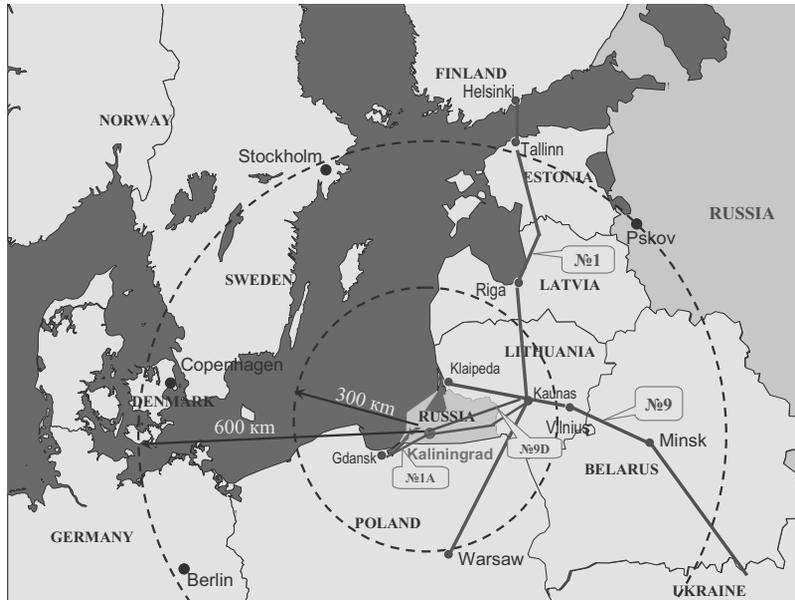


Fig. 2 Geographical location of the Kaliningrad region

Branches of two Trans European transport corridors: №1A (Riga-Kaliningrad-Gdansk) of the route № 1 “Via-Baltica” (Helsinki – Tallinn – Riga – Kaunas – Warsaw) and № 9D (Kaunas-Kaliningrad) of the route №9 (Kiev – Minsk – Vilnius – Kaunas – Klaipeda) cross the Kaliningrad region.

2.2 Characteristics and Perspectives of the Port Complex

The port of Kaliningrad is the only ice-free port of the Russian Federation on the Baltic Sea, it has unique location – the distances to the biggest ports on the Baltic Sea are 300 – 700 km [5]. The port has an avantport of Baltiysk, inner harbours at Kaliningrad and terminals along the 43 km long Kaliningrad sea canal. Canal dimensions: depth on a halfway from the entrance at Baltiysk is 10.5 m, and width is between 80 – 180 m. The rest part has depth 9.0 m; width 50 m. Such characteristics of the canal allow to carry vessels having length up to 170 m, and 30 thousands tons of tonnage. Berthing is about 20,000 m total length. 14 stevedoring companies handle all kind of cargoes in the port. Main terminals of the port of Kaliningrad are shown in the Fig. 3. The port of Kaliningrad links to port of St. Petersburg and ports of Poland, Germany, the Netherlands, Denmark, Belgium and Baltic states by container and ferry lines. The design annual throughput of the port terminals is up to 33 mln tons. The amount of cargoes handled by the port complex of the region has been increasing since 2000. Dynamics of Kaliningrad ports cargo, including container handling is shown in the Fig. 4. Serious reasons like the discrimination tariffs policy of Lithuania for cargoes transported through its territory directed to the Kaliningrad port and the global economic crisis resulted to reducing of the annual cargo and container turnover in 2008-2009. But now after recession the cargo turnover is expected to raise up to 15.1 mln tons and up to 150.000 TEUs in 2010. According to the “Transport strategy” mentioned above, directions of port development are the following: construction of new and modernization of acting port producing complexes; cruise and ferry transshipment; development of port as deep sea container hub with the approximate turnover of 128 million tons. A new cluster was developed in the port due to construction of Ro-Ro and Railway ferry terminal in Baltiysk. It will be used on the areas

located along the canal for new multi-purpose cargo terminals constructing. The following cargoes form the volume: oil, oil products, metals, chemical fertilizers, container and packaged freight, construction materials, coal, ferroalloy and technics.

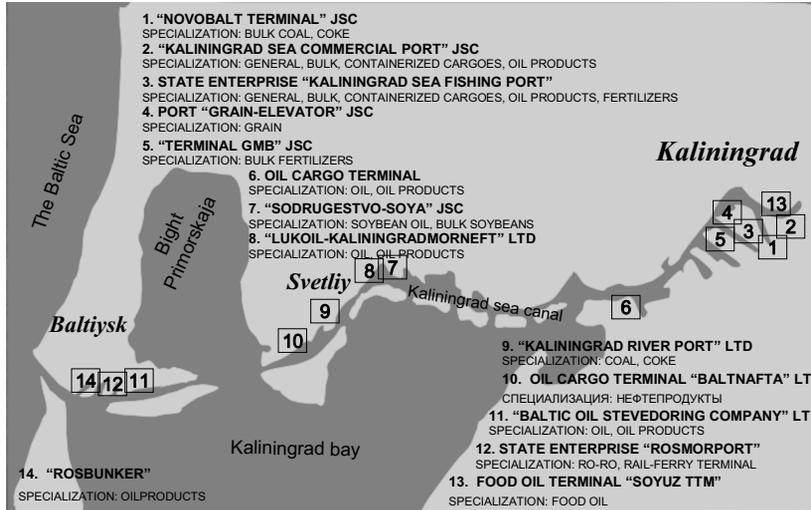


Fig. 3 Terminals of the port of Kaliningrad

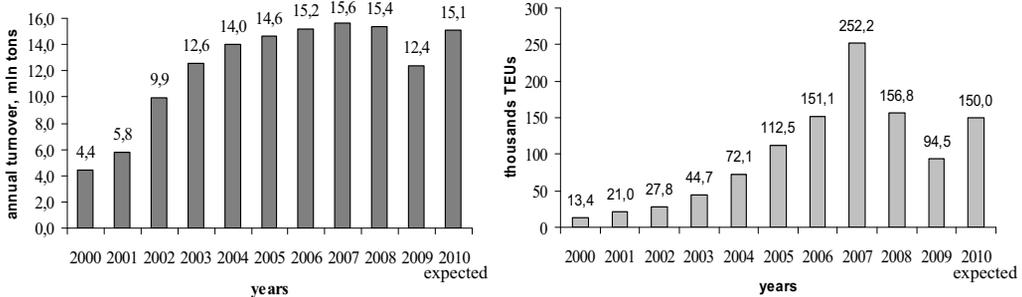


Fig. 4 Annual cargo and container turnover

Like export cargoes which intend for domestic consumption (including industrial enterprises of the region) and partial export to foreign countries (transit and re-export) and the mainland of Russia the import cargoes have to be transported from the port terminals by the railway and motor transport. It is obvious that taking into account present carrying capacities of main railway lines and roads, cargo handling of the specified volume is impossible without development of the infrastructure in the direction to the ports, increasing effectiveness of commodity circulation (using modern logistic technologies, development of the transport logistics) and development of the storage facilities. Taking into account the perspectives of the Kaliningrad transport complex development in the post-crisis period, it is necessary to solve the following problems in order to intensify this process:

- optimization of strategic plans for transport modes and their infrastructure;
- attraction of cargo flows;
- optimization of transit tariffs;
- integration of the regional transport-logistical system in the European and world transport systems;
- training and increasing skills of transport specialists.

3. Professional Training Problems

3.1 Preparation of Specialists for the Transport Complex

Nowadays, training of specialists for the transport complex of the Kaliningrad region is provided by the Baltic Fishing Fleet State Academy (BFFSA) [6]. Graduates from the Academy receive the qualification “Engineer for organization and management on transport” in the field of marine and road transport. The educational process provides training of specialists who know modern information technologies, methods of system analysis, methods of optimization of transport processes, methods of modeling and simulation, etc. In addition to the study of special subjects, such as “Technology and organization of handling and transport processes”, “Transport Logistics”, “Commercial work on transport“, cadets are actively involved in scientific research. A great importance for preparation of competent specialists has industrial practices conducted in the transport enterprises of Kaliningrad. BFFSA is a partner in the projects that are partly financed by European Union. The goal of the project “East-West Transport Corridor II” [7] is to develop a “green” transport corridor between the countries of the Asia-Pacific region and Europe. Study visits of cadets to foreign ports are included in the project. Another project named “TransBaltic” [8] has a main goal to create an integrated transport system in the Baltic Sea region. One of working packages of this project is devoted to increasing of human capacity that means improving transport specialists’ professional training. A deep study of the professional and business English provides graduates the opportunity to work not only in Russian, but also in foreign transport companies. Graduation projects are carried out on topics actual to the regional transport problems. Results of projects take into account market research, recent trends of the geopolitical and economic nature, issues of management, logistics and environmental protection on transport. Monitoring of graduates shows that most of them successfully work as specialists in the fields of transport management.

3.2 A System of Professional Improvement

At the same time, there is an actual task of specialist’s professional skill improvement with the aim to develop new technologies, scientific methods of organization and management of transportation, mastering of related professions. But this task is only a part of long-life learning system. An analysis of the situation in the postgraduate education shows that at present the continuity of professional development of specialists may be achieved by implementing the cyclic scheme of continuing learning: “self-development – professional improvement/additional training - self-development - professional improvement, etc.” It is assumed that the processes of professionalism improvement and self-development should be managed. It is achieved by using a program-oriented method of management of educational processes. Objectives and means of their achievement should be linked in the programs of professionalism development. Controllability of continuing education processes has to be ensured by self- and external controlling (for example, a study center). The personal - oriented process of specialist’s professional development is carried out in specially created conditions that are associated principally with the content and technology of a educational interaction. Thus, there are two important components of an educational system: the content and tools (methods, forms) of training. The goals of education perform a systematizing function in the educational system. An analysis of existing approaches to the organization of professional improvement and professional self-development processes shows that the educational system has to be adaptive, open and accessible for specialists of all professional levels, staffed by qualified consultants, provided with technical equipment and a program check. The system should have an extensive library of electronic educational materials, virtual laboratories, modules for creating of a virtual professional-activity environment of communication. The most effective technologies among the major educational technologies of professional- and self-development are business and simulation games. Games allow updating theoretical knowledge and carrying out professional training of specialists. For example, complex business games “Ensuring of navigation safety and increasing of fishery effectiveness”, “Ensuring of maritime transportation” and simulating games for the design of transport - logistic systems in the educational process in BFFSA are used [9], [10]. The principles of variability, system, interlinking, optimality, personal orientation of subjects, modularity, discrete – continuous renewal; anticipation were introduced as the basis for the educational system of self-development. In the

process of the designing the educational system we used a process approach. Development of the system was carried out by the following scheme: goals - requirements - principles - processes - functional structures - morphology (resources, material, content, etc.).

3.3 Requirements to the System of Professional Improvement

On the basis of an analysis of the goals and requirements to the system, the following processes were identified:

- the basic process - self-development and self-improvement;
- functional processes - diagnostics, problematics and self-determination, training/self-education technologies;
- selection of training content/self-education/self-development;
- information processes and technologies;
- financial and economic processes;
- administrative and legal processes;
- organization process;
- management processes.

The management processes include: forecasting, planning, monitoring, analytical processes (for example, an analysis of a social and economic situation, development of science and technology, educational technologies, a services market and human resources analysis); preparing and decision-making; implementation of decisions. Systematization of the processes was carried out on the basis of system-structural analysis. As well options characterizing these processes and system links were defined. It allowed to identify the main components of the educational system of specialist’s self-development. The structure of the created educational system consists of the following main components: consultants/teachers; students; a content of education; a subsystem of personal-oriented special programs development, distance technologies of self-education, monitoring and control; methods and models of self-management, information and a material and technical base. The structural/process model of the educational system is shown in Fig. 5.

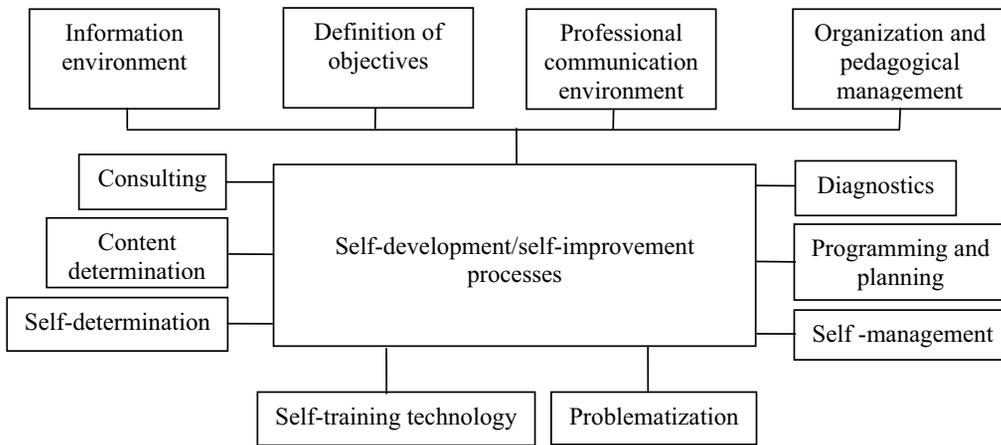


Fig. 5 Process model of the educational system of specialists’ professional self-development and self-improvement

The important task of selecting the training content has to be solved both during the design of the educational system, and in the process of its operation.

3.4 A Method of the Educational Content Determination

It was suggested a method for content determination based on the principle of integration of diagnostic, simulation and expert methods. The diagnostic method allows to make an analysis of the existing

specialist's level of training, opportunities, advantages and disadvantages of his self-development system. Using this method it is possible to study the development of the situation in the past, present and to identify trends, approximating them for future periods. As a result of the diagnostics of the specialist it is identified the need for compensatory education and in accordance with the objectives to move to the selection of content in the context of development plans.

Determination of the self-development/self-education content can be performed using expert and simulation methods. In accordance with the objectives of self-development and taking into account the results of the diagnostics of the specialist's professional development level and potentialities, experts can offer variable self-development programs. Such programs will be considered as a basis for the formation of personality-oriented plans for professional self-development in the future. Simulation modeling of a professional activity or some of its aspects allows to create a system that focuses on self-estimation of a professional level, determination of the personal "ignorance" field and corresponding objectives of self-education. Conducting of game experiments based on special methods allows to shift to the self-development mode. The integrated model of diagnostics and determination of the content of training and self-development of specialists is presented schematically in Fig. 6.

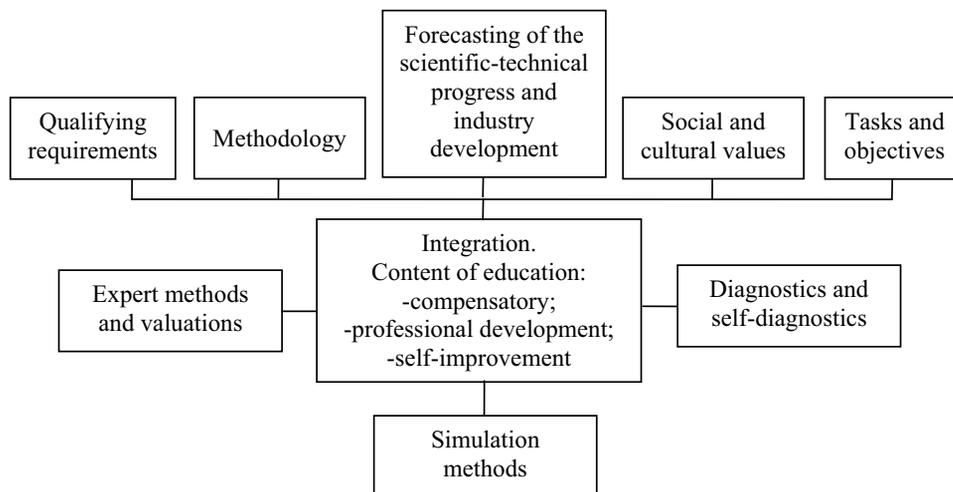


Fig. 6 Integrated scheme of a selection content process for professional self-development and self-improvement of specialists

An analysis of existing approaches to the management of educational systems oriented on post-graduate education (improvement of professional skill and retraining) shows that the processes of self-development are actually uncontrolled.

In the development of the system of organization and educational management for specialists' self-development processes results of research [11], [12], [13] were used. An analysis of an organizational work with the personnel at the enterprises of the marine and fishing fleet and the operational experience has allowed to define basic principles on which a system of organizational and educational management of the processes of professional self-development and self-improvement of specialists should be formed. These principles are: the principle of systematization; the principle adaptability; the principle of profitability; the principle of continuity; the principle of self-development system and its self-support.

The following components of the system were identified:

- managing and controlled systems;
- management functions;
- management methods;
- elements (subsystems) of the controlled system and links between them,
- main functions and controlled parameters of subsystems.

The Table below shows the suggested main stages of organization and educational management of marine specialists' professional development. It is seen that functions determining self-development and self-improvement processes are: motivation, regulation, diagnostics and control.

Stages of the training organization	Functions of management/self-management		
	motivational	coordination	control and diagnostics
1	2	3	4
1. Initial diagnostics of the level of professional readiness and assessment of an educational situation.	Identifying the degree of motivation and readiness of a specialist for self-development and self-improvement.	Identifying the level of professional readiness, as well as "lacks" of knowledge and skills. Determining specialist's readiness to individual study, skills to organize activities for self-development and self-improvement.	Evaluation of professional readiness. Determining the specialist's readiness for self-development and self-improvement.
2. Objective self-evaluation	A specialist forms self-evaluation of his professional readiness level, based on the analysis of initial diagnostics and refers it to own ambitions that are as a result a powerful motivation factor.	Identifying abilities of a specialist for a critical self-analysis and his goals, as well as readiness to cooperate in the system "teacher – learner".	Evaluation of a specialist's readiness level to the objective self-analysis and cooperation, a level of own ambitions.
3. Programming of self-development and self-improvement.	Determining the content of education and development of the program of action in the context of continuing professional development.	Building a system of knowledge and skills in the context of a compensatory, adaptive and developing functions of training, self-development and the self-improvement.	To set up control/self-control stages, time limits for performance of basic points of the program.
4. Designing teaching and practical activities on self-development and self-improvement.	Defining goals and means of their achieving. Selection ways of self-stimulation, factors of internal and external motivation.	Building knowledge systems, logistic schemes of their relations and the choice of knowledge actualization methods.	Developing criteria for evaluation of the knowledge and skills level, as well as the integral criterion of evaluation level of professional readiness

Table Organizational and educational management of professionalism development

Continuation of the Table

1	2	3	4
5. Planning the project implementation.	Selecting methods of stage-by-stage assessment of achievements and its stimulation.	Defining means and methods to achieve goals, limits realization of basic positions of the plan.	Selecting ways of controlling and accounting. Defining controlled parameters.

6. Implementation of the project and the plan.	Stimulation and motivation self-development and self-improvement.	Organization for a process of continuous professionalism development. Correcting the process in a case of conditions change.	Controlling and accounting. Evaluation productivity of the teaching and self-development process.
7. An outcome analysis and assessment of a specialist preparedness for the transition into the next stratum of professionalism.	Assessment of the level of professional a specialist preparedness for the transition to the next stratum of professionalism. Selection methods and means of self-development	An analysis of the goals achievement. The reflection of own actions and achievements. Determination failures and unproductive activities. Synthesis of successes and failures. Coordination further activities	Determining the level of development of certain types of readiness and training as an integral index.

4. Conclusion

The maritime transport complex of the Kaliningrad region – an enclave of the Russian Federation on the Baltic Sea has good perspectives of further development after economic recession. An actual task is the use of the transit potential of the complex and its integration in the world and European transport systems. According to solving this task active preparation and qualification improvement is stipulated. The main stages of organization/self-organization activities in the context of professional development of a specialist were identified: diagnostics of the professional readiness level and assessment of a learning situation, self-disqualification or objective self-evaluation; programming of self-development and self-improvement; designing educational and practical activities for self-education, self-development and self-improvement; planning of project implementation; realization of projects and plans.

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