Trends in the development of maritime education: prospects and proposals

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Abstract. Maritime Education and Training is an essential factor for the contribution to the sustainable maritime development. The article reveals the basic trends in the development of maritime education. It is shown that the need to study and scientific understanding of the processes taking place in the space of maritime education, is determined by increasing the Convention's requirements, the new educational standards of professional maritime education, needs of society, the state and the merchant shipping industry. Maritime branch can be adequately updated and maintained only through effective maritime education and training.

This paper shows that a change in educational purposes causes a change in the content of the training, as well as methods of teaching and carrying out control and assessment procedures. In this regard, the system of technological criteria of professional training in maritime education is proposed and substantiated.

As an example of the expansion of educational opportunities the new educational project is offered. This Project implementation can be considered as an opportunity and platform for developing the mechanism for regular exchange and valuable discussion by maritime educators from different regions, who are ready to share and cooperate during workshops in favour of Maritime Education and Training, and Maritime industry.

The originality of the idea of the proposed Project corresponds with IAMU goal to invite new potential members, including different representatives of maritime industry and provide the opportunity not only to strengthen connections among IAMU Members, by enhancing the sharing of experience and knowledge, but also to promote the next step of maritime education evolution.

Key words: maritime education, educational space, poly-profiled and communicative competence, maritime transport.

1. Introduction

Maritime education is a complex, multilevel process, presuming the interaction of closely linked quantitative and qualitative transformations and at the same time the result of a long historical, economic, and spiritual coexistence and interaction of participants of the Global Maritime educational community.

The issues of Maritime education development do not cease to be urgent, as it covers the complex relationship of education, social and economic environment and society. Its unity has become essential, because there is a process of integration of all components of the Maritime transport sector at different levels. This process leads to the enrichment of each component in the existing system, to an appearance in it of new, integrative features. One of such components is marine education, with its new quality – poly-functionality.
2. Poly-functionality of Maritime Education

Poly-functionality of Maritime Education is both the process and the result acting as a resource of optimization of Maritime transportation industry. Level and quality of Maritime education in much determine the state of the sea industry. Maritime education at the present stage includes several functional tendencies: organizational, social, informational, communicative, preventive, analytical and predictive, etc.

The quality of implementation of these tendencies depends heavily on the diversification of maritime education, involving the organization of the learning process and the result of poly-functional, poly-profile training of future specialists for professional activity using of hierarchical training system [3, pp. 107-108]. This approach to the training process allows providing future specialist with extra opportunity of choosing personal and professional vector of their development.

Peculiarities of the multi-level system of marine specialist training in modern maritime university include: a high degree of unification of curricula in profiles and specialties of higher and secondary maritime professional education and a combination of broad basic training with subsequent specialization. At the same time, the global Maritime community imposes new requirements to the training of seafarers, and provides for new types of practical training that, in turn, necessitates optimization of the existing multi-level system of professional Maritime education.

When designing maritime educational space it is necessary to account the multisided nature of an activity of a maritime specialist. Analysis of the Manila amendments to the STCW Convention-78/95, adopted in 2010 showed that the standards of competence of all crew members introduced new competencies, knowledge and skills, providing different types of training caused by the introduction of modern new technologies and sophisticated equipment on ships. Also a step was made in the direction of development at sailors of non-technical skills, namely leadership features and ability to work in a team [1]. Such ability often becomes decisive in professional situations.

Such changes have already been reflected in the content of Maritime education, but not always at a proper level. In this aspect application of the poly-profile and communicative approach to the selection of content of maritime education can be useful and urgent. This approach presumes analysis of cognitive tasks, industrial and cultural characteristics of partners, including foreign ones, and organization of the communicative actions of all participants of solution and realization of set tasks [3, pp. 43-45].

Application of poly-profile and communicative approach to the selection and optimization of the content of education of future maritime specialists provides: systematic construction of the entire educational process; generalization and systematization of the training content, its components, reflecting poly-profile character of specialists’ relations; continuity at all stages of lifelong learning; use of inter-subject links in the constructing of integrated training programs [3, p. 13].

At present the best maritime specialists are considered as complicated managers possessing poly-profile knowledge. The content of their education must be aimed at permanent accumulation at them essential professional features that adequately reflect the specificity of the nature of professionalism and formation of poly-profile and communicative competence, i.e. the integral abilities, consisting of number of competences of specialists of different professions, but included in the same professional field [3, p. 202]. Poly-functionality as a specialist’s characteristic must be included in the content of education that further will provide him the different directions of development, depending on his abilities, desires and possibilities.

The development of poly-functional Maritime training assumes performing actions representing certain stages of its functioning and development. Each stage differs qualitatively by new state of the educational process and people included in it. Such actions include:
– career-guidance work, which allow attract to universities only concerned entrants, not those who are not interested in a specific specialty, but only the possibility of training on a budgetary basis (maritime education in Russia in much is on budget ground);
– investigating of factors influencing the Maritime education content and consideration of economic and legal conditions for the functioning of educational institutions and possible changes in the prospective period;
– implementation of innovative models of functioning of Maritime Universities and improvement of their departments management systems;
– introduction updated educational technologies in educational process; creation of digital, interactive textbooks and manuals in accordance with international and national requirements, as well as programs and integrated courses having poly-profile character, with subsequent organization of poly-profile practices at different companies in the industry or in different departments in accordance with the program;
– study and use of best experience, including international one with the aim of improving both the quality of education, and external academic mobility of students and members of teaching staff of Maritime Universities;
– creation of legal support of simulator training, and improving the organization of industrial practice and training on ships and at the shore companies, both national and foreign, providing regular financial support of this practice;
– providing conditions for increasing scientific potential of Maritime Universities and support the development of young scientific and pedagogical staff, and also attraction of students to performance of research work and the preparation of scientific projects;
– further development of the system of continuous education, reflecting the continuity of basic, secondary and higher professional education with the use of reduced terms of training, especially for graduates of the branch colleges in universities in their field, where they must undergo the full training period;
– formation and support of different forms of cooperation with employers (target training, seminars, conferences, involvement of customers in the structure of the University, for example, in a methodical Committees or boards of Trustees, development of proposals on improving the procedures of licensing of educational activity and state accreditation of Maritime universities engaged in Maritime specialists’ training process;
– regular monitoring of the demand for Maritime specialists of any rank on domestic and international labour market and improving the planning of volume of their training for the Maritime industry;
– development and implementation of programs of support of cadets at the stage of their professional adaptation, the revival of mentoring and internship programs;
– raising the prestige of teaching activities and involvement employees working in the Merchant shipping branch in the educational process, etc.;
– wide extending of distance learning as alternative method of learning and teaching in MET. Implementation of these tools enables education institutions to provide a range of programs for seafarers. Successful delivery of distance learning provides more and more educational opportunities.

In this connection while developing content for distance learning the following factors should be taken into consideration: targeted competencies and outcomes; profiles of the different learning cohorts and their requirements and limitations; understanding the impediments to the learning; time and cost of developing the learning resources and the availability and access to the associated systems to deliver them, etc. [2, p. 210].

Networked learning, which allows connecting learning spaces, flexible learning programs and tools and hybrid learning, combining different methods of teaching have already enlarged existing learning opportunities and have further prospects.
3. Factors influencing quality of Maritime education

Consideration of the development trends in Maritime education involves the significant expansion of its diversification opportunities: different training period, forms, technologies, methods and means of teaching. But it is necessary to take into account external and internal factors that influence the quality of Maritime education, among which the following are:

1) changing of geopolitical and economic conditions of international integration with their determining influence on the competitiveness of specialists on the international labour market;
2) constantly increasing requirements of Federal Educational Standards of Higher Education to the level of marine expert training and Conventional requirements including the Manila amendments as well as current requirements, regularly published by the International Maritime Organization [1];
3) continued growth of accidents in the Maritime transport sector;
4) significant damage to the environment due to the increase of major disasters;
5) continuous development of technologies and their implementation on ships and in shore structures industry;
6) the best experience of Maritime universities, including foreign ones etc. [5; 7; 8; 9].

Accounting the external factors and specific conditions of implementation of marine education allows build a productive educating process, and plan and implement interaction with shipping industry. Internal factors, reflecting the nature of the industry are generated by combining the individual system elements. Their influence determines the operation and effectiveness of the poly-profiled training of future Maritime experts.

Change, or rather an adjustment of the educational purposes causes a change in the substantial part of the training and teaching methods, and conducting monitoring and evaluation procedures. Training of specialists working in a branch Universities is of particular importance. In this regard, we propose a system of technological criteria of quality of industry training of teachers (lecturers, instructors) working in the system of Maritime education. These criteria include:

- expediency, presuming the training corresponding to updated requirements of merchant shipping industry to the level of knowledge of Maritime specialists;
- poly-profileness, including not only knowledge of a certain specialty, but also profiles involved in the production of merchant shipping;
- diversification, supposing a variety of ways, methods and means of presentation of educational material;
- succession, namely, a) rationality of the choice of methods, forms and means of training; b) identification of the most effective teaching techniques; c) timely replacement of obsolete items of operational component of the learning process; d) maintaining of the above elements, which have stood the test of time and proven to be effective;
- coherence, involving continuous coordination of educational programs with accounting new model courses approved by the IMO and compliance with requirements of national and Conventional educational standards.

Accounting of technological criteria of industry training of lecturers, instructors, which train marine professionals, contribute to the definition of technology of acquiring of special subjects.

4. International cooperation as resource of development of maritime space

While considering tendencies of Maritime education development as a resource of industry optimization it is necessary to point out the international partnership as one of the important aspects. In Maritime education this component plays a special role that is stipulated by the international character of Maritime activities. It is well aware that international links in educational space of Maritime University are necessary to ensure the training of future marine specialists to contacts with foreign partners,
coordination of related industrial activity and acquiring value orientations prevailing in the world, to
to prepare for inclusion in international programs, projects and etc.

In this regard, activities of such international associations as IAMU, IMLA, BSAMI, etc. are of great
importance. Admiral Ushakov Maritime State University (Russia, Novorossiysk) proposed some educational
projects, the implementation of which contributes and will contribute in the further to the development
of international Maritime educational space [4; 6; 7; 8; 9]. One of the latest projects is a Database of an
innovative educational product. The idea of the Project is creating a free database of innovative educational products with a purpose to offer extra opportunities for educators from different countries to use them to improve the quality of Maritime education in Universities.

The urgency of the offered project is evidenced by challenges facing maritime education and training
providers, and the Maritime industry and constantly growing requirements to quality and a level of
future sea experts training. It also contributes to the implementation of new methods of teaching,
development of technologies directed to the training of highly skilled sea professionals and development
of cooperation among universities in promoting intercultural exchange and cooperation among
professors, lecturers and instructors of the maritime educational space.

5. Conclusion

Maritime universities are focused on the principal issues of the maritime education, including the
objectives to create a new competitive image of the merchant shipping industry, to support the industry
through scientific and technological development. The result of set tasks first of all depends on
specialists working in the branch, on their educational and cultural level. In this connection knowledge
of trends in the development of maritime education and their accounting in the choice of new methods,
forms and technologies of education would determine future success of educational process in maritime
universities and success of maritime industry as a whole.

References