

OPTIMIZATION OF DISTANCE LEARNING IN THE SYSTEM OF SEA SPECIALISTS' POSTGRADUATE TRAINING

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Abstract. The growing demand for skilled and competent seafarers requires relevant delivery of qualitative training and education. The Manila Amendments of STCW provided new opportunities to distance delivery of courses to seafarers that are required for advancement in certification level. Developing courses for distant learning revealed on one hand the necessity of constant searching new forms and methods for presenting material and on the other hand the need of optimization of the existing distant learning system corresponding to challenges of modern level of maritime industry development.

The paper shows that organization of e-learning in Maritime University is aimed to support training under STCW. Composition and characteristics of e-learning environment are justified. Factors and conditions for its implementation and operation, determining the adequacy of new educational results according to Conventional and the national requirements are considered.

The contradiction between the constantly increasing requirements to the system of Maritime education, and their reflection in the content of postgraduate education is shown, and the way to resolve this contradiction is grounded. Experimental verification of the proposed content and methodology of e-learning environment are shown.

The paper proves, that despite the fact the e-learning is an integrative part that unites both contents and delivery of distance education, it has advantages and disadvantages which should be accounted while e-learning arrangement.

Specific issues on teaching technical subjects are considered and possible ways of implementation of the developed by the University courses in a learning process are shown.

Keywords: e-learning, distance education, maritime education, professional competence.

Introduction

The growing demand for skilled and competent seafarers requires relevant delivery of qualitative training and education.

The analysis of the different models of lifelong learning shows that one of the most effective ways of implementing the principle of continuity in education is postgraduate education, presuming professional development of a person. It is designed to solve social and personal problems of professionals providing a sustained support for their social and professional activity.

While analyzing the state of the distance learning in Maritime education in modern conditions we highlight the following trends: improving of the educational level of the sailors; the increasing need to expand access to educational programs at all levels, including postgraduate and doctoral studies; increased interest of specialists to enhance their professional skills and training according to growing requirements of the Convention STCW 78-95 taking into account the Manila amendments 2010 [1]; the increase in the number of part-time students combining study with work etc.

Part 1. Postgraduate professional education for marine professionals

Postgraduate professional education for marine professionals does not include only special social characteristics, contributing to its institutional status [2]. There is need for constant updating of knowledge, awareness and massive needs in the promotion and development of professionalism. Primarily, this occurs due to the requirements of the STCW Convention and relevant Code relating to continuous retraining in different professional spheres [1].

Currently, the following types of postgraduate professional education are distinguished: self-education, involving the implementation of individual educational programs; retraining, i.e. the possession of new specialty and practical training. The main purpose of these forms is to secure in practice the acquired knowledge; training and further advancement in a certain profession.

Analysis of the current system of postgraduate Maritime education has allowed us to highlight the contradiction that exists between the constantly increasing requirements to the system of Maritime education, the growing level of development of information society, a reflection of these processes in the postgraduate education and abilities of the pedagogical system of maritime institutions to meet growing demands of marine industry.

One way to resolve this contradiction is a wider use of distance learning. This is proved by the revised STCW Convention (the Manila Amendments of STCW) which provides for the use of distance learning and e-learning in Maritime Education and Training. Section B-1/6 of the Convention contains guidelines for training by distance learning and e-learning. These guidelines help in much in developing new courses for distance learning.

It is necessary to mention that the convention in much has simplified the task of educational institutions because it contains requirements to e-learning programs arrangement. These instructions include development of clear and unambiguous instructions for the trainees to understand how the program operates; demand to structure of a program in a way that enables a trainee to reflect on what has been learnt by both self assessment and tutor-marked assignments; and it provides professional tutorial support through different methods of communication. The convention also states that each participant should ensure that approved assessment procedures, that presumes selection of specific information to trainees and conditions of tests and examinations arrangement. Moreover, this support provides analysis of learning outcomes of a trainee (selected test questions; validation procedures to record results, etc.).

Postgraduate developing courses designed for distant learning revealed on one hand the necessity of constant developing new forms and methods for presenting material and on the other hand the need of optimization of the existing distant learning system corresponding to modern level of maritime industry development and opportunities of educational institutions.

Part 2. Opportunities of distance learning in maritime education

It is evident, that distance learning based on modern information technology brings into the educational process new features: the combination of high economic efficiency and flexibility of the educational process, wide use of information resources, a significant expansion of the possibilities of traditional forms of learning, and the ability to build new and effective forms of teaching and learning.

Qualitative provision of distance learning in much is influenced by different factors and conditions. Their correct accounting while the process of its implementation and operation, determines the adequacy of new educational results according to Conventional and the national requirements.

Study of existing distance learning experience of future marine specialists allows us to conclude that the quality of distance learning provided by various Maritime universities, differs in much from the quality, achieved while traditional learning [4]. It can be explained by influence of several external and internal factors. For example, the quality of distance learning depends on the ability and competence of teachers, available resources, the level and effectiveness of the administrative system, etc. Hence it is impossible to judge the quality grounding only on the quality of educational material. The whole teaching experience is also very important.

The wide introduction of distance learning has significantly changed the higher education [3; 4; 5]. It also concerns traditional courses, indicating necessity of constant improvement in delivery methods and pedagogical support of the educational process. Among widely famous programs used for distant training of sea specialists are Videotel and Seagull. Admiral Ushakov State maritime university bought and implemented these programs to provide additional or alternative opportunities for sea specialists training.

Popularity of Videotel is explained by the fact that it is available both onboard and on shore. Moreover, there is a very impressive online library of training materials. Results are collected locally and stored centrally in the cloud making the training experience seamless and giving a person a single point of consolidated data for record keeping and training management.

The courses offered by Videotel include informative video, dynamic animated content and a substantial range of test assessment questions to motivate seafarers to learn and retain knowledge. Participation of experts in developing training materials makes them more effective and attractive both for instructors and for trainees.

Another worldwide famous provider of e-learning material for seafarers is Seagull. It offers a comprehensive library of training and onboard courses for regulatory compliance and improved seafarer knowledge. Founded in 1996 by experienced mariners it has grown into a dynamic company in partnership with leading shipping companies which deliver a full range of competence management, training administration, assessment and training tools that ensure meeting and exceeding STCW and other IMO standards [1]. Benefits of using Seagull courses are explained by the fact that they are developed in compliance with the current rules and regulations and are approved by several major flag states.

Nobody will argue the advantages of using these famous providers of distant maritime learning, but to implement them in the Russian national educational process is possible only partly. The matter is they do not fully account the Russian system of higher maritime education due to different educational standards and language of teaching.

Analysis of the best practices is valuable to any institution interested in adopting and expanding online courses, programs and degrees. Advantages of implementation of distance learning programs are evident. First of all due to flexibility that allows to work when and where it is most convenient; significantly cheaper costs; social interaction, i.e. opportunities to work in network via online forums; choosing preferred means of studying, etc.

Grounding on the fact that distance education is a system, which implementation in the learning process allow achieve certain educational qualification by trainees we can presume that it will become the basis for their further creative work and will help trainees in employment. Admiral

Ushakov state maritime university (AUMSU) has started the work on developing distance learning system accounting both conventional and national educational standards.

Part 3. Difficulties in implementing distance learning to overcome

The proposed by AUMSU system is able to contribute to the solution of many urgent problems of development of Maritime education. However, it is necessary to create favorable conditions for strengthening and development of the most productive forms of specialists' training and retraining and improving the quality of their professional level providing at the same time both training in English and Russian languages and compliance with the Conventional and National standards of education, which very often do not coincide.

Productive arrangement of postgraduate education in regime of distance learning is possible in case the following problems are solved [5]:

- the lack of availability of quality services for sailors in different regions;
- the limited staff and teaching/methodical resources of distant learning arrangement;
- the increase in training volume for seafarers (financing and training time);
- facilities for instructors to supervise a trainee's achievement;
- facilitation and coordination of work on updating the content for learning;
- harmonization of methods of supplying the training material;
- increase the availability of educational services;
- reduction of financial costs for the provision of educational services, etc.

At the same time, in connection with the use of modern computer and telecommunication technologies in education there are significant changes in teaching, which also should be taken in consideration. Among them we can distinguish place and role of teachers in the educational process and their basic functions, namely:

- complexity of activities in the development of courses for distance learning;
- development of special skills and techniques of curriculum development;
- higher requirements to quality of training materials;
- the increasing role of a learner in the educational process;
- strengthening pedagogical support of a student during the learning process;
- accounting of feedback between a teacher and a student, etc.

It follows from the above mentioned that the tendencies of the organization and development of distance education for seafarers can be viewed as a two-tier system that includes both methods of organization of educational process of distance learning system, and technical equipment, which includes the channels and networks that provide network services [3].

We are sure that the main mechanism for improving the quality of distance education services is the integration of stakeholders in the educational process. Such integration is only possible when it becomes mutual benefit for all participants of educational space: the state, universities, students, employers, and so on. This requires sustained communication among experts, involved in marine field and developers of the distance courses material and the pedagogical staff participating in the educational space which must be convenient for active multilateral cooperation, search for most beneficial solutions and innovative forms of distance learning arranging. This situation dictates the need for additional training of the teacher to create distance learning courses and work with them, which in turn leads to new problems to be solved. In other words, the issue of creating and effective implementation of distance education is not easy and requires special consideration and study. It is necessary to take into account the following aspects of the traditional form of higher education:

- territoriality (inability to provide everyone with the opportunity of obtaining education);
- inertia (low adaptability of educational systems to changes in social and economic situation);
- locality (specificity of Maritime education obtained in a certain educational institution);
- limitations (inability of regional universities (branches), e.g. lack of special equipment, etc.).

One of the main task to be solved while developing national system of maritime distance education is the implementation of coordinated training of qualified personnel on the basis of agreed innovative educational programs in the field of priority interest for professional and social development of sea specialists.

At present AUMSU already has succeeded in developing several courses for distance learning of sea specialists' postgraduate training. Among the most popular are the following:

- Quality systems and organizational management;
- Maritime economics and logistics;
- Risk management in maritime sector;
- Maritime casualty investigation;
- Prevention and combating of marine pollution, etc.

These courses are provided by means of different technologies for distance education, among them are the following are:

- case-technology, which is usually reflected in structured training materials which are sent to the learner for self-study;
- TV-technology, that is based on the use of TV lectures with consultations of tutors;
- network technology, by means of which trainees are provided with instructional material and interactive communication.

All three variants are offered for postgraduate students but the most acceptable is networking technology. It can be explained by rapid development of the telecommunication transmission medium, improvement of access devices to the communication medium data and software.

The didactic cycle offered for study includes virtual lectures, seminars, practical and laboratory classes, tests, exams, etc. Networking technology allows distance education to be involved in the process of training of marine specialists.

Network support of trainees using developed distant courses removes time and spatial constraints of the interaction of teachers and helps to improve skills, share experiences and find like-minded people to support professional communication, etc. Pedagogical support of distant courses provides the educators the experience of long-life education, develops skills of professional communication and collective activities in educational space of maritime university. This support is also regarded primarily as the training that is developed and is being implemented to assist in effective professional and personal development, the formation and development of necessary competences and experience of a qualified performance of professional activity.

Experience in various technologies in Distance education led to the understanding of the need to build a universal educational space of Maritime education [2]. This space should combine the various educational institutions (secondary and higher education) by opening their virtual offices, to be distributed and to have a single means of navigation, providing the user with opportunity to quickly and easily find the information he needs.

Conclusion

Currently learning software products usually are developed on selected topics of different disciplines without software support. At the same time a large number of courses, developed on good didactic basis and of deep contents is not always well graphically designed. Sometimes they are difficult in use and not always provided by the appropriate methodical materials. So, it requires further development in this direction.

The purposes of the implementation and use of information technology in Maritime education, assume correspondence with the requirements of the marine industry to the level of competence

of marine specialists, which in turn, creates new opportunities for the educational system to develop new forms and methods.

This paper has noted the significance of the inclusion of the guidelines for use of distance learning and e-learning in the training of seafarers. The paper also recommends some key criteria relevant for the selection of distant course management system for sea specialists, giving consideration to the guidelines stated in Section B-I/6 of the STCW Convention.

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