

DISTANT LEARNING ASSESSMENT SYSTEM OPPORTUNITIES FOR IMPROVEMENT QUALITY OF MARITIME EDUCATION

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Abstract. No one industry can be improved and developed without professionals. It as well concerns the shipping industry, which needs well educated and trained specialists whose professionalism should meet the appropriate international maritime standards. Maritime Education and Training is essential factor for the contribution to the sustainable maritime industry development. All maritime institutions define learning outcomes by the competences the students are expected to have upon graduating. But despite the adopted standards for competence assessment and certification of seafarers there is a lack of uniformity in the adopted assessment methods and learning outcomes.

The paper describes the educational portal created on the basis of software «e-Learning Server 4G». It is proved that implementation and use of this portal in the educational environment of the Maritime University allows solving various tasks that focus on the organization of the educational process, assessing its effectiveness and quality, and also on managing the professional development of educators involved in this process.

The paper proves that modern electronic resources allow us to approximate the effectiveness of the distant form to an internal form of education, making the emphasis on independent learning. It is grounded that implementation of the developed educational portal opens new ways both for students and teachers who acquire extensive technical opportunities in the learning process.

Keywords: assessment, standardization, maritime education, Conventional requirements, learning process, quality.

Introduction

Professionals are people who make industry attractive and prosperous. Any industry cannot be improved and developed without them. Well educated and trained sea specialists whose professionalism should meet the appropriate international conventional standards can be considered as the core of the sea industry in any state.

Maritime universities providing education and training of future professionals are the platforms grounding on which contribution to the sustainable maritime industry development is possible.

Further improvement of maritime education presumes the arrangement of qualified specialists' training according to the requirements of the national educational standards and international conventions. This situation requires seeking for new productive methods, forms and means of teaching.

Distance learning is one of the forms, which becomes more and more popular «Distance learning, especially targeting seafarers at sea is becoming an attractive alternative in MET... advanced software programs, simulation tools, and associated hardware enable multi-mode distance learning options ranging from passive delivery of material to interactive audio-visual sessions» [2]. Among different models of distance learning the following are distinguished: training on the type of external studies; learning based on cooperation of several educational institutions; autonomous learning; integrated learning through multimedia programs; the case-technology etc. Possibility to use modern data information technologies opens up new perspectives for increasing the efficiency of the educational process, that is a benefit for the trainees to have the opportunity of working with educational materials in accessible mode and volume. At the same time there are some weaknesses of distance learning, for example, the lack of direct communication between educators and learners, as well as inability to conduct training in distance courses in all specialties effectively. One more weakness is a lack of uniformity in the adopted assessment methods and learning outcomes.

Part 1. Multilevel information educational environment of the Maritime University

Among different factors (international integration, conventional standards; growth of accidents in the Maritime transport sector; development of technologies and their implementation on ships and others) the quality of maritime education is determined by the information educational environment in which this quality is formed. Multilevel informational educational environment is formed from information and educational resources developed for different purposes and levels. As a rule, such resources include: electronic textbooks,

manuals, reference books, virtual laboratories, simulators, training programs of various complexity levels for different users. These resources can be used not only for the formation of knowledge and skills in a particular discipline, but also as a means for self-development. Multilevel information educational environment of the University is the structure with combination of complementary hierarchically related subsystems:

- public (usually presented on an official University server, and intended for common use);
- specialized (intended for specific faculties, departments, courses, etc.);
- advanced (covering the optional courses, additional programs, and designed primarily for self-study mode).

This approach to the organization of learning processes and knowledge assessment allows to get rid of unnecessary paper routine, providing the transparency of the educational process, facilitating functions of the lecturers, performing assessment and controlling functions.

Despite the large number of available software means, it makes sense to indicate a number of problems in the selection and implementation of the assessment system while a training process: incompatibility of existing systems and training materials; additional work on optimization of existing programs both by programmers, and trainers; strict requirements of many systems to technological and hardware platforms; necessity of integration into the common information space and technological infrastructure of the University, etc.

Despite all known advantages, distance learning is designed primarily for self-study, therefore, forms of control acquire new qualitative characteristics. In this regard, there is an additional opportunity for promotion of low-quality educational services, demand for which continues to be high. In this regard, the quality of education is not always the main criterion for successful employment and further professional growth of a specialist.

Mentioned problems cannot be solved immediately. Their solution requires a thorough analysis of opportunities for distance learning, a clear scientific and methodical support, high technology and accuracy in the process of its implementation and application at all levels of the education environment.

Undoubtedly, having such advantages as flexibility, modularity, cost-effectiveness, technological effectiveness, access to global information resources, etc., with appropriate scientific and methodical support, distance learning provides a high level of knowledge and thereby already takes its place in the market of educational services.

For achieving the main objectives by any Maritime institution providing training of marine specialists it is necessary to provide high quality of all conditions of the educational space, including scientific and informational content. The system of distance education may include

programs and courses of different levels (secondary, secondary vocational education; higher education; postgraduate education; professional development courses and others). Among indicators of the quality of distance training we can distinguish the following [4]:

- the availability of distance learning;
- the quality of educational services;
- resource provision of the process of distance learning;
- the effectiveness of distance learning.

Another important aspect is criteria to assess electronic resources:

- ease of access to resources;
- affordable cost of network materials;
- ability to assist users and training of users;
- stability of network resources;
- the possibility of obtaining long-term access to network resources;
- facility of license agreements;
- delays in access to materials due to congestion;
- determination of the degree of reliability of the seller and the possibilities of further cooperation with them;
- the degree of potential use (based on numbers of users and frequency of access to materials);
- easy computer interface for users, etc.

All mentioned above is included in the field of scientific and methodical support, but not only these ones. The scientific and methodical support assumes analysis of a professional field of marine specialists' activity, development of forms, methods of training and others. Moreover, the academic staff is to provide appropriate assessment tools that would allow reflect the true level of achievement of intended learning outcomes under STCW requirements.

Part 2. The specificity of the scientific and methodical support of distance learning in Maritime education

The scientific and methodical support is understood as the unity of techniques, methods, means and conditions for promoting the educational objectives with use of information technology. This unity presumes: a) the need to create psychological and social conditions favorable for the educational process; b) the consistency of actions of all participants of process of learning to its distance arrangement. Scientific and methodological support of educational process of training of marine specialists should be oriented to free and responsible

choice to the trainees own educational trajectories. Its organization should be aimed at implementation of the goals set, to develop students' abilities to work in any educational environment, to implement training and quasi-professional activity in real conditions [3; 4; 5]. The main methodical requirement for research and pedagogical support of distance learning is the consideration of its essence, the internal arrangement and mechanisms governing the interaction of its components. The scientific and methodical support of distance learning for sea specialists training should be based on the following principles:

- systematic approach for ensuring target competencies and outcomes;
- modularity, implying the division of educational process into structural elements;
- poly-profile character of the content of teaching, providing knowledge in different subjects included in one's professional field;
- interactivity of educational aids;
- staging, involving a sequence of changes in the level of requirements to knowledge;
- the interrelation between methods and forms of teaching and educational process;
- adaptability, requiring the organization of the educational process, providing the sequence of formation of knowledge, abilities and skills [5].

The organization of the educational process in distance learning is expedient on the basis of situational and functional approach, under which the actions of a teacher and a student are performed in two autonomous functional systems: a leading and decisive. In the first system a leading person is the teacher, who imposes the task and leads the student to poly-profiled communicative situation, and the student accepts it. In the second system the decisive person is a student, who grounding his knowledge and skills intends to solve the obtained tasks [3; 6]. The result is the assimilation of new information, acting incrementally to an existing state of cognition. Reliance on this approach provides a gradual formation of students' knowledge and developing their competence. Teachers, organizing training and information professionally-oriented environment focus on information model of teaching that incorporates all sources of information (manuals, modeling software, databases and knowledge, information and expert system) and active participants in the educational process: teacher, introducing new teaching methods and using new teaching manuals to support the learning process and the student as an object of obtaining information and interpreting it in the form of their own knowledge and skills [3; 6]. In this regard, the issue of lecturers' skill, their level of knowledge and training is of great importance.

While constructing the scientific and methodical support of distance learning the fact of performing by a trainee both the subjective and objective actions should be kept in mind.

Their ratio should be adequate to educational activities. The student acts as an object with respect to the teacher and as a subject of his own actions. In the process of obtaining knowledge, development of competences, his role is changing. The organization of training and information professionally-oriented environment requires structuring information on different levels, systematization of the process of presentation of information, interactive communication [3; 6]. Implementation takes place by means of creation computer educational-methodical complexes on different disciplines and model courses.

Conditions of realization of distance learning for future sea specialists are depended on the following:

- the focus of distance learning on the content for studying and learning outcomes of students, their compliance with both national and international educational standards;
- poly-profile and communicative approach to the selection of educational materials for the assimilation by distance learning;
- adaptability of the methodical system of distance learning to the university space;
- the creation of the corresponding educational servers and the availability of mediation access to educational resources;
- optimal choice of forms and methods of training for distance learning;
- training and retraining of pedagogical staff for work with distance technologies;
- implementation of pedagogical monitoring of the status and results of educational process of distance learning;
- optimal system of indicators reflecting achievements in training;
- applicable version of the rating system of quality management of specialists training, etc.

Scientific and methodical support developed for distance maritime education performs the following functions:

- designing function (correspondence to the modern technological level);
- constructive function (allows select the content for the distance learning activities, choose appropriate forms and methods);
- informational and educational function meet the requirements for standards of competence, (prescribed in the relevant sections of the STCW Code and national education standards);
- communicative function (provides feedback in the communicative environment).

Part 3. The educational portal on the basis of «e-Learning Server 4G» software.

Distance learning implies a shift in the focus of the educational process for self-study work of a student, which in itself should be welcomed, because only in the process of independent

consideration of tasks of a various degree of complexity a learner can obtain any "qualitative" knowledge. The definition of "quality" is in quotes, because it hardly can be used in relation to the concept of education because of poor knowledge simply does not exist.

It should be noted that distance education existed in Russia before, in the extramural form. It is assumed that part-time students independently by means of books and other auxiliary material study all disciplines and perform the necessary written works (abstracts, mathematical and graphic works, course projects, etc.). All completed individual assignments are sent by mail to an institute (the faculty of distance education) for further verification by teachers; in the case of availability of remarks, institute sends them back to finalize. Once a year part-time students are required to come to the institute for the session for submission of all tests and examinations.

Moreover, students are taught theoretical and practical parts of the planned academic disciplines under short programs, and they perform laboratory works. Typically, the duration of the session is 1,5-2 months, hence the main disadvantage of this form of training is lack of time to learn all the material that a full-time student passes for a year. That is why skeptical attitude to such form of education, to the quality of knowledge always exists.

With the development of electronic means of information transfer on distance and achievement of an acceptable stability of communication, distance education has gained a more attractive opportunities, which currently are constantly improved and new tools appear. First of all it refers to so-called educational portal (EP) providing information and educational digital space for a full-scale organization of the educational process. Now the role of self-study work of a student is becoming defining in achieving the goal of acquiring knowledge (some of the students as the main target mistakenly consider getting of a diploma). The role of a teacher in this case is not reduced at all, but now he needs to create such methodical developments that can significantly help a trainee in self-study work.

Today, leading educational institutes of Russia increasingly use in the learning process innovative methods and forms of education on the basis of remote technologies. In AUMSU the EP is created on the basis of eLearning Server 4G software.

The system solves various tasks, including:

- the creation of information and educational portal;
- development of training courses, tests, surveys, interactive exercises;
- organization of educational process and management of staff development;
- control of knowledge and registration of educational achievements;
- organization of users interaction in the learning process;

– assessment of the effectiveness of training.

It should be noted that this form of training is "more native" to modern students, and much easier in use due to its mobility and the timing of a course. At the same time, a teacher in real-time mode can control not only the results of the tasks, but their duration and intensity. For contact with the certain student it is not required to appoint particular days and time, as EP provides the opportunity at any time to contact the teacher or ask him a question.

The main conclusion of the above can be as follows: modern electronic resources allow us to approximate the effectiveness of the distant form to a full-day form of education, making a major bet on self-study learning. The teacher receives extensive technical possibilities in the presentation of information (graphics, animation, video, etc.).

Conclusion

Irrespective of the chosen pedagogic approach, active student taking subjective position in the educational process is the main key to successful distance education. In this case active student participation presumes a shift from teacher-centered education to student-centered learning.

No matter what technology is used, educators should provide the quality of the outcome, corresponding to the STCW Convention requirements [1] and sustain the motivation of the students. The quality of education offered through distance learning technologies must be available. This quality to a greater extent is determined by scientific and methodical support including such aspects as:

- analysis of the functional adequacy of information and educational resources (content, a variety of methods and forms of automated teaching and knowledge control, simplicity and ease in use of these resources in the mode of self-study, consultation, etc.) for the purposes of training;
- the adequacy of the forms and modes of interaction of teachers and students using distance technologies in study.

Implementation of distance learning in a unified information and educational space provides for interdisciplinary relationships of special disciplines and the possibility of their use not only in accordance with the work plan of the specialist training in a particular semester, but when preparing diploma or studying development courses.

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