E-LEARNING PLATFORMS – NEW SOLUTION FOR CONTINUOUS TRAINING OF ADULTS

T. Popa, O.S. Cupsa
CERONAV (ROMANIA)

Abstract

Maritime education and training are based on theoretical and practical exercises, but in conformity to STCW Convention is require doing at regular intervals of time (usual 5 years) an updating of knowledge.

"Safety first” is main seamen's logo, that means they have need to prioritize for continuous training, so that all seafarers to keep up with the latest achievements of the industry, as well as of legislative changes in force.

The professional training needs to be coordinated and evaluated so that the rules and recommendations required by international and industrial standards are achieved, for a greater efficiency. But this training takes time, which becomes one of the essential factors. This issue is our main question. Our institution, CERONAV Constanta, proposes to address training programs of adults, especially those who work at sea, using e-learning platforms, which by shortening the time spent in class can become the solution of the moment.

The paper aims to highlight the advantages of using e-learning platforms and how distance education can solve many problems, saving time and, also, increasing efficiency on board for seafarers.

Keywords: Training, e-learning, trainee, instructor, standard.

1 INTRODUCTION

Marine Education is something special. What sets it apart from other programs? It is that in addition to theoretical and practical training in the university laboratories, the graduates need to follow an extensive program of practical training on board of ships. The professional training of a graduate on the sea is thus divided into four stages distinctive (at least in Romania), as follows:

1 The first step in that accumulates theoretical and practical knowledge (specific laboratory) into a maritime university;
2 The second stage is to put into practice all that has accumulated in university and himself during cadet program. This period of time the cadet learns specific activities and practice specific skills in a program of cadet aboard ship shipping without the duties or responsibilities on board;
3 The third stage in which they will complete profile studies in the areas of maritime and obtain a licence of navigation in his profile, program carried out in a maritime training centre, and
4 A final stage is a form of continuous training. The seafarer must be informed always with the newest maritime regulation and legislation and technical updates of the maritime industry. This stage takes place throughout the period of activity on board and ends with a series of upgrading programs in a maritime training centre.

2 METHODOLOGY

The current training system requires for each sailor to participate effectively at class or other similar forms of training. These systems, although with remarkable results has a great disadvantage, due to the very long period of training time. There are four steps of training as we shown. Our intentions are qualitative and quantitative implementation of kind of training we use, for obtaining good results.
For this reason we applied a methodology taking into account the benefits of this combined approach [7]. The quantitative analysis was conducted by using a survey. The qualitative dimension of the analysis, based on individual interviews, focused on outcomes of the training in our institution, in terms of possible improved performance at classes, while also assessing the effectiveness of the training methods.

The survey had 15 questions structured under 5 topics: 4 of them had questions with Likert-type scale (from 1 to 5, 1 meaning total disagreement and 5 meaning total agreement) [8]. One topic had open questions.

The questions focused on the following aspects:

- Structure of information (open questions),
- Relevance of information,
- How the information is presented / type of virtual materials,
- How to access information / Accessibility,
- Overall experience.

The individual interviews were conducted in 2018, with trainers and trainees that provided additional support in case the training materials were not sufficient or the issues were too complex.

The interviews focused on the following major directions:

- For trainers:
  - Perception of the pace of assimilation of the information by the trainees
  - Time for training
- For trainees:
  - The quality of the services as a result of using the materials, in terms of performance
  - The degree of assimilation of information through the new training methods, compared to the old training methods.

Based on the findings of the current case study, a series of recommendations are made in relation to e-learning at teaching processes.

3 THE TRENDS

Technical fields generally are less likely to use other type of education than the current one. Conform to university curricula is require to be followed a number of laboratory hours, where the students presence is compulsory. Practical initial training period is conditioned by this. Due to the students do not have sufficient notions about future job; it is not always desirable to shorten that period of preparation.

It becomes more attractive idea to minimize the periods of preparation of the trainee, after graduation. Why? Because once finished the period of theoretical preparation, each of them is more interested to pass to the next level. This means that the trainee should has access easier to information even if he is on board of ship.

CERONAV is an institution accredited by the Romanian Naval Authority to conduct specific training for seafarers. CERONAV developed courses which are required by the STCW Convention. This Convention imposes a set of specific requirements. Taking in account that is a specific profession we have tried to find solutions to decrease the period of training in the center, in this way the programs will become more attractive. Many topics can be discussed online or using an e-learning platform or an e-training platform. Moreover this method will assure both form of preparation specifically of step two and three: training on-board and training required by the Convention into a maritime training center.

Also the use of navigation simulators and marine engines can cover part of the training on board. Thus a certain period of work in the simulator can equate to a period of training as a cadet.
Distance learning is an educational process that provides students educational resources with the following characteristics:

- separation in time and / or space for students in relation to the institution offering programs of study, each student / students to educational resources and teachers;
- interaction between students and the institution offering programs of study with other students and between students and educational resources is achieved through bidirectional communication media (e-mail, the e-learning, telephone, Skype, etc.), with the support guardians.

The advantages of using an e-learning platform for teachers / trainers

- Decrease of the time period necessary to presentations of the courses and for evaluating and scoring of the participants.
- Information is centralized in one place and can be organized into categories.
- E-learning platform and / or E-training can be shown as desired!
- Easy to access, use and manage.
- The number of users can be variable.
- No need to go to teach the training course in a certain place.

The advantages of using an e-learning platform for students / trainees

- Educational platform for e-Learning and / or E-training can be easy-to-use with functions accessible even for people with basic knowledge of PC operation.
- Learning method encourages interactivity by stimulating curiosity, individual work and, where appropriate, teamwork, collaboration and competitiveness.
- Each participant at training course can learns individually.
- Educational platform can be accessed from any web browser and from any desktop or mobile device, from anywhere and at any time the user wishes.
- Courses can be divided into categories, departments or skills available content. They are easy to understand and easy to access.
- Assessment and evaluation results will be displayed in real time. Communication between trainer or teacher and users participating in on-going training are making it more efficient.

4 SOLUTIONS AND RESULTS

The first e-learning platform made in CERONAV was for seafarers who work on the inland waters. This was the result of implementation of European web -platform EWITA and training concepts for intermodal inland waterway transport (European Web Platforms and Training Concepts for Intermodal Inland Waterway Transport) project, funded by the European Commission.
The main objectives of the project were updating and expanding learning platform Ines (Inland Navigation eLearning System) and similar platforms for developing a corridor Rhine - Maas - Schelde. INeS Danube is hosted by CERONAV and it is an e-learning platform open to all interested [10]. It provides a modern form of education in the field of logistics on inland waterways in the Danube region with particular reference to intermodality. The platform caters to the needs of different target groups, whether pupils or students of educational institutions focusing on logistics, practitioners like shipping companies or the manufacturing industry.

INeS Danube provides content for the specific learning levels of its users [11].

- The basic course contains general information about intermodal inland waterway transport and focuses specifically on users new to this field.
- Target groups such as ports, manufacturing industry and shipping companies find a selection of content relevant to their profession.
- Specific information can be accessed by clicking on a topic list.
- Educational institutions and experts, who wish to create individual courses, can do so within specific learning groups.

Comparing both systems of training, classical one and using an eLearning platform, all people interviewed have answered positively to the open questions regarding the structure of the information. The results are summarized as follows:

- Good structure of the information
- Information that starts from general, simple cases, to some complex ones
- Information is structured in learning steps
- Information is presented schematically, short
- Training materials include quizzes and simulations of practical examples

The results of the interview are summarised in the Table 1.
Table 1. Feedback after the implementation of virtual training

<table>
<thead>
<tr>
<th>People interviewed</th>
<th>Topics</th>
<th>Relevant answers/relevant feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Time for training</td>
<td>Time is considerably reduced (40%), because the trainers have only to follow the evolution of the gained knowledge of the new employees and have only to explain what is not clear</td>
</tr>
<tr>
<td></td>
<td>Perception of the pace of assimilation of the information by the new employees</td>
<td>- Some information must be repeated / new presented, although it is already in the virtual training materials&lt;br&gt;- Some trainees are not interested in the explanations of the trainers, they rely only on the information from the virtual information&lt;br&gt;- Overall, the young trainees can understand better and quicker some information, mainly after they get the basic information and can create connections between information&lt;br&gt;- Trainers have a better understanding of the gained knowledge of the trainee, based on the test results, so they can better adapt their one to one training to the trainee's needs</td>
</tr>
<tr>
<td>2</td>
<td>Time for training</td>
<td>Time is considerably reduced (30%), because the trainees have enough time for others activities&lt;br&gt;Number of understanding in the training activity is reduced by 75% compared to the average number of understanding by the trainees with classical training</td>
</tr>
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<td></td>
<td>The quality of the training</td>
<td>Assimilation time is on average 2-2.5 months, compared to 6 months, with classic training (time reduction of about 61-66%)</td>
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<td>The degree of assimilation of information through the new training methods, compared to the old training methods</td>
<td>Assimilation time is on average 2-2.5 months, compared to 6 months, with classic training (time reduction of about 61-66%)</td>
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As we can conclude from the above table, the trainees were more enthusiastic in relation to these materials, they consider them useful, yet the need for human input is still felt when there are unclear aspects or in the case of complex practical situations.

As far as the results of this implementation are concerned, the institution (CERONAV) has analysed such implementations on the market and has determined its own goals to achieve, in terms of (improved) performance, time and cost savings.

5 CONCLUSIONS

Given that the target group of this implementation of virtual training materials is low, the absolute values of the analysis are low, but the impact of implementation is high. Managers mentioned that 30%-40% time reduction on trainings for 11 trainers is visible in the reduction of the overtime worked and on the overall performance of the three teams as a whole. This second improvement was not measured, as intended initially, but is perceived by all the people directly or indirectly involved in this change. Prior to implementation, analyses were conducted based on historical data on training times, trainers, training content, impact of similar implementations on other companies in the market, financial impact, possible risks, etc.

A possible recommendation to be taken into account by institutions that want to apply this kind of training is that all initial analyses need to be conducted again after the implementation period, in order to know exactly the impact of the measures taken and to be able to make continually improvements, as this is the only way to achieve the desired success.

Another important aspect is the financial component of such implementations. The institution analysed in the current case study has allocated a minimum of human, technical and financial resources for the development of training materials. The materials have proven to be effective in the learning processes, but not 100%, because there are limitations on the knowledge of trainers and technical limitations. An institution that wishes to successfully implement e-learning methods, must be aware that the financial investment is directly proportional to trainee satisfaction and success in the medium and long term.
REFERENCES


