

Higher Performance in Maritime Education Through Better Trained Lecturers

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ABSTRACT: The necessity to have good trained officer's onboard ships today comes in complete accordance with the present development of the shipping industry, materialized through presence of high technology and computerized equipment. This is not just an IMO request, but is an imperative in order to have safer seas and oceans and a cleaner marine environment.

The training level of present and future officers is directly connected with the level of training and knowledge of trainers and teachers. For this reason we consider as compulsory to reach higher performance for the personnel involved in maritime education, especially in the academic field.

In this way, in the present, Constanta Maritime University is developing a project dedicated to initial and continuous training of younger lecturers, who are for the first time in contact with the maritime educational system. Also, this project have parts dedicated to experienced lecturers with many years in the system, targeting the goal of maintaining the level of knowledge already acquired, and bringing new training procedures and techniques in accordance with the present necessity.

In the present paper we will describe the concept of this project, its principal goals and courses developed inside in order to have better trained trainers from their beginning activity.

1 INTRODUCTION

Interaction between human and oceans are more intensive in the present than the past. Oceans and seas make possible connections between world states, with a great value for economical changes and transport activities. The maritime transport takes the first place if we consider the transported quantity over the world. The development of the maritime transportation and its connected activities imposed the necessity of having more trained people involved in operation, able to act in different situation. This ability can not be considered as a native one, and it must be developed through specific training.

For this reason the training process, especially related knowledge and skills in operation, safety and security fields, must be highly qualified. Taking into account the fact that this training is covered in many cases through academic studies, is compulsory to have an academic staff able to assure a training process at high level. This training includes both theoretical knowledge and also practical skills. In order to persuade the trainees about necessity to be better trained for an expandable work market and in continuous development, is necessary to prove, as

teacher or trainer, that you have in possession the latest knowledge and equipment.

This ability is a difficult task for the younger teachers, coming directly from the school, with a good theoretical luggage, but with gaps in the practical area. On the other side, in the maritime academic system is really difficult to bring people with a wide practical experience in the background, due to different knowledge gain between onboard and on table.

In order to cover the missing experience of a longer practice on sea, our university developed a project dedicated to initial and continuous training of the younger lecturers, and not only, to make easier reaching a teacher position and to fill up the gas related to new technologies used in the training process.

2 THE MARITIME INDUSTRY AND MARITIME ACADEMIC

2.1 *The maritime industry*

From the beginning of times, people have been attracted by the sea, by the possibilities to interact with other peoples, especially for trade and also for

social and cultural development. The main way of transport used in trading relations is represented by the maritime transport, first because of the quantity transported, second due to the price. Once economical relations got wider, the maritime industry had to adjust the capacity to satisfy these requests. The growth of the ships capacities becomes obvious starting from the 70's and continues during present time. This development requests increasing quality of operability, bringing onboard the ship the newest technology and people able to work in these new conditions. The improvement of technology and this presence of high technology onboard ships, is changing the concept of classical sea transport and in consequence requires people trained for this.

Not only one part of maritime industry has changed, the ships, also they have changed the connecting activities during last decades. So, the port operations, shipping company activities and others have suffered changes and requested personnel trained for the new conditions.

Even if technology evolved, the basic activities and the operation of equipments are still human duties. The maritime industry is based on human element and, in this way, the necessity to invest in human factor must be a high priority. To have personnel qualified according to technological standards, is a request that can prove difficult if it doesn't exist adequate background training. A solution can be represented by the training onboard ships, directly on the working elements, but can have the inconvenience of missing knowledge's in case of changes.

Also, the technological changes impose continuous updating of older employees, people familiarized with the previous equipments, which have also gaps into theoretical field related, not only into practical experience. Here, the difficulty consists in the age of the employees, their position facing new technology and, not in the end, the ability of achieving sufficient knowledge to assure a good and safety operability.

With the younger personnel, problems related to accessibility to the new are less; they are living in the technological era and have more resources to comply these onboard ships. Also, if they are correctly trained and are open to latest techniques, they will be able to help their older colleagues in achieving knowledge and skills in operating computerized equipments.

Now, after the ships have been modernized, armed with computerized equipments and high technology in order to provide a safety operation, to increase protection of the human life and of the environment, is the time to improve people capabilities.

These requests can be solved through a better learning and a training period before taking responsibilities onboard. During this period, they must be teach about new ship types, their characteristic operations, the differences between different types, about technology already onboard, configuration and operation, situations which can be met during a voyage, organizing and managing of onboard activities and duties and about everything is necessary to provide a rightful and safe activity.

This is in our duties, as academic staff, to satisfy the present requests and necessities of the maritime industry, to provide people, both deck and engine officers able to work and react in different conditions and situations encountered during activity.

2.2 *Maritime academic role in maritime industry*

As stated before the maritime universities have important duties and responsibilities near the maritime activities. The maritime academics do not have only one role, that of training, they are also formative institutions for maritime officers, including personality modeling and developing a responsible behavior of their actions. Is in human nature to borrow from other people's personalities, from teachers or trainers in this case. Being examples, the teachers have to show only the better part of their personality, oriented on their professional knowledge and skills and to correct the intention of the trainees to become a copy, to help them develop their own personality, based on a model.

For this, is important for teachers to use in the training process their experience in working with people, to complete theoretical knowledge with practical examples and advices, based, if is possible, on own experience on sea, if not, on studied cases. To do these is necessary that teachers to possess an adequate level of training and to have knowledge's from domains complementary to their teaching area.

Doing this, trainers training from the beginning of their academic carrier, is a more acceptable situation, because of fresh theoretical knowledge acquired during studies period. It will be necessary just to introduce them in the teaching techniques, to use different teaching materials and to teach them to target the maximal goal, in order to have at the end good prepared people for their future professional life. For teachers involved in training process from many years, the scope is to keep them in line with technological development, to convince them to pass from classical teaching methods to the new ones, to include in their activity the use of computerized and simulated application, also distant open learning and e-learning concepts.

Starting from these ideas, Constanta Maritime University developed a project addressed mainly to

the younger lecturers, but also to all lecturers; inside of it, it has been created a curricula of courses based on actual requests for training level of trainers. It have been covered knowledge and skills related by using the training technologies, as simulators, the development of an e-learning course, management of knowledge, class courses curricula developments, various pedagogical methods, how to create good relations with your trainees and other objectives used for becoming a better trainer or for updating with technical advance.

3 THE “MARCON” PROJECT

3.1 *The international context of the project*

The “MARCON” (Improvement of Maritime Lecturers Competencies) project is based on politics and strategies fated to support the European maritime academic system position into the worldwide context.

The project is develop according with Lisbon European strategies with scope to make from European Union a dynamic and competitive community with an economy based on knowledge, with much and better working places, increasing investment in education and research activities. For these, the Commission in relation with member states and universities will put in practice concrete actions related to continue professional formation in educational field.

Starting from 2001, once the eEurope plan has launch, through e-Learning initiative, the communication and computerized technology became an important element of educational system.

All of these strategies opened new possibilities for universities and their staff, as increasing of quality in academic level, professional promotion to easement the economical grow and develop of society based on knowledge.

European Commission considers the maritime transport development as an important element in general economical growing. In this context, the maritime training system is the part which offer qualified work force on European market.

Also International Maritime Organization put accent on the level of training in the maritime educational system. With the latest intentions of changing of the levels of training, in order to improve the STCW Convention, has appear as necessary to be known the actual equipments and technologies meet onboard ships. These requirements need people trained and familiarized with equipments, able to train others.

3.2 *Project objectives*

The general objective of the “MARCON” project is represented by multidisciplinary researches concerning initial and continuous formative of the lecturers from maritime universities and providing of advancement programs according with the maritime industry requirements.

Achieving of this objective will lead to increasing of maritime lecturers competencies and also will make attractive for graduates to come in the system.

The results of this project, the initial and continue formative courses, are addressed to all debutants lecturers and also to older lecturers.

According with equal chances concept, can be observed, that in an activity domain dominated by the male, attendance of females is not treat as abnormality. As long women are presented onboard ships, in many cases in managerial position, their presence in the maritime universities is not treated with skepticism.

The development of the maritime industry imposes the implementation of a framework for providing of advancing programs due to continue changing of this activity domain.

Beside general objective of the project, the specifically objectives are:

- 1 Increasing of lecturers competencies through promotion of knowledge's and technologies in the academic maritime field.
- 2 Creation of a development, update and on-line management framework for initial and continue formative of the human resources.
- 3 Realizing of studies and analyze to define formative programs dedicated and an optimum correlation of these with maritime industry necessities.
- 4 Increasing of access and participation of lecturers to formative programs and to obtain a double qualification.
- 5 Encouraging of lecturers to maintain a high qualification level through participation at specialized courses.
- 6 Introduction of carrier advancing opportunities for younger lecturers.
- 7 Elaboration of 6 pilot courses and analyze of the feedback.
- 8 Verifying of the process and teaching activities through initial and continue formative programs in scope of improvement of TIC using level.

All these objectives are based on premise than continue learning is the main condition for restructuring and development of educational and formative systems, for assuring of decisive competencies during life and to realize the coherency between persons involved in maritime academic system.

A high level of qualification has to be guaranteed by the training institutions through modular and flexible educational structures, completed with high standard personnel.

The project square up many horizontal objectives as durable development, innovation needs and transnational approach.

Durable development has as scope the give up of traditional methods for lecturers formative. Will be followed the alignment to actual and future requirements of the international maritime market, the expected result being represented by a next generation of competitive seagoing officers. The formative objectives will be not state just in theory, it will be extend to objectives focused on knowledge, action, cohabitation, personal and social innovation. In this scope will be taken in consideration economical aspects, problems regarding environment protection, right manage of human resources, all of these resulting in promotion of a durable global development.

The transnational approach of the project is give it by the maritime sector characteristics, an international one and due to teaching act results, the graduates, who will work onboard ships under different nations flags.

This project tries to involve maritime lecturers in international maritime transport framework, to put them in direct contact with the end users of their work, the companies from maritime industries and to know exactly their needs. The international maritime companies are the necessary source of information's regarding worldwide requests for employ of maritime personnel.

Collaboration with partners from maritime field, as project objective, will be found on communication and information changes to identify and implementation of adequate modalities to increase the number of work places and to optimize these.

After completed realization of this objective has as results the extension of integration opportunities for future Romanian maritime officers in the international market. For this reason will be looking for solutions to cast away the impediments and to have an objective and equal appreciation.

With these desiderates the transnational and inter-regional approach will have as scope achieving of a common denominator between national and international requests in maritime transport, able to offer to the future officers the chance to integrate without problems in national, also international work market.

3.3 *The target group*

As is stated in the project name and objectives, the target group is represented by the maritime lecturers, mainly younger lecturers, beginners in the maritime

academic. In this category we are including all lecturers, staff of the university, with ages under 35 years old.

Also, older lecturers, are included in the target group of the project, especially in continue formative part.

The attendance to the project courses can be made at the beginning of activity in the maritime academic or after a time, but to not exceed 35 years old, for the initial formative part. Better solution will be to attendance in the first year of the lecturer carrier, when knowledge's received during classes is fresh and capacity to catch new knowledge is higher.

According with this criteria's, in the present, in Constanta Maritime University, the teaching staff on age levels is formed by:

- under 35 years: 22 persons, with positions as assistant professor and lecturer;
- between 35 to 40 years old: 7 persons, with positions as assistant professor, lecturers and associate professor;
- 40 years old and after: 51 persons, with position as lecturer, associate professor and professor.

This statistic show that 40 percent of the present teaching staff of the university is mark as principal target group, able to pass through all steps of the formative program. In this statistic we take in consideration as target on younger lecturers group staff with ages between 35 to 40 years considering that these persons are lecturers with experience on sea, who start their carrier onboard ship's at finishing of study period and after they has become teachers or trainers.

3.4 *Project development*

Initial and continue formative activities for academic staff supposed training in modern teaching techniques, IT domain, simulation applications and in human resources management.

In this direction will be create courses for lecturers, with topics as "Teaching curricula development", "Using of simulation techniques during training process", "Advanced concepts in virtual learning method", "Human resources management in maritime academic", "Maritime academic system development in knowledge management context", "Use of new technologies for research purpose".

These courses has importance in the context of changes in the maritime training system, where in the present it seen the tendencies to pass from theoretical base to theory-practice combination.

"Teaching curricula development" is a course dedicated to familiarize younger lecturers with actual premise requested by maritime field curricula

which must contain IMO requirements, as compulsory, also new elements imposed by technical development in the sector. Here are explained modalities of curricula conception, contents, compulsory elements, hours repartition on course and practice, detailing of each course and practice class, trainer and trainee manual elements, use of electronic course development and ways to be delivered to the trainees and other aspects characteristic to each curricula.

The second course developed, is one of the principals, here is describes the actual simulators used in the training process and present in the university possession. There are included simulators of ship handling and navigation, liquid cargo operation, engine operation and crisis situations.

Using of simulators during training process, in a correctly way, can reduce the missing of practice experience of the first years students, they are able to find and be familiarized with the future equipments use in the daily activities on board.

But, for a right use is necessary trainers trained accordingly with scope of training. Is obviously that not all courses need simulation application. But, courses related main activities onboard, as navigation, ship handling, engine operation and cargo operation, depend by the use of simulators during training.

Simulators are new teaching techniques introduced in the process. Once appear these request persons trained for their use. The increased necessity of simulator training asks for more persons able to use it. For this, younger lecturers can be the ideal solution to become simulator trainers and the present project course let them to enter in this area of training and provide knowledge's and practice in simulation.

“Advanced concepts in virtual learning method” is a course created according with the European initiative to improve the education system through a better communication between actors using the advantages offer by the latest technologies, the virtual world. The concept develop in this course is over the present idea of virtual learning, treat as a web based systems, where are posted materials with scope to be downloaded or accessed to be read on the web. The next level in this trend is to create the “virtual teacher”, a technology based on interaction between teachers and students on a virtual platform.

To realize this concept is necessary as teacher to know to control the virtual platform, to create modules on this and to keep it up to date with the latest researches in the domain. Interactivity offer possibility to transfer data on interested subjects between teachers and students, help both participant to improve their knowledge's. Here, teachers bring latest researches, as scientific and students can explain the

practical experience, own lived and how is possible to accomplished the training process to the real applicability.

Human resources concept in the present project is built on actual strategies in the maritime academic regarding management principals of human elements. The system changes made in the last period affect also the human resources manage, dividing personnel in sectors of activities, as teaching and research areas. Management of resources in teaching area supposed capabilities to organize academic staff on university curricula, to nominate right trained person to according course, to lead activities during course period, including student management on curricula activities.

In the research area, human resources management has main goal the people selection in order to create a good and devoted teams inside projects develop by the university or in collaboration with other educative institutions or with partners from economical field.

Knowledge management represented a creation, maintain and consolidation process of knowledge's inside of an organization, for their use in the most adequate modalities to create values and to generate competitive advantages.

In the new approach, users are producers and knowledge managers, not only consumers, knowledge management being seen as a cyclic process, implicating three correlative activities as creation, integration and dissemination of knowledge's.

Organization flexibility, adaptation capacity, realized through new knowledge's accumulation have to be organization basic characteristic for it evolution.

Knowledge management system is a specific technological system designed for the management of functional bringing in of distributed elements of hardware, software and network compounds in a single functional unit, which sustains knowledge production, acquisition and transfer processes inside one organization. In order to realize this design of knowledge management system in a virtual community is imperative to have a profound understanding of cooperation inside groups or organizations, this implying both artifacts and social conventions. This field consists beside computer sciences (knowledge engineering, distributed artificial intelligence, user interfaces) of some other disciplines: psychology, ergonomics, linguistics, sociology, organizational and management sciences.

At the end, but not in the last, the research activities are very important in lecturer formation and to this the project includes elements to help our younger colleagues to become good researchers. The scientific activities are based on the technological advance and the use of these is essential in many

research fields. To be able to initiate and complete a research project suppose to know necessary technologies for it scope. Also are included techniques of research, ways to realize it and how to evaluate results in order to disseminate realizations to the scientific world.

We think that all these courses will be profitable for persons who come for the first time in contact with the maritime educational system and its processes, helping them to integrate easily and to reach necessary competences to push forward the maritime educational process. For already involved person in the system these can update some aspects related to new approaches, technologies and currents in the maritime academic.

Beside of courses developed by our university in the project, the attendant person's have possibility to participate to courses developed by "Ovidius" University from Constanta, as psycho-pedagogical training for lecturers, World Maritime University, in the Maritime English field or provided by other institutions with duties in training of lecturers competencies.

3.5 *Project complementary*

The project is in direct consonance with the EU policies for maritime university level, expresses through documents as "An Integrated Maritime Policy for the European Union", issued in 2007 and "Green Paper on a future Maritime Policy for the EU", 2006. In this way, the project objectives and activities are elaborated according with the European policies for development of human resources in educational field.

Inside of "MARCON" project objectives can be seen complementary elements with different Leonardo da Vinci projects, as "Developing the competencies of maritime lecturers", which objectives are the identification, analyze and description of the better educational system for teaching personnel in academic level and to consider the formative and informative educational system as professional experience.

Another complementary project is "e-Marine" from Leonardo da Vinci program, axed on creation of two learning centers, real and virtual, dedicate to maritime and port operation training. Inside of this project has been identified and elaborated national standards for seven professions, also has been created two training centers, one virtual, for online training, in maritime field with topics in pollution prevention, increasing of safety of navigation and maritime security, another, as formative center for professions in port operation field.

The "MARCON" project is also in consonance with the Waterborne Technology Platform program strat-

egy, which objectives are: safety, support and operations efficiency; European maritime industry competitive in order to facilitate increasing and even to change the pattern of actual maritime commerce.

3.6 *Expected results*

Through this project is expected to create competencies for younger maritime lecturers and to improve the competencies of the older lecturer's.

The creation of courses bilingual, Romanian and English, permit other lecturer from national and foreign universities, maritime particular, to take part to these with impact in the number of person's included in the program.

Taking acknowledge of materials contained dedicated to initial and continue formative of maritime lecturers and after to reply with own evaluation, consideration and proposals for improvement of courses will lead to a better correlation of lecturers competencies with maritime industry needs.

4 CONCLUSIONS

The world economy is changing, the maritime industry, as part of it, is changing too and the requirements and necessities are remodeled. To achieve these new challenges is necessary to redesign the training system, the approach principles and people involved.

It will not be easy to change the actual format of maritime training system, mentalities or main topics approach. The transition must be started from the new lecturer's generation and completed with older lecturers through programs for initial and continue formation.

This program's idea has the advantage of mobility, the ability to reach to different generations, to shape up the content according to present requirements and to apply that parallel with the daily activities. Being based on printed and virtual components, it can be accessed by own personnel and by the outside personnel, from other universities or from economic field on interesting fields.

The courses developed in the "MARCON" project are created in the actual trend of maritime education and come to help lecturers to improve their competencies or to create new ones, particularly those related to the use of latest technologies, computerized and simulation procedures.

The competencies and qualification achieved at the end of the teaching processes contained by the project, will make the maritime academic system more attractive, with competent personnel and able

to provide to the maritime industry, well trained officers to face the new realities in the field.

The collaboration relationships developed in the project context between the training system and maritime companies will help the rightful deduction of the maritime industry necessities.

According with its structure and concepts, the "MARCON" project can be included in the European project ideas dedicated to the maritime training.

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