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DISTANCE LEARNING OPPORTUNITIES FOR POSTGRADUATE STUDIES OF SEAFARING OFFICERS

GEMİ ZABİTLERİNE UZAKTAN EĞİTİM İLE LİSANSÜSTÜ EĞİTİM OLANAĞI SAĞLANMASI

Ergün DEMIREL[1]

Abstract

The seafaring officers require further studies for their future roles related with their professions such as positions at shipping companies, shipyards, ports and terminals. However, the working environment of the seafarers is totally different from the surroundings of other occupations. They work on a mobile work place and mostly have no or very limited internet connection which is essential for distance learning today. The education and training of the seafaring officers is regulated with the international regulations mainly based on the Standards of Training, Certification and Watch-keeping Convention for Seafarers (STCW) and requires a continuous education application which enables them to keep their certificate of competencies valid. This situation makes us to consider the application of different type of education and training methods in particular distance education of seafaring officers. The meta-synthesis method is applied to define most suitable postgraduate educations for seafaring officers considering their future role in the maritime industry and applicable distance learning methods matching their working conditions. This study starts with the investigation of available distance learning methods and postgraduate educations applied for seafaring officers. It continues with analysis of required modifications to enable application of distance learning methods for seafaring officers performing their duties on board the ships. The final aim of this study is to propose composite learning methods for postgraduate studies of seafaring officers mainly based on the distance learning and as well as possible supporting elements for distance learning. The standards established by the European Qualification Framework (EQF) and European Union Lifelong Learning (LLL) programme will also be considered.

Keywords: Seafaring Officers' Education and Training; Distance Learning; Lifelong Learning; Assessment of Distance Learning

Öz

Gemi zabitlerinin meslekleriyle ilgili olarak gelecekte denizcilik şirketleri, tersaneler, limanlar ve terminaller ve buna benzer yerlerde alabilecekleri görevler için ilave eğitimler alması gerekmektedir. Ancak gemi zabitlerinin çalışma ortamı diğer meslek gruplarından tamamen farklıdır. Sürekli coğrafi konumu değişen bir işyerinde çalışırlar ve çoğunlukla uzaktan eğitimden yararlanmak için gerekli olan internet bağlantıları yoktur ya da çok sınırlıdır. Bu zabitlerin eğitim esasları Gemi adamları için Eğitim, Belgelendirme ve Vardiya Tutma Standartlarına (STCW) göre uluslararası kurallarla düzenlenmiştir ve yeterlilik belgelerini geçerli tutabilmek için sürekli olarak yenileme eğitim almaları gerekmektedir. Bu durum da gemi zabitlerinin uzaktan eğitiminde farklı eğitim ve öğretim yöntemlerinin uygulanmasını düşünmemizi gerekli kılmaktadır. Gemi zabitlerinin ileride denizcilik sektöründe alabilecekleri görevlere uygun lisansüstü eğitimler ve onların çalışma şartlarına uygun uzaktan eğitim metotlarını belirlemek üzere meta-sentez yöntemi uygulanmıştır. Araştırma gemi zabitlerine halen uygulanmakta olan uzaktan eğitim metotları ve lisansüstü eğitimlerin belirlenmesi ile başlamaktadır. Bilahare mevcut uzaktan eğitim metotlarının gemide görev yapan zabitler için nasıl modifikasyona tabi tutulması gerektiğinin analizi ile devam etmektedir. Çalışmanın nihai amacı, gemi zabitlerinin lisansüstü eğitim alabilmeleri için bileşik/karma uzaktan eğitim ve öğrenme yöntemleri önermek ve bu sistemin uygulanmasını destekleyecek ögeleri belirlemektir. Çalışma kapsamında Avrupa Yeterlik Çerçevesi (EQF) ve Avrupa Birliği Yaşam Boyu Öğrenme (LLL) programı tarafından oluşturulan standartlar da dikkate alınmaktadır.

Anahtar Kelimeler: Gemi Zabitlerinin Eğitim ve Öğretimi; Uzaktan Eğitim; Yaşam boyu Öğrenme; Uzaktan Eğitimin Değerlendirmesi

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1. INTRODUCTION

Technological developments have led to significant changes in the posture of the business life and workforce. These developments have also emerged new occupations and changed structure of existing professions. Furthermore, as new professions appeared to meet the new posture of business, some professions have disappeared accordingly. The rapid change of technology required update of occupational knowledge permanently. Adaptations of the professionals to new structure of business life, special types of education and training systems have been accomplished. In the past, education has been conducted in a definite period of life in regular education institutes, but new information and competency requirements made education as a continuing lifelong learning activity.

Tang and Sampson (2011) has conducted a survey administrated to the seafarers as a part of a study of training associated with the introduction of new technology. The important finding of the questionnaire was that Information and Communication Technology demands new skills for shipboard personnel and also provides better education and training opportunities for the crew. The technological improvement resahaped the education and training concept. Over the past two decades, a large body of research literature sectors (e.g. Barrett and O'Connell, 2001; Bartel, 1994; Dearden et al., 2000) has repeatedly confirmed that training increases productivity in both the manufacturing and service. The major change is observed in the delivery methods which enable learners to reach the education opporunities at any where and and any time without any limitation.

Distance learning is one of the key element to facilitate the education of the people who are not able to participate classroom sessions due to their working conditions being far away from the school buildings. Improved ICT provided a large opportunity for the people who are not able to attend classroom education such as seafarers. Considering this situation, distance learning is an important alternative for the seafarers.

Different type of education and training methods are introduced in the 20th Century getting benefit from new teaching material and delivery methods. The different approaches of today's education system are introduced in the following paragraphs.

Student Centred Education

Not only have the structure of education and training but also design and delivery concept been changed to create more effective and feasible methods for learning. The student centred education is one of the new consideration in the recent education systems.

The idea of student-centred learning is that, rather than training being focused on the needs of the trainer (as it often is), the training is focused on the needs of each trainee. The opposite of teacher-centred is student-, or trainee-centred. The being trainee-centred means that the training conforms to each trainee. It accommodates their individual learning styles, their varying level of academic ability and pre-existing knowledge, and their *location* and time *constraints*. It puts the trainee at the centre of the training process, offering better and more effective results (Goldberg, 2016).

Blended Learning Techniques

The blended learning is composition of different learning methods used to meet the special requirements of the course delivered. Especially maritime subjects based on the competency and skills need the use of some simulation techniques. So, the blended learning techniques should be considered when competency and skill based courses are thought to be the solution. Nowadays all maritime schools are fully equipped with simulator systems and approximately one year of the academic education conducted on board the ships as sea training under the supervision of academic staff. Major parts of the vocational courses are delivered and tested şn the simulators rather than classroom environment

Peer Learning

Peer-learning provides an opportunity for learners to share their knowledge with other learners. The shipboard duties are conducted as team-work such as Bridge Team and Engine Team. The crew should conduct their function as a complete team-work.

The postgraduate studies require group discussions and sometimes group works. The creative thinking, SWOT analysis, Delphi method which are mostly used for research activities, all require group discussions. The peer learning requires use of online discussion which is sometimes very hard for seafarers at sea. In this case we should think about asynchronous discussions where participants do not need to be conversing at the same time to participate peer sessions.

Seafarers always suffer from the location and time constrains due to their working conditions. Today, rapidly spreading distance learning systems provide better opportunities for seafarers to get benefit from education opportunities. The e-learning facilitates to overcome *location* and *time constraints* problems for the learners even if there exists many problems related to lack of internet connections (or very expensive) required for instructor/tutor sessions.

As planning and designing a distance learning programme for seafarers, advantages and disadvantages of the student centred education, blended learning techniques and peer learning should be discussed and most suitable, applicable and acceptable method be defined.

2. RESEARCH METHOD

The meta synthesis method based on the collection of the literature related to distance learning applications, post graduate studies required for seafaring officers for their future roles and living and working conditions of them, is applied for this study.

The study is conducted in three phases. The distance learning concept and existing application methods, the posture of seafaring officers' life and expectations of maritime sector from these officers outside of the sea deployment are envisaged in the first part.

Existing postgraduate programmes related to maritime sector delivered by distance learning methods, best practices, additional fields may be delivered by distance learning and new delivery methods in the light of best practices are discussed in the second phase. The data gathered are based on European Union projects, studies World Maritime University and respective well recognized institutes such as SIRC (Seafarers International Research Centre) of Cardiff University, BIMCO (Baltic and International Maritime Council)/ISF (International Shipping Federation) manpower reports

Following discussions phase, the suitable master programmes for seafaring officers to be delivered to meet the requirements of maritime industry and modified distance learning methods which are suitable for modus operandi and modus vivere of these people are proposed.

3. FINDINGS

3.1. The Distance Learning Concept

Distance Learning is a mode of delivering education and instruction, often on an individual basis, to students who are not physically present in a traditional setting such as a classroom. Distance learning provides - "access to learning when time and distance, or both separate the source of information and the learners" (Honeyman and Miller, 1993). Distance learning is training that takes place largely synchronously; that is, the material is delivered to all participants at the same time even though participants are separated by geographical distance. The US Distance Learning Association defines distance learning as "the delivery of education or training through electronically mediated instruction including satellite, video, audio, audio graphic computer, multimedia technology and learning at a distance" (Leonard, 1996).

Distance Learning has been defined in various ways. In its most basic level, Distance Learning takes place when a content provider and a learner are separated by physical distance. Technology acts as an interface for face-to-face communication, bridging the instructional gap (Smith, 1998). However, in today's environment, Distance Learning may be better defined as education in which the student and the instructor, while physically separated are intellectually connected via technology (Burke, 1998).

Types of distance learning technologies include: one-way and two-way interactions using audio (e.g., audiotape, voice mail, audio conferencing), data (e.g., computer-based training, internet), video (e.g., videotapes, video messaging, two-way videos), and combinations of audio, video and data (e.g., multimedia programming, multimedia messaging) (Chute et al., 1999).

Distance learning involves interaction between class members primarily at a distance, and enables the instructor to interact with learners. Distance learning is typically associated with televised broadcasts and correspondence courses, but it also applies to certain e-learning applications. On the Internet, educational interaction primarily at a distance is required between instructor and students, or between students. Typical distance learning includes Internet-based live instructor broadcasts, video-conferencing, chat and scheduled online conference discussions, and even e-mail courses or discussions. As seen on the Figure 1, the distance learning covers different echelons of learning methods and all these echelons are interlinked

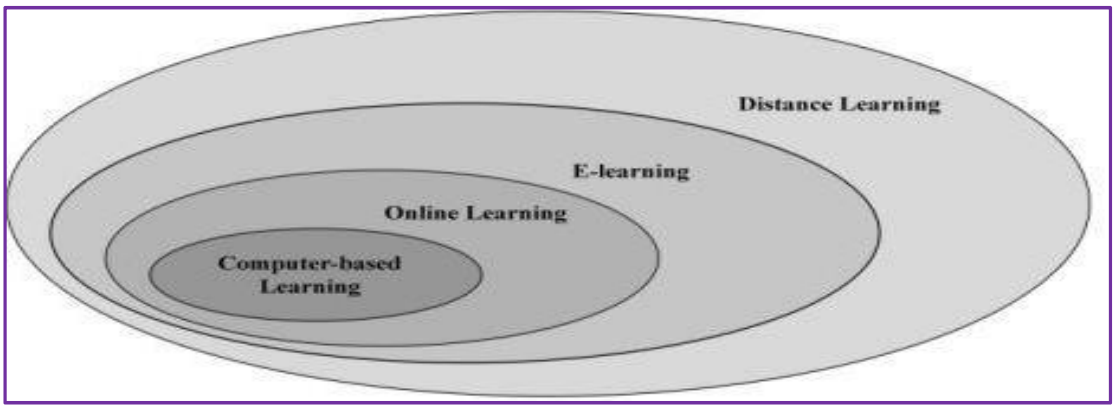

Figure 1: Distance Learning Coverage (Source: Bachman, 2002)

Distance learning courses have a wide range of teaching methodologies. These methods based on synchronise physical, asynchronous on-line and self-paced asynchronous formats are introduced in Table 1 (Harvey, 2003). Due to working conditions seafaring officers may get benefit only from the self-paced asynchronous applications. So, they will not be able to attend Web Seminars and Broadcasts, Coaching, Instant Messaging and Conference Calls. This situation complicates both preparation and application of courses which will be delivered by distance learning. In particular lack of instant messaging may cause delay to reach the instructor/tutor for an instant question which requires clarification of some major issues to evade any misleading or misunderstanding to start a project or case study.

Table 1: Learning approaches and choices (Source: Harvey, 2003)

Synchronous physical formats	Instructor-led Classrooms & Lectures, Hands-on Labs & Workshops, Field Trips
Synchronous online formats (live e-learning)	Online Meetings, Virtual Classrooms, Web Seminars and Broadcasts, Coaching, Instant Messaging, Conference Calls
Self-paced, asynchronous formats	Documents & Web Pages, Web/Computer Based Training Modules Assessments/Tests & Surveys Simulations Job Aids & Electronic Performance Support Systems (EPSS) Recorded Live Events Online Learning Communities and Discussion Forums Distributed and Mobile Learning

3.2. Existing Distance Learning Institutions and Models Applicable For Seafarers

The distance learning courses for seafarers have started in the United Kingdom in 1980s and made rapid progress in this area. The followings are the MET (Maritime Education and Training) institutions that provide different type of courses on line in the United Kingdom (Marine Insight, 2012);

University of Southampton offers a total of seven marine courses, dealing with all aspects of marine engineering. These are postgraduate courses offered in a full time study pattern. Yacht designing, ship science and naval architecture are some of the courses being offered.

University of Strathclyde provides both undergraduate and post graduate studies in marine engineering. Both the studies and entire study course of this department is accredited by the Royal Institution of Naval Architects (RINA) and the Institute of Marine Engineering (ImarEST).

Newcastle University deals with specific marine environment and offers highly directed marine courses at both undergraduate and postgraduate level. A variety of maritime courses related to marine engineering like marine informatics, mechanics, and marine engineering practices are available.

Southampton Solent University offers four marine engineering courses dealing with yacht and power craft designing.

Plymouth University offers full time coastal engineering courses.

University of Greenwich offers Marine engineering management course that deals with honing skills of students to take charge of related jobs.

Liverpool John Moores University offers two courses in mechanical and marine engineering for undergraduate and postgraduate students.

University of Aberdeen offers a course in Subsea Engineering. The course is available for both graduate and undergraduate students.

Heriot-Watt University provides marine resource development courses.

University of Liverpool offers a total of three courses related with maritime civil engineering. The courses are dedicated to enable students be able to design marine structures for various marine environments including coasts, shores and estuaries.

The following post graduate programmes are delivered for seafarers by distance learning in different institutions:

MBA Terminal Management

MBA Harbour Master

MBA Logistics Management

MBA Ship Management

MBA Crew Management

MBA Ship Agent

MBA Ship Superintendency

MBA Maritime Business Management

MBA Shipping and Logistics

MSc Risk Management

MSc Vessel Valuation

MBA Global Energy Management

MBA Strategic leadership for the global energy industry

MBA in Logistics Management

MBA in Terminal Management

MBA in Port Management MBA in Marine Accident Investigation

Postgraduate Diploma in Maritime Energy

PG Certificate / PG Diploma / MSc Intelligence and Security Studies:

PG Certificate / PG Diploma / MSc Marine Insurance course by distance learning

The following distance courses are also offered for seafarers which may be considered as a follow-up courses:

Terminal Management

Naval Architecture

Diploma in Terminal Management

Offshore Field Development

Warehouse Management Certificate

Port Facility Security Officer (PFSO) Training Course

FPSOs Certificate in KPIs for Ports & Terminals

Maritime Safety Law distance learning training course

Oil, gas and petrochemicals shipping distance learning course

Certificate in Shipping Business distance learning course

Supply chain management course by online distance learning

Maritime Law and Shipping Contracts distance learning training course

Marine Drilling distance learning training course

Certificate in KPIs for Shipping

Certificate in Ship Sale & Purchase

Certificate in Shipping Business

The following master programmes are also provided by World Maritime University Malmö, Dalian and Shanghai Branches:

Port Management

Shipping Management & Logistics

Maritime Safety & Environmental Administration

Maritime Law & Policy

Maritime Education & Training

Maritime Energy Management - *New in 2016*

Ocean Sustainability, Governance & Management - *New in 2016*

International Transport & Logistics (ITL) (Shanghai)

Maritime Safety and Environmental Management (MSEM) (Dalian)

Raunek (2012) made a study on the MET (Maritime Education and Training) institutes which are delivering distance learning for seafarers. According to the study the following institutions are found as the top five:

Informa Global Events-Lloyd's Maritime Academy offers a wide range of maritime courses to a global audience. "MBA in Shipping and Logistics" is the most famous course of this organization and is also the finest online MBA course in shipping available.

Videotel offers a variety of online maritime training courses which are filled with video, graphic sequences, full audio narration and interactive texts and advertising.

Lloyd's Register provides top quality online maritime training courses, which are up to date with the latest developments in the fast moving maritime sector. All courses provided are featured with real life scenarios to offer better understanding to course takers.

Coracle Online provides online maritime courses in professional development. It has tailored and made courses for almost every aspect of commercial shipping, and also provides podcast and iphone applications.

Shipgaz is another online maritime training provider that offers courses only for maritime professionals who belong to one of the shipping companies listed on its respective website. Moreover, Shipgaz is the only maritime online training provider with DNV Standard of Certification for Maritime."

3.3. The specific condition of the seafaring officers

The ship, core element of the shipping, operates worldwide in a multinational, multicultural and multifunctional environment. To facilitate working in such a complicated environment, the seafarers must be trained taking into account the entire aforesaid environments, taking into consideration, all international standards and related regulations. The purpose of maritime education and training (MET) is to supply manpower for the shipping industry. MET covers a wide spectrum of training institutions which range from those delivering short-time courses to post-graduate studies.

A study on the deck cadets made by Gould (2011) well expressed their physiological condition at the first part of their sea life including their views on how they came to take up training; their experiences of life at sea and the ship as a training environment; and their hopes and fears for a future at sea. "All cadets in this study expressed ambivalence in varying degrees to shipboard life and to a future at sea; ambivalence was revealed through the mixed emotions, the tensions and the uncertainties they experienced as individuals. The study suggested that the cadet experience of transition into adulthood and into working life

would seem to be more extreme than that of their peers in other forms of higher education; this increased challenge was seen as a of the inescapable nature of the separation from home; of the limited nature of communications whilst away at sea; of the lack of peer contact; and, of the unique and committing nature of day to day life at sea". It is strongly believed that a new occupation area to connect them with another world will also mitigate their burden. The distance learning may create such a suitable environment for young officer to change their troubled life at sea.

Ships operate throughout the world. To create a suitable distance learning system for seafarers we should accommodate differing needs of the seafarers operating in the different locations and time zones. Another issue is lack of internet connections at sea which hamper face to face lecturing/discussion periods. This makes the planners to increase the number of the face to face period and produce new methods to overcome this problem.

Figure 2 shows condense shipping areas where the seafarers are available for distance Learning and Figure 3 shows the time zones.

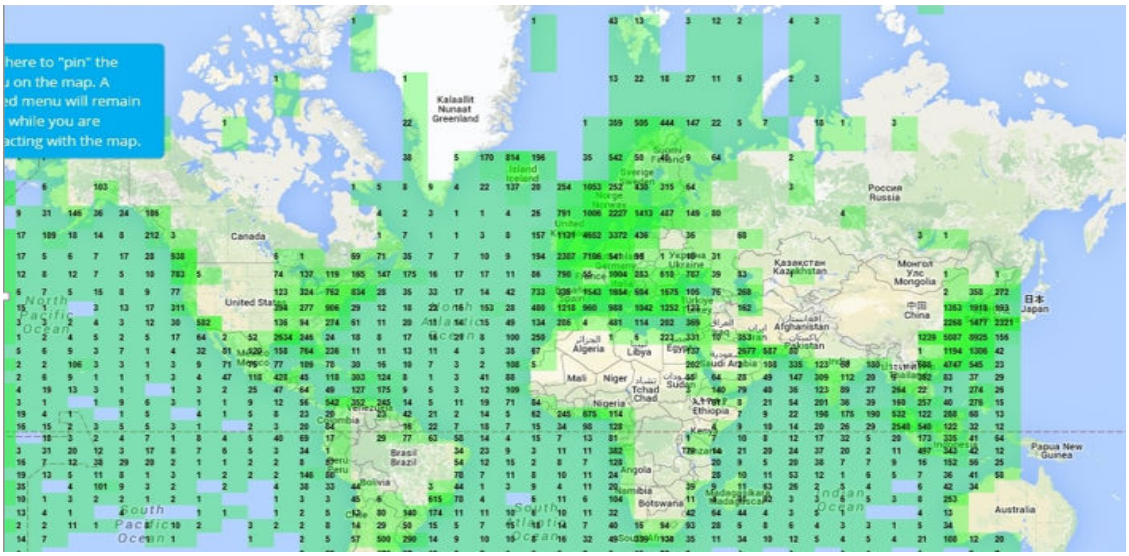

Figure 2: Condense Shipping Areas

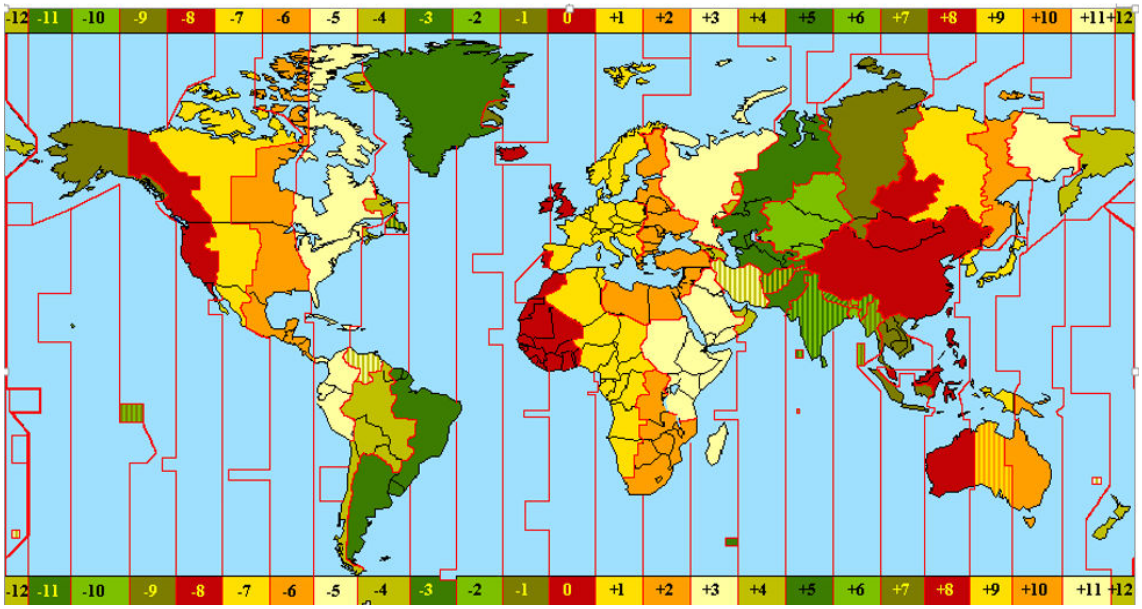

Figure 3: Time Zones

The time zones in condense shipping areas are found as ZT: 0-2, ZT: 6-8 and ZT: (-5) - (-6). In according to this data transmission time should be arranged to CET [ZT: +2] and may be repeated at ZT (+7) and (-6). The instructor/tutorial hours in many distance learning is conducted between 1800 to 2000 local time. In the light of condense shipping areas and time zones, we may propose 1800-2000 CET as primary transmission time and 1200-1400 CET may be as a secondary. Transmission time at 0800-1200 CET (ZT (– 5)-(-6) may be also considered taking into account the number of learner.

Although the transmission time for face to face instructor/tutorial hours and group conferences is increased, the seafarers have a very limited chance to participate these active phases of distance learning due to differential working periods based on the local time (Zone Times sailed). They may have many questions to ask the tutors when they study in particular responding assignments ant tests. In order to solve this problem a frequently updated and comprehensive data base which will respond most of the questions which may be asked by learners should be improved. We may call this systems as Dynamic FAQ (Frequently Asked Questions) which will be operated by a lecturer team which collect and analyse associated questions coming from the learners and then respond accordingly. This is not an easy process and needs deployment a team responsible to update and improve this system permanently.

3.4. The suitable jobs at shore for seafaring

The European Union *"Sail ahead"* project aims at providing an on-line guidance tool for a second career for captains. It covers a report with transferable skills, result of a survey in nautical academies to identify competencies acquired through formal learning and a survey in the ships to identify competencies through non-formal one. The outcomes of this project are; a mapping of competencies and profiles required for at least 10 alternative career paths ashore and an on line tool to be used by students or captains that will help them assess the possibilities to work on shore. As a result of SAIL AHEAD Project the following job profiles are found suitable for deck officer at shore: Coast Guard Officer, Chief Executive Officer (CEO), Operations manager, Designated Person Ashore (DPA), Quality Manager, Occupational Health and Safety Manager, Maritime Lecturer, Maritime Auditor, Maritime Surveyor (Inspector – Auditor), Marine Advisor/Consultant, Port Authority officer, Pilot, Arbitrators.

Additionally Stevedore Captain, Lashing, Cargo Handling Manager, Port Facility Security Officer (PFSO) can be included in the above mentioned job profiles. Many shipping companies also started to operate as a logistic company and/or have a logistics component. So logistics became a significant occupation for seafaring officers.

4. DISCUSSION

4.1. General Considerations for Seafarers' Educational Requirements

This study is made to determine the best alternatives for the delivery of master courses for seafaring officers through distance learning and e-learning in order to improve their qualifications in their occupation and prepare them new proficiencies in the maritime industry.

The BIMCO/ISF Manpower Report 2015 indicates that the current global supply of seafarers is around 1,647,500 of which approximately 774,000 are officers and 873,500 are ratings, and that the current global demand for seafarers is around 1,545,000 seafarers, with the industry requiring approximately 790,500 officers and 754,500 ratings. The shortage of officers is about 16,500 for 2015 and it has been estimated to be 92,000 for 2020 and 147,500 for 2025. Although there is not a big change in the number of the ship (68,723 ships in 2015) the reason for this significant change is because of the increase of new job areas for seafaring officers such as positions at shipping companies, shipyards, ports and terminals etc. This situation makes the education planners to consider the new education opportunities which respond education requirements for all parts of the maritime sector.

The working conditions of the seafarers do not create an opportunity to get benefit from the conventional type of education. The only opportunity is to get education using distance learning. There are many institutions to provide education and training on maritime related subjects. But they have

major problems to get benefit from interactive phases of distance learning programmes because of limited internet connection at sea and mismatched instructor/tutor transmitting times.

Depending on the type of job the mariner is pursuing, this will require either specialized training organ advanced degree such as a Master of Science. For example, on the job training provided by the employer is often the case for a Chief Engineer who becomes a Marine Superintendent or a Master.

A short course or diploma programme potentially accomplished through distance learning may be sufficient for a mariner who will assume the DPA (Designated Person Ashore), or ship surveyor, Port State Control inspector, ship's agent duties. An advanced degree is an essential element for those seeking employment in the Maritime Law, Logistics, Naval Architecture or Trade and Finance sectors.

In considering the development of a European master degree programme for former seafarers, the study noted that those seeking employment in the areas where an advanced degree is not required would potentially find their opportunities for advancement or sector mobility increased if they did possess a degree. As will be discussed later, an EU MSc programme development should concentrate on incorporating a variety of common elements from a number of maritime sector jobs to offer the graduate the broadest range of employment and advancement opportunities. Figure 4 illustrates this concept (Ketchum and Pourzanjani, 2014).

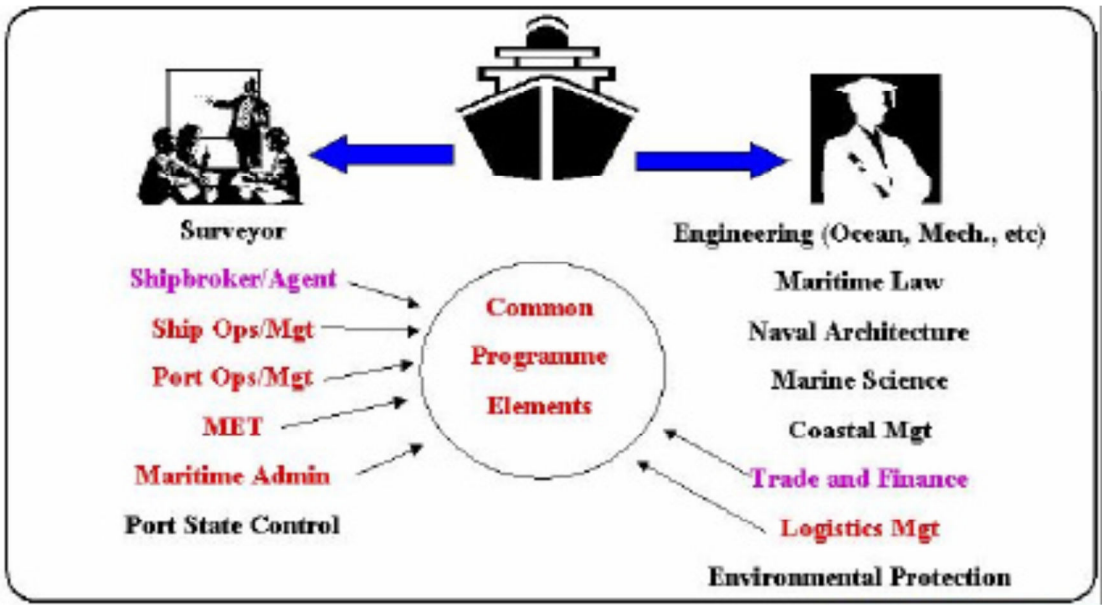

Figure 4: Common Programme Elements (Source: Ketchum and Pourzanjani, 2014)

4.2. Investigation on the existing method to improve new models

Distance Learning provides many advantages for learners who are not able to reach education centres. But it also has some disadvantages for both lecturers and learners. The learners need internet connection for distance learning courses delivered online courses. The seafarers at sailing has very limited connections due to high cost of internet at sea even there is no connection in some condition. This situation hampers to join lecturing or tutorial hours and they cannot find an opportunity to interact with trainer. In particular it makes hard to respond assignments, home works and projects which generally requires connection with instructor to request some explanations. Lack of participation opportunity in a group discussion on internet creates a significant difference with other learners. Some seafarers hesitates to take an e-learning course due to above mentioned reason.

In synchronous distance learning, all participants are "present" at the same time. In this regard, it resembles traditional classroom teaching methods despite the participants being located

remotely. It requires a timetable to be organized. Web conferencing, video conferencing, and educational television, instructional television are examples of Synchronous technology, as are direct-broadcast satellite (DBS), internet radio, live streaming and telephone. Online meeting software such as Adobe Connect has helped to facilitate meetings in distance learning courses (Lever-Duffy et al, 2007)

Synchronous education tools support communication and collaboration at the same time. This type of instruction often involves use of videoconferencing or Interactive Distance Learning Network (IDLN) (Neal, 1997). IDLN is a tool that allows the instructor to be seen and heard by the audience but the feedback is limited since the students can only communicate with him/her via typed messages. Other important tools for teacher-student and student-student communication include application / screen sharing, whiteboard and collective web browsing. In asynchronous distance learning, participants access course materials flexibly on their own schedules. Students are not required to be together at the same time. Mail correspondence, which is the oldest form of distance education, is an asynchronous delivery technology, as are message board forums, e-mail, video and audio recordings, print materials, voicemail, and fax (Lever-Duffy et al, 2007).

Asynchronous education also means that communication and collaboration between teachers and students takes place across time and space. This kind of instruction is usually provided via Internet, Web-based classes, computer-based training or videotape (Neal, 1997). The instructor, if present, could be on video or online, human or software agent. Interaction with peer students is supported in many distance courses through for example mail, mail groups, bulletin boards, etc. (Neal, 2000).

The special condition of the seafaring officers dictates application of as *Asynchronous Distance Learning* methods. How we can design a system which mitigate the problems due to lack of tutorial sessions and provide support for the students at sea. Best solution is likely to establish a database covering approximately all types of probable questions. It can be achieved creating a Frequently Asked Question based on the questions have been asked from learners. It can be name as *Dynamic FAQ* which will be by a *permanent team* to update the FAQ bank and associate the different questions related to each other.

4.3. Applicable Standards

The accreditation has a significant importance to prove the quality of any type of education and training. The first internationally applicable standard that focuses on the most important assets, organizations and facilities in distance learning is ISO 29990:2010 (last revised in 2016). The objective of this International Standard is to provide a generic model for quality professional practice and performance, and a common reference for learning service providers (LSPs) and their clients in the design, development and delivery of non-formal education, training and development. This International Standard uses the term “learning services” rather than “training” in order to encourage a focus on the learner and the results of the process, and to emphasize the full range of options available for delivering learning services.

ISO 29990:2010 provides a unified standard for learning service providers, including corporations, vocational institutions, and life-long learning centres, around the globe. Certification against the standard ensures that the design, development and delivery of the learning experience you provide meet the ISO requirements. The audit and certification process also provides you with a transparent analysis of your present program and a valuable tool for developing effective, learner-centred training (ISO 29990).

ISO 29990 requires more of a learning service provider than any other standard, because it verifies exactly what the student will benefit. In conclusion, e-learning and distance learning systems meet the necessary requirements with respect to ISO 29990 in Maritime Education and Training. These systems will increase the quality of training and also provide improved learning environment and much more benefits to the students and learners.

4.4. Suitable programmes to be delivered for each additional professions

Taking into account the studies on the possible job areas for seafaring officers at shore, a matrix has been created which explains proposed *profession*, *required postgraduate education* and *availability of distance learning.* See Table 2 below.

Table 2: Suitable programmes to be delivered for each additional profession

Profession	**Proposed Education**	**Distance Learning Availability (If Not)**
Coast Guard Officer	MBA Ship Superintendency MBA Maritime Business Management MSc Risk Management LLA Maritime Law	No
Executive Officer/Department Heads in Shipping Companies	MBA Ship Management MBA Shipping and Logistics MBA Ship Superintendency MBA Maritime Business Management	
Chief Operations/ Crew Management	MBA Crew Management MBA Ship Agent MBA Ship Superintendency MBA Crew Management	
Designated Person Ashore (DPA)	MSc Vessel Valuation	
Quality Manager	MSc Risk Management MBA Ship Management MBA Shipping and Logistics MSc Maritime Safety & Environmental Administration LLA Maritime Law & Policy	No No
Occupational Health and Safety Manager,	LLA Maritime Law	No
Ship Agent	MBA Maritime Business Management	
Ship Broker	MBA Maritime Business Management	
Maritime Lecturer	MBA Maritime Education & Training MBA Maritime Business Management	
Maritime Auditor	MSc Risk Management MSc Vessel Valuation	
Maritime Surveyor (Inspector – Auditor)	MBA Ship Superintendency MSc Risk Management	
Marine Advisor/Consultant	MSc Risk Management MSc Vessel Valuation	
Port Authority Officer / Harbour Master	MBA in Port Management LLA Maritime Law MBA Harbour Master MBA in Marine Accident Investigation	No
Department Head / Project Officer at Maritime Authority	MBA Shipping and Logistics MBA in Port Management MBA Maritime Safety & Environmental Administration MBA Maritime Law & Policy MBA in Marine Accident Investigation	No No No
Logistics	MBA Shipping and Logistics MSc Risk Management MBA in Logistics Management MBA in Terminal Management MSc International Transport & Logistics	No
Arbitrators	MBA Shipping and Logistics MSc Risk Management LLA Maritime Law	No

	MSc Vessel Valuation MBA in Marine Accident Investigation	
Stevedore Captain,	MBA Terminal Management	

Port Manager	MBA in Port Management MBA Terminal Management MBA Maritime Business Management MBA Shipping and Logistics MSc Maritime Energy Management	
Lashing,	MBA Terminal Management	
Cargo Handling Manager at Port	MBA in Port Management MBA Terminal Management MBA Shipping and Logistics	
Port Facility Security Officer (PFSO)	MBA Terminal Management MBA in Port Management MSc Risk Management MSc Intelligence and Security Studies	

This table is open for discussion but establishes a start out for further studies. Nowadays a new profession is born and many education and training opportunities are emerging to meet the requirements of these new professions. Following the improvement and requirements in new profession and considering the effects of technology on distance education methods, this table should be reviewed and re-evaluated.

European Union has established many qualification standards and institution for VET (Vocational Education and Training). The European Quality Assurance Reference Framework (EQAVET) and work based learning are good examples of European Union's effort to make VET coordinated well. Those regulations are designed to meet the industrial requirements in the European Union Areas specifically based on defined lessons learned after the economic crises of 2008.

The European Quality Assurance Reference Framework (EQAVET) is a reference instrument designed to help EU countries promote and monitor the continuous improvement of their vocational education and training systems on the basis of commonly agreed references. The framework should not only contribute to quality improvement in VET but also, by building mutual trust between the VET systems, make it easier for a country to accept and recognise the skills and competencies acquired by learners in different countries and learning environments (Demirel & Bayer 2015).

Work-based learning (WBL) is another tool and a fundamental aspect of vocational training for the European Union. It is directly linked to the mission of VET to help learners acquire knowledge, skills and competences which are essential in working life.

The European Union's EQAVET and WBL will help to define outcomes content and design of the distance learning courses.

5. CONCLUSION

The improvement of World economy and maritime transport created new job areas for seafaring officers such as positions at shipping companies, shipyards, ports and terminals etc. This situation make the education planners to consider the new education opportunities for seafarers especially seafaring officers which respond education requirements for different field of the maritime sector.

Working conditions of the seafarers do not create an opportunity to get benefit from the conventional type of education. The only opportunity is to get education using distance learning. The distance learning is formed to facilitate the education and training for the people who has not an opportunity to get education in the regular classroom condition. The improved IT technology provided us interactive, tutorial supported video conference type attractive learning methods. Most education providers has established their own LMS (Learning Management Systems) which combines classical teaching methods and e-learning systems and improved blended teaching/learning methods.

Pre-loaded power point introductions, movies, course material reduced the continuous internet connections which is a key problem for the seafarers at sea. The significant and essential issue for distance learning for mariners is that the system should be capable to work also offline considering that the seafarers would not be able to have a continuous online connections.

The Figure 5 shows a basic student centred (meeting specific requirements of the students) distance learning system which may be used to serve for seafaring officers who works at sea.

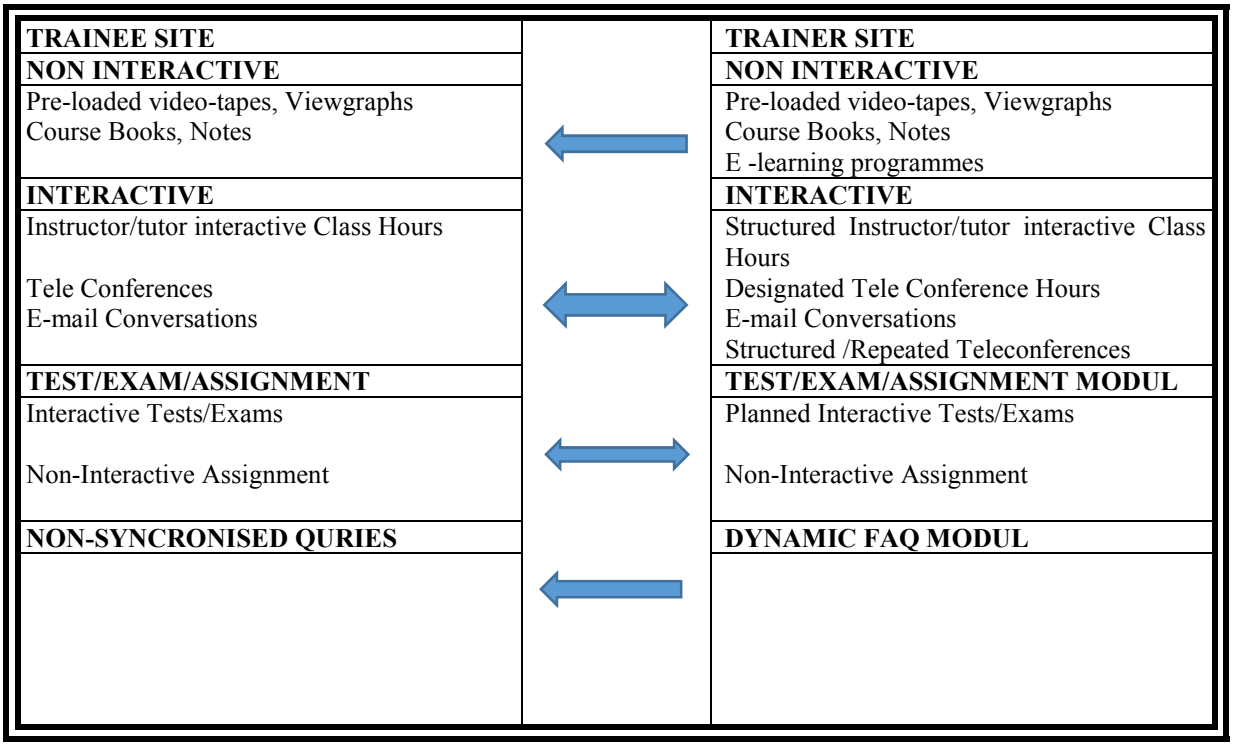

Figure 5: Proposed Distance Learning Model for Seafarers

The seafarers are operating in the different locations and time zones. They have lack of internet connections at sea which hamper face to face lecturing/discussion periods. One of the solution is to improve asynchronous distance learning methods. This makes the planners to increase the number of the face to face period and produces new methods to overcome this problem. The planners should find ways to accommodate differing needs to make the training location and schedule adapt to them. One of the solution is to improve asynchronous distance learning methods. The followings are proposed to facilitate distance education for seafarers;

a. The instructor/tutorial hours in many distance learning is conducted between 1800 to 2000 local time. In the light of condense shipping areas and time zones, we may propose 1800-2000 CET (Central European Time) as primary transmission time and 1200-1400 CET may be as a secondary. Transmission time at 0800-1200 CET [ZT (– 5) - (-6)] may be also considered taking into account the number of learner.

b. In order to respond questions from the seafarers who are not able to participate active phases a frequently updated and comprehensive data base should be improved. We may call this systems as "Dynamic FAQ (Frequently Asked Questions)" which will be operated by a lecturer team which collect analyse, associated the questions coming from the learners and responding them. This requires deployment a team responsible to update and improve this system permanently.

As soon as a new profession bursts, a new education and training opportunity emerges to meet the requirements of this new profession. Following the improvement and requirements in new profession and considering the effects of technology on distance education methods, the professional education requirements should be reconsidered. Suitable programmes to be delivered for each additional profession are introduced in the Table 1. This table establishes a start out for further studies.

The accreditation has a significant importance to prove the quality of any type of education and training. ISO 29990:2010 provides a unified standard for learning service providers, including corporations, vocational institutions, and life-long learning centres, around the globe. The certification of distance learning courses is required to ensure that the design, development and delivery of the learning experience meet the standards established by ISO requirements.

The European Quality Assurance Reference Framework (EQAVET) is a reference instrument designed to help EU countries promote and monitor the continuous improvement of their vocational education and training systems on the basis of commonly agreed references. The European Union's Work-based learning (WBL) is another tool and a fundamental aspect of vocational training for the European Union. It is a suitable tool to define knowledge, skills and competences which are essential in working life. The European Union's EQAVET and WBL may also use to define outcomes content and design of the distance learning courses.

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