



Exploring the Qualifications of Future Seafarers from the Perspective of Stakeholders: its Implications in the Maritime Education and Training

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Abstract

The global need for logistics distribution is increasing from year to year. Significant technological developments have been applied to merchant ships to run supply chains more effectively and efficiently. Seafarers are the main subjects who operate and navigate ships to adapt to technological advances. Their qualification to meet stakeholder expectations then becomes an essential issue for discussion. This study aims to discover the qualifications of future seafarers from a stakeholder perspective. Implications in Maritime Education and Training are also discussed. The authors use a qualitative research design and conduct interviews to collect data. Using the purposive sampling method, the author involved participants who had much experience in the maritime industry. The findings of this study reveal that technical and theoretical knowledge, English communication skills, and IT skills are hard skills expected by stakeholders. Apart from hard skills, seafarers also need soft skills to support their work, including managerial skills, hardiness and adaptability, motivation to learn, and a good attitude. This finding has significant training in the Maritime Education and Training sector. Students need to learn lessons to foster student learning motivation and provide more time for ship simulators and engines to experience actual work activities on board.

Keywords: hard skills, maritime education and training, qualifications, seafarers, soft skills, stakeholders.

Abstrak

Menggali Kualifikasi Pelaut Masa Depan dari Perspektif Pemangku Kepentingan: Implikasinya dalam Pendidikan dan Pelatihan Maritim; Kebutuhan global distribusi logistik semakin meningkat dari tahun ke tahun. Perkembangan besar teknologi telah diterapkan pada kapal-kapal niaga untuk menjalankan rantai pasokan dengan cara yang lebih efektif dan efisien. Pelaut sebagai subjek utama yang mengoperasikan dan menavigasi kapal dituntut untuk menyesuaikan diri dengan kemajuan teknologi. Kualifikasi mereka untuk memenuhi harapan para pemangku kepentingan kemudian menjadi isu penting untuk dibahas. Studi ini bertujuan untuk menggali kualifikasi pelaut masa depan dari perspektif pemangku kepentingan. Implikasi dalam Pendidikan dan Pelatihan Maritim juga dibahas. Penulis menggunakan desain penelitian kualitatif dan melakukan wawancara untuk mengumpulkan data. Dengan menggunakan metode purposive sampling, penulis melibatkan partisipan yang banyak mendapatkan pengalaman di industri maritim. Temuan penelitian ini mengungkapkan bahwa pengetahuan teknis dan teoritis, keterampilan komunikasi bahasa Inggris, dan keterampilan TI merupakan hard skill pelaut yang diharapkan oleh para pemangku kepentingan. Selain hard skill, pelaut juga membutuhkan soft skill untuk menunjang pekerjaannya, antara lain kemampuan manajerial, hardiness dan adaptability, motivasi belajar, dan attitude yang baik. Temuan ini memiliki implikasi yang signifikan di sektor Pendidikan dan Pelatihan Maritim. Penting untuk menyesuaikan metodologi pengajaran untuk menumbuhkan motivasi belajar siswa dan memberikan lebih banyak waktu untuk penggunaan simulator kapal dan mesin agar siswa dapat mengalami aktivitas kerja nyata di atas kapal.

Kata kunci: *hard skill*, pendidikan dan pelatihan kelautan, kualifikasi, pelaut, *soft skill*, pemangku kepentingan.

1. Introduction

Indonesia is a country which has a lot of natural resources potential, especially in the maritime field. It is the largest archipelagic country in the world consisting of 17,504 islands with a long coastline of 95,161 km. Indonesia

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has a total of 5,9 million km² area of water (Lasabuda, 2013). The water between the archipelagos is not separating but connecting the islands (Hartanto, et al., 2019). Thus, the contribution of the seafarers in the manning vessels for carrying essential goods becomes a vital part of the economic supply chain.

In the shipping industry, seafarers' existence is highly significant. Seafarers have a special working environment, in which they may have to stay onboard the ship for a long time, away from home and their loved ones. They have to survive the hardest circumstances, at the same time, maintain a professional approach to fulfill the global market safely and effectively based on STCW qualifications. The special characteristics of their job require them to have special qualifications.

Technological advancements in the shipping industry have influenced competitiveness that requires seafarers to be knowledgeable on the theoretical aspect of technology as well as technological aspect as mentioned by Ngcobo in Voloshynov (2019) (Voloshynov, 2019). But back then, Asyali (2014) in the ship's voyage was leaned entirely on the navigating qualification of the master and the officers and their analytical thinking skills in assessing the situation at an ample time for the best possible outcome (Brčić, et al., 2019). Yet, the current maritime industry is embracing the industry 4.0 revolution. A brand-new technology, for instance, the automatic machine, cybersecurity, and inventions in technology for the environmental sector will emerge rapidly and change the entire industry (Brooks & Faust, 018). Even the automation vessel has started in Norway with some tests of the navigational voyage even some programs were executed by Finland and the EU (Muslu, 2020). Not surprisingly, the increase of technology implemented on the company fleet triggers Indonesian seafarers to be qualified enough to manage it.

Then, what are the seafarers' needs to support them in this ever-changing era? The answer is a skill. Skill is the major foundation that underlies individual quality over sophisticated tools and techs. Seafarers have to possess a set of skills which can be divided into hard and soft skills. Hard skills are easier to be measured by assessment, for instance analyze, technology, science, technical things related to knowledge, and soft skills are related to other people and oneself, such as motivation, communication, influence, and also leadership management skill which is required especially by the officers (Mahmudah, 2016).

So how do we know the aspects which are important for seafarers? Those who know best about the qualifications of a professional seafarer are the stakeholders related to the shipping company and the Maritime education and training sector. The perspectives pointed out by the stakeholders here are vital since they have already dived deep into this line of works while interacting with countless individuals with various specification backgrounds. Therefore, this study was aimed to explore the qualifications of future seafarers from the perspective of stakeholders. The implications in the Maritime Education and Training will also be discussed.

2. Methodology

This study is qualitative in nature. In the data collection, the writers used the purposive sampling method, in which we carefully selected the participants to be involved in this study. There were 6 participants who had an excellent track record in their respective field of work either on board the vessel or within management level. The list of the participants can be seen in table 1.

The participants were asked to give their opinions concerning the seafarers' qualifications. The questions given to the participants were a) How is the process of recruitment for the ship's crew; b) What are the qualifications expected from seafarers; c) What is your review about the present qualifications of seafarers; and d) What aspects still need improvement.

All the interviews were conducted using phone calls since the participants lived far away from the writers. All calls were recorded after obtaining permission from the participants. The interviews were started on March 28th, 2021, and completed on April 6th, 2021.

To analyze the data, all the interviews were transcribed. The writers read the transcript several times to obtain understanding and to identify relevant parts regarding seafarers' qualifications which afterward were labeled for analysis.

Table 1. The list of participants

No.	Participants	Occupation	Interpretation
1	Participant 1	<i>Crewing Manager of a shipping company in Jakarta for 12 years (Engine Department) with Marine Magister and Master Management title.</i>	<i>The new batch of seafarer lacking the discipline, improvement motivation, also both skill and knowledge.</i>
2	Participant 2	<i>Crewing Manager of a shipping company in Jakarta (Deck Department) who also a former vessel's Captain for 15 years.</i>	<i>The new generation of seafarers need to improve their linguistic skill and mentality in general.</i>
3	Participant 3	<i>Deputy Manager of a shipping company in Jakarta for 10 years and former vessel's Captain for 10 years.</i>	<i>Our seafarers nowadays are still lacking in communication skill and IT knowledge to compete with other's nation seafarers.</i>
4	Participant 4	<i>A lecturer of Marine Engineering Department of a Maritime Institute in Singapore</i>	<i>Our seafarers need better character building and the motivation to learn. Aside from that, the MET itself needs improvement in term of activities regarding seafarer trainees.</i>
5	Participant 5	<i>Active Captain On-Board on a national shipping company since 2015 with Marine Magister title.</i>	<i>Our seafarers are barely adequate in practical field and lacking in theoretical field also our seafarers need to be more adaptable toward dynamic nature of their field of work.</i>
6	Participant 6	<i>The head of ship management (the crew service center) of a shipping company in Jakarta for 8 years.</i>	<i>The most fatal flaw our seafarers have are the poor interest of reading and the lack of theoretical knowledge in general.</i>

3. Results and Discussion

The interviews revealed that there are several aspects that essentials in the qualifications of seafarers. The writers divided the aspects into 2 (two) main categories such as Hard Skills and Soft Skills. Hard skills are technical skills required to carry out a particular task while soft skills on the other hand are non-technical skills that complement hard skills such as communication and interpersonal skills (Rao, 2018). Detailed description showed below.

Hard skills

Kennedy (2016) described that hard skill are technical skills that acquired through the cognitive aspect of human intelligence regarding their field of proficiency. These skills are used as a basis for the development of educational curriculum, future profiling of jobs and the technical functions that the industry desire most (Patacsil, et al., 2017). According to the interview with the participants, the hard skills that need to be improved by Indonesian seafarers are technical and theoretical knowledge, English communication skill, and IT skill.

Technical and theoretical knowledge related to the seafarers' field of work

The participants described that technical and theoretical knowledge are hard skills that Indonesian seafarers needed to improve. Both types of knowledge are important to support their work as seafarers. Participant 6 mentioned that many seafarers applied for Captain's position, but only 10% of them can meet the company's qualification in terms of technical and theoretical knowledge. Participant 5 also revealed his experience when he sailed with Indonesian seafarers with different ranks. He said that the technical and theoretical knowledge of Indonesian seafarers needs to be improved. For example, most seafarers he had encountered in the past know what Colreg and SOLAS is, yet they put the two publishing bellow their own experiences for references or guidelines in taking actions while sailing. Thus, our seafarers prone to accidents and regulation infringements either in local or international waters.

English Communication Skill

English is the language of the sea. Ship communications are conducted using English, all manuals and instructions are written in English. All participants agreed that English is the specific parameter for seafarers to work onboard the ship. However, participant 6 revealed that many Indonesian seafarers (even those who are senior officers)

have problems in speaking English correctly. Therefore, it is important to improve the English communication skills of Indonesian seafarers such as speaking, writing, reading, and listening.

IT skill

Technical skills refer to the specialized knowledge and expertise needed to accomplish complex actions, tasks, and processes relating to computational and physical technology as well as a diverse group of other enterprises (Dimaculangan, San Luis, & Gabitanan, 2021). Workforces need to be capable of continuously adapting to shifting job requirements related to new skill-intensive technologies (Kasza, 2018).

Basic IT skill is a must for seafarers in the 21st century. Most of the ships have already used autopilot navigation and Unattended Machinery Spaces (UMS) to maximize ship safety operations and effectiveness. As highlighted by participant 2, it is important that Indonesian seafarers can keep up with the advancement of technology.

Soft Skills

Besides hard skills, soft skills become essential qualifications for seafarers who work onboard the ship. Soft skills will support seafarers to conduct their duties safely and effectively. Most of the managers of shipping companies observed that it is rather difficult to find seafarers with good soft skills. A study conducted by Williams (2015) directly affects positive social change of college students by enhancing the quality of soft skills for their future employees. The desirable soft skills that the stakeholders look for are managerial skills, hardiness, learning motivation, and a good attitude (Williams, 2015).

Managerial Skills

As mentioned by Participant 1, to be an officer, seafarers need to have a set of managerial skills ranging from leadership, work planning, organizing and directing crew onboard, and managing time more effectively to ensure deadlines are met. Good managerial skills are vital in achieving the company goals. Participant 4 added that officers' poor managerial skills can cause work accidents onboard.

Hardiness and adaptability

The harsh working environment of seafarers requires them to survive in many difficult conditions. As participant 2 described that stress, fatigue, and homesickness are some of the important concerns for seafarers because they may affect seafarers' working performance on the ship. It is important that seafarers have a high level of hardiness and can adapt to any difficult situation.

Learning Motivations

Endless motivation to learn something new can make people grow and be able to improve themselves. However, many seafarers have a low learning motivation. As described by participant 6, there are many publications on board, such as SOLAS, ISGOTT, and other Manual books, but the Indonesian seafarers seem not to have the motivation to read the information from the manuals and publications to improve their knowledge.

Attitude

Most participants agreed that attitude becomes an important quality that they expect from seafarers. Shipping companies look for seafarers who have a good attitude, including discipline, confidence, politeness, and willingness to obey company rules and international regulations. The ability to manage emotions is also important. The qualifications needed by seafarers are summarized in Table 2.

Table 2. The summary of qualifications needed by seafarers

Hard skills	Soft skills
1. Technical and theoretical knowledge	1. Managerial skills
2. English communication skill	2. Hardiness
3. IT skill	3. Learning motivation
	4. Attitude

The implications in the Maritime Education and Training (MET)

According to the interview, most of the participants agreed that the maritime education and training institutions that supply seafarers need revitalization and adjustment according to the requirement of the International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers (STCW).

Based on the findings, it is urgent that the maritime education and training institutions improve the teaching and learning methodology by providing more time for high-tech simulator practice. A simulator can be a great learning tool for students to practice the real working activities on board the ship. It must be updated frequently with the newest version. Besides that, it is also important to encourage students to be more active in the class during the teaching and learning process by implementing 2-way communication between lecturers and students. In this case, lecturers need to upgrade their knowledge and skills to keep up with the latest ship's technology and regulation. Regarding English communication skills, it is necessary to integrate technical subject teaching (content knowledge) with the English language.

Based on interviews with each participant the Maritime Education and Training (MET) institution needs to refocus its program into character building which already reviewed to be lacking in various aspect. The new batch of Indonesian seafarers might have been graduated from their respective institution yet they're still far from ideal seafarers the stakeholders want to hire and work with.

Our participants give their inputs and advice which mainly revolving around Maritime Education and Training (MET) restructuring their programs. The main problem our participants reviewed is the fact that most trainees in any Maritime Education and Training (MET) are bound to engage in extracurricular activities that actually intended to increase communication skills, teamwork, and stress relief to some extent yet somehow stray away from its intended goals. In reality, most trainees ended up forsaken studying in exchange with secondary activities (Drum Band, Marching Band, Martial Arts Championship, etc) since the secondary activities seems to be more appealing to them. Our participants suggest that the portion of such activities to be reduced even if those activities might intend for advertise the institution to society since it is not the trainees job to do so.

In continuation with the previous aspect, our participants hope that the trainees in Maritime Education and Training (MET) not blindly depending on the lecturers teaching to get their knowledge. Our participants encourage the trainees to be more active and willing to spend their time for the sake of their own future. Seafarers should be should be more interested in learning new things related to their field. After all the institution already provide them with various sufficient means to gain knowledge (Computer Lab, free Wi-Fi connectivity, library, etc).

Then, our participants also point out the fact of how low trainees reading interest in general. This is one of the key factors for the success of educational activities since no matter how meticulous the education planning or how skilled the lecturer is if the one who expected to learn not putting up any effort, the whole system are bound to be fail. Thus, our participants recommend to actually put more thought into the attempt of increasing trainees reading interest above extracurricular activities scheduling. This is concluded under the thought that if the trainees want to study with their own will they would less likely be stressed about educational activities even if they're living within campus and limited from outside world interaction (with internet connectivity as the only exception).

Lastly to keep up with the advancement of technology in the maritime industry, Indonesian seafarers need to improve their hard skills as well as their soft skills because both are critical to ensure the safe operations of the ship. The maritime education and training institution become one of the important elements in ensuring the growth and sustainability of the maritime industry.

4. Conclusion

The important of hard skills for seafarer are formed from class such as technical and theoretical knowledge related to the seafarers' field of work, English communication skill, IT skill while soft Skills such as managerial skills, hardiness, and adaptability, learning motivations, attitude are obtained when seafarer adapt the society. With all combination between hard skill and soft skill, all seafarer expected will be survived in real world.

The writers suggest that the policy development in maritime education and training needs to be aligned with the demands of the stakeholders, in this case, the shipping companies. There are several steps that can be implemented. Firstly, optimize the use of ship bridge and engine simulators to provide students with a real working situation onboard the ship. Secondly, give the lectures opportunities to upgrade their knowledge to adjust with the development of technology. Thirdly, encourage cooperation between English lecturers with subject-content lecturers to bridge the language and knowledge gap. Last but not least, regarding the importance of soft skills, it is necessary that the maritime education and training institution also provides soft skills training, such as leadership and motivation training in a meaningful way, by not only giving theory but the implementation in a real life.

Declarations

Author contribution

All authors contributed equally as the main contributor of this paper. All authors read and approved the final paper.

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Conflict of interest

The authors declare no conflict of interest.

Additional information

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