

## Education and Training to Improve the Quality of Human Resources in the Maritime Transportation Industry

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### Abstract

Education and training play a crucial role in improving the quality of human resources in the maritime transport industry. This industry requires skilled, knowledgeable, and adaptable workers capable of facing the challenges of globalization and the continuous development of technology. Structured education and training programs can enhance both technical and managerial competencies, resulting in a workforce that is competitive at the national and international levels. This research aims to analyze the effectiveness of education and training programs in creating a high-quality workforce and to identify the challenges faced in their implementation. The research employs a qualitative approach, using literature review and in-depth interviews. The findings indicate that continuous education and training are essential in producing competent and adaptable workers in the maritime transport industry.

**Keywords:** Education, Training Maritime Transport

### Introduction

The maritime transportation industry plays a very important role in the global economy, especially in international trade. To support efficient and safe operations, this industry requires a workforce with special skills and a deep understanding of technology, regulations, and maritime safety standards. The quality of human resources (HR) is one of the key factors that determine the competitiveness and sustainability of the maritime transportation industry.

However, along with the development of technology and the increasing complexity of shipping operations, the demands on the quality of HR are also increasing. The need for workers who are able to adapt quickly to change, as well as have good managerial skills, is very urgent. To answer these challenges, the right education and training programs are a strategic step in building the necessary competencies.

Formal education in the field of maritime transportation provides an important knowledge base, but is often insufficient without being supported by practical training that is relevant to the dynamics of the industry. Therefore, the combination of formal education and continuing training is expected to improve the quality of HR who are better prepared to face the challenges of modern industry. This study aims to explore the role of education and training in improving the quality of HR in the maritime transportation sector, as well as review the challenges and solutions that may arise in its implementation.

This approach is important to ensure that the maritime transport industry has a workforce that is not only technically competent, but also able to think critically and innovate, so that it can adapt to increasingly rapid global change.

## **Methods**

As a sailor, in writing this journal, I used the method of collecting journals from various sources that are relevant to education and training of human resources (HR) in the maritime transportation industry. The main steps that I took include:

1. **Data Collection:** I accessed scientific journals, articles, and reports related to education and training in the maritime transportation sector, especially those related to improving seafarer competency. These sources include literature from maritime universities, seafarer training institutions, and international maritime organizations such as the IMO (International Maritime Organization).
2. **Analysis:** After collecting journals, I conducted an analysis of the policies, training programs, and certifications implemented in Indonesia and globally. The goal is to understand the extent to which Indonesian seafarers can adapt to international standards.
3. **Comparison of Global and National Practices:** I also compared training and education methods in Indonesia with developed maritime countries to identify opportunities for improvement.
4. **Reflection of Personal Experience:** As a sailor, I recorded my own experiences related to the training and education that I have undergone. This provides a practical perspective on how the theories outlined in the journal are applied in the field.

## **Results and Discussion**

Mangkuprawira, (2011:43) In essence, education is one of the obligations that must be passed by everyone in their lives. The success of education can not only be known from the quality of individuals in a country, but is also closely related to the quality of life in society, nation, and state.

According to Hardjanto (2000:70), training is part of education. Training is specific, practical, and immediate. Specific means that training is related to the field of work being done. While practical and immediate means that what has been trained can be practiced. Training is also an effort to increase the knowledge and skills of an employee to do a certain job.

The purpose of education is essentially related to things such as:

1. **Work Productivity.** With education, a person's work productivity will increase, quality and quantity will be better because they gain technical skills and managerial skills.
2. Reduce the accident rate.
3. Reduce damage to goods, production and machines. Have the opportunity to improve a career for everyone.
4. Increase efficiency of manpower, time, raw materials, and reduce wear and tear of machines
5. Conceptual.

Education is a system consisting of components that are functionally interrelated to achieve quality education. There are at least four main components in education, namely: human resources, funds, facilities, infrastructure, and policies. The human resources component can be said to be a strategic component, because with quality human resources, other components can be utilized, so that educational effectiveness and efficiency are achieved. Where quality human resources can be achieved through human resource development.

Based on Government Regulation of the Republic of Indonesia Number: 51 of 2012 concerning Human Resources in the field of transportation, it states that efforts to improve and optimize shipping for national development can be reviewed through:

1. Education and Training in the field of Transportation is called Transportation Training is the implementation of learning and training processes in order to improve knowledge, expertise, skills and the formation of behavioral attitudes of human resources needed in organizing transportation.
2. Provision of educational personnel, namely: qualified educational personnel as teachers, lecturers, counselors, learning facilitators, widyaiswara, tutors, instructors, facilitators and other titles according to their specializations and participating in organizing education in the field of transportation human resources.

Japan can be taken as a sample of the development of innovative human resources. Universities and industry work together in the process of industrialization of Japan. From time to time, industry and academics hold meetings and interact to review the rocky things created by academics that have the potential to cover the demands expected by industry. The interaction that runs very well discussing new things and things that have passed that are born with the development of science and technology creates a reliable value system. This makes Japan a very competitive country, able to beat the competition in various ways (Subandono Diposaptono. 2017).

This country has differences compared to Indonesia. the world of work and research (universities and research and development institutions) continue to function regularly separate Both require coordination to be able to work together and benefit each other. they need each other. Currently there is no synergy between the two ministries and higher education research institutions in developing science and technology needed by the business world and society.

In fact, universities and research institutions in Indonesia have produced various scientific works. However, there is something unfortunate, the results of scientific works and research conducted by students, universities and researchers are still not widely used by the public in general and the business world in general. So there is still hope The education system must be able to work together to answer current challenges without abandoning the existing local cultural system. The development of personal potential must be carried out with different efforts to produce interactive relationships between universities and industry.

### **The Important Role of Human Resources (HR) in the Field of Maritime Transportation**

Maritime transportation is a vital sector in driving the global economy, considering that more than 80% of international trade is carried out by sea. In this context, the quality of Human Resources (HR) is one of the determining factors for the success of operations and management in the maritime industry.

#### **1. Need for Competent HR**

HR in the field of maritime transportation covers various roles, from operational personnel on board ships such as captains and crew, to managerial personnel in shipping companies, port operators, and related government institutions. The need for competent HR is very urgent considering that this industry faces global challenges, such as the development of maritime technology, changes in international regulations, and demands to implement safety and environmental protection standards.

The technical skills required include navigation skills, ship operations, and maritime logistics management. On the other hand, non-technical skills such as communication skills, team management, and an in-depth understanding of maritime law and international regulations are also very important. Special education and training are key in building HR that is able to answer these challenges.

## 2. Maritime HR Education and Training

Educational and training institutions play a crucial role in producing quality maritime HR. In Indonesia, various maritime higher education and vocational training institutions have been established, such as the College of Maritime Affairs (STIP) and the Polytechnic of Maritime Affairs (PIP). In addition to formal education, continuous training is also needed to keep up with developments in ship technology, safety standards, and new policies in the maritime industry.

The implementation of international certification, such as the International Maritime Organization (IMO) and Standards of Training, Certification, and Watchkeeping (STCW), is a standard that must be met by professionals in this field. This certification ensures that every sailor, operator, and port manager has globally recognized skills.

## 3. Challenges in Human Resource Development

The biggest challenge in developing human resources in the maritime transportation sector is the skills gap between industry needs and the qualifications of the workforce. In addition, the lack of interest of the younger generation in professions in the maritime sector is another challenge, especially considering the perception of high work risks and working conditions far from home for long periods of time.

Some strategies that can be taken to overcome this challenge include:

1. Increasing cooperation between industry and educational institutions: This can ensure that the curriculum taught is in accordance with the actual needs of the industry.
2. Improved welfare and working conditions: Offering a safer and more attractive working environment for the workforce, including providing better incentives.
3. Promoting the maritime industry to the younger generation: A creative approach is needed to increase the attractiveness of the maritime profession through educational campaigns and professional introduction.

## 4. Role of Government and Regulators

The government has a strategic role in supporting the development of human resources in the maritime transportation sector. Policies related to maritime education, training, and certification must continue to be aligned with international standards to ensure the competitiveness of the Indonesian workforce in the global market. On the other hand, the government also needs to provide incentives to the industry to encourage investment in human resource development, both through training subsidies and the provision of supporting facilities.

## **Competence of Seafarers in Indonesia**

As the largest archipelagic country in the world, Indonesia has a very large need for competent seafarers to manage domestic and international maritime transportation. The competence of seafarers is very important to ensure the safety, efficiency, and professionalism in ship operations and to comply with international standards set by organizations such as the International Maritime Organization (IMO). To achieve these standards, seafarers in Indonesia must have competencies that cover various technical, managerial, and work ethics aspects.

## **Seafarer Competence Standards**

Seafarers' competency in Indonesia is regulated by the International STCW (Standards of Training, Certification, and Watchkeeping) Convention which is applied globally. STCW regulates the training, certification, and qualifications of seafarers so that they are ready to work on ships with international standards. Seafarers who work on Indonesian or foreign-flagged ships must have competency certification that includes qualifications according to the level of position, such as officers, captains, or ship engine technicians.

To obtain this certificate, Indonesian seafarers must undergo education and training that includes:

a. **Basic and Academic Education**

Prospective seafarers must undergo formal education at a shipping school or maritime academy. This education includes materials on navigation, ship operations, maritime law, and basic safety. Shipping institutions in Indonesia, such as the Sekolah Tinggi Ilmu Pelayaran (STIP) or Politeknik Ilmu Pelayaran (PIP), play an important role in providing this initial education.

b. **Competency Training**

After basic education, sailors must undergo various special training that is appropriate to the position they will occupy. This training includes technical skills such as ship navigation, ship engine management, cargo handling, and occupational safety and health at sea. This training is usually provided by recognized maritime certification institutions, both in Indonesia and abroad.

c. **Competency Certification**

Certification is an important part of a sailor's competence. Every sailor must have a Certification of Proficiency (COP) and Certification of Competency (COC) issued by the government through the Ministry of Transportation. This certification consists of various

levels according to the position on the ship, from the watch officer to the ship's captain. In addition, sailors are also required to renew their certification every five years, which includes refresher training according to technological developments and regulations.

### **Challenges in Improving the Competence of Seafarers in Indonesia**

Although Indonesia has great potential in providing seafarers, there are several challenges in efforts to improve the competence of seafarers, including:

a) **Cost of Education and Training**

The cost of obtaining seafarer education and certification is quite high. Many prospective seafarers face financial difficulties in completing training or renewing their certificates. Although the government has provided scholarship or subsidy programs, their coverage is still limited.

b) **Quality of Education and Training**

Several maritime education institutions in Indonesia still face obstacles in providing a curriculum that meets international standards. In addition, training equipment and facilities at several maritime schools are still not optimal, limiting the practical experience that is very necessary for prospective seafarers.

c) **Adaptation to New Technology**

Along with the development of maritime technology, seafarers are required to master various modern navigation devices and systems, such as the Electronic Chart Display and Information System (ECDIS) and ship automation technology. This challenge requires adjustments to the curriculum and more sophisticated training to ensure that Indonesian seafarers are able to compete in the international market.

d) **Protection and Welfare of Seafarers**

In addition to technical competence, seafarers must also be equipped with an understanding of their rights at sea, both in terms of safety, health, and welfare. Legal protection and decent working conditions must be an integral part of improving competence, so that seafarers can work in a fair and humane environment.

#### **Efforts to Improve Seafarer Competence in Indonesia**

Some efforts that have been and are being made to improve seafarer competence in Indonesia include:

1. **Improving the Quality of Maritime Education Institutions**

The Indonesian government continues to strive to improve the quality of seafarer education institutions by standardizing the curriculum and updating training facilities. In

addition, international cooperation with foreign shipping institutions is also continuously being improved to ensure that graduates of seafarer education institutions in Indonesia meet international standards.

### 2. Continuous Certification and Training Programs

Continuous certification is one of the main focuses in developing seafarer competence. Refresher training programs and advanced training continue to be encouraged by the government and shipping companies to ensure that seafarers are always up-to-date with technological developments and international regulations.

### 3. Collaboration with the Maritime Industry

Partnerships between the shipping industry and educational institutions are also important to ensure the relevance of seafarer competence to industry needs. Shipping companies can provide field training and internships for seafarers to provide very important hands-on experience.

## **The Problem of Seafarer Competence Costs in Indonesia**

Seafarers are one of the important components in supporting the maritime and sea transportation industry. In Indonesia, known as the largest archipelagic country in the world, the need for competent sailors is very high. However, one of the major challenges faced by sailors in Indonesia is the high cost of obtaining and improving their professional competence.

One of the main requirements for a sailor to work on a ship is to have an internationally recognized competency certificate, as regulated by the International Maritime Organization (IMO) through the STCW (Standards of Training, Certification, and Watchkeeping) Convention. To obtain this certificate, sailors must follow various training and education programs that comply with international standards. The cost of following these training programs is often a heavy burden for most sailors, especially those who are just starting their careers.

### **This cost issue covers several aspects, including:**

#### 1. Formal Education and Training Costs

To become a competent sailor, prospective sailors must undergo formal education at a shipping academy or school. Shipping education institutions in Indonesia, both state and private, set relatively high fees. For sailors who come from families with lower to middle economic backgrounds, this cost is often a major barrier.

#### 2. Certification and Examination Costs



After completing formal education, seafarers are required to take certification exams to obtain a Certification of Proficiency (COP) and Certification of Competency (COC) that are recognized nationally and internationally. The costs of these exams and certifications vary, depending on the level of competency to be achieved, and are often an additional burden for seafarers.

### 3. Certification Renewal Costs

Seafarer competency certificates are not valid for life; seafarers must renew their certification every five years. This renewal requires seafarers to take refresher courses and additional training, which of course costs more. This process, although important to maintain safety and professional standards, adds to the financial burden for seafarers, especially those who already work with unstable incomes.

### 4. Additional Training and Specialization Costs

In addition to basic training, many seafarers need to take additional training to obtain certain specializations, such as special safety certificates, crisis management, or handling dangerous cargo. This training, although increasing the professional value of seafarers in the job market, also requires a lot of money.

### 5. Limited Financial Support

Although the Indonesian government has provided several scholarship schemes and subsidy programs to support the development of seafarer competency, their coverage is still limited. Many seafarers have to finance their own education and certification, without much help from the government or the companies they work for.

### Impact and Possible Solutions

The issue of competency costs has a direct impact on seafarers' accessibility to quality education and certification. Many talented prospective seafarers are constrained by high costs, which prevents them from being able to compete in the international shipping industry.

### **Some solutions that can be considered to address this issue include:**

#### 1. Increasing Subsidies and Scholarships

The government and shipping companies can work together to provide more subsidies or scholarships for prospective seafarers and seafarers who want to renew their certification. This will help reduce the financial burden that must be borne by individuals.

#### 2. Developing More Affordable Training Schemes

Maritime education and training institutions can create more efficient and affordable training programs without compromising the quality of training. Alternatives to online or distance-based training can also be considered to reduce accommodation and transportation

costs.

### 3. Partnerships with Shipping Companies

Shipping companies can provide financial support to their seafarers in the form of sponsorship or education funding. Thus, companies can ensure that their workforce always has the required competencies, while seafarers do not need to be burdened by high certification costs.

Overall, the cost of improving seafarer competency in Indonesia remains a significant challenge. Collaborative steps are needed between the government, educational institutions, and industry to create solutions that can ensure that Indonesian seafarers have wider access to quality education and training, without being burdened by high costs.

## Conclusion

The competence of sailors in Indonesia is an important key to the development of the national maritime industry. Appropriate education, training, and certification are the main foundations to ensure that Indonesian sailors have the skills needed to compete in the international market and support the sustainability of the maritime transportation industry. Although there are various challenges, such as the increasingly complex and evolving competence burden in accordance with international standards, with the right support from the government, industry, and educational institutions, improving the competence of Indonesian sailors can continue to be carried out. This is necessary so that they are able to face increasingly complex global dynamics and increasingly high work demands in the maritime industry.

## References

- Kristianti, Mariana dan Reni Hermawati dan Kundori *MEMBANGUN SUMBER DAYA MANUSIA DAN TEKNOLOGI INFORMASI SEBAGAI DASAR KEJAYAAN MARITIM DI INDONESIA*, Jurnal Saintek Maritim, Volume 23 Nomor 2, Maret 2023
- Setiawan, Heru Dian dan M. Dimiyati Sudja. *KOMPETENSI SUMBER DAYA MANUSIA KELAUTAN DI INDONESIA*, Jurnal Ilmu dan budaya Volume 42, Nomor 2, Tahun 2021
- Suryanti dan Zoely Nurfadoely. *Kelemahan Indonesia Menuju Poros Maritim Dunia* Jurnal Dinamika Bahari Vol.2 No.1 Edisi Mei 2021
- Potto, Ivan, Sudjanadi Tjipto Sudarmo, Sri Handayani, Yana Tatiana dan Prasadja Ricardianto *Analisis Sertifikasi Pelaut, Keterampilan, dan Kesejahteraan Awak Kapal Sebagai Variabel Mediasi Terhadap Kinerja Operasional Kapal* Jurnal Penelitian Transportasi Laut.