

Integrating Emotional Intelligence Training in Pre-Sea Programs: Enhancing Competency and Resilience of Merchant Navy Cadets

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ABSTRACT

The merchant navy is an attractive profession for young individuals due to its financial benefits, adventurous nature, and global exposure. However, it also presents significant challenges, including long working hours, isolation, and limited recreational opportunities. Emotional intelligence (EI) plays a crucial role in ensuring the mental well-being of seafarers, as emotional instability can lead to mental health issues and human errors on board. Given the high-risk nature of maritime operations, even minor errors in navigation or decision-making can have fatal consequences. While technical proficiency is essential for effective performance at sea, soft skills such as emotional intelligence, decision-making, and problem-solving are equally critical. Officers who are emotionally stable, mentally resilient, and capable of identifying psychological distress in themselves and others are more likely to develop strong leadership skills and contribute effectively to a safe working environment. Despite its importance, EI training is often overlooked in pre-sea cadet programs. This study highlights the necessity of integrating EI training into maritime education to better prepare cadets for the psychological challenges of their profession. A survey was administered to 70 experienced Indian seafarers using purposive sampling, with 48 responses received. A mixed-methods approach was adopted, incorporating both quantitative and qualitative data. The survey included a structured questionnaire, and five experienced seafarers were interviewed to gain deeper insights into the role of EI in maritime operations. Results were analyzed using percentage analysis, allowing researchers to categorize and grade key EI subcomponents. The study identified the top 10 EI competencies essential for seafarers, forming the basis for the development of a structured training program aimed at equipping Indian pre-sea cadets with critical emotional and interpersonal skills. The findings are limited to Indian pre-sea cadets and may serve as a foundation for future studies in broader maritime contexts.

I) Introduction:

Emotional Intelligence is the ability to sense, understand, value and effectively apply the power of emotions as a source of human energy, information, trust, creativity and influence” –Daniel Goleman.

The merchant navy is a profession that is ranked as one of the most risky and hazardous professions in the world. Risks in merchant navy include but are not limited to physical, biological, chemical and even some social elements. (ILO, 2014). Apart from this, risks are with respect to possible pirate attacks, bad weather conditions, the risk of enclosed places and getting exposed to certain

chemicals. While these are all with respect to nature of work itself, some factors of risk may be due to psychological factors like stress, isolation from family, anxiety and loneliness. (ILO, 2014). According to research done by Roberts (1996) and Hansen (2002), fatality rates in merchant navy are 20 times the average of shore-based industries in that particular industry. Thus, a seafarer working on a merchant board or cargo vessel is always at risk in some way or the other. This profession is demanding in many ways and it's not a profession where a person can switch off from work and relax or distress in a different environment that generally happens in other professions. The officers must be both physically and mentally strong in order to cope with daily risks on board. Physical and mental health of seafarers is also important to prevent accidents and hazards. One of the core components of mental health is emotional intelligence or EQ.

Understanding emotional intelligence:

It was in 1990 when Dr. Peter Salovey and Dr. Jhon Mayer first defined and research emotional intelligence. According to them, emotional intelligence is the ability to monitor one's own and others' feelings and emotions, to discriminate among them and use this information to guide one's thinking and actions" (Salovey& Mayer, 1990). Emotional intelligence is touted to be one of the most important abilities when it comes to working in any field. This is especially true when it comes to working in a profession like the merchant navy where the need to monitor emotions in oneself and in others and to make important decisions and judgments are an essential part of everyday work. To ensure that emotionally stable officers are in- charge of vessels, budding seafarers and cadets need to be trained in enhancing emotional intelligence. However, this is often the most neglected aspect of training in maritime training institutions. While cadets are trained to work with machines in the engine room and to navigate the ships, very little training is imparted to help them strengthen their emotional intelligence. Emotional intelligence training needs to be imparted in everyday curriculum so that human error can be reduced, and cadets learn to control complex emotions and make rational choices in the toughest of conditions. Emotional intelligence, unlike general intelligence, can be improved to a great extent with proper training. The aim of this paper is to highlight the importance of training cadets in emotional intelligence and rationalize the need to introduce the concept in curriculum. Awareness is likely to bring about change in perception thereby facilitating training programs in the maritime sector in the future.

II) Review of literature:

i) Merchant navy and mental health:

There have been various published research papers that have shed light on the connection between mental health and performance of sea farers. After a review of sixty-three studies, it was seen that younger age, poor physical health, poor sleep, poor teamwork, long duration at sea were certain factors that led to an increase in human error and poor work performance. (Brooks et.al, 2022). Certain suggestions were given based on the study to help seafarers cope with stress and anxiety incurred due to these factors. Some of these suggestions are

1. Monitoring the physical and mental health of seafarers in a better way.
2. Increasing the number of crew on board ships.
3. Providing training and education.

At times there are frequent conflicts between various ranks and people due to which feeling of isolation can deepen in working professionals. Physical causes of stress can be high – pitched noises, vibrations in the ship, high temperatures and various other factors.

After the onslaught of COVID – 19 pandemic, the physical and mental health of seafarers was even more compromised. Fear of infections, lack of shore leaves and deterioration in health care standards led to a crippling fear amongst the seafarers. Depression and suicidal thoughts were at

peak and the repercussions of the pandemic are still felt today. Thus, it is undeniable that there are several factors that can lead to mental health issues in seafarers today.

Emotional intelligence is an important component of mental health. If a person has emotional intelligence, he can successfully cope with stress and stressors and can even largely even control his anxiety. Hence, emotional intelligence is very important for seafarers.

ii) Emotional intelligence and performance of seafarers:

Seafarers have an ever-going evolving need for adaptation. They have to keep adapting themselves to new environment in order to work effectively. Every new voyage means that seafarers must adapt to new people, new situations. This adaptation is possible if a person has a satisfactory level of emotional intelligence. There have been numerous studies that aim at understanding the significance of emotional intelligence with respect to job performance. One such study has shown that high emotional intelligence is linked to high performance in seafarers. (Kaan et al, 2015).

Researchers have also found a significant connection between human error and emotional instability. A report titled Human Error in Merchant Marine Safety indicated that 27% of surveyed participants recognized emotional instability among crew members as a contributing factor to maritime incidents and near-miss events. These findings highlight the significant role of emotional factors in influencing human error and operational safety within the merchant navy. Research by Matthews et al. (2006) highlights that individuals respond to stress and workplace challenges differently, with emotional intelligence playing a key role in these variations. Their findings suggest that individuals with lower emotional intelligence are more prone to worry and tend to rely on avoidance-based coping strategies when faced with stress. The maritime work environment is particularly demanding, operating within a rigid hierarchical structure and a closed system that can intensify stress levels. In such conditions, emotional intelligence is essential for managing emotions, maintaining effective interpersonal relationships, and coping with high-pressure situations. Consequently, a seafarer's performance is closely linked to their ability to regulate emotions and handle stress effectively. Emotional intelligence and coping with stress. R.S. Lazarus (1966) has defined stress as, "Stress arises when individuals perceive that they cannot adequately cope with the demands being made on them or with threats to their well-being. Another definition of stress has been given by. S. Palmer in 1989. According to him, "Stress is the psychological, physiological and behavioral response by an individual when they perceive a lack of equilibrium between the demands placed upon them and their ability to meet those demands, which, over a period, leads to ill-health. These definitions also clearly show that stress has a profound impact on the way a human being functions in daily life as well as how he/she copes at workplace. Seafarers experience stress in different situations. They need to accept as well as manage their stress in a healthy way. Research has shown a significant correlation between coping with stress and emotional intelligence. Research conducted by Nurahaju and Widanti (2014) highlights the significant impact of emotional intelligence on individual behavior and communication. Their study shows that seafarers often experience elevated stress levels, particularly when feeling overwhelmed, working in confined spaces, or worrying about their families left behind. These stressors emphasize the critical role of emotional intelligence in managing emotions and maintaining effective communication in the maritime environment. Thus, family is also an important part of stress in the life of seafarers. If a person has high EQ or emotional intelligence or EQ, they are likely to fare better and can cope with stress in a better way as compared to seafarers who do not possess the emotional stability to deal with stress in a better way.

iii) Emotional intelligence and cultural diversity:

Emotional intelligence can also be greatly swayed by the culture of seafarers. Though very little research has been done on this topic in the field of merchant navy, experience of seafarers, surveys and other documents have suggested that there is a correlation between the cultural background of seafarers and emotional intelligence. Research carried by Bjørn Helge Johnsen, Philippine Meeùs, Research conducted by Johnsen et al. (2012) demonstrated that Southeast Asian officers on board merchant ships exhibited significantly higher levels of emotional intelligence compared to their European counterparts. They scored significantly higher on utilization of emotions, handling relationships and self- control. Another interesting aspect was that the higher the post, less the emotional intelligence. Thus, when addressing the concerns of training officers, cultural aspects also need to be considered.

iv) Emotional intelligence and mental disorders:

Emotional intelligence can enable seafarers to cope with anxiety, panic and even sleep disorders to a certain extent. Today, seafarers are found to be suffering from various kinds of mental disorders. This is especially true after the onslaught of the Covid Pandemic. Research conducted by Sampson and Ellis (2019) highlights a recent increase in anxiety and depression among active seafarers. Their findings also indicate that seafarers experience higher levels of loneliness while at sea compared to when they are at home. Given these challenges, emotional intelligence plays a crucial role in safeguarding the mental well-being of seafarers, emphasizing its undeniable significance in maritime settings. Role of maritime training institutes in developing emotional intelligence.

Maritime training institutions have a huge role to play in the training and development of budding seafarers. Research is very limited in the role of development of emotional intelligence of maritime training institutions because it is a very recent area of concern. However, attempts have been made in the past to highlight the importance of providing solutions to seafarers during their training for improving their mental health on – board vessels. Research conducted by Paschalia Divari (2019) emphasizes the critical need for mental health training among maritime cadets. Her findings indicate that while shipping companies have implemented mental health programs that significantly enhance the well-being of active seafarers, such initiatives are notably scarce in pre-sea training institutions. This disparity suggests an urgent requirement to incorporate mental health education into the curricula of maritime academies to better prepare cadets for the psychological challenges of seafaring. Though the role of training cadets in mental health is apparent through various researches, there is very little effort being taken to enable training of skills that can help cadets cope with difficult life situations on – board vessels.

This literature review clearly shows that emotional intelligence training in training institutions with the help of innovative concepts can help cadets build this vital skill.

III) Methodology

The researcher aimed to integrate the findings from the literature review with real-world insights, focusing on the experiences of pre-sea merchant navy cadets. Given that these cadets are generally inexperienced and unfamiliar with life on board, the researcher sought to collaborate with seasoned seafarers to identify key emotional intelligence (EI) subcomponents relevant to their work environment. These insights could inform further research and training. The researcher aimed to integrate the findings from the literature review with real-world insights, focusing on the experiences of pre-sea merchant navy cadets. Given that these cadets are generally inexperienced and unfamiliar with life on board, the researcher sought to collaborate with seasoned seafarers to identify key emotional intelligence (EI) subcomponents relevant to their work environment. These insights could inform further research and training. A mixed-methods approach was used, combining both quantitative and qualitative data collection techniques to gain a comprehensive

understanding of the issue.

The data collection process involved the following steps:

- **Study of Emotional Intelligence Framework:** Daniel Goleman's model of emotional intelligence was thoroughly reviewed, focusing on its five core components: self-awareness, self-regulation, motivation, empathy, and social skills.
- **Literature Review:** A comprehensive literature review was conducted to identify which subcomponents of these five major EI components were essential in the merchant navy context. Based on this review, 20 subcomponents were selected for further examination.
- **Survey Design (Quantitative Data):** A survey was developed using a 5-point Likert scale, where seafarers rated statements related to each EI subcomponent. The statements were framed as situation-based prompts, asking seafarers to reflect on whether they could manage a particular EI subcomponent under realistic onboard circumstances. This approach helped reduce bias and avoid socially desirable responses, which might have occurred with direct rating. The quantitative data gathered allowed the researcher to identify the top 10 subcomponents that seafarers found most challenging. These were retained for further analysis, while those deemed easier to manage were excluded.
- **Interviews with Experienced Seafarers (Qualitative Data):** Ten experienced seafarers were interviewed to gather qualitative insights regarding the need for emotional intelligence training. The interviews provided deeper understanding of which EI skills were considered most vital for success on board, and seafarers were encouraged to share personal experiences and challenges related to EI.
- **Data Analysis:** Both survey and interview responses were analyzed. The Friedman Test was used to rank the most essential EI subcomponents.
- A chart summarizing the seafarers' backgrounds has been included to highlight the significance of the survey findings, illustrating how seafarers' experience levels correlate with their understanding of the industry's emotional intelligence requirements

Years of sailing experience
48 responses

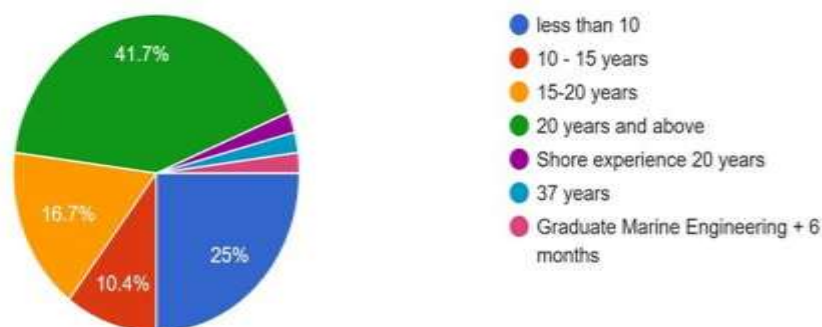


Figure 1. Years of Sailing Experience Among Respondents.

IV) Results and Interpretation:

1. 41.7% of respondents have 20 years and above of sailing experience, indicating a highly experienced group.
2. 16.7% have 15–20 years of experience, also a notable portion
3. The majority (58.4%) have 15+ years of experience, emphasizing an experienced

workforce.

4. There is a mix of both junior and senior professionals, with one-fourth (25%) having less than 10 years of experience.

The survey consisted of 20 sub-components of Emotional Intelligence that were based on the original 5 components of emotional intelligence based on Goleman's theory of intelligence. The 20 subcomponents of emotional intelligence are represented in the table

Table 1:
Emotional Intelligence Components

Category	Subcomponents
Self-awareness	Self -confidence, Mindfulness, Self-compassion, Feedback
Self-regulation	Emotional self-control, Adaptability, Achievement, Optimism
Motivation	Desire, Activation, Persistence, Dealing with failure
Empathy	Understanding others, accepting differences, Developing others, Awareness of others' emotions
Social skills.	Communication, resolve conflict, Appreciate others, Leadership.

The seafarers were asked to rate their importance on ships based on their experience on ship and their observations. The seafarers were given instructions to collaborate the components with their own work experience rather than the set norms. The aim of this was to get as real a picture as possible of components of emotional intelligence and their real impact when working on board ship. The five major components taken into consideration consisted of self-awareness, self-regulation, motivation, empathy and social skills. The survey consisted of 20 questions related to each sub-component of Emotional intelligence. Apart from this, interviews were conducted on five merchant navy officers who sailed as either Captain or Chief Engineer on board ship. They also emphasized the importance of emotional intelligence on board ship and admitted that components like self-confidence, emotional self-regulation and empathy play a crucial role on board ship. They were asked to rate on a scale of 1-5 with 1 being the least important and 5 being most important.

This study utilized the Friedman Test to rank components of Emotional Intelligence deemed essential for seafarers. The Friedman Test was chosen as it is a non-parametric method suited for comparing multiple related groups with ordinal data, such as Likert scale ratings. Since seafarers rated multiple emotional intelligence subcomponents based on experience, this test effectively identified significant differences in their rankings without assuming normal distribution, making it ideal for this study's within-subject comparisons

A survey of 48 participants was conducted, and components with a mean score of 3.0 or higher were identified as crucial. The top-ranked components included Understanding Others (4.10, SD = 0.803), Awareness of Others' Emotions (4.00, SD = 0.947), Emotional Self-Control (3.93, SD = 1.311), Dealing with Failure (3.90, SD = 1.213), and Resolve Conflict (3.90, SD = 1.185). Other important traits identified were Self-Confidence, Self-Compassion, Achievement, Activation, and Leadership.

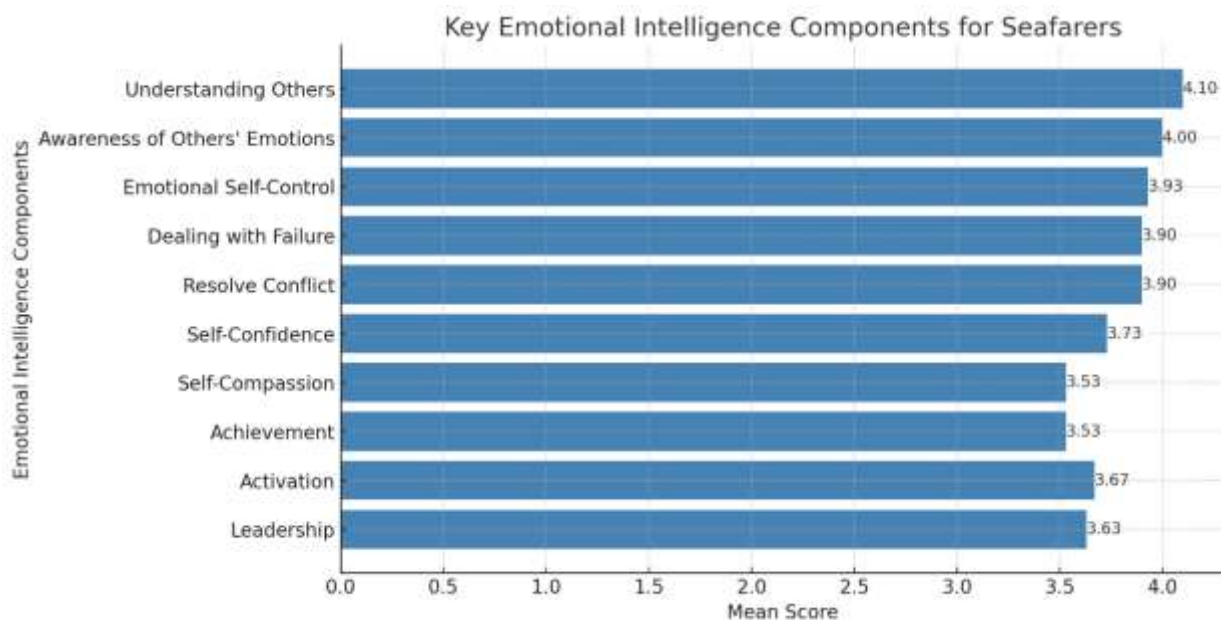
These findings suggest that maritime training institutions should integrate these emotional intelligence elements into pre-sea cadet programs to enhance onboard performance. Future research with a larger sample and comparative studies across different ranks could further validate these insights."

Table 2
Descriptive Statistics for Emotional Intelligence Subcomponents

No	Subcomponent selected	Mean	Standard deviation
1	Self confidence	3.73	1.081
2	Self-compassion	3.53	1.074
3	Emotional self-control	3.93	1.311
4	Achievement	3.53	1.137
5	Activation	3.67	1.124
6	Dealing with failure	3.90	1.213
7	Understanding others	4.10	.803
8	Awareness of others's emotions	4.00	.947
9	Resolve conflict	3.90	1.185
10	Leadership	3.63	1.033

The graphical representation is as follows

Figure 2: Key Emotional Intelligence Components for Seafarers



The results of the survey have managed to narrow down the subcomponents of emotional intelligence which can be further utilized for planning for additional training in maritime training institutions.

V) Discussion**i) Interpretation of Results**

The study's findings emphasize the pivotal role of emotional intelligence (EI) in shaping the psychological resilience and professional competence of merchant navy cadets. The analysis revealed that Understanding Others (4.10), Awareness of Others' Emotions (4.00), Emotional Self-Control (3.93), Dealing with Failure (3.90), and Conflict Resolution (3.90) were among the most critical EI subcomponents required in maritime work environments. These abilities are essential for handling high-pressure situations, maintaining strong teamwork, and ensuring safety onboard. Given that over 58.4% of the respondents had more than 15 years of maritime experience, the results provide credible insights from seasoned professionals. The combination of survey responses and qualitative interviews have highlighted the necessity of structured EI training in maritime education to help cadets develop leadership skills, enhance decision-making, and reduce errors caused by emotional instability.

ii) Comparison with Previous Research

The study's findings are consistent with earlier research that links emotional intelligence to maritime safety and performance. Research by Brooks et al. (2022) and Matthews et al. (2006) has demonstrated a strong correlation between stress, emotional instability, and human errors in seafaring. Similarly, Kaan et al. (2015) established that higher levels of EI contribute to better job performance among seafarers. Additionally, Johnsen et al. (2012) found cultural differences in emotional intelligence, noting that Southeast Asian officers scored higher in self-regulation and interpersonal skills compared to their European counterparts. Unlike most previous studies that focus on experienced seafarers, this research takes a unique approach by emphasizing the need for EI training in pre-sea cadet programs, ensuring that cadets develop essential emotional competencies before they begin their maritime careers.

iii) Explanation of Implications and Significance

The outcomes of this study have significant implications for maritime education and industry practices. By identifying key EI competencies, maritime training institutions can design targeted training programs that equip cadets with the emotional skills required for their demanding profession. Integrating EI training into cadet education can foster mentally resilient, emotionally aware, and adaptable maritime officers, thereby reducing workplace stress and minimizing errors.

iv) Limitations of the Study

This study is limited by its small sample size of 48 Indian seafarers, reducing generalizability. It focuses on experienced professionals rather than cadets, overlooking their perspectives. Self-reported data may introduce response bias, affecting accuracy. Additionally, the study lacks long-term analysis of EI training's impact. Future research should include diverse nationalities, cadet insights, and longitudinal studies to assess EI training's effectiveness over time in maritime education.

VI) Recommendations for training:

To improve emotional intelligence, the following aspects of training can be introduced.

1. Practical based training: Practical training improves confidence. This is an important aspect of emotional intelligence. Practical based training is also skill-based training. With better skills in place, a cadet is likely to be assertive with respect to his skills and capabilities.
2. Emphasis on self-awareness: Training to improve self – awareness in cadets can be introduced. This can be done through Yoga, breathing exercises and special training programs. Allowing cadets to express themselves in a safe zone will also enable better self-awareness.

3. Assertiveness training program: Teaching graded assertiveness techniques to young cadets will enable not just strategies of coping with difficult situations, it can also lead to better EQ thanks to the ability of the cadet to first assess their emotions and then act on them in a rational way.
4. Emphasis on the development of personality: Personality development leads to better emotional control and regulation. Personality development can be achieved with the help of sports, appreciation, giving meaningful tasks to cadets, better study habits etc. encouraging students to self-care and engage in meaningful hobbies will lead to the development of personality.
5. **Cognitive restructuring sessions for cadets with maladaptive traits:** With the help of an expert, cognitive restructuring sessions can be planned for cadets who display maladaptive traits. Research has shown that cognitive restructuring can help swap negative thought process with positive one thereby improving emotional health of the person.
6. **Suicide preservation and awareness programs:** Suicide is the result of depression. Inability to control emotions and lack self-awareness. However, by providing proper awareness with respect to suicide and related mental health conditions, cadets can be empowered with information. Information is power. Hence, emotional awareness, ability to know oneself, ability to spot problems in other's behaviour can improve with the help of specialized training. There can be various training sessions planned for cadets throughout their training program to help them spot shifts in mental health.
7. **Awareness programs for addictions and drug abuse:** Consumption of alcohol and drugs can hamper emotional intelligence. Addictions hamper reasoning. Hence, cadets need to be discouraged from addictions. This can be done through organizing awareness programs on regular basis.
8. **Individual counselling and group guidance sessions:** Maritime training institution must hire a professional counselor who can train cadets in emotional intelligence. This is also true for group guidance session which aim at improving emotional intelligence.

Conclusion:

Emotional intelligence is a trainable skill. It is also an important skill if cadets need to work efficiently onboard vessels. Innovation needs to be brought into the field of maritime training so that soft skills become an integral part of training. With better mental health programs in place, cadets can have better emotional intelligence and thereby have better onboard experiences.

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