

Beyond The Maritime Education Classrooms: Analysis Of Life Skills Gained From Maritime Trainings

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Abstract

Intensive maritime education and training cultivate the competence of students in their future career. As the industry evolves, it also requires professionals who can apply their skills in real-life scenarios. This investigation explored the life skills gained from maritime trainings by analyzing the experiences of maritime students (n=15). The participants in the one-on-one interview were purposively sampled based on several demographic characteristics i.e., a college student, have maritime units (>50), have been in curriculum-specified trainings. Findings of the study indicated that maritime students gained life-essential skills, including career-based, health-related, and emergency skills, through undergoing rigorous training programs. These acquired skills empower students to effectively address practical challenges and contribute positively to their career progression, personal growth, and well-being. As maritime students undergo specialized training and gain proficiency in technical and non-technical skills, their self-confidence and self-efficacy in addressing challenges and excel in their careers could be enhanced. The students' recognition of the practical use of their acquired skills in real-world scenarios highlights their self-efficacy, influencing their motivation, critical thinking, and problem-solving capabilities. It is the responsibility of maritime education industry to raise awareness and provide comprehensive education to aspiring seafarers.

Keywords: career-based skills, life-essential skills, maritime education, maritime trainings, self-efficacy.

Introduction

The maritime sector depends heavily on seafarers, however there is a severe scarcity of seafarers available. According to Drewry (2014), the shortage of ship officers reached on up to 15,000, and this shortfall continued until year 2019 (Bao et al., 2021). The shipping sector is

frequently used as an example of one of today's most globally integrated industries (Sampson, 2003). This industry faces major problems when it comes to the quality of graduates, and their competence in real-life career paths.

This investigation seeks to determine the life-essential skills that the maritime students learned from trainings. This study also delves into the concept of self-perception in relation to how students perceived their level of skill after they undergone marine education and training (MET) learnings. The findings enable the researchers to describe the relation of trainings and the acquired skills and how students perceived their competence in real-life scenarios.

MET institutions specialize in providing comprehensive courses to aspiring seafarers, commonly referred to as 'cadets' that specifically designed to equip them with a fundamental education, which is essential for them to meet the necessary qualifications and successfully pass the examinations required to obtain certificates of competency (Galam, 2022; Sampson, 2004; Karahalios, 2014). Outsourcing seafaring labor has given rise to a worldwide labor market for seafarers, without of any nationality limitations, which permits the recruitment of seafarers from any country (Galam, 2022; International Labour Organization, 2001). This labor market operates through a highly structured framework, facilitated by extensive global networks that connect shipowners, ship managers, crew managers, labor-supply agencies, and training institutions.

The establishment of a consolidated global labor market had significant implications for one key dimension of maritime labor—the seafarer education standards (Bloor & Sampson, 2009; Sampson, 2004; Sampson & Bloor, 2007). The separation of ship nationality from crew nationality resulted in shipowners and employers losing their ability to exert influence over the level of skill and proficiency of the workforce they employ (Baum-Talmor & Kitada, 2022; Bloor et al., 2014).

In Hong Kong, Ng and Yip (2009) asserted that it is crucial to consider the impact of the maritime curriculum provided by MET institutions in Hong Kong on the development of future officer skills. They raised concerns regarding the curriculum established by an engineering-oriented department of a university, suggesting that it may not fully align with the standards outlined in the International Convention on Standards of Training, Certification and Watchkeeping. While in Vietnam, a significant challenge to the recruitment of seafarers in Vietnam was identified as the notable issue of substandard quality among graduates and trained individuals in this field (Nguyen et al., 2014). In a study conducted by Yu (2014), the focus was on evaluating the performance of instructors within the context of MET institutions. The research findings revealed that the instructors were found to lack proficiency in delivering practical training (Manuel, 2017).

One of the key determinants of an organization's success is the implementation of professional training initiatives (Grossman & Salas, 2011; Islam et al., 2020) and the promotion of learning is facilitated through the suitable and authorized use of training methods (Sande et al., 2016). This study assumes that there are several life-essential skills that marine students learn from MET, and these skills are also applicable to their everyday life as a professional and ordinary citizen.

This study was centered on the possible connection between MET, skill acquisition, and self-perception, which contributes to the understanding about how maritime education impacts students' preparedness for both their professional roles and their everyday lives. By identifying life-essential skills gained through MET and examining students' experiences, the research sheds light on the connections of education, training, and practical application within the maritime industry. Addressing the identified gaps in maritime education and training has the potential to bridge the shortage of skilled seafarers and to enhance the overall safety, efficiency, and success of the maritime industry.

Literature Review

The shipping industry emphasizes the need for educational programs and training that foster the cultivation of critical thinking abilities in aspiring seafarers (Cerit et al., 2004). These skills are typically nurtured within maritime institutions, where individuals are equipped with the necessary tools to enhance their cognitive capacities. The capacity to analyze, synthesize, and assess information, along with the ability to effectively apply said information within a specific context, constitutes a significant component of the MET (Estimo, 2020).

Wang and Yeo (2016) conducted an analysis to identify the key factors that influence the recruitment of foreign seafarers by Korean shipowners. The researchers highlighted four major factors that emerged as significant determinants in this context which include the quality of seafarers' education and training, as well as the supply ability for well-trained seafarers.

The recruitment and retention of seafarers are significantly impacted fatigue and stress, their workloads, education and training standards, security, safety, and environmental protection (Lappalainen, 2016; Main et al., 2017; McVeigh, 2019; Nielsen et al., 2013). One of the primary incentives for individuals pursuing a career in seafaring is the promise of financial compensation. However, upon saving for financial resources, many seafarers make conscious choices to move to land-based jobs to prioritize their family (Baylon et al., 2011).

The management of education and training in the maritime industry plays a crucial role in facilitating growth, expansion, and positive change. By equipping individuals with the necessary knowledge and

skills, it enables them to successfully face the challenges that arise within this sector. In numerous industries, the presence of qualified and competent human resources management is imperative to ensure the ongoing operations and sustainable existence of organizations (Othman, 2014). The implementation of MET has not yet been realized, or it persists solely as a conceptual framework that stimulates deliberation at the policy level (Boonadir et al., 2020; Haun, 2020). MET is important because human error accounts for at least 80–90 percent of the maritime accidents (Baylon & Santos, 2012).

Serious incidents within the maritime industry, resulting from human factors, specifically the inappropriate actions of unskilled officers, have raised concerns regarding the declining quality of MET. Considering the demanding trainings in MET, this study assumed that these trainings could develop the overall self-efficacy and skill acquisition of maritime students. This mechanism enabled them to apply their skills in both their future career and everyday life. This relationship was proposed to analyze the impact of perceived self-efficacy in life skills connected to resilience, having the capacity to persevere and grow in the face of adversity.

Pooley and Cohen (2010) discovered that general self-efficacy substantially indicated high levels of resilience in mid-adolescents. There are favorable associations between general self-efficacy and emotional well-being, particularly with mastery, personal progress, and self-acceptance (Sagone et al., 2020). Theoretically, this study believed that the intensive MET could help students learn life-valuable skills (i.e., technical, personal, methodical) which they can use in their everyday life and career paths. This could also influence the students to be competent and positive on their skills they acquired from maritime trainings. This is an important direction because limited studies were conducted on the concept of MET and skill acquisition, and their relevance to self-efficacy and perceived competence of students while using the experiences of students in marine trainings as conceptual foundation.

Objectives

This study explored the concept of learning life-essential skills in maritime education training. The narratives of the participants shed light on the applicability of these skills in their life experiences. Below are the specific objectives of the study.

1. Determine the life skills gained from maritime education training.
2. Determine the applicability of life skills gained from maritime training to real-life situations.

Methods

Research Design

This study investigated the life-essential skills learned from maritime trainings. This study employed qualitative analysis to contextualize the types of skills the students learned and delved into how the skills have practical use in their life. Qualitative research provides the flexibility and adaptability of the results by making them into themes and thematic patterns (Chavez & Lamorinas, 2023). Qualitative research focuses on exploring a phenomenon, often relying on rich, contextual data to provide insights into human experiences and behaviors. Specifically, this study used exploratory design to collect valuable information from the experiences.

Exploratory research (Singh, 2007) is applicable when there is limited existing knowledge about a particular subject. In this case, the study aims to uncover real-life experiences into the life skills that participants gain from maritime education and how these skills manifest in their daily lives. Exploratory research is particularly valuable for capturing context-specific information that uncover contextually relevant insights that might not be apparent through quantitative methods alone.

Participants and Sampling Technique

The participants of this study were the maritime-oriented course e.g., marine engineering, marine technology, maritime education. The participants were purposively sampled (n=15) based on some demographical characteristics, i.e., a college student, have maritime units (>50), have been in trainings specified in their curriculum. In this study, the target population were students who have undergone maritime education training and have gained life skills from that experience. By using purposive sampling, researchers ensured that participants possess the necessary experience and exposure to trainings to provide meaningful insights.

Purposive sampling allows researchers to select participants who can provide detailed narratives and instances that align with the research objectives (Etikan et al., 2016; Tongco, 2007). This technique ensured that the collected data directly contribute to address the goals set for the study.

Research Instrument

The researchers developed interview guide questions to serve as the research instrument. The guide questions provided the flow and direction of the conversation with the participant (Kallio et al., 2007; Roulston, 2018). The formulation of the interview guide questions involved three distinct stages: conceptualization, refinement, and validation.

The researchers generated a preliminary set of open-ended questions aimed at eliciting detailed narratives from participants. These questions were designed to uncover the types of life skills acquired

during maritime training, the contexts in which these skills were learned, and participants' perceptions of their real-life applicability.

The researchers seek feedbacks from external validators to critically assess the interview guide, its structure, content, and sequencing. The feedback was carefully integrated to ensure that the questions were comprehensive, unbiased, and capable of generating data that aligns with the research objectives. The final interview guide questions (Table 1.0) were refined iteratively, enabling researchers to explore the life skills gained from maritime training and their practical implications in their lives.

Table 1.0 Interview Guide Questions

Objective	Interview Questions	n
Determine the life skills gained from maritime education training.	a. What life skills did you learn from your maritime trainings? b. How were you trained in your course? Give some instances and scenarios.	15
Determine the applicability of life skills gained from maritime training to real-life situations.	a. How and when can you apply these life skills? b. What do you think maritime-trained professionals have compared to other professionals in terms of life skills?	15

Data Gathering Procedure

This study involved one-on-one interviews to explore life skills gained from maritime training that ensured ethical considerations and maximized the quality of data collection. The researchers sought formal permission from the school administration to conduct the research within the educational institution. An official request was submitted, outlining the study's objectives, methodology, and intended impact.

Once permission was obtained, the participants were identified through a purposive sampling. The researchers reached out to the instructors and administrators assigned in maritime education programs to compile a list of potential participants who is taking or had completed a maritime training. These individuals were then contacted through reliable modes, such as email or formal letters, to provide them with a clear study overview, the interview process, and the potential benefits of their participation.

Upon receiving participants' willingness to engage, individual interviews were scheduled. During the one-on-one interviews, open-ended questions were asked, encouraging participants to share their experiences, reflections, and insights related to life skills gained from maritime training. The interview environment was designed to be

conducive to open dialogue, enabling participants to express themselves freely.

Data Analysis

The primary data in this study was the narratives from one-on-one interview. Analysis of the data involved a structured process for identifying recurring patterns, themes, and common experiences within the collected qualitative data. The thematic analysis process consists of three primary stages: data familiarization, pattern identification, and theme development.

The researcher examined the relationships between themes and their subthemes, creating a hierarchy that represents the interconnectedness of ideas. The thematic pattern was refined through reflection and analysis, thereby giving coherent representation of the life skills gained from maritime training and their practical applicability. Throughout the thematic analysis process, it was a priority of maintaining transparency, rigor, and interpretive integrity, ensuring that the resulting themes authentically represent participants' experiences and contribute to a comprehensive understanding of the research phenomenon (Braun & Clarke, 2006, 2012, 2013; Chavez & Del Prado, 2023).

Results

Objective 1: Determine the life skills gained from maritime education training.

Theme 1: Career-based Skills

Most maritime students (n=10) undergone trainings believed that they were able to learn some career-based skills during their trainings. These skills include fixing, problem solving, planning, which they believed would make them competent in their future career.

“At school we can understand and acquire the ideas regarding problem-solving, fixing, such as voyage planning, the time of arrival, and we are solving to estimate the ship's balance so that it cannot be sunk. We need to be capable on a global scale and competent enough to improve the maritime industry's system.”

Theme 2: Health-based Skills

Some of students (n=7) were able to learn health-related skills such as fitness, exercise, and body monitoring. The trainings helped them feel less concerned about their applicability to their future work set up. Students believed that the intensive trainings in maritime education significantly improved their kinesthetic competencies.

“When it comes to training, sir, we trained well so that we wouldn't feel fatigued while doing it. As seafarers, our work is highly demanding,

therefore in college, we trained extensively to ensure that it wouldn't have an impact on our health as we worked on board."

Theme 3: Emergency and Safety Skills

There were maritime students (n=4) who reflected on emergency skills. They believed that the trainings in maritime education helped them learn some basic emergency skills such as disaster preparedness and response, risk management, and effective decision making. These skills were important to them especially when they will encounter imminent dangers when on duty or in an everyday scenario.

"Lifesaving skills which are relevant to daily life, for example we are the captain, we're the one who steer the ship from one place to another. We are taught how to manage the ship because there are circumstances that we cannot avoid, especially the risk e.g., typhoons and rain."

Objective 2: Determine the applicability of life skills gained from maritime training to real-life situations.

Theme 1: Career Applicability

Most maritime students (n=12) think that the skills they learned from trainings will have great applications to their future career as a seafarer. Some of them reflected on the concept of being independent and responsible decision maker while others on professionalism and ethics. Students revealed that the skills they learned from the trainings allow them to apply the principles of work ethics, administration, leadership, and decision making.

"The skills we learn from the marine sector, sir, really come to use in everyday situations and it helps to stand up for our own path to battle this kind of circumstances because we face obstacles in life and must work independently to find solutions for problems we may encounter."

"All we must do as students, sir, is learn more about how to solve problems in practical settings. For me, sir, the reason why we are currently practicing life skills is that the task of a seafarer is difficult, and occasionally the things that are aboard the ship are heavy and it really implied for us to be able to do the things that is not easy."

"As the life skills that I've acquired are highly beneficial, especially if I'm on board. I know how to administer emergency care if there is a threat, but I am not authorized to carry out that task since a professional should. On a ship, we have various tasks that we are aware of how to carry out, but as a seafarer, I must request permission to carry them out."

Theme 2: Helping Others in Need

While mostly focused on career applicability, some maritime students (n=6) wanted to help others in need, especially when there is an emergency. Being a disaster responsive enables them to save others from any forms of danger, most probably when they are sailing on seas. For

them, being knowledgeable on disaster response is necessary because most of the times, they only have themselves on the sea.

“The edge of maritime trainee is to know how to save lives and our knowledge was expanded due to the fact the its expensive course because we sent here by our parents, this is not just to become better for ourselves but also become better as a person.”

“For me, sir, we have a wide range of skills to provide, particularly while we are on board. It is survival labor, and through it, we developed skills that are crucial to our line of work. Seafarers are the only type of workers who have the ability to supply life skills in a crisis, especially while on board a ship.”

Theme 3: Psychological Management

The extensive trainings (n=3) helped students be psychological competent to manage their emotions. They feel that being able to control yourself is an important aspect when working as a seafarer because they are exposed to psychological stressors.

“Since we already know what we do on the ship, I will have to endure a lot of hardship to be completely committed to this course of action. There is no signal and little or no interaction with anyone aboard a ship, especially your family. Even though we insist that our jobs pay well, we truly think that even though we occasionally experience homesickness and loneliness, we must work even more as we must provide for our families.”

Discussion

Objective 1: Determine the life skills gained from maritime education training.

The findings of the study indicated that some maritime students learned several skills e.g., career-based skills, health-based skills, and emergency skills. These aspects enabled them to be competent in essential life aspects. Intensive maritime trainings developed their skills in these aspects which they believed has impact on their career, self, and to other people.

Education and training represent structured initiatives designed to impart knowledge and enhance skills among individuals or workers, enabling them to effectively perform tasks and fulfill job-related responsibilities (Hidayati et al., 2020). Education should cultivate students who possess skills, including competence, proactivity, creativity, and innovation (Agung, 2017; Pearlman, 2006). The career-based curriculum trainings helped students to “understand and acquire the ideas regarding problem-solving, fixing, such as voyage planning, the time of arrival, and we are solving to estimate the ship's balance so that it cannot be sunk.” Maritime education and training helped students learn fundamental skills necessary in their career as seafarers.

The literature highlighted several skills that maritime students should learn such as the technical competencies, discipline, professionalism and ethical behavior, responsibility, and learning and self-development skills (Cicek et al., 2019; IAMU, 2019). Some of these skills set outline by IAMU manifested among the maritime students such as technical skills (troubleshooting, analyzing), methodological (problem-solving, management), and personal (emotional control, motivation, safety awareness).

Shipboard safety knowledge cultivates seafarers' understanding of the importance of ensuring individual and safety of others (Aliprantis & Oliver, 2013; Buted et al., 2014; Gausdal & Makarova, 2017; Yuen et al., 2020). For some maritime students, they learned emergency and safety skills (e.g., lifesaving, risk assessment) after undergoing maritime trainings. As one student revealed, "lifesaving skills which are relevant to daily life." The training program aims to familiarize the individuals with the correct methods of donning a life jacket, give information on survival techniques using board survival crafts, and provide education on the appropriate procedures for abandoning ship (Kamis et al., 2020).

Because maritime education caters for shore and offshore activities (Haun, 2014), the maritime industry should be proactive in giving opportunities to raise maritime awareness to aspirant seafarers (Cunningham, 2015; Mallam et al., 2019). In this study, students learned some career-valuable skills such as "how to solve problems in practical settings", and "how to administer emergency care." These helped them be "capable on a global scale and competent enough to improve the maritime industry's system." Generally, simulation trainings increase learners' perception and judgment of potentially risky circumstances (Sanfilippo, 2017), enhances students' training outcomes (Nazir & Manca, 2015), and develop collaboration, critical thinking, and case-specific learning process (Bhardwaj & Pazaver, 2014; Nikitakos et al., 2017). When students were exposed to intensive trainings in higher education maritime curriculum, it makes them feel competent of their own self and be industry-ready after graduating.

Students also highlighted learning soft skills, particularly emotional and physical knowledge. To achieve life success, all stakeholders should actively participate, as no single discipline can comprehensively impart the essential life skills required by students (Cabas Jr. & Tancinco, 2016; Kiran, 2007). One student discussed that they were "trained well so that [they] wouldn't feel fatigued while doing it." Individuals who feel highly energetic and active experiences significant improvements in physical strength, emotional vitality, and cognitive alertness (Asis-Castro & Edralin, 2022; Diener et al., 1999).

Maritime students were aware of the demands in maritime industry, from skills to personal competence. The education and training of seafarers is very crucial, as it directly impacts their ability to adhere to

instructions, mitigate risks, and resolve challenges (Baylon & Santos, 2011). Additionally, the psychological and emotional well-being of seafarers is crucial in maintaining safe, secure, clean, and efficient operations, ultimately ensuring the safety of individuals at sea (Dacuray et al., 2015). Maritime professional should possess professionalism and ethical behaviour, human relations skills, emotional intelligence, logical and critical thinking, and leadership skill (Nalupa, 2022).

The study indicates that maritime students acquire career-based skills, health-based skills such as mental health (Chavez, 2020), and emergency skills through intensive training programs. These skills are vital for their competence in various life aspects, from solving practical problems and administering emergency care to maintaining physical and emotional well-being. The maritime curriculum also focuses on instilling technical competencies, discipline, professionalism, ethical behavior, responsibility, and learning skills. The incorporation of simulation training and practical experiences enhances students' perception, judgment, and collaboration, making them industry-ready upon graduation.

Objective 2: Determine the applicability of life skills gained from maritime training to real-life situations.

Students expressed positivity on the applicability of their learned skills to life situations. For instance, the emergency and safety skills enabled them to respond to disasters and be risk-ready individuals whenever possible. They were also positive that they are competent, skillful, and knowledgeable, and are able to provide for their industry needs.

The acquisition of diverse skills, ranging from technical competencies to emotional intelligence and safety awareness, contributes to building students' self-efficacy. For one student, "the skills we learn from the marine sector, sir, really come to use in everyday situations and it helps to stand up for our own path." As students undergo training and gain proficiency in these skills, they develop a stronger sense of self-confidence and belief in their capacity to handle challenges and excel in their maritime careers.

Self-efficacy governs the perceptions of students towards their acquired skills and its application to real-life scenarios. The purpose of training, either simulation or on-the-job, is to facilitate the transfer of acquired skills from the training setting to the actual work environment (Renganayagalu et al., 2019). Students' self-efficacy has a positive impact on their critical thinking abilities, communication skills, and competence towards research that contributes to their overall competence as practitioners (Dewan et al., 2023; Salas et al., 2012; Van Dinther et al., 2011). Self-efficacy could arise before or during the training process, which improves individuals' motivation to engage in learning activities as well as their subsequent learning outcomes (Salas et al., 2012). The skills acquired through education and training programs contribute to

students' belief in their own abilities, fostering a sense of confidence and competence that extends across various areas of their lives.

In some instances, students believed that maritime trainings developed their skills that are applicable for their future career, in helping others in need, and psychological management. They feel that after training sessions, they are more competent individuals, in "survival labor," "in a crisis," and "if there is a threat" by acquiring the skills that are required for a maritime professional.

Maritime students revealed that the trainings improved their skills in managing their emotions well. Emotional regulation involves cognitive and behavioral processes that subsequently manifest in expressions, monitoring, and deliberate adjustment of both positive and negative emotional states (Aldao et al., 2016; Braunstein et al., 2017; Gross, 2013, 2014). Extensive trainings provided to maritime students contribute to their ability to manage their emotions effectively. This psychological competence is essential for seafarers, given the challenging and isolating nature of their work. Through training, students learn to control their emotions and endure hardships, such as homesickness and loneliness, while remaining committed to their career.

Students reflected on their career competence. They feel competent enough to meet the needs of their industry. In their study, Arya et al (2012) discovered a significant correlation between self-efficacy and organizational commitment. Essentially, self-efficacy individual's belief in their ability to successfully execute a specific task or behavior, considering their personal skills and the specific circumstances in which they are operating (Gayathri & Aithal, 2023; Urdani et al., 2002). Notably, students believed that there are real-life applications of their acquired skills from maritime trainings which also made them more positive on their performance in future career and how to manage their emotions effectively.

The study highlighted the importance of enduring hardship and maintaining commitment, despite emotional and physical challenges, reflects a strong sense of self-efficacy. Students who believe in their ability to manage emotions, challenging situations, and dangers are more likely to maintain a positive outlook and a high level of motivation in their future career and in everyday life.

Conclusion

Intensive maritime training programs empower students with career-based, health-based, and emergency skills, fostering their ability to address practical challenges and administer critical care. These acquired skills not only enhance students' performance in their maritime careers but also extend to their personal lives, highlighting the holistic impact of education and training on individual competence.

Students perceive their acquired skills as applicable and valuable in various real-life situations, both within their maritime careers and in their everyday lives. This demonstrates a strong connection between the training received and their belief in their capability to effectively handle challenges, creating a heightened sense of self-efficacy. The students' recognition of the practicality and usefulness of their skills contributes to their confidence and competence, enhancing their overall self-efficacy beliefs.

The development of technical competencies, emotional intelligence, safety awareness, and other essential skills contributes to students' growing self-confidence and belief in their ability to excel as maritime professionals. This improved self-efficacy not only impacts their career performance but extends to various aspects of their lives, influencing their motivation, critical thinking, and cognitive abilities.

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