A MODEL TOWARDS DEVELOPING LIFE SKILLS AMONG MARITIME STUDENTS FOR LONGER SERVICE AT SEA

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Abstract This study aimed to determine where maritime cadets are in terms of their life skills and to propose a model designed to develop and strengthen their life skills so they may choose to serve longer at sea. Descriptive design using the survey method was employed in gathering the baseline data for the study. The level of life skills of the students were determined through the use of a researcher-made instrument which was validated by experts in the field. Reliability was obtained using Cronbach's alpha which yielded an alpha coeeficient of 0.88. the survey was administered to a total of 1699 maritime students randomly selected from three Maritime Higher Education Institutions (MHEIs) during the second semester of school year 2016-2017. The statistical tools used were the mean, standard deviation, and multiple regression. Taken as a whole, the data showed that the maritime students have a HIGH level of life skills as shown by the composite mean score of 3.08. Among the four dimensions, the Interpersonal Communication/Human Relations had obtained the highest level of life skills (M = 3.11). This means that students can easily relate with people that they trust in their immediate environment and that they are capable of maintaining a positive social relationship most of the time. On the other hand, Physical Fitness/Health Maintenance obtained the lowest mean (M= 3.06). This implies that even if the overall (M = 3.08) has a high level of life skills, there is still a need to enhance the student's life skills. The value of R^2 is 0.917, which indicates that 91.7% of the variation in life skills can be attributed to the problem-solving/decision making. This means that the ability to make decisions and solve problems plays the most important roles in order to improve the students' life skills. It is the role of the academe to develop and demonstrate the problem-solving and decision making skills among the maritime students.

Keywords*:* Life skills, maritime students, life skills model, sea service, human factors

1. Introduction

Future seafarers need to be equipped with a reservoir of skills that can help them sustain themselves through life---skills that can make them effectively manage challenges and tough times of everyday shipboard life, not just on the personal and academic level but in their preparation for their career life ahead. These life skills also referred to as coping skills, are essential as they prepare to take their place in the industry as responsible officers. According to Mofrad (2013) and Packer (2006), today's generation of future officers needs to develop optimum skills to easily adapt to the realities of seafaring.

Merchant seafaring is a unique occupation that has traditionally been associated with high risks of fatal accidents (Tomaszunas & Weclawik, 1997). Currently, the maritime industry is beset with perennial issues related to crewing. These issues include stress and fatigue, shortage of workforce, heavy workloads, increased demand in standards of training, homesickness anxieties, threats on safety and security, incidents of depression leading to suicidal behavior, work discrimination, and interpersonal conflicts on board such as bullying. While attractive financial rewards remain to be a major motivation for choosing the seafaring profession, a growing number of seafarers opt to take a land-based job after acquiring sufficient funds to support their families. The challenge now is how to mold and retain competent seafarers who are willing to render longer sea service while remaining positive about reaching the peak of their career as Masters and Chief Engineers. According to Caesar, Cahoon, and Fei (2015), prolonging the number of years that seafarers spend at sea and their subsequent retention is, therefore, an important issue that requires further attention.

For the maritime industry to sustain itself in the years to come, it needs to have a stable fallback in terms of human resource by ensuring a steady supply of quality workforce. The industry needs to breed marine officers who do not only possess the technical competence and skills, but also the soft skills to enable them to cope and survive. Such expectations require more professional adequacy, not mentioning substantial preparation in a holistic sense. Yadav and Iqbal (2009) point out that equally important as with the acquisition of cognitive skills is the development of social and emotional coping skills or life skills that help promote the development of well-being and competence in young people as they face the challenges and realities of life. Unfortunately, as observed by Burns, Ruby, Seaman and Brannan (2015), with all the advances in technology and human expectations, the development of non-technical skills or "people skills" such as interpersonal and social skills, communication skills, leadership and teamwork, self-management and other life skills have failed to keep pace and are deemed insufficient.

For maritime students, just like many others who train for other fields of profession, the expectations are immense. With the maritime industry providing for more than 50, 000 vessels worldwide and with an estimated 90% of the goods traded and transported by sea (International Labor Organization), the seafarer's career is characterized by increasing stress. According to Oldenburg & Jensen (2012), a seafarer may be at least comfortable and sure of his position and skills and the expectations of others on board a vessel, but ashore, he may be seen as immature, carefree, and lacking social skills. Hence, putting a high value on the human element, the International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers (STCW) with its latest major revision in 2010 has strongly emphasized the importance of human factors in developing future seafarers. Behavioral competencies or the development of "soft skills" such as leadership and teamwork has become the latest talk in the maritime industry, putting a value on the importance of workforce and the need to provide future seafarers with life skills that can make them succeed through life.

1.1 Objectives

This paper aimed to determine where maritime cadets are in terms of their life skills and to propose a model designed to develop and strengthen their life skills so they may choose to serve longer at sea. Specifically, it aims to:

a) Determine the level of life skills of first year maritime students in terms of the four dimensions: Interpersonal Communication/Human Relations, Problem-Solving/Decision Making, Physical Fitness/Health Maintenance, and Identity Development/Purpose in Life, and when taken as a whole;

b) Identify which of the four dimensions can best predict the life skills of maritime students

c) Design a model that could develop and strengthen the life skills of seafarers

1.2 Framework

Life skills also called coping skills or strategies, is defined as the individuals' thoughts and actions used to deal with threatening or stressful situations. According to Flannery (2016), it can be positive or negative (Centre for Studies on Human Stress, 2017). Expectedly, future maritime officers are supposed to develop positive life skills or coping skills to survive in their profession.

The concept of this study is anchored on Brooks' (1984) Taxonomy of Developmental Life Skills, which was classified generically by Picklesimer and Miller (1998) into four main categories: (1) interpersonal communication/human relations, (2) problem-solving/decision-making, (3) physical fitness/health maintenance, and (4) identity development/purpose in life.

Interpersonal communication/human relation skills comprise the development of certain psychosocial behaviors such as empathy, confrontation, warmth, genuineness, management of interpersonal intimacy and clarity of expression (Brooks, 1984).

The second category, *problem-solving/decision-making*, according to Fishoff (1980), is the life skill that involves problem identification, goal setting, information seeking, time management and conflict resolution. It is a task of illustrating decision, consequently to provide an answer to any problematic situation that causes perplexity.

Furthermore, the third category as identified by Picklesimer and Miller (1998) is *physical fitness/health maintenance*. One of the developmental tasks of adolescents is developing healthy habits and skills to cope with stress (Hurlock, 1982). According to Brooks (1984), the life of young adults comprises the maintenance of proper nutrition, stress management, coordination, selection of leisure activity inclusive of physiological health and sexuality.

Identity development/purpose in life is the fourth skill, comprising of self-esteem, moral choices, self-monitoring, sex role development and emotional expression. The development of "Persona" according to Jung (2014), a Swiss Psychiatrist, is the social face the individual presents to the world---a kind of mask designed to make a definite impression upon others and to conceal the true nature of the individual. The development of a variable "social persona" is a vital part of adapting to and preparing for adult life in the external social world. A strong ego is related to the outside world through a flexible persona.

From the perspective of Maritime Education and Training (MET), the development of life-skills is emphasized in Table A-VI/1-4 of STCW which mandates among seafarers a competency that can contribute to the effective human relationship. Such mandate promotes the need for seafarers to undergo training and certification to equip them with the ability to maintain good human and working relationship, work in the spirit of teamwork, and deal with conflicts that they could experience on board ship.

The present study is also anchored on Swanson's System Model for Performance Improvement. This model relies on the integration of different items of the environment into a comprehensive frame of reference. In this study, the model is formed by integrating into its dimensions various concepts and constructs that were based on an extensive review of related literature on factors that bear upon the development of life skills among students. The results of the study on life skills of maritime students were also considered as baseline data for the model that is proposed in this paper.

2. Methods

Descriptive design using the survey method was employed in gathering the baseline data for this study. The level of life skills of students were determined through the use of a researcher-made instrument which was validated by experts in the field. Reliability was obtained using Cronbach's alpha which yielded an alpha coefficient of 0.88. The survey was administered to a total of 1699 maritime students randomly selected from three Maritime Higher Education Institutions (MHEIs) during the Second Semester of the school year 2016-2017. The level of life skills of these students was determined based on a four-point Likert Scale and interpreted as Very High (3.51-4.0), High (2.51-3.50), Low (1.51-2.50), and Very Low (1.0-1.50). The statistical tools used were the mean, standard deviation, and regression analysis. Furthermore, the indicators of the description of the levels of life skills are shown below:

Table 1 *Mean Scale, Description, and Indicators*

| Mean Scale | Description | Life Skills | | | |
		Interpersonal Communication/ Human Relations	Problem-Solving/ Decision-Making	Physical Fitness/Health Maintenance	Identity Development/ Purpose in Life
3.51 – 4.0	Very High	Very easily relates with everyone in his immediate environment; Maintains a positive social relationship at all times	Very quick at identifying problems and seeking possible solutions; Very good at setting his goals; Very effective in managing and resolving conflicts that may arise	Very good at coping with stress and maintaining proper health and nutrition for a sound mind and body; Strongly adheres to good health habits	Possesses a very high self-esteem; Very effective in making moral choices and in expressing himself and his individuality to other people
2.51 – 3.50	High	Easily relates with people he trusts in his immediate environment; Maintains a positive social relationship most of the time	Can identify problems and possible solutions with a little help from others; Able to help manage and resolve conflicts	Able to cope with stress; Conscious of maintaining good health habits and practices most of the time	Possesses a high self-esteem; Able to make moral choices and express himself and his individuality to other people
1.51 – 2.50	Low	Has some difficulty in relating with people in his immediate environment; Occasionally isolates himself from others	Is slow at identifying problems and thinking of possible solutions; has difficulty in managing and resolving conflicts	Has a problem coping with stress; Often disregards the importance of maintaining good health habits and practices	Often regards himself as inferior to others; Has difficulty in making moral choices and in expressing himself and his individuality to other people
1.0 – 1.50	Very Low	Does not attempt to socialize with others; Most of the time isolates himself from the group	Lacks the ability to identify existing problems or think of possible solutions; Unable to manage or resolve conflicts	Does not know how to deal and cope with stress; Does not give importance to maintaining good health habits and practices	Has a very low opinion of himself; Cannot express himself and his individuality to others; Withdraws in the background when forced or compelled to work with other people

3. Results

3.1 Life Skills of Maritime Students

The mean scores shown in Table 2 indicate the level of life skills of the maritime students as perceived by the different respondents in terms of four dimensions. As a whole, the data showed that the maritime students have a **HIGH l**evel of life skills as shown by the

composite mean score of 3.08. Among the four dimensions, the Interpersonal Communication/Human Relations had obtained the highest level of life skills (M = 3.11). This means that students can easily relate with people that they trust in their immediate environment and that they are capable of maintaining a positive social relationship most of the time. On the other hand, Physical Fitness/Health Maintenance obtained the lowest mean (M= 3.06). This implies that even if the overall (M = 3.08) has a high level of life skills, there is still a need to enhance the student's life skills.

Table 2 *Level of life skills of maritime students*

Dimensions	Mean	SD	Description
Interpersonal Communication/Human Relations	3.11	0.50	High
Problem-Solving/Decision Making	3.07	0.50	High
Physical Fitness/Health Maintenance	3.06	0.49	High
Identity Development/Purpose in Life	3.08	0.49	High
Total	3.08	0.47	High

For these data, R is 0.957. The value of R^2 is 0.917, which indicates that 91.7% of the variation in life skills can be attributed to the problem-solving/decision making. This means that the ability to make decisions and solve problems plays the most important roles in order to improve the students' life skills.

It is the role of the academe to develop and demonstrate the problem-solving and decision making skills among the maritime students.

Table 3 *Predictors of students' life skills*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.957ᵃ	.917	.917	.13682

a. Predictors: (Constant), Problem-Solving/Decision Making
b. Dependent Variable: Overall Mean

3.2 The Model: Pillars of Life Skills for Tougher and Longer-Serving Seafarers

Given the results of the first objective as baseline data, this study proposes a model which identifies four strong pillars that need to be established and strengthened to develop the life skills of future seafarers.

3.2.1 Personal Factors

The proposed model begins with the premise that there are personal factors that influence the acquisition of life skills among individuals. Some of these factors are personality, attitude, aptitude, motivation, commitment, and competence.

Personality

Personality is an abstraction that is used to explain consistency and coherence in an individuals' pattern of affects, cognitions, desires, and behaviors. What one feels, thinks, wants, and does changes from moment to moment and from situation to situation but shows a pattern across situations and over time that may be used to recognize, describe, and even to understand a person. Researchers have investigated the relationship of Jung's theory of individuals' preferences and their approach to problem solving and decision-making (Lawrence, 1982, 1984; McCauley, 1987; Myers and McCauley, 1985. One conclusion that maybe drawn from these investigations is that individual differences in problem solving and decision making must be considered to adequately understand the dynamics of these processes (Stice, 1987).

Attitude

Attitude refers to the adaptability and sensitivity of the students towards change in any school organization (Pamplona & Magallanes, 2010). Positive attitude drives total change within an individual or learner's behavior. It is a manner of action towards students' courses that affects attitude (Aguro, et al., 2016).

Aptitude

Aptitude is defined as the domain that influences on individual differences and exceptional talent. It has a relationship with performance and extensive practice. The aptitude leads to human physical performance and strong genetic influences (Vinkhuyzen, van der Sluis, Posthuma, Boomsma, 2008). In the study of aptitude, sex differences were observed across nearly all domains.

Motivation

Motivation refers to the reason that underlies behavior as characterized by willingness and volition. Motivation is considered as an attribute that moves students to do something. It energizes and sustains students' activities towards scientific and educational exploration and challenges that lead to better learning outcomes and results (Lai, 2011).It is a positive influence on the students' academic performance, adjustment, and well-being. It has a positive correlation between motivation and performance (Kasurkar, 2011; Ten Cate, Vos, Westers, & Croiset, 2011; Klusmann, Kunter, Beyer, Trautwein, & Baumert, 2012).

Commitment

Commitment has a desirable impact in the individual's performance and organizational behavior. It has an immediate impact to the workers' satisfaction and motivation. Researchers agreed that workers' motivation could be explained by the organizational behavior, which is,

therefore, a consequence in the bond of commitment (Leite, N., de Aguilar Rodrigues, A., de Albuquerque, L., 2010; Lengnick-Hall, Andrade, & Drake, 2009; Rosa & Brito, 2010).

Competence

The demand for continuous learning is an integral part of competence. The individual should continuously develop his work as well as his theory of practice. The ability to think and work independently and collaborate with others are essential qualities that lead to the development of competence (De Angelis, 2003).

3.2.2 The Role of the Academe in the Development of Life Skills

The school plays an important role in contributing life or coping skills. In the maritime field, the school is referred as the Maritime Higher Education Institution or MHEI. Through MHEI's, the maritime education and training (MET) contribute to the life or coping skills of its students for them to stay longer onboard ship. The KNOWME Project (2017) investigated the state of policies and strategies for training, education, and knowledge development in the North-West Europian countries such as Netherlands, Belgium, Denmark, Germany, Poland, Portugal, Russia, Norway, Sweden, UK, Lithuania, Estonia, Latvia, and Greece. Most of these countries listed specific competencies in their maritime education and training in the school curricula such as keeping the quality of education at a high level, promoting maritime research and science, environmental protection, and others. Lobrigo (2014) mentioned that MET continues to be a mechanism for ensuring coherent working and living conditions for seafarers.

Life Skills as a Curricular Requirement

Since a maritime university inculcates competence in the seafaring profession among its students, the curriculum must focus on and must have a strong foundation in maritime education and training (MET). A maritime university sees to it that the curriculum is anchored on national standards, (STCW 1978 as amended in 2010), and other national regulating bodies such as the Commission on Higher Education Memorandum in its Memorandum Order, No. 20, 2015 (Consolidated Policies, Standards and Guidelines for the Bachelor of Science in Marine Transportation (BSMT) and Bachelor of Science in Marine Engineering (BSMarE) Programs. European maritime universities, on the other hand, follow the mandates of the EU or the European Union (Ziarati, Ziarati, and Singh, 2013). MET can influence the quality of education of seafarers as well as their well-being (Ziarati, Ziarati, and Acar) (n.d.).

Utilization of research findings to increase life skills of future seafarers

Research plays an important role in higher education institutions because it can raise the standard of education most especially to its learners, develop new technology to solve problems and create change among its beneficiaries, both in the academic and non-academic aspects. The significant contribution of research is apparently seen in maritime higher education institutions in studies conducted in different maritime institutions (Acar, Ziarati, and Ziarati (n.d.). Cwilewicz and Lisowski (2002) stressed the importance of onboard training and research starting in secondary up to post-graduate education. Research brings life skills in terms of writing, thinking, and reading that adds life skills among its future seafarers.

3.2.3 Socio-Cultural and Economic Factors and Their Influence on Seafarers' Life Skills and Decision to Stay Longer at Sea

How a seafarer could cope with the challenges of his career bears upon his decision to stay or not to stay in the seafaring job. His ability to cope can be influenced by certain social, cultural and economic factors such as: support of family and friends,seafarers' social image and financial security, healthy environment and relationship in the workplace.

Family problems, shore alienation, and separation from family and community of friends, are some of the ongoing causes of stress among seafarers. On the average, the contract with oceangoing vessels could take six months to as long as 12 months or even longer. During the voyage, the seafarers experience all the odds: long hours of fatigue, family issues, discrimination, poor communication (Manalo, Mercado, Paragas, Tenorio, & Dotimas, 2015), harassment, discrimination and bullying (Bullying, Discrimination and Harassment Survey, 2010), time, distance, months of separation, the loss of contact and the loss of communication, and family problems reaching them (Thomas, Sampson & Zhao, 2010).

According to Thomas (2003), the family is the single most significant influence in a seafarer's life. Positive social support of wife and children plays a major role in one's ability to make healthier choices. In addition, social support extended by relatives and friends can create a "feeling of importance," reassuring the seafarer that all his sacrifice matters, providing him a good reason to serve longer and advance in his career.

The social image of a seafarer is associated with tangible and intangible benefits of financial security such as big salary, attractive benefits and privileges, luxurious homes and cars, and the best schools for their children. This is the kind of image that is impressed upon students who are recruited for a seafaring career, and while it could likely develop a strong employment brand that will increase the levels of recruitment and retention (Thai,

Balasubramanyam, Yeoh, & Norsofiana, 2013), it can also be a seafarers' deciding factor between serving their career longer or giving it up.

In some cases, sustaining a high-maintenance life is one of the factors that drive seafarers to continue with their career. When their social circle paints a picture of them in the high-end of the society, it becomes more of trying to live up to this social image. Eighty to 90 percent of seafarers who had been asked said that the decision to serve the sea longer is more of providing their families a cloak of financial security growing economic needs.

In the light of these issues, seafarers need to make sound decisions in setting their goals not just on the basis of how seafaring can benefit them but also on how they can positively contribute to the industry. There might also be a need to redefine the social image painted about the seafarers because, in reality, they are just as vulnerable as everyone else in their struggles to survive in their personal life and advance in their career.

A Healthy Work Environment is one that is safe, empowering, and satisfying. It is not merely the absence of real and perceived threats to health, but a place of "physical, mental, and social well-being," supporting optimal health and safety. In a healthy work environment, a culture of safety is paramount, in which everyone has a responsibility to perform with a sense of professionalism, accountability, transparency, involvement, efficiency, and effectiveness.

An unpleasant working environment and relationships in the workplace could create physical and emotional exhaustion. A study conducted by Oldenburg, Jensen and Wegner (2013) found out that long working days, lack of care taken by the shipboard superiors and/or the shipping company, high responsibility for work organization with those involved in leadership, and social problems due to the long periods of separation from their families were associated with emotional exhaustion.
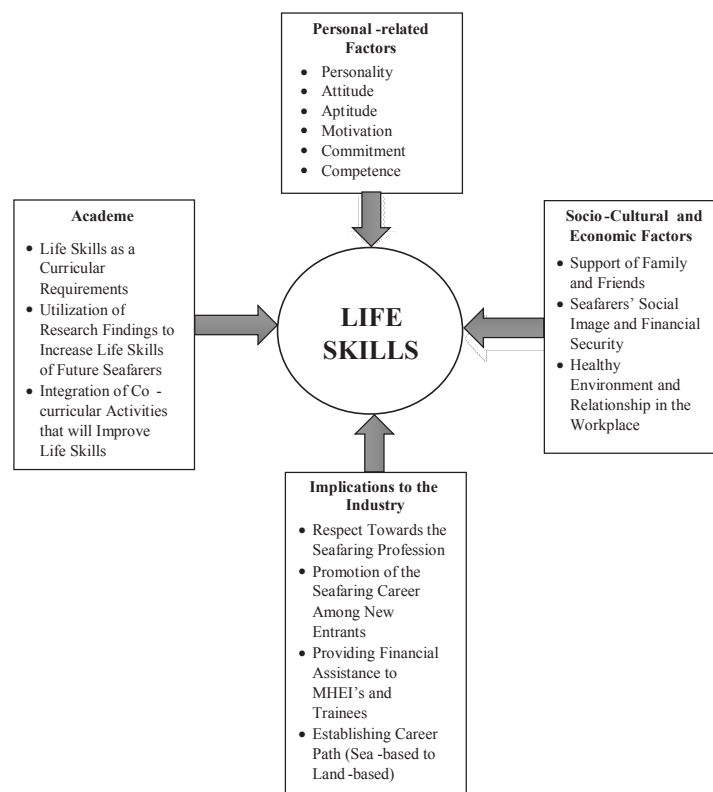
3.2.4 Implication to the Industry

In the last decade the shipping industry has on several occasions warned against an impending shortage of qualified labor on board EU-flagged ships. The relative attractiveness of the seafaring profession has steadily decreased over the years, partly due to the specificities of the profession itself (such as long periods of time away from home) and partly due to misperceptions and a general lack of information (Verhoeven, 2005).

Trained officers seem to quit sea work only after few years (Weber and Nevala, 2006 in Ljung and Widell, 2014) and young people do not any longer seem attracted by the sea as young people were before. Some estimations show that the medium time an educated sea officer stays at sea is eight years (Swedish Maritime Administration, 2010 in Ljung and

Widell, 2014). The same findings was found out in a study onducted by the European Transport Workers Federation (ETF) and European Community Shipowners Associations (ECSA) that the most frequently mentioned period for which they expected to remain at sea was 5-10 years, with the second most frequently mentioned period was 2-5 yrs. In the Philippines, a study conducted by De Guzman (2017) found out that the average number of years spent at sea by the seafarer officers was between 15-20 years with five (5) years as minimum and thirty eight (38) years as maximum. It is therefore seen as a very significant contribution to the recruitment of the new entrants to the seafaring profession if the proposed model will be utilized by all the sectors concerned.

Other considerations that may lead to the development of life skills of seafarers that will eventually lead to longer sea service are:respect towards the seafaring profession, promotion of the seafaring career among new entrants, providing financial assistance to MHEIs and trainees, and establishing career path and succession planning.

Personal -related Factors
- Personality
- Attitude
- Aptitude
- Motivation
- Commitment
- Competence

Academe
- Life Skills as a Curricular Requirements
- Utilization of Research Findings to Increase Life Skills of Future Seafarers
- Integration of Co - curricular Activities that will Improve Life Skills

LIFE SKILLS

Socio-Cultural and Economic Factors
- Support of Family and Friends
- Seafarers' Social Image and Financial Security
- Healthy Environment and Relationship in the Workplace

Implications to the Industry
- Respect Towards the Seafaring Profession
- Promotion of the Seafaring Career Among New Entrants
- Providing Financial Assistance to MHEI's and Trainees
- Establishing Career Path (Sea -based to Land -based)

4. Implications/Future Directions

The development of life skills among future seafarers is critical factor that could determine their decision to stay or not to stay in the seafaring industry. Hence, it is important that this should be highly prioritized as part of their training preparations. Future directions on this issue should comprise the following:

- Strengthening of the screening process, e.g. conduct of the following tests: motivation check, personality test, aptitude test, AQ, EQ, and RQ aside from entrance test
- Enhancement of pedagocial approaches and strategies to develop problem-solving and decision-making skills in all subjects
- Collective involvement of parents, faculty and the community in various extra-curricular activities to provide support to students in the development of their life skills
- Provide students more challenging activities in the classroom to make the lessons more relevant and realistic
- Conduct more studies on factors that could predict life skills
- Do discriminant analysis to identify the characteristics of seafarers and non-seafarers and use these as indicators for testing the aptitude of new student recruits

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