Navigation and Seamanship Concepts Learned and Students' Level of Satisfaction in Training Ship

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ABSTRACT: This study aimed to determine the concepts learned in Navigation and Seamanship as well as the level of satisfaction of students' in using the training ship in terms of food, accommodation, readiness of venue, quantity of equipment, activities, speakers, and ships' crew. The respondents of this study were the 129 students of JBLFMU-Arevalo. They were selected through stratified and cluster sampling. A questionnaire was sent to the respondents through e-mail and Facebook messenger to gather the data. The comments of the students were classified according to themes. For BSMT 1 – Familiarization and Ship Tour, in Navigation, the themes are learning the ship nomenclature and manipulating the different navigational equipment onboard, inculcating skills to plan and manage a ship for safety voyage, employing the concepts learned about the various ship positioning to arrive at the port or point of destination, and refining the importance of learning the qualities of a competent navigator. In Seamanship, the themes are enhancing concepts learned about the importance of prioritizing safety on board and learning the International Maritime Law, learning the important purposes and uses of the different navigational equipment on board, improving skills on proper operation of the ship, and uplifting the duties and responsibilities of officers and crew members on board. For BSMT 2, Port and Anchor Watch, in Navigation, the themes are, learning the uses and importance of the different navigational equipment on board, different types of navigation use to navigate accurately, employing the concepts learned about the various ship positioning to arrive at the port or point of destination, uplifting the duties and responsibilities of officers and crew members on board, and defining navigation for watercraft. In Seamanship, the themes are learning about anchor operations, familiarizing different parts of the ship, integrating seamanship skills in navigation, enhancing concepts learned about the importance of prioritizing safety on board, learning mooring operation, and definition of seamanship. For BSMT 3, Navigational Trip, in Navigation, the theme is learning the different navigational equipment on board and for Seamanship, improving seamanship skills. Having different themes for every year level indicates that the students have actually learned various knowledge about Navigation and Seamanship during their stay onboard the training ship. For the students' level of satisfaction, the grand mean is described as "High". This means that some aspects are good in terms of food, accommodation, venue, quantity of equipment, activities, speakers, and ships' crew. This study concludes that the concepts learned by students' in Navigation and Seamanship varies in each activity. Furthermore, the students were highly satisfied in using the training ship's amenities in terms of food, accommodation, readiness of venue, quantity of equipment, activities, speakers, and ships' crew. The researchers recommend another follow-up study to include respondents from other units as well and some other non - JBLFMU/JBLCF students utilizing the training ship to further validate the results, reduce the number of students participating in every activity to optimum to maximize the outcome intended for each activity, and finally, create a multiple choice questionnaire to assess better the concepts learned and to be given personally to the respondents.

1 INTRODUCTION

For more than a year, the JBLFMU training ship has been utilized by all three JBLFMU academic units to maximize the learning experiences and to improve the skills of the students. The training ship is used to train students as a sailor and future maritime officers and at the same time housing the students during the course of their activity onboard the training ship.

The training ship serves as an instrument in the hands-on application and the development of the student's knowledge in Navigation and Seamanship. It is utilized to supplement the theoretical knowledge of the students discussed inside a classroom. The training ship has been purchased for each school to have standardization of training, at-sea experience, familiarization training, and expose them to the real operations while the ship is in port, at anchor, or at sea.

The knowledge of the students is further enhanced and improved if paired with a hands-on application. According to data released in 2014 "Learning in America Survey" 52% out of the 1,011 respondents listed active participation through hands-on training as the best learning method, and listening inside a classroom is only 16% of the total respondents [1].

A manual/handbook on Best Practice Guide for Recruitment, Welfare, and Ability of Cadets deals with cadets as learners toward the beginning of their adventure in the sea business. Subsequently, the industry division has that commitment to give a steady preparing stage to the improvement of abilities, information, and comprehension in a proper preparing condition and culture with center and prosperity. Cadet preparing software engineers ought to likewise support an association's long haul keeping an eye on the system [2].

Mr. Dario Alampay of the Filipino Ship-owners Association (FSA), urged vessel proprietors to give billets to cadets. He expressed that if the nation is truly keen on keeping up its title as the world's main provider of profoundly qualified sailors, vessel administrators should do everything conceivable to give sea cadets shipboard compartments required by the last to pick up their seagoing experience [3].

World sea specialists state that the transportation exchange is as yet confronting a worldwide deficiency of 10,000 officials. In spite of measures done by the business to control the mass migration, there has consistently been a battle to draw in fresh recruits of graduates from various sea countries have neglected to fulfill the need of qualified officials in the Philippines presently considered as the chief provider of the world's sailors. Sea foundations have been delivering about 40,000 cadets for every year around 10% or just 4,000 lean toward their profession adrift. Today, benchmarking the exhibition of the worldwide field of nautical countries has been the most recent pattern in transportation [4].

Consequently, it goes without saying that the intended learning outcome of the course can be achieved best during a hands-on situation. Carefully designed activities and assessments prepared for the students during their stay onboard the training ship must be done, making sure all students are able to perform the said activity individually and in the presence of a competent officer/instructor.

The activities on board the training ship must be properly regulated, controlled, and organized to maximize the stay of the students and their learnings, adhering to all shipboard rules and regulations. Thus, this study was conducted.

This research aimed to determine the knowledge of the students in Navigation and Seamanship and their level of satisfaction onboard the training ship.

2 MATERIALS AND METHODS

2.1 *Research Design*

This research utilized survey as a research design. A survey involves asking people for information through a questionnaire, which was distributed on paper [5]. Survey was used because the concepts learned in Navigation and Seamanship in various activities while utilizing the trainings ship were determined from BSMT students while the level of satisfaction in various activities while utilizing the trainings ship were identified from Bachelor of Science in Marine Transportation (BSMT) and Senior High School (SHS) students.

2.2 *Participants*

The respondents of this study were the 129 students composed of 76 BSMT and 53 SHS students. These BSMT students have experienced various activities at the training ship. They were selected through stratified and cluster (by section) random sampling techniques. These BSMT students answered on what concepts they had learned in Navigation and Seamanship in various activities at the training ship. For BSMT 1 students (Familiarization and Ship Tour), 18 students were selected. Fifty two (52) BSMT 2 students for Port and Anchor Watch and six BSMT 3 students for Navigational Trip.

Meanwhile, the same sampling procedure was applied in selecting the 53 SHS students composed of 23 Grade 11 and 30 Grade 12 students. It must be noted, that SHS students answered only the level of satisfaction of the various activities in the training ship.

2.3 *Instrument*

The researcher-made questionnaire was used to determine the concepts learned in Navigation and Seamanship for Familiarization and Ship Tour, Port and Anchor Watch, and Navigational Trip through the 4-item open-ended questions.

On the other hand, a four-point Likert scale was used to determine the level of students' satisfaction on the various activities such as Familiarization and Ship Tour, Port and Anchor Watch, Navigational Trip, Ship Tour, and Ship Immersion where they answered each statement that range from 1 to 4 where 1 is Very Low and 4 is Very High. Each activity consists of seven ships' amenities: food, accommodation, readiness of venue, quantity of equipment, activities, speakers, and ships' crew.

This researcher-made questionnaire was validated by three experts in research and grammar and underwent reliability-testing through Cronbach alpha with a reliability index of 0.84.

2.4 *Data Collection*

Data were collected from the open-ended questionnaire to generate concepts learned in Navigation and Seamanship. Moreover, another set of questionnaire was used to capture the satisfaction level of maritime students in utilizing the training ship for various activities such as Familiarization and Ship Tour, Port and Anchor Watch, Navigational Trip, Ship Tour, and Ship Immersion. The questionnaire was administered to the respondents through e-mail and Facebook messenger and the response were retrieved through the same platform.

2.5 *Data Analysis*

In the qualitative data, themes were generated from the concepts learned in Navigation and Seamanship while mean, descriptive rating, and indicators were used for interpreting the students' satisfaction level as shown in Table 1.

Table 1 Mean, Descriptive Rating, and Indicators for Students' Satisfaction Level

Mean Scale	Descriptive Rating	Indicators
3.51-4.00	Very High	All aspects are good in terms of accommodation, food, venue, equipment, activities, speakers and ships' crew.
2.51-3.50	High	Some aspects are good in terms of accommodation, food, venue, equipment, activities, speakers and ships' crew.
1.51-2.50	Low	Many aspects need improvement in terms of accommodation, food, venue, equipment, activities, speakers and ships' crew.
1.00-1.50	Very Low	All aspects need improvement in terms of accommodation, food, venue, equipment, activities, speakers and ships' crew.

3 RESULTS AND DISCUSSION

Navigation and Seamanship concepts learned by the students' in using the training ship from various activities were classified according to themes.

3.1 *Familiarization and Ship Tour*

3.1.1 *Navigation*

Learning the ship nomenclature and manipulating the different navigational equipment on board. Twelve respondents highlighted ship nomenclature and the different navigational equipment on board ship (i.e., saw the different parts of the ship and the different equipment used in navigation; know the functions and importance of different navigational equipment on board; tried and utilized all the navigation equipment on board such as radar, gyro compass, ARPA, ECDIS, echo sounder, etc.; and learn how to compass reading, plotting, GPS reading, Correcting the compass and Map reading). Fan, Huang, Jiang, and Xu [6] in their report, the introduction of three-dimensional models and actual ship driving systems was suggested and analysis was presented on "virtual-real" and "dynamic-static" technologies and equipment for ship navigation. The hydrological variables, topographical characteristics, rivers, traffic patterns, and ship driving data are effectively incorporated in the proposed process, concentrating on achieving key developments such as the convergence of simulations and actual ship driving as well as the fusion of multi-source knowledge.

Inculcating skills to plan and manage a ship for safety voyage. Three respondents stated that they learned how to plan and manage a ship for a safety voyage (i.e., controlling a ship to have a safe voyage and the importance of planning, managing, and directing a vessel's voyage). Lazarowska [7] presented the design and evaluation of modern ship route preparation and collision avoidance algorithms. The results of his findings have contributed to the development of new technologies in the field of autonomous ship navigation that will lead to making shipping safer and more efficient.

Employing the concepts learned about the various ship positioning to arrive at the port or point of destination. Two respondents stated that they had learned the concept of ship positioning (i.e., the use of fixed position, dead reckoning position, estimated position, and the purpose of navigation which is to get the speed, direction to arrive at the port, and determine the present position). One of the key duties of marine administration services is to ensure maritime safety in areas where vessel traffic is monitored. In these parts of the sea, coastal radar stations, part of the facilities of the vessel traffic detection and control scheme, are used to detect the movements of ships [8].

Refining the importance of learning the qualities of a competent navigator. One respondent learned some of the qualities of a navigator like the importance of being competent navigator on board vessel. The mental workload assessment during ship handling training typically depends on professionals (captain, pilot) with a lot of experience on board [9]. In addition, Ihor et al. [10] claimed that based on the results of the experimental research of successful interaction creation of 'The Ship's Captain and the Pilot' through training technologies, it will promote solving problems in the training of ship handlers, as well as in improving captain skills.

3.1.2 *Seamanship*

Enhancing concepts learned about the importance of prioritizing safety on board and learning the International Maritime Law. Eight respondents learned about the importance of safety on board (i.e., familiarizing and understanding the basic safety procedures in the ship; the safety of oneself, crew and the ship; the importance of wearing safety gear such as safety helmet and high-visibility clothing, the importance of safety onboard the vessel by properly following the rules and instructions onboard the vessel, always prioritizing safety on board and learning the concepts of International Maritime Law).

Although the advancement of techniques and technology has greatly improved ship navigation during sailing, seafarers are now expected to be well versed in a growing array of maritime regulations and procedures promoting the safety of life and property at sea and the conservation of the marine environment, while at the same time ensuring the unimpeded exploitation of ships. For the Master, as the person with the highest responsibility on board a ship, that particularly applies [11]. Learning the important purposes and uses of the different navigational equipment on board. Five respondents learned the ship's nomenclature and uses of different equipment on board (i.e., the use of tools on board; different equipment on board and their uses like vests, life raft, etc.; the operation of deck equipment; ship's nomenclature purposes and uses; and the different ship's line.) Lee, Kim, Lee, and Cho [12] mentioned the primary cause for marine accidents is human error with regard to the running of the ship. The human error of the officers in charge of the watch is linked to the capacity of the officers to manage navigational equipment. A vital function is played by navigational devices to help officers determine what to do for safe navigation. Therefore, the ability to manage navigational equipment means not only the application of equipment, but also the full understanding of the device, such as the analysis of information obtained from equipment, the effective use of information in the light of navigational circumstances.

Improving skills on proper operation of the ship. Three respondents stated that they learned about the concept of operating and handling the ship (i.e., how the bridge of the ship operates and what it does in order to navigate the ship to the right course, watch keeping and ship handling). Quality assurance of ships and equipment and the development of management schemes can only work if expertise and experience are contributed by the responsible persons involved in shipping. The IMO has placed a lot of effort into legislation and guidelines that help the growth of workers [13].

Uplifting the duties and responsibilities of officers and crew members on board. Two respondents learned the duties and responsibilities of an officer on board (i.e., the duties and responsibilities applied by a seafarer and the ship-board organizational structure or the roles and crew members on board.) The crews of the ship are the personnel who sail on board a ship and are mainly responsible for its service while the ship is at sea (with some responsibility when at port). A decreased workload for the shipping crew can be accomplished during the port stay of the vessels by shifting some routine duties to shore-side personnel. In addition, the accessibility of welfare services and clearer knowledge about their offerings should be given greater importance. Measures to encourage visits to maritime health facilities should be taken as an effective refuge for seafarers [14].

3.2 Port and Anchor Watch

3.2.1 Navigation

Learning the uses and importance of the different navigational equipment on board. Twenty respondents learned the concepts, uses and importance of different navigational equipment on board (e.g. the concepts of navigational equipment such as ECDIS, Radar, GPS, AIS; the difference between the magnetic and the gyro compasses; using the instrument sextant; how to use the different navigational equipment on board and its importance; learned how to use and operate the Radar/ARPA and other equipment onboard; learned how to detect targets, gather information about the targets' distance, other objects and how to avoid collision; learned how to use X band and S band radar as well as of Gyrocompass in coastal; how to use NAVTEX to receive intended type of messages, Weather Facsimile to obtain a weather chart, Gyro Compass, GPS, taking azimuth of celestial body and computing its error and other use of other navigational equipment; how to take bearings on terrestrial objects accurately and have gained a lot of knowledge on how to use the basic operations of ECDIS and ARPA especially passage planning; using sextants and celestial calculations such as Nories Table has also given me a primary idea how to solve errors on charts; solving of problems with the aid of almanac; operational use of Radar/ARPA and other Equipment onboard, how to detect targets and display the information on the screen such as the distance of the ship from land, any floating objects and other vessels to avoid a collision; the used of maps or charts and recognized different symbols and signs; the used of compass and other navigational tools; knowledge on how to use Radar to determine distances of certain objects whose position is known; and learned different navigational terms; the use of parallel indexing technique in the marine radar in order to monitor the progress of the vessel on its course or track; learned about the calculations we need to apply on board in the future as a seafarer and how to operate equipment such as the sextant). Fan et al. [6] in their report, the introduction of three-dimensional models and actual ship driving systems was suggested and analysis was presented on "virtual-real" and "dynamic-static" technologies and equipment for ship navigation. The hydrological variables, topographical characteristics, rivers, traffic patterns, and ship driving data are effectively incorporated in the proposed process, concentrating on achieving key developments such as the convergence of simulations and actual ship driving as well as the fusion of multi-source knowledge.

Different types of navigation use to navigate accurately. Nineteen respondents stated that they learned the concepts of different types of navigation use to navigate accurately (e.g. celestial navigation, terrestrial navigation, electronic navigation, dead reckoning, GPS, maps and compass, how to solve celestial navigation problems with the data we gathered using the sextant and became familiar on some formulas regarding celestial navigation.) Navigation is a field of study which focuses on the process of monitoring and controlling the movement from one place to another of a craft or vehicle. Four general divisions form the field of navigation: land navigation, maritime navigation, aeronautical navigation and space navigation. It is also the term of art used to conduct navigation duties for the advanced skills used by navigators. Compared to known positions or patterns, all navigational strategies include finding the position of the navigator. In a wider context, navigation may refer to any capacity or

analysis involving the determination of location and direction. Navigation requires orientation and pedestrian navigation in this context [15]. Employing the concepts learned about the various ship positioning to arrive at the port or point of destination. Nine respondents stated that they learned the concept of ship positioning (e.g. the 3 types as with different ways to describe location; how to plot your position manually on the chart and there are several types of determining your location manually just like running fix and navigating the ship by the use of the ECDIS by the help of the GPS; several concepts like position identification through the use of cross-bearing; the application of waves and currents to the positioning of a ship when anchored but not in a docking site, how to use a sextant, how to solve and calculate position using the sextant and the sun, and how the radar manually operates; practice estimating distances through getting the compass bearing of the navigational landmarks; getting the azimuth distances of celestial objects through navigational stars or sun to know your ships position; how to get your position by the use of light house; the use of maps or charts and recognized different symbols and signs; the use of compass and other navigational tools; knowledge on how to use Radar to determine distances of certain objects whose position is known; and how to get your position by the use of light house; the use of maps or charts and recognized different symbols and signs; the used of compass and other navigational tools; knowledge on how to use Radar to determine distances of certain objects whose position is known). One of the key duties of marine administration services is to ensure maritime safety in areas where vessel traffic is monitored. In these parts of the sea, coastal radar stations, part of the facilities of the vessel traffic detection and control scheme, are used to detect the movements of ships [8]. Uplifting the duties and responsibilities of officers and crew members on board. Four respondents learned the duties and responsibilities of officer on board the ship (e.g. the importance of fulfilling the duties and responsibilities of each crew for the sake of effective and safe navigation, learned that one should be a responsible officer on board, the proper use of life-saving appliances, and the international Convention from the safety of Life at Sea wherein it was discussed hat we must protect the lives of every personnel and the prevention of marine pollution). The crews of the ship are the personnel who sail on board a ship and are mainly responsible for its service while the ship is at sea (with some responsibility when at port). A decreased workload for the shipping crew can be accomplished during the port stay of the vessels by shifting some routine duties to shore-side personnel. In addition, the accessibility of welfare services and clearer knowledge about their offerings should be given greater importance. Measures to encourage visits to maritime health facilities should be taken as an effective refuge for seafarers [14]. Defining navigation for watercraft. Two respondents (Respondents 36 and 44) stated the definition of navigation which is the movements of watercraft from one point to another; (a vessel is not drifting and under way which varies with the craft type, area of operation, and mission). Navigation is organized and goal-directed movement by organisms or intelligent machines through the world. It requires both movement preparation and implementation. The two elements of locomotion and way finding can be understood to involve it [16].

3.2.2 *Seamanship*

Learning about anchor operations. Eleven respondents stated that they have learned the concept of ship anchoring operations (e.g. learned how to anchor watch; the concept on how to drop the anchor; proper ways of anchoring the ship; introduced with the proper operation of the anchors and cables; have a glimpse of the principles and guidelines during anchoring, give us an idea on how, where, and when is the best way and place to anchor the ship; how to drop the anchor the safest way and as well as familiarizing the parts of the bow and anchor of the ship; ship's position during anchorage with regards to the direction of the wind; learned on what to do's and what not to do during anchoring operations; and learned how to anchor a ship and that the tides' direction varies by the day so a good sailor should know where to anchor it safely and foresee possible tide influence that may put the ship in danger). The phrase 'anchor handling' covers a wide range of procedures, including the following: removing the anchor from the rig, transporting and deploying the anchor to its proper position, retrieving and transporting the anchor from the sea floor to the surface, carrying the anchor on board the recovery vessel, and bringing the anchor back to the ship. Both of the above include some anchor handling procedures, while some procedures involve only any of the above [17].

Familiarizing different parts of the ship. Twelve respondents learned and familiarize the ship's nomenclature (e.g. the parts of the ship and their terminologies; manage to learn the different parts of the ship and their uses; the basic information about the ship: its vessel's name, call sign, length overall, gross tonnage, net tonnage and etc.; chance to be familiarized with the ship's components and nomenclature especially what makes up the accommodation and the bridge of the ship; familiarized ourselves with the overall structure of the ship; different machinery and parts of the bow and body of the ship in actual observation; and learned about the equipment on the forward and aft parts of the vessel which includes the tension winch, anchor, cable, etc.). Although the rudder, anchor, bow, keel, accommodation, propeller, mast, bridge, hatch covers, and bow thrusters are typical visible parts of a hull. In the other hand, the ship consists of an intangible yet rigid part; bulkheads, supports, cargo holds, hopper tank, double bottom, girders, cofferdams, side hull, etc. With traditional words such as front, left, right, and back, understanding ship building is complicated and uncomfortable; so we can look at some of the common nautical terms used on the ship [18].

Integrating seamanship skills in navigation. Eleven respondents learned the concept of watch keeping (e.g. the importance of deck watch duty and the basic steps on steering the ship; learned about Deck Watch keeping time; practicing good watch keeping during night time and how to maneuver the ship; the different position and respective duties each member must do; learned many important protocols while having the bridge watch keeping and the information that needs to be recorded while having the watch; communication

equipment that was used and the duties of the officer to perform navigation watch; and able to participate watch duties supervised by our STO and the Officer on watch). Seamanship only involves the expertise and experience that a seaman requires. This is apparent since most seamanship books appear to be textbooks that do not explicitly describe the term, but rather only present the range of skills and expertise needed to function at sea. Seamanship is, in addition, a seaman's mix of expertise, experience, and overall specialist mentality. Seamanship is one that cannot be learned in books, but instead, it is an increasingly acquired mentality [19].

Enhancing concepts learned about the importance of prioritizing safety on board. Nine respondents learned about the importance of safety on board (e.g. the concepts regarding safety protocols; lifesaving arrangements; have learned that in order to maintain the safety of the ship we must practice it; having Knowledge in doing some task will not lead you to a risky outcome; basic knowledge on what to do during emergencies, where to go and what to do; the value of awareness and safety, following of protocols is a very necessary thing to do to promote good seamanship). Although the advancement of techniques and technology has greatly improved ship navigation during sailing, seafarers are now expected to be well versed in a growing array of maritime regulations and procedures promoting the safety of life and property at sea and the conservation of the marine environment, while at the same time ensuring the unimpeded exploitation of ships. For the Master, as the person with the highest responsibility on board a ship, that particularly applies [11].

Learning mooring operation. Eight respondents stated that they have learned about mooring operation (e.g. familiarization of mooring equipment; learned on what to do's and what not to do during mooring and anchoring operations; mooring and handling of the basic operations of the ship itself were introduced to us by the instructors; how to store ropes and the proper knot tying; the use of pilot ladder and proper embarkation and disembarkation onboard). Because of the high accident risks, vessel mooring is one of the most risky procedures for ships and terminals. During mooring operations, several incidents have occurred that cause serious consequences such as deaths, injury, emissions and financial loss due to numerous reasons such as lack of maintenance of mooring equipment, untrained and inexperienced workers, equipment failures, heavy weather conditions, inadequate coordination, errors in the safety process and risk management failures [20].

Definition of seamanship. Two respondents stated the definition of seamanship that seamanship is the art of operating a ship or boat (i.e., the degree of knowledge needed within these areas is dependent upon the nature of the work and the type of vessel employed by a mariner and seamanship is the knowledge involved in handling and storing ropes, tying knots and performing practical tasks such as mooring and anchoring). Seamanship only involves the expertise and experience that a seaman requires. This is apparent since most seamanship books appear to be textbooks that do not explicitly describe the term, but rather only present the range of skills and expertise needed to function at sea. Seamanship is, in addition, a seaman's mix of expertise, experience, and overall specialist mentality). Seamanship is one that cannot be learned in books, but instead, it is an increasingly acquired mentality [19].

3.3 Navigational Trip

3.3.1 Navigation

Learning the different navigational equipment on board. Six respondents learned how to use the different navigation equipment on board and the other respondent mentioned that they learned the concept of monitoring and maneuvering a vessel and plotting at same time. Fan et al. [6] in their report, the introduction of three-dimensional models and actual ship driving systems was suggested and analysis was presented on "virtual-real" and "dynamic-static" technologies and equipment for ship navigation. The hydrological variables, topographical characteristics, rivers, traffic patterns, and ship driving data are effectively incorporated in the proposed process, concentrating on achieving key developments such as the convergence of simulations and actual ship driving as well as the fusion of multi-source knowledge.

3.3.2 Seamanship

Improving seamanship skills. Six respondents learned the knowledge involved in performing practical tasks such as anchoring and mooring, tying knots, and storing and handling ropes. The other respondent mentioned that the officer on board should have a proper look out and helms proper execution to the officer. Seamanship only involves the expertise and experience that a seaman requires. This is apparent since most seamanship books appear to be textbooks that do not explicitly describe the term, but rather only present the range of skills and expertise needed to function at sea. Seamanship is, in addition, a seaman's mix of expertise, experience, and overall specialist mentality. Seamanship is one that cannot be learned in books, but instead, it is an increasingly acquired mentality [19].

3.4 Students' Level of Satisfaction in Using the Training Ship

Table 2 shows the students' level of satisfaction in using the training ship conducted last school year 2019 – 2020. The grand mean is 3.33 with the descriptive rating of "High" which means the students are highly satisfied in using the training ship during their stay onboard. The highest mean is 3.48 which is the Navigational Trip. The lowest mean is 3.08 which is the Port and Anchor Watch. There were only 129 respondents who answered the level of satisfaction.

For Familiarization and Ship Tour, the highest mean is on ships' crew which is 3.56 described as "Very High" while the lowest mean is on quality of food served which is 2.61 described as "High".

For Port and Anchor Watch, the highest mean is on ships' crew which is 3.48 described as "High" while the lowest means are on quality of food served and number of equipment which is 2.69 described as "High".

For Navigational Trip, the highest mean is on accommodation of students before and during the activity which is 3.83 described as "Very High" while the lowest mean is on ships' crew which is 3.17 described as "High".

For Ship Tour, the highest mean is on ships' crew which is 3.70 described as "Very High" while the lowest mean is on quality of food served which is 3.13 described as "High".

For Ship Immersion, the highest mean is on ships' crew which is 3.60 described as "Very High" while the lowest mean is on quality of food served which is 3.17 described as "High".

Table 2. Students' Level of Satisfaction in Using the Training Ship

Activity	Mean	Descriptive Rating	SD
Familiarization and Ship Tour	3.22	High	0.68
Port and Anchor Watch	3.08	High	0.65
Navigational Trip	3.48	High	0.54
Ship Tour	3.47	High	0.55
Ship Immersion	3.41	High	0.60
Grand Mean, Descriptive Rating, and SD	3.33	High	0.60

4 CONCLUSIONS

This study concludes that the concepts learned by the students in Navigation and Seamanship vary in each activity. This means that the students were actively participating from the various discussions conducted inside the classroom as well as in the training ship. In addition, the learning objectives prepared by the instructor for each activity conducted onboard the training ship were appropriate, relevant, and therefore had been achieved. Moreover, the students were highly satisfied in various training ship activities.

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