

Difficulties Experienced by Maritime Students During Shipboard Training: Basis for an Intervention Program

Rolly H. Castillo, MMET

Faculty, Assistant Dean, Assistant Onboard Training Officer, EXACT Colleges of Asia Inc., Arayat Pampanga, Philippines

Email of Corresponding Author: cstllrly@gmail.com

Publication history:

Received: August 14, 2026

Revised: September 12, 2026

Accepted: September 16, 2026

Published: September 17, 2026

International Journal of Sustainable and Integrated Studies, Vol. 1, No. 2, pp. 395–404, September 2026.

Abstract

This study examined the difficulties experienced by maritime students of EXACT Colleges of Asia, Inc. during shipboard training as a basis for developing an intervention program to strengthen cadet readiness, resilience, well-being, and training experiences. Anchored on Bandura's Social Cognitive Theory and an Input-Process-Output model, the study employed a quantitative descriptive-correlational design involving 100 maritime cadets who had completed shipboard training under the Bachelor of Science in Marine Transportation and Bachelor of Science in Marine Engineering programs. Data were collected using a researcher-made 60-item questionnaire with excellent internal consistency (Cronbach's $\alpha = 0.956$) and analyzed using frequency, percentage, weighted mean, Pearson r , and standard deviation. Findings showed relatively low overall difficulty (2.43), although personal and psychological challenges (2.60) and institutional and professional challenges (2.50) remained evident. Technical factors were the strongest contributors to training difficulties (2.82), particularly unclear technical instructions, difficulty applying theoretical knowledge, and limited prior equipment exposure. No significant relationships were found between respondents' demographic and training profiles and the difficulties encountered ($p > 0.05$). Despite these challenges, cadets demonstrated strong coping capacity (3.41) and perceived strong institutional support (3.42). The study proposed the SEA-READY intervention program, comprising TECH READY, MIND READY, COMM READY, and REALITY READY, and recommended strengthened technical preparation, psychological readiness, communication, competency-aligned training, industry collaboration, and continuous institutional support. The study aligns with SDG 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth) by supporting improved maritime education and workforce preparedness. Its sustainability impact centers on strengthening educational and institutional systems, psychosocial well-being, and the long-term preparation of competent maritime professionals.

Keywords: Cadet Readiness; Coping Mechanisms; Maritime Education; SEA-READY; Shipboard Training; Technical Preparedness; Training Difficulties

1. Introduction

Shipboard training is a fundamental component of maritime education because it bridges classroom instruction and actual professional practice at sea. Through supervised onboard experience, maritime cadets apply theoretical knowledge, develop technical competencies, and become familiar with vessel operations, watchkeeping, safety procedures, maintenance, and professional responsibilities. However, the shipboard environment also exposes students to demanding workloads, strict hierarchies, multicultural interactions, prolonged separation from family, communication difficulties, and adjustment pressures that may affect their physical, psychological, social, and academic well-being. Previous studies emphasize emotional unpreparedness, isolation, occupational demands,

and the importance of resilience and adaptability in completing shipboard training successfully (Senbursa and Dender, 2024; Devota, 2025). The present study therefore examined the difficulties encountered by maritime students of EXACT Colleges of Asia during shipboard training as a basis for developing an intervention program that can strengthen readiness, resilience, well-being, and overall training experience.

Shipboard training is a mandatory component of the Bachelor of Science in Marine Transportation (BSMT) and Bachelor of Science in Marine Engineering (BSMarE) programs in the Philippines and is governed by national and international maritime education standards. The Joint CHED-MARINA Memorandum Circular No. 1, Series of 2022 and the Standards of Training, Certification and Watchkeeping (STCW) Convention of 1978, as amended, require supervised practical shipboard experience to develop competencies necessary for certification and maritime employment. At EXACT Colleges of Asia, the “3-1 Scheme” consists of three years of academic work followed by one year of shipboard apprenticeship aboard domestic or international vessels. Before deployment, cadets undergo a Shipboard Training Seminar covering STCW requirements, watchkeeping duties, documentation, employment requirements, safety protocols, workshops, and simulations. Despite these preparations, cadets continue to report stress, homesickness, workplace conflicts, adjustment difficulties, and mental health concerns, indicating that compliance with technical and regulatory requirements alone may not sufficiently address the broader realities of shipboard life.

Shipboard training is widely regarded as the culminating stage of maritime education because it integrates theoretical instruction with actual seafaring practice. Under the STCW framework, it involves organized onboard learning, supervised assessment, and approved seagoing service to develop professional competence (IMO, 2024). In the Philippine context, CHED and MARINA regulate maritime education to maintain conformity with international competency requirements, while the 3-1 scheme combines academic preparation with supervised onboard training for professional certification, licensure, and employment (Piñas et al., 2019). Despite these structures, cadets encounter heavy workloads, inadequate supervision, inconsistent training quality, limited competency exposure, communication difficulties, and challenges in completing Training Record Books (TRBs). Dimo (2025) identifies stressful working conditions, poor mentoring, communication problems, and documentation requirements as significant training challenges, while difficulties with TRB task sign-offs and alignment of onboard duties with learning outcomes demonstrate the need for structured guidance and continuous mentoring. Cadet difficulties arise from interconnected behavioral, personal, environmental, and technical factors. Time management, adaptability, discipline, emotional resilience, motivation, and preparedness influence cadets' ability to manage onboard demands (Bandura, 2001; Piñas et al., 2019). Multicultural crews, hierarchical structures, isolation, and gaps between theoretical learning and practical application further influence adjustment and performance (IMO, 2024). Stress, anxiety, homesickness, and fatigue may affect performance, safety awareness, and learning outcomes (ILO, 2024), while communication barriers and limited proficiency in Maritime English can contribute to misunderstanding and operational inefficiencies (Österman et al., 2022). Workload and insufficient rest can also reduce cognitive performance and vigilance and increase operational errors (IMO, 2024). Cadets manage these challenges through problem-focused strategies such as time management, task prioritization, and seeking assistance, as well as emotion-focused approaches involving acceptance, emotional regulation, and communication with family (Kivak, 2020; García & Santos, 2021). Peer support and informal mentorship also promote adaptation and psychological well-being (ILO, 2024). Institutional support complements these individual strategies through mentoring, supervision, monitoring, simulation-based training, and Bridge and Engine Resource Management (BRM/ERM), which can strengthen technical competence, communication, teamwork, and decision-making (Bačnar et al., 2024; Tusher et al., 2024). Mental health services, peer support, safety measures, anti-harassment policies, confidential reporting, and mental health literacy are likewise emphasized as components of a supportive shipboard learning environment (ILO, 2024; IMO, 2024; Sailors' Society, 2025; ILO, 2022; IMO, 2021).

At the institutional level, EXACT Colleges of Asia provides pre-deployment preparation through its Shipboard Training Seminar and implements the 3-1 scheme to prepare students for actual vessel operations. Nevertheless, reported difficulties during onboard training indicate a continuing need to understand institution-specific cadet experiences. Nationally, Philippine maritime education operates under CHED and MARINA regulations and the structured academic-onboard training system designed to maintain alignment with international maritime competency standards (Piñas et al., 2019). Globally, the STCW Convention provides the framework for organized onboard learning, assessment, seagoing experience, and competency development (IMO, 2024). Across these contexts, literature demonstrates that regulatory compliance and technical preparation coexist with persistent psychosocial, interpersonal, environmental, and professional challenges, emphasizing the need to consider cadets' overall training experience rather than technical competence alone.

The study was anchored on Albert Bandura's Social Cognitive Theory (1962), as cited by Devi et al. (2017), which explains learning and behavior through reciprocal interactions among personal, behavioral, and environmental factors. Personal factors include self-efficacy, prior knowledge, and motivation; behavioral factors encompass coping mechanisms and skills; and environmental factors include social structures, norms, and physical conditions. Applied to shipboard training, the theory explains how cadets' confidence and preparedness, coping and problem-solving behaviors, and the isolated, hierarchical, physically demanding shipboard environment interact to influence adjustment and performance. This perspective supports interventions addressing all three dimensions through mentoring, coping and stress-management preparation, teamwork, communication,

and supportive onboard systems. Building on Social Cognitive Theory, the study adopted an Input-Process-Output (IPO) model. The input comprised the cadets' demographic profile; personal and psychological, interpersonal and social, and institutional and professional difficulties; behavioral, personal, environmental, and technical contributing factors; coping mechanisms; and existing intervention programs. The process involved systematic data collection regarding onboard experiences through a survey questionnaire with open-ended questions. The intended output was a proposed intervention program addressing cadet readiness, coping mechanisms, institutional support, well-being, and successful completion of shipboard training.

The reviewed literature consistently identifies shipboard training as essential to maritime competency while documenting multidimensional difficulties related to stress, adaptation, workload, communication, supervision, documentation, mentoring, and the shipboard environment. However, gaps remain between prescribed training standards and their actual implementation, particularly in supervision and TRB completion (The Nautical Institute, 2020). Previous studies largely addressed general cadet difficulties, stressors, coping mechanisms, and institutional interventions, whereas the present study provides an institution-specific examination of maritime students at Exact Colleges of Asia by integrating behavioral, environmental, social, technical, and personal dimensions. Rather than limiting the investigation to identifying difficulties, the findings are intended to provide the basis for a proposed intervention program that can improve cadet readiness, resilience, well-being, and shipboard training experience.

The study primarily aligns with SDG 4: Quality Education by generating evidence on the difficulties experienced by maritime cadets and using this information to support improvements in maritime training programs, student support services, and learning experiences. It also aligns with SDG 8: Decent Work and Economic Growth by supporting the development and preparedness of future seafarers for professional maritime practice and the global workforce. These alignments reflect the study's focus on improving both the quality of maritime education and the competencies and readiness needed for employment in the maritime industry.

The study contributes principally to educational, institutional, public health, and socio-economic sustainability within maritime education. Educational and institutional sustainability are supported by identifying cadet difficulties that can inform training curricula, targeted intervention programs, mentoring systems, and student support mechanisms. Its attention to stress, homesickness, health-related concerns, coping, and well-being provides a public health dimension by recognizing that sustainable maritime preparation involves psychosocial welfare alongside technical competence. Socio-economic sustainability is reflected in preparing maritime students for professional growth, employment, and smoother transition into maritime work, while shipping companies may benefit from improved onboarding, mentorship, workforce efficiency, productivity, and stability. Collectively, these contributions support a more comprehensive and sustainable approach to developing maritime professionals and strengthening maritime education and training.

2. Material and methods

2.1 Research Design

The study used a quantitative, descriptive-correlational research design to describe and examine variables related to the shipboard training experiences of maritime cadets of EXACT Colleges of Asia, Inc. The descriptive component examined respondents' demographic characteristics, difficulties encountered during onboard training, contributing factors, coping mechanisms, and institutional support. The correlational component determined relationships among the respondents' demographic characteristics, encountered difficulties, and contributing factors. Quantifiable data were gathered through a researcher-made questionnaire, providing the basis for systematic analysis and the development of an appropriate intervention program.

2.2 Locale of the Study

The study was conducted within the context of EXACT Colleges of Asia, Inc. in Arayat, Pampanga. The research involved maritime cadets affiliated with the institution who had completed their required shipboard training under the Bachelor of Science in Marine Transportation (BSMT) or Bachelor of Science in Marine Engineering (BSMarE) programs. The questionnaire was distributed online to cadets assigned to local and international shipboard locations, allowing respondents to participate regardless of their deployment location.

2.3 Respondents of the Study

The respondents were maritime students of EXACT Colleges of Asia, Inc. who had completed shipboard training as part of the BSMT and BSMarE programs and were officially enrolled in the institution during Academic Year 2021–2022. They were selected because their firsthand shipboard training experiences enabled them to provide relevant information concerning the difficulties encountered, coping mechanisms used, and institutional support experienced during deployment. The final respondents consisted of 100 maritime cadets, including 47 BSMT and 53 BSMarE students.

2.4 Sample and Sampling Procedure

The study initially considered a population of 130 maritime cadets who qualified as respondents. However, 100 cadets completed and submitted the questionnaire. The reduction was attributed to schedule conflicts, time constraints, limited internet connectivity among cadets who were still onboard, and difficulties contacting some prospective respondents during the data collection period. Thus, the final sample consisted of 100 respondents who provided the data analyzed in the study.

2.5 Research Instrument

The study utilized a self-made questionnaire designed to determine the difficulties experienced by maritime students during shipboard training as a basis for the proposed intervention program. The instrument collected respondents' demographic, socioeconomic, and training-related information, including age, gender, civil status, family monthly income, length of onboard training, assigned department, shipboard training location, and vessel type. It also assessed personal and psychological, interpersonal and social, and institutional and professional difficulties; behavioral, personal, environmental, and technical contributing factors; coping mechanisms; and existing institutional support related to orientation, monitoring, coordination, counseling, and safety policies. The questionnaire further obtained respondents' suggestions for interventions intended to strengthen preparedness, address training challenges, and support the transition to academic or professional practice. The instrument's reliability was assessed using responses from 30 respondents, all of whom were included in the analysis, resulting in a 100% valid response rate with no missing cases. The 60-item questionnaire obtained a Cronbach's alpha coefficient of 0.956, indicating excellent internal consistency in measuring the multidimensional constructs associated with shipboard training challenges.

2.6 Data Gathering Procedure

Data collection began with securing an endorsement letter from the research adviser and permission from the President of EXACT Colleges of Asia Inc. in Arayat, Pampanga. Following approval, the researcher finalized the self-made questionnaire after establishing its validity and reliability. The instrument was distributed through Google Forms to local and international maritime cadets from December 2025 to February 2026, enabling participation regardless of shipboard location. Instructions were provided to guide respondents in completing the questionnaire, while responses were monitored through the Google Forms dashboard. Follow-up reminders were sent to improve participation and data completeness. After collection, the responses were checked for completeness and inconsistencies and organized for statistical analysis.

2.7 Data Analysis Techniques

Microsoft Excel and the Statistical Package for the Social Sciences (SPSS) version 23 were used to process and analyze the data. Frequency and percentage distributions described respondents' demographic and training-related characteristics, while weighted mean determined the level of difficulties, contributing factors, coping mechanisms, and institutional support experienced during shipboard training. The weighted mean interpretation used four intervals: 3.26–4.00 for Strongly Agree, 2.51–3.25 for Agree, 1.76–2.50 for Disagree, and 1.00–1.75 for Strongly Disagree. Pearson *r* and standard deviation were also used to correlate the respondents' demographic profile with the difficulties encountered during shipboard training.

2.8 Ethical Considerations

The study observed ethical standards for research involving human participants. Participation was voluntary, and informed consent was obtained before administration of the questionnaire. Respondents were informed of the study's purpose, procedures, expected outcomes, and their right to refuse or withdraw without penalty or academic disadvantage. No personally identifiable information was collected, codes were used to preserve anonymity, and results were reported in aggregate form. Electronic data were password-protected and stored on encrypted devices accessible only to the researcher, while any physical research materials were securely stored. The data were used solely for academic purposes and were intended for permanent deletion following completion and approval of the study. Academic integrity was maintained through proper citation and referencing, careful acknowledgment of other authors' work, and plagiarism-prevention measures. Turnitin was used to assess originality, with the manuscript obtaining a 15% similarity index.

3. Results and Discussion

3.1 Profile of the Maritime Students

3.1.1 Age, Gender, Civil Status, and Family Monthly Income

Most respondents were aged 24–26 years (51%), followed by those aged 21–23 years (47%), while only 2% were aged 27–29 years. The respondents were predominantly male (97%), with females comprising only 3%. Similarly, 97% were single and 3% were married. In terms of family monthly income, 33% reported ₱10,000 and below, 26% reported ₱10,001–₱20,000, 12% reported ₱20,001–₱30,000, and 29% reported above ₱30,000. The age distribution indicates that most cadets were within the expected transition period from academic preparation to professional shipboard exposure. The strong male predominance reflects the continuing gender imbalance in

maritime education and is consistent with IMO and WISTA International (2024), which reported that women remain underrepresented in the maritime sector despite increasing participation. The predominance of single respondents aligns with (Diamante & Raut-Raut, 2024), who noted industry preference for younger, single cadets because of fewer familial obligations and greater adaptability to onboard demands. The concentration of respondents from low to lower-middle income households further indicates the role of maritime education as a pathway for socioeconomic mobility (Albert et al., 2018).

3.1.2 Job Department, Training Location, and Vessel Assignment

The respondents were relatively evenly distributed between Engine (53%) and Deck (47%) departments. Most completed shipboard training on local vessels (78%), while 18% trained internationally and 4% experienced both local and international assignments. RoRo-passenger vessels accounted for the majority of assignments (69%), followed by cargo vessels (19%), passenger vessels (6%), other vessels (4%), and tankers (2%). The balanced representation of Engine and Deck cadets indicates comparable exposure across the two major maritime training disciplines, supporting Sevilla and Arceno (2017), who emphasized comparable competence among deck and engine cadets in maritime duties. However, the predominance of local assignments suggests limited exposure to multicultural and multinational shipboard environments. The high proportion assigned to RoRo-passenger vessels also reflects the structure of domestic Philippine maritime operations, providing substantial local experience but less exposure to specialized international vessel operations.

3.1.3 Length of Onboard Training

Most respondents (84%) completed 12 months of onboard training. Seven percent completed 3–11 months, 8% completed 13–18 months, and 1% reported 24 months of training. The predominance of 12-month training indicates that the one-year cadetship remains the standard duration among respondents, with relatively few variations. This reflects consistency with maritime training requirements and regulatory standards under CMO No. 70, Series of 2017, Revised Policies, Standards and Guidelines for the Bachelor of Science in Marine Transportation (BSMT) and Bachelor of Science in Marine Engineering Programs.

3.2 Difficulties Experienced During Shipboard Training

3.2.1 Personal and Psychological Challenges

Personal and psychological challenges obtained an average mean of 2.60 (Agree). Homesickness recorded the highest mean at 2.85, followed by physical and mental exhaustion at 2.76 and anxiety or stress from shipboard duties at 2.67. Difficulty adapting to long periods away from family obtained 2.40, while difficulty maintaining motivation received 2.34. These findings indicate that emotional and physical strain represented important challenges during shipboard training, particularly homesickness, fatigue, and stress. This aligns with (Nittari et al., 2022), who identified homesickness and exhaustion as primary stressors among maritime trainees, reinforcing the importance of emotional separation and demanding shipboard conditions in cadet experiences.

3.2.2 Interpersonal and Social Challenges

Interpersonal and social challenges obtained an average mean of 2.19 (Disagree). Respondents generally disagreed that they experienced major difficulties involving communication with multinational crew members, conflicts or misunderstandings, isolation, adjustment to multicultural teamwork, or inappropriate treatment. The relatively low level of interpersonal and social challenges suggests that cadets generally adapted well to onboard social environments. The predominance of domestic assignments and Filipino crew composition may have reduced language and cultural barriers. This partially aligns with Valentine (n.d.), who emphasized the importance of social support systems in seafarers' well-being, suggesting that onboard cohesion may mitigate interpersonal difficulties.

3.2.3 Institutional and Professional Challenges

Institutional and professional challenges obtained an average mean of 2.50 (Agree). Excessive workload received a mean of 2.70, while assignment of tasks that did not always correspond with required training competencies obtained 2.59. Problems completing Training Record Book requirements, limited supervision or mentoring, and limited or unclear feedback received lower ratings. The overall mean for all difficulty domains was 2.43 (Disagree). The findings indicate that workload and alignment between assigned duties and required competencies were more prominent concerns than supervision and mentoring. This suggests that institutional and professional difficulties were associated primarily with the operational execution and alignment of shipboard training rather than an overall absence of institutional support.

3.3 Factors Contributing to Difficulties During Shipboard Training

3.3.1 Behavioral Factors

Behavioral factors obtained an average mean of 2.69 (Agree). Poor time management received the highest mean of 2.80, followed by limited exposure to the professional demands of shipboard life at 2.70, lack of self-discipline at 2.67, weak study habits and work ethic at 2.64, and lack of assertiveness at 2.63. The results indicate that behavioral preparation contributed to the difficulties encountered onboard, particularly in managing time,

workload, professional demands, and communication. These factors form part of the broader multidimensional pattern of shipboard challenges identified among the respondents.

3.3.2 Personal Factors

Personal factors obtained an average mean of 2.76, with stress affecting decision-making receiving the highest mean of 2.91. Unhealthy lifestyle habits followed at 2.87, while lack of confidence in applying theoretical knowledge obtained 2.70, homesickness 2.68, and poor physical health 2.66. These findings demonstrate that personal difficulties involved both psychological and physical dimensions, particularly stress, lifestyle, confidence, and separation from family. Together with behavioral, environmental, and technical factors, these results indicate that shipboard training challenges are interconnected rather than isolated.

3.3.3 Environmental Factors

Environmental factors obtained an average mean of 2.72 (Agree). Limited onboard facilities received the highest mean of 2.91, followed by shipboard safety risks at 2.74, vessel conditions such as noise, motion, and weather disturbances at 2.71, multicultural communication differences at 2.64, and limited recreational access at 2.61. The findings indicate that the physical and social shipboard environment contributed to cadet difficulties through limited facilities, safety risks, demanding vessel conditions, communication barriers, and restricted recreation. These environmental pressures operated alongside personal, behavioral, and technical factors, further demonstrating the multidimensional nature of onboard training challenges.

3.3.4 Technical Factors

Technical factors emerged as the highest contributing domain, with an average mean of 2.82 (Agree). Unclear or inconsistent technical instructions received the highest mean of 2.99, followed by difficulty applying theoretical knowledge to technical tasks at 2.80, limited prior equipment exposure at 2.78, inadequate simulator training at 2.77, and limited proficiency in Maritime English and technical vocabulary at 2.74. The overall mean across all contributing factors was 2.75 (Agree). The prominence of technical factors indicates a gap between academic preparation and actual shipboard application. These findings are consistent with IMO (2021) Maritime Training Guidance Updates, which emphasize competency gaps when training is insufficiently simulation-based or aligned with onboard realities. Similarly, BIMCO and ICS Seafarer Workforce Report (2021) highlights difficulties among new cadets in translating academic preparation into operational performance. The findings further indicate that instructional clarity and communication of onboard tasks contribute to these difficulties, supporting stronger simulation-based preparation, mentoring, and pre-deployment readiness.

3.4 Relationship Between Respondents' Profile and Shipboard Training Challenges

3.4.1 Personal and Psychological Challenges

None of the respondents' profile variables showed a statistically significant relationship with personal and psychological challenges ($p > 0.05$). Age, gender, civil status, family income, length of onboard training, job department, shipboard training location, and vessel type all yielded nonsignificant relationships. The findings suggest that stress, homesickness, and fatigue occurred across respondent groups regardless of demographic or training characteristics. This aligns with (Oldenburg & Jensen, 2019), which emphasize occupational factors such as isolation, long working hours, and environmental confinement as major sources of psychological strain. Likewise, IMO (2022) Seafarer Well-being Report confirms that mental health challenges onboard are universal across seafarer groups. The findings therefore indicate that these challenges are more structural than demographic.

3.4.2 Interpersonal and Social Challenges

No significant relationship was found between any profile variable and interpersonal and social challenges ($p > 0.05$). The results indicate that social adjustment was relatively consistent regardless of age, gender, civil status, family income, training duration, department, training location, or vessel assignment. This finding supports ILO (2020) Guidelines on Maritime Labour and Crew Welfare, which emphasize that structured teamwork and standardized safety roles promote social cohesion regardless of individual differences. It also aligns with Österman et al., (2020), who found that occupational solidarity can reduce the effects of demographic differences on social interaction. However, it partially contrasts with Li and Wang (2020), who identified increased communication barriers in multicultural crews. The predominance of Philippine domestic vessel assignments with Filipino crews in the present study may account for this difference, indicating that organizational culture and crew composition may have greater influence on interpersonal adjustment than demographic characteristics.

3.4.3 Institutional and Professional Challenges

No profile variable demonstrated a statistically significant relationship with institutional and professional challenges ($p > 0.05$). Vessel type showed the strongest relationship, but its weak negative correlation ($r = -0.193$, $p = 0.054$) remained statistically nonsignificant. The findings indicate that workload, task mismatch, and technical difficulties were not determined by cadet demographics or training backgrounds. This is consistent with IMO (2021) Model Course Implementation Review, which emphasizes institutional design, supervision quality, and industry alignment in training effectiveness. Similarly, Stopford (2020) identifies operational inefficiencies in

training environments as system-driven rather than person-driven. Thus, institutional and professional challenges appear more closely related to training implementation, workload distribution, and competency-task alignment.

3.5 Coping Measures Employed During Shipboard Training

The respondents demonstrated high coping capacity across behavioral, personal, environmental, and technical domains, with an overall mean of 3.41 (Strongly Agree). Technical coping recorded the highest average mean of 3.45, followed by personal coping at 3.40 and behavioral and environmental coping at 3.39 each. Particularly strong strategies included continued practice of required skills (3.55), following safety protocols and participating in drills (3.53), hands-on practice and observation of experienced crew members (3.52), and learning new tasks through demonstration and gradual practice (3.48). The strong use of technical coping supports Bandura's Social Cognitive Theory as applied in maritime training studies (2019–2023), which emphasizes observational learning and guided practice in skill acquisition. It also aligns with IMO (2021) competency-based training reforms, which highlight experiential learning in maritime competence development. Personal coping strategies further reflect Kivak (2020), showing that cadets regulate stress through emotional control and social support. Overall, cadets demonstrated active adaptation and resilience rather than passive responses to shipboard difficulties.

3.6 Institutional Support Programs of EXACT Colleges of Asia

Respondents strongly agreed that EXACT Colleges of Asia provided institutional support, with an overall mean of 3.42. Safety policies received the highest rating at 3.46, followed by coordination with shipping companies at 3.44, counseling services at 3.40, and both pre-deployment orientation and faculty monitoring at 3.39. The strong institutional support aligns with IMO (2022) Guidelines on Training, Certification and Watchkeeping (STCW updates), which emphasize institutional readiness, pre-departure orientation, and industry coordination in supporting cadet safety and competence. It also supports BIMCO/ICS (2021) findings linking effective maritime training to institutional-industry collaboration and structured monitoring. Strong institutional support may therefore function as a protective factor contributing to cadet preparedness and the relatively low interpersonal and institutional difficulties reported.

3.7 Additional Support Systems Recommended by Respondents

Health and Psychological Readiness was the most frequently recommended additional support area ($f = 28$), followed by Practical and Technical Preparation ($f = 19$), Safety Preparedness ($f = 16$), Professional and Career Development ($f = 11$), and Financial and Administrative Support ($f = 5$). Respondents emphasized stress management, emotional resilience, self-discipline, physical fitness, ship familiarization, pre-board orientation, Training Record Book guidance, practical exposure, safety training, emergency drills, mentorship, career preparation, financial assistance, and document processing. Some respondents provided no additional recommendations. The emphasis on physical and psychological preparation is consistent with evidence that psychological well-being, resilience, and mental health influence cadet performance and shipboard readiness (Santoso, 2025). Recommendations concerning practical and safety preparation also support research emphasizing hands-on learning, technical competence, and compliance with the Standards of Training, Certification and Watchkeeping (STCW) before deployment (Magsino et al., 2023; Devota, 2025). Mentorship recommendations further align with evidence that experienced officers and structured supervision facilitate the transition from classroom learning to actual shipboard operations (Devota, 2025; Magsino et al., 2023).

3.8 Proposed SEA-READY Intervention Program

Based on the identified needs, the study proposed SEA-READY (Shipboard Excellence and Adaptation Readiness for Young Engineering and Deck Cadets), a structured intervention program for EXACT Colleges of Asia. The first phase focuses on program development through analysis of the needs assessment and cadet feedback, review of maritime education and industry standards, development of learning materials and implementation guidelines, and expert validation. The intended outputs include identified priority intervention areas, an intervention framework aligned with MHEI and industry requirements, completed modules and facilitator guidance, and a validated intervention program. The implementation phase provides comprehensive preparation through TECH READY for technical readiness, MIND READY for psychological preparedness, COMM READY for communication and social adaptation, and REALITY READY for shipboard expectations. Activities include simulation-based deck and engine exercises, hands-on tasks, mentoring, stress-management workshops, resilience preparation, psychological readiness assessment, Maritime English communication drills, role-playing, and conflict-management exercises. These components directly reflect the technical, psychological, communication, and adaptation needs identified in the study. The monitoring and evaluation phase assesses program effectiveness and opportunities for continuous improvement through pre- and post-program readiness assessments, competency checklists, participant feedback, instructor and shipping-company evaluations, and review of program outcomes. Maritime faculty, the institutional maritime department, and quality assurance personnel are identified as responsible for evaluating improvements in readiness and practical competence, determining strengths and areas for enhancement, obtaining external validation of onboard preparedness, and continuously improving the intervention program based on evidence.

4. Conclusion & Recommendations

The study concludes that maritime students of EXACT Colleges of Asia generally completed standard shipboard training within local shipping environments and experienced relatively low overall difficulty; however, psychological and emotional concerns, particularly homesickness, stress, fatigue, excessive workload, and mismatches between assigned tasks and required competencies, remained evident. Technical factors were the strongest contributors to training difficulties, particularly limited practical exposure, unclear instructions, and difficulty applying theoretical knowledge in actual shipboard operations. Respondents' demographic and training profiles were not significantly related to the difficulties encountered, indicating that these challenges were generally shared across cadets. Despite these difficulties, students demonstrated strong adaptability and coping capacity, while existing institutional support through orientation, counseling, monitoring, safety preparation, and industry coordination was perceived positively. Overall, the findings support strengthening technical competence, psychological preparedness, communication skills, competency-aligned training, and the proposed SEA-READY Program to improve cadet readiness and shipboard training experiences.

EXACT Colleges of Asia and maritime education institutions are recommended to develop, validate, pilot-test, implement, monitor, and continuously improve the proposed SEA-READY modules TECH READY, MIND READY, COMM READY, and REALITY READY with appropriate expert involvement. Collaboration with shipping companies and industry partners should be strengthened to improve supervision, performance feedback, and alignment with industry competency requirements, while standardized student support should remain accessible to all cadets regardless of background. Reflective learning, peer support, and post-training debriefing should also be strengthened, and existing institutional support services, partnerships, guidance programs, and quality assurance practices should be regularly reviewed. Future research may include the perspectives of shipboard supervisors, officers, and shipping company administrators; investigate long-term effects on employability and career development; compare local and international training experiences; and evaluate the proposed intervention program following implementation.

The study was limited to maritime cadets of EXACT Colleges of Asia and did not include the perspectives of shipboard supervisors, officers, or shipping company administrators. It also did not examine the long-term effects of shipboard training on graduates' employability and career development, systematically compare local and international shipboard training experiences, or evaluate the effectiveness of the proposed intervention program after implementation. These areas therefore remain for further investigation.

5. Compliance with ethical standards

The authors affirm that no conflicts of interest exist in relation to this study. The research was conducted in accordance with ethical principles for human-participant research, including voluntary participation, informed consent, the right to withdraw at any stage without penalty or academic disadvantage, and the protection of confidentiality through anonymous, secure, and aggregated data management. Data were collected through a non-invasive survey questionnaire, and no personally identifiable information was collected or disclosed. The researchers acknowledge the maritime students and EXACT Colleges of Asia, Inc. for their participation and institutional support

REFERENCES

- Albert, J. R. G., Santos, A. G. F., & Vizmanos, J. F. V. (2018, December). *Profile and determinants of the middle-income class in the Philippines*. Philippine Institute for Development Studies. <https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps1820.pdf>
- Bačnar, D., Barić, D., & Ogrizović, D. (2024). Exploring the perceived ease of use of an immersive VR engine room simulator among maritime students: A segmentation approach. *Applied Sciences*, 14(18), 8208. <https://doi.org/10.3390/app14188208>
- Baltic and International Maritime Council and International Chamber of Shipping. (2026). *Seafarer workforce report executive summary*. <https://www.bimco.org/media/mxhbsjxb/seafarer-workforce-report-2026-executive-summary.pdf>
- Bandura, A. (2021). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 70, 1–27. <https://doi.org/10.1146/annurev-psych-010418-103233>
<https://ssrlsig.org/wp-content/uploads/2018/01/bandura-2001-social-cognitive-theory-an-agentic-perspective.pdf>

- Brooks, S. K., & Greenberg, N. (2022, May). Mental health and psychological wellbeing of maritime personnel: A systematic review. *BMC Psychology*. <https://link.springer.com/article/10.1186/s40359-022-00850-4>
- Ching, M. I., & Entendez, P. N. (2024, December). Mentoring program on shipboard training, navigation and seamanship: PMMA's supplementary learning support amid learning crisis due to COVID-19. *Journal of Information Systems Engineering and Management*. <https://jisem-journal.com/index.php/journal/article/view/703/247>
- Commission of Higher Education. (n.d.). *CHED Memorandum Order No. 70, series of 2017: Revised implementing guidelines on the approved seagoing service requirement for the conferment of the degree in Bachelor of Science in Marine Transportation (BSMT) and Bachelor of Science in Marine Engineering (BSMarE) programs*. <https://legacy.ched.gov.ph/wp-content/uploads/2017/10/CMO-70-s-2017.pdf>
- Devi, B., Khandelwal, B., & Das, M. (2017). Application of Bandura's social cognitive theory in the technology-enhanced blended learning environment. *International Journal of Applied Research*, 3(1), 721–724. <https://www.allresearchjournal.com/archives/?year=2017&vol=3&issue=1&part=J&ArticleId=3115>
- Devota, R. C. A. (2025). The lived experiences of maritime cadets: Applying master class knowledge in real-world shipboard operations. *East Asian Journal of Multidisciplinary Research (EAJMR)*. https://www.researchgate.net/publication/393740370_The_Lived_Experiences_of_Maritime_Cadets_Aplying_Master_Class_Knowledge_in_Real-World_Shipboard_Operations
- Diamante, C. J. P., & Raut-Raut, A. B. (2024, November 15). An assessment of shipboard training deployment among shipping companies. *Journal of Maritime Research*. https://www.researchgate.net/publication/395113562_An_Assessment_of_Shipboard_Training_Deployment_among_Shipping_Companies
- Dimo, R. (2025). Cadets' onboard training challenges towards commitment to completing BS degree: Basis for enhanced onboard training program of PNTC Colleges. *Apcore Online Journal*, 1(1), 535–556. <https://doi.org/10.65232/8hwp2506>
- International Chamber of Shipping. (2024, February 21). *Global shipowners body sets out industry principles to combat harassment and bullying*. <https://www.ics-shipping.org/press-release/22514/>
- International Labour Organization. (2020). *Guidelines on maritime labour and crew welfare*. https://www.deutsche-flagge.de/de/redaktion/dokumente/dokumente-sonstige/mlc_english.pdf
- International Labour Organization. (2024, January 8). *Second meeting of the joint ILO/IMO tripartite working group to identify and address seafarers' issue and the human element*. <https://www.ilo.org/meetings-and-events/sectorial/second-meeting-joint-ilo-imo-tripartite-working-group-identify-and-address>
- International Maritime Employers' Council. (n.d.-a). *IMEC cadet training – Philippines*. <https://www.imec.org.uk/maritime-training/philippines-cadet-training>
- International Maritime Employers' Council. (n.d.-b). *IMEC member sponsorship: MAAP 3-year study + 12 months sea time*. <https://www.imec.org.uk/maritime-training/imec-member-sponsorship>
- International Maritime Organization. (n.d.). *Joint ILO/IMO working groups on seafarer issues*. <https://www.imo.org/en/ourwork/legal/pages/jointimoioloworkinggrouponseafarerissues.aspx>
- International Maritime Organization. (2022). *Guidelines on the training, certification and watchkeeping (STCW Convention updates)*. <https://www.imo.org/en/ourwork/humanelement/pages/stcw-conv-link.aspx>
- International Maritime Organization. (2024, March 5). *Preventing and combatting violence and harassment in the maritime sector*. <https://www.imo.org/en/mediacentre/pressbriefings/pages/tackling-violence-and-harassment-in-maritime.aspx>
- International Maritime Organization and WISTA International. (2024). *Women in maritime survey 2024*. https://wwwcdn.imo.org/localresources/en/MediaCentre/Documents/IMO%20WISTA%20WIMS%20report%202024_REPORT_CM.pdf
- Kivak, R. (2020). *Transactional model of stress and coping*. EBSCO. <https://www.ebsco.com/research-starters/psychology/transactional-model-stress-and-coping>
- Li, X., & Wang, Y. (2020). Cross-cultural communication challenges in multinational ship crews. *Marine Policy*, 118, 103–112. <https://doi.org/10.1016/j.marpol.2020.103112>
- Magsino, R. G., Paraggua, V. Q., Mobo, F. D., Acuavera, R. C., Villavicencio, L. D., Pasa, G. C., & Guiang, S. L. A. (2023, March). Students' onboard experiences: Basis for improved shipboard training program policy. *International Journal of English Literature and Social Sciences*. https://ijels.com/upload_document/issue_files/38IJELS-104202326-Students.pdf
- Nittari, G., Gibelli, F., Bailo, P., Sirignano, A., & Ricci, G. (2022, October 28). Factors affecting mental health of seafarers on board merchant ships: A systematic review. <https://www.degruyterbrill.com/document/doi/10.1515/reveh-2021-0070/html?lang=en>
- NYK Shipmanagement. (n.d.). *Cadetship training program*. <https://www.nyksm.com.sg/cadet-training>
- Oldenburg, M., & Jensen, H. J. (2019). *Stress and strain among seafarers related to the occupational groups*. MDPI. <https://pmc.ncbi.nlm.nih.gov/articles/PMC7068386/>
- Österman, C., Praetorius, G., & Hult, C. (2020, January). <https://www.sciencedirect.com/science/article/pii/S2211379718320771?via=ihub> | request PDF. Science Direct.

https://www.researchgate.net/publication/328544309_httpswwwsciencedirectcomsciencearticlepiiS2211379718320771via3Dihub

- Österman, C., et al. (2022). Workplace bullying and harassment at sea: A structured literature review. *Marine Policy*, 140, 105014. <https://www.sciencedirect.com/science/article/pii/S0308597X21005212?via%3Dihub>
- Piñas, E. J., Delos Santos, A. J., Diaz, R. D., & Hasigan, J. (2019, June). Shipboard training performance of cadets in one maritime academic institution in the Philippines. *Asia Pacific Journal of Maritime Education*, 5, 1–6. <https://asiapjournals.org/shipboard-training-performance-of-cadets-in-one-maritime-academic-institution-in-the-philippines/>
- Sailors' Society. (2025). 2024/25 cadet report: The next generation of maritime speaks. https://sailors-society.org/wp-content/uploads/2025/03/Sailors_Society_CadetReport_24_25.pdf
- Santoso, W. (2025b). Mental health and work engagement as predictors of cadet... <https://reference-global.com/article/10.2478/mdke-2025-0021>
- Senbursa, N., & Dunder, E. (2024, June 28). Navigating the depths: Exploring seafarers' psychological well-being on board, anchored by the mediating role of resilience and loneliness. *International Maritime Health*. https://journals.viamedica.pl/international_maritime_health/article/view/98445
- Sevilla, R. M., & Arceno, L. A. (2017). Structured shipboard training program and performance of maritime cadets. *International Journal of English Literature and Social Science*, 2(4), 55–67. <https://ijels.com/detail/structured-shipboard-training-program-and-performance-of-maritime-cadets/>
- Stopford, M. (2020). *Maritime economics* (4th ed.). Routledge. <https://doi.org/10.4324/9780429205558>
- Tusher, H. M., Munim, Z. H., & Nazir, S. (2023/2024). An evaluation of maritime simulators from technical, instructional, and organizational perspectives: A hybrid MCDM approach. *WMU Journal of Maritime Affairs*. <https://link.springer.com/article/10.1007/s13437-023-00318-1>
- Valentine, E. (n.d.). Social support systems and seafarer well-being in maritime environments. *International Journal of Maritime Studies*. <https://www.theseus.fi/bitstream/handle/10024/876941/Ekwem%20Valentine.pdf?isAllowed=y&sequence=2&utm>