

Fitness Awareness and Learning Motivation as Predictors of Maritime Skill Acquisition Challenges

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Abstract

Maritime students face challenges in acquiring essential skills. This study determined the significance of fitness awareness and learning motivation as predictors of maritime skill acquisition challenges. Using predictive-descriptive design, and with the 150 samples selected through stratified random sampling, the result showed that fitness awareness does not significantly influence the criterion variable. In contrary the learning motivation is found to be significant predictor. However, learning motivation has a reverse correlation with the criterion variable. This result partially affirms the Achievement Goal Theory. Future studies are encouraged to explore other variables not covered in this study to account 89.2% variance in the criterion variable. Likewise, educational institutions are encouraged to implement programs that boost students' learning motivation to reduce skills acquisition challenges, supporting equal access to quality education.

Keywords: *Fitness awareness, learning motivation, predictors of maritime skills acquisition challenges*

Keywords: Type your keywords here, separated by semicolons ;

1. Main text

(10 pt) The global maritime industry is grappling with significant challenges in acquiring maritime skills. A primary concern is the inconsistency in the standards of the acquisition process across different jurisdictions. McDougall (2020) highlighted that such variances are alarming. With the rapid evolution of maritime technologies, the acquisition of maritime skills is in a difficult situation.

In Tuvalu, while the Tuvalu Marine Training Institute provides basic maritime qualifications, the

number of Tuvaluans employed as seafarers has difficulties in acquiring new maritime skills (Wikipedia, 2025). In Georgia, Gabedava and Kakabadze (2021) stated that seafarers struggle to upgrade their skills. In Namibia, Nambira and Mabakeng (2020) reported a severe shortage of skilled maritime personnel, attributing this to the difficulties of maritime professionals in acquiring needed skills. In Bangladesh, Hossain and Islam (2021) highlighted challenges in acquiring maritime skills, thus challenging the Maritime Education and Training (MET) institutions to provide this opportunity.

In the Philippines, despite being a leading supplier of seafarers globally, there is a noted shortage of qualified maritime personnel attributed to outdated training facilities and curricula not aligned with international standards (World Ports Organization, 2024). The country faces specific hurdles in maritime education and training. The European Maritime Safety Agency (EMSA) has repeatedly flagged deficiencies in the Philippines' compliance with the Standards of Training, Certification, and Watchkeeping for Seafarers (STCW), particularly concerning the monitoring and evaluation of training programs (GMA News Online, 2023). Furthermore, the Commission on Higher Education (CHED) acknowledged the struggle to lighten the difficulty of maritime students to acquire important skills (Philstar.com, 2023).

The continued difficulty in acquiring maritime skills can lead to increased maritime accidents and incidents, as inadequately trained personnel may not respond effectively to emergencies (World Ports Organization, 2024). Coupled with scarcity, the urgency of this study is called for as triggered by such a stated condition.

This study is vital for understanding how fitness awareness and motivation influence skill acquisition among maritime students, offering data-driven insights to enhance training programs. By focusing on these factors, the research aims to improve educational standards, instructional strategies, and support systems within the maritime field.

The findings may provide actionable recommendations to ensure that future maritime professionals are well-prepared to meet the physical and cognitive demands of their careers, fostering a more skilled and resilient workforce. Maritime students may benefit by gaining strategies to overcome skill acquisition challenges through enhanced fitness awareness and motivation. Instructors may adjust teaching methods to integrate fitness and motivational support, aiding students in acquiring essential skills more efficiently. Educational institutions may gain insights into how fitness and motivation affect student success, allowing them to refine curricula and student services to foster better learning environments. Future researchers may find a foundation for further exploration into the relationship between fitness, motivation, and skill acquisition in maritime education. This study may contribute to developing a more effective and resilient maritime workforce.

Nomenclature	
A	radius of
B	position of
C	further nomenclature continues down the page inside the text box

1.1. Structure

2. The global maritime industry is grappling with significant challenges in acquiring maritime skills. A primary concern is the inconsistency in the standards of the acquisition process across different

jurisdictions. McDougall (2020) highlighted that such variances are alarming. With the rapid evolution of maritime technologies, the acquisition of maritime skills is in a difficult situation.

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7. The findings may provide actionable recommendations to ensure that future maritime professionals are well-prepared to meet the physical and cognitive demands of their careers, fostering a more skilled and resilient workforce. Maritime students may benefit by gaining strategies to overcome skill acquisition challenges through enhanced fitness awareness and motivation. Instructors may adjust teaching methods to integrate fitness and motivational support, aiding students in acquiring essential skills more efficiently. Educational institutions may gain insights into how fitness and motivation affect student success, allowing them to refine curricula and student services to foster better learning environments. Future researchers may find a foundation for further exploration into the relationship between fitness, motivation, and skill acquisition in maritime education. This study may contribute to developing a more effective and resilient maritime workforce.

8. A predictive quantitative research design, particularly a descriptive correlational design, was utilized in the study to investigate the interrelations among fitness awareness, motivation, and skill acquisition difficulties without manipulating variables. The design is applied to respond to questions about relationships between measurable variables to explain and predict phenomena (Lim, 2024). The

adopted research methods are appropriate for this research as they enable responses to the research instruments and generate new knowledge consistent with the research objectives. By analyzing the interrelation between the degree of fitness awareness, students' motivation, and skills acquisition challenges, this method aims to make connections and find the statistical interdependencies among the variables without asserting causality, making the current research applicable.

9. This study was conducted among three maritime institutions in Davao City - School A, School B, and School C - which offer similar maritime programs. The study focused on a private, non-sectarian maritime school in the Población area, accredited by CHED and MARINA and equipped with a dedicated training pool. The institutions offer programs such as Bachelor of Science in Marine Transportation (BSMT), Marine Engineering (BS MarE), Customs Administration (BSCustom), and Hospitality Management (HM). The research specifically targeted students in the Maritime Department to gather relevant data aligned with the study's objectives. The respondents for this study were selected using simple random sampling from a population of approximately 800 maritime students across Schools A, B, and C. A sample of 150 first-year BSMT students was chosen, ensuring that participants had relevant knowledge of fitness awareness and motivation in relation to skill acquisition challenges in a maritime context. The inclusion criteria were limited to first-year BSMT students, while second-, third-, and fourth-year students were excluded from the selection of respondents. This focus aimed to provide targeted insights and enhance the study's validity by involving those at the early stages of skill development (Babbie, 2016).

10. The study, focused on students enrolled in BSMT programs, aimed to provide targeted insights, enhancing the study's validity by involving those most directly impacted by the examined variables.

11. The research instrument employed in this study was an adapted 60-item survey questionnaire systematically organized into three sections. The first section comprises 20 items aimed at assessing Fitness Awareness. The second section consists of 20 items focused on evaluating Motivation, while the third section includes 20 items designed to measure Skill Acquisition Challenges. This structured questionnaire provides a comprehensive tool for collecting data on these essential variables.

12. The data collection process began with securing ethical approval, followed by obtaining authorization from the appropriate academic departments. Survey questionnaires were distributed and administered with clear instructions to ensure understanding. The researcher oversees the data collection process to maintain accuracy, after which the collected data is compiled and organized for analysis.

13. Asking for Permission to Conduct the Study. The researcher secured an endorsement letter from the Dean of the Graduate School and the HCDC Society for Moral Integrity and Legal Ethics (SMILE) program at Holy Cross of Davao College, which was approved by the thesis adviser. The letter was then forwarded to the Division Office of Davao City through the Schools Division Superintendent (SDS) for formal authorization. Consent was subsequently obtained from the school principal.

14. Data Collection. Data collection began once the researcher submitted a formal letter to the Dean's office requesting permission to conduct the research involving freshmen BSMT students. Upon approval, the researcher distributed an informed consent form (ICF) to respondents. The researcher retrieved the signed ICF before the survey was distributed to ensure that all participation was

voluntary. After collecting all surveys, the researcher organized and prepared the data for tabulation, ensuring it was ready for analysis.

15. Administration and Retrieval of Questionnaires. The researcher distributed the questionnaires to the selected respondents, providing clear instructions to ensure accurate completion face-to-face. During the administration, the researcher monitored the process closely to address any queries, safeguarding the integrity of the data collection. After all responses had been gathered, the researcher carefully retrieved the questionnaires to prevent any loss or misplacement. This meticulous approach ensured the completeness and reliability of the collected data for further analysis.

16. Tabulation and Organization of Data. Once the questionnaires had been retrieved, the researcher entered the data into a structured format using Microsoft Excel to ensure accurate recording. The data was then categorized according to the relevant variables, facilitating easier identification of patterns and trends. Proper tabulation and organization are critical as they serve as the groundwork for accurate data interpretation and meaningful conclusions in the research.

17. The data analysis statistical methods were utilized to interpret and evaluate the collected data, providing a detailed understanding of the relationships between variables and addressing the study's research objectives.

18. Mean. The mean was used to address the first three variables of the study, specifically to describe the levels of Fitness Awareness, Motivation, and Skill Acquisition Challenges among freshman BSMT students. It provided an average value to summarize the levels of these key variables.

19. Pearsons r. This statistical tool assessed the strength and significance of the relationships between Fitness Awareness, Motivation, and Skill Acquisition Challenges among maritime students. It helped determine the degree of correlation between these variables.

20. Multiple Linear Regression Analysis. Multiple linear regression was employed to determine the combined influence of Fitness Awareness and Motivation on Skill Acquisition Challenges. This method helped identify key factors that influence students' ability to overcome challenges in skill development

21. When exploring the influence of fitness awareness and motivation on skill acquisition challenges among maritime students, ethical considerations are paramount. Potential harms include physical risks such as fatigue or injury during fitness assessments, as well as psychological risks like stress or decreased self-esteem if students struggle with skill acquisition. To mitigate these risks, it is essential to implement comprehensive safety protocols during physical activities, ensuring that all exercises are conducted under proper supervision and within the student's capabilities. Additionally, providing psychological support and fostering an inclusive environment can help address emotional challenges, promoting a positive learning experience. Obtaining informed consent, ensuring confidentiality, and allowing voluntary participation are also crucial steps to uphold ethical standards in the research.

Results and Discussion

Table 1 provides a detailed overview of maritime students' fitness awareness, motivation, and skills acquisition challenges, highlighting high levels across all variables. The results indicate that maritime students

are strongly aware of health and physical fitness, which is crucial for their demanding roles.

Table 1. Descriptive Table

Variables	N	SD	Mean	Descriptive Level
Fitness Awareness	150	.58	4.06	High
Health Knowledge		.67	4.06	High
Exercise Understanding		.63	4.05	High
Wellness Perception		.64	4.15	High
Physical Literacy		.64	3.98	High
Learning Motivation	150	.54	3.92	High
Intrinsic Motivation		.59	3.99	High
Extrinsic Motivation		.74	3.70	High
Goal Setting		.59	4.00	High
Self-Efficacy		.70	3.99	High
Skills Acquisition Challenges	150	.64	2.50	Low
Learning Barriers		.73	2.50	Low
Technique Difficulty		.90	2.59	Low
Performance Obstacles		.62	2.33	Low
Competence Struggles		.81	2.57	Low

Table 1 indicates that the fitness awareness variable obtained a mean score of 4.06, which is categorized as high. This suggests that maritime students possess more fitness awareness. All the indicators of these variables also obtained respected mean scores classified as high. Furthermore, the student learning motivation variable recorded a mean of 3.92, also interpreted as high, indicating that the maritime students were very strongly motivated. All its indicators obtained mean scores described as high. Lastly, as shown in the table, the skill acquisition variable had a mean score of 2.50, which fell under the low category. This reflects that skill acquisition challenges are easy for first-year maritime students. All indicators under this variable were rated as low.

Correlation Analysis

Table 2. Correlation Table

Independent Variables	Skills Acquisition Challenges			
	r	p-value	Decision on H ₀	Interpretation
Fitness Awareness	-.188	.021	Rejected	Significant
Learning Motivation	-.312	.000	Rejected	Significant

Table 2 specifically shows that the correlation between fitness awareness and skill acquisition challenges variables obtained a p – p-value of 0.021 which is less than 0.05 degree of significance. Hence, the null hypotheses were rejected. It indicates that the correlation between fitness awareness and skill acquisition challenges of maritime students is significant. However, it demonstrates a low level of negative association as indicated by the r- r-value of -.188. Moreover, the correlation between learning motivation and skill acquisition challenges variables obtained a p-value of 0.000, which is less than the 0.05 significance threshold. Therefore, the null hypotheses were again rejected, indicating that the correlation between learning motivation and skill acquisition challenges variables is significant at a moderately low level of strength, as indicated by the r- r-value of -.312.

Regression Analysis

Table 3. Regression Table

Predictors	Skills Acquisition Challenges				
	Beta Coefficient	t-value	p-value	Decision on Ho	Interpretation
Constant	3.703	10.036	<0.001		
Fitness Awareness	0.104	0.814	0.417	Accepted	Not Significant
Learning Motivation	-0.412	-3.276	.001	Rejected	Significant

$r = .318$, $r^2 = .108$, F-ratio = 8.224, p-value = .000

Table 3 specifically shows that the fitness awareness variable obtained a coefficient of -0.104, which indicates that it is 10.4% not significant, which is the null hypothesis is accepted influence on skill acquisition challenges, with a p-value of 0.417, which is more than the 0.05 alpha the null hypothesis is rejected. This indicates that the influence of learning motivation on skill acquisition challenges is statistically significant. Furthermore, it implies that for every 0.104-unit change in the fitness awareness variable, there is a corresponding unit increase in skill acquisition challenges.

Furthermore, the learning motivation variable obtained a β coefficient of -0.412, which indicates that it has a -41.2% degree of influence on skill acquisition challenges. Such degree of influence is significant, as indicated by the p-value of 0.001, which is less than 0.05 alpha. This further implies that for every 0.412-unit change in the learning motivation variable, there is a corresponding unit decrease in the skills acquisition challenges variable.

Lastly, Table 3 shows that the two predictive variables- fitness awareness and learning motivation obtained an r-squared value of 0.108, which denotes that together, they have a 10.8% combined degree of influence on the criterion variable, which is skill acquisition challenges. This combined degree of influence is considered statistically significant, as indicated by the p-value of 0.000, which is less than 0.05 level of significance and supported by an ff-ratio of 8.224

Summary of Findings

1. There is more fitness awareness, learning motivation is very strong, and the skills acquisition challenges are easy.
2. Fitness awareness and students' learning motivation are significantly correlated with the skills acquisition challenges at negative low association and moderate low level of strength, respectively.
3. Fitness awareness does not significantly influence skills acquisition challenges; however, motivation does. Nevertheless, the combined degree of influence of the predictors (10.8%) is significant.

Discussion on Descriptive Analysis

Fitness Awareness among First-Year Maritime Students

This study reveals that the overall fitness awareness of freshmen BSMT students is high, indicating a

strong level of understanding regarding the significance of physical health in maritime careers. This suggests that students possess a well-developed awareness of how physical fitness contributes to their overall well-being and professional readiness.

This result is congruent with an author's claim that physical health awareness is crucial for maintaining overall well-being, particularly in physically demanding professions (MacFarlane et al., 2017). It also supports a study on maritime students, which found that those with higher fitness awareness were better equipped to handle the physical demands of their training (Thomas et al., 2018). Furthermore, a review of maritime education programs highlighted the importance of incorporating practical fitness training to enhance students' preparedness for real-world maritime settings (Hasselberg et al., 2019).

Learning Motivation Among First-Year Maritime Students

This study reveals that the overall motivation of freshmen BSMT students is high, indicating that their drive to engage in academic and physical activities is often manifested. This suggests that the students are well-oriented toward achieving personal and professional goals, demonstrating the internal and external factors sustaining their participation and effort in the rigorous maritime training environment.

This finding is aligned with the study of Mendoza et al. (2024), which emphasized that maritime students show consistently high levels of motivation due to their curriculum's practical and goal-oriented nature. The structured demands of maritime education promote discipline and focus, which in turn help cultivate both intrinsic and extrinsic motivational sources. Furthermore, Ramos (2024) found that students in physically demanding programs such as marine and transport-related courses tend to display higher levels of motivation when they see a clear connection between academic success and future career opportunities.

Moreover, research by Atienza et al. (2017) affirmed that strong motivational profiles among maritime students are directly linked to academic performance, mental resilience, and physical engagement. These findings support the result of the present study, confirming that high motivation is a consistent characteristic among BSMT students and is essential in shaping their readiness for academic and real-world maritime responsibilities.

Skills Acquisition Challenges among First-Year Maritime Students

The study results reveal that freshmen BSMT students demonstrate a low level of skill acquisition challenges. This means they are very good at identifying and managing obstacles related to learning and performing physical tasks relevant to their training, and they find it easy to acquire skills. Despite encountering barriers, students remain resilient, actively seeking strategies to overcome difficulties in mastering techniques and physical competencies required in the maritime field.

This finding is supported by the recent study by Simanjuntak et al. (2025), which emphasized that maritime students often face difficulties in acquiring physical skills but benefit from structured training programs and supportive learning environments that foster persistence. Similarly, Magsino et al. (2023) found that learners taught adaptive coping and problem-solving strategies in physically demanding academic programs are better equipped to manage competence-related challenges, resulting in improved skill acquisition and performance, for example, in the maritime field.

Discussion on Correlation Analysis

The findings indicate that fitness awareness and skills acquisition challenges share a weak but meaningful relationship, where students with greater awareness of their physical fitness tend to experience fewer difficulties in acquiring skills. This suggests that physical preparedness may play a role in helping students adapt to practical learning tasks more effectively. Additionally, the significance of this relationship confirms that fitness awareness is linked to students' ability to navigate skill-based challenges. Meanwhile, students' motivation shows a stronger connection to skill acquisition challenges at the negative association. This indicates that those with higher motivation levels tend to experience fewer difficulties in mastering

practical skills. The significance of this relationship reinforces the idea that intrinsic motivation helps students remain engaged and persistent in developing their abilities. This highlights how students' drive and commitment influence their capacity to overcome skill-based challenges and perform effectively in assessment settings.

These findings imply that fitness awareness and motivation correlate with students' skill acquisition, shaping how they approach practical learning tasks. However, motivation demonstrates a more pronounced effect, suggesting that more engaged and driven students are better equipped to manage skill-based challenges easily. The significance of these relationships highlights the interconnected role of physical preparedness and psychological factors in shaping students' learning experiences.

The significant results prove that physical fitness is crucial in developing practical skills, particularly in activities requiring endurance, coordination, and agility. According to Stodden et al. (2019), students with higher fitness levels tend to demonstrate better motor skill proficiency, enhancing their ability to acquire and refine complex movements and lowering perceived challenges. Similarly, Faigenbaum et al. (2019) emphasized that physical preparedness improves cognitive functioning, allowing students to focus better and retain skill-based knowledge more effectively. Furthermore, Logan et al. (2020) highlighted that individuals with higher physical fitness levels show greater adaptability and confidence in skill acquisition, reinforcing the connection between fitness awareness and skills acquisition challenges.

The findings agree that motivation is a key determinant of student's ability to acquire and refine practical skills, influencing their persistence and engagement in learning tasks. This is further supported by Deci and Ryan (2017), who asserted that intrinsic motivation drives students to participate in learning activities actively; they tend to find difficult activities easy to accomplish, leading to better skill mastery and long-term retention. Similarly, Zimmerman and Schunk (2019) highlight that self-regulated learners, who are highly motivated, demonstrate more remarkable persistence and adaptability and lower skill-based challenges. Additionally, Dweck and Yeager (2020) argued that students with a growth mindset are more likely to embrace challenges, viewing difficulties in skill acquisition as opportunities for improvement rather than setbacks.

Discussion on Regression Analysis

The findings indicate that the combined influence of fitness awareness and motivation towards skills acquisition challenges is significant. The two variables explain 10.8% of the variance in skills acquisition challenges. However, the regression table shows that only motivation influences skills acquisition challenges among maritime students, explaining a notable portion of the variance in their skill development. Fitness awareness does not significantly influence the skills acquisition challenges.

These results contradict existing literature claiming that fitness awareness is crucial in skill acquisition, particularly physical and cognitive coordination, like in the study by Puspitasari et al. (2024), which states that students with higher fitness literacy demonstrate greater ease in acquiring motor skills, as physical readiness enhances movement efficiency and cognitive processing. It also negates the study by Stodden et al. (2019), which highlighted that physical literacy is a strong predictor of skill proficiency, enabling students to apply learned techniques with greater precision and confidence. As well as nullifying, Cattuzzo et al. (2016) emphasized that fitness awareness contributes to better self-perception in physical activities, reinforcing the connection between physical preparedness and successful skill acquisition.

Recent studies have also investigated the correlation between fitness awareness and skill learning difficulties within the AGT framework. A study indicated that fitness awareness did not substantially affect skill acquisition challenges, implying that mere awareness of fitness ideas does not inherently enhance skill learning or performance (Millar et al., 2021). Ravn (2022) also underscored the significance of embodied learning and interaction in skill development, contending that the phenomenological dimensions of physical activity, not just fitness awareness alone, exert a greater influence on skill acquisition than basic fitness awareness.

On the other hand, the results further prove the existence of the Achievement Goal Theory by Nicholls (1994; as cited by Jaitner et al., 2019), which states that the motivational environment, or classroom goal structures, influence individual outcomes through students' personal motivation. Hence, highly motivated students further show low complains in facing acquisition challenges. In line with the study of Jørgensen Olsen and Mehus (2022), these findings unequivocally support the promotion of mastery goals in physical education. The authors suggest that facing challenges in skills acquisition can be lessened by cultivating a mastery-oriented motivational environment that promotes effort, mastery, and growth.

Conclusion

Based on the results, it is concluded that fitness awareness is not a significant predictor of maritime skills acquisition challenges, but learning motivation is a significant predictor. The combined degree of influence of the predictors is 10.8%, which is significant. This conclusion partially affirms the achievement goal theory, stating that motivation is associated with social achievement and learning environments.

Recommendations

Based on the conclusion, the following are recommended: further quantitative research may be done using other predictive variables not covered in this study in order to account for the 89.2% variance in maritime skills acquisition challenges; educational institutions may initiate programs that enhance the learning motivation of the [maritime] students in order to reduce their skills acquisition challenges – something which supports the realization of the sustainable development goals for equal access to quality education.

21.1. Construction of references

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