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Tracer Study of Recognized Marine Engineering Cadets in University of the Visayas S.Y. 2012-2013 to 2016-2017

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Abstract

This study examines the shipboard training deployment status of recognized Bachelor of Science in Marine Engineering (BSMar-E) cadets at the University of the Visayas from School Year (SY) 2012–2013 to SY 2016–2017, focusing on those who pursued apprenticeships either within the country or internationally. Employing a quantitative descriptive research design, the study analyzes the total number of cadets who participated in this mandatory training, in compliance with CHED Memorandum Order No. 67, series of 2017, which mandates a minimum of 60% deployment for maritime institutions. The study reveals that while participation rates in the study varied deployment percentages consistently exceeded the required minimum reflecting the institution's success in meeting regulatory standards. Key findings indicate that cadets relied on diverse means to secure their placements, including walk-in applications, family and social connections within the maritime industry, and university assistance. Notably, participation increased steadily over the years, reaching a peak of 92.25% in 2015–2016, although a portion of cadets each year opted out, primarily due to personal preferences, shifts to land-based careers, or changes in professional interests.

Key words: Marine Engineering, Students, Shipboard Trainee, Maritime Education

Introduction

Shipboard Training is a crucial phase in the educational journey of every maritime student. After completing three years of academic coursework at their respective maritime institutions, students embark on a one-year onboard apprenticeship to fulfill the requirements for their Bachelor's Degree in Marine Transportation or Marine Engineering. (Besikci et al., 2019). However, despite their qualifications many maritime graduates encounter significant challenges in securing these apprenticeship placements, contributing to the growing pool of unemployed new graduates in the field (ICS, 2016).

Maritime institutions play a pivotal role in developing competent Filipino seafarers by ensuring that students are well-prepared and placed for actual shipboard training as part of their educational requirements (Bhattacharjee,2017).. This is mandated by the Commission on Higher Education (CHED) Memorandum Order No. 67, Series of 2017, in alignment with the Maritime Industry Authority (MARINA) under Republic Act 10635. This act establishes MARINA as the sole Maritime Administration responsible for implementing and enforcing the Standards of Training, Certification, and Watch keeping (STCW) 1978, as amended.

In 2013, the European Maritime Safety Administration (EMSA) conducted an audit of MARINA and CHED's regulatory and monitoring practices for maritime education in the Philippines. EMSA identified three major deficiencies: an impractical monitoring plan for maritime schools, conflicts of interest among evaluators and assessors, and a lack of alignment among maritime regulatory bodies with the National Quality Standards System (NQSS), which provides a uniform framework for quality standards in maritime education and certification.

In response to EMSA's findings, MARINA and CHED took extensive measures to address these issues and avoid a potential ban by the European Union on Filipino seafarers. The joint MARINA and CHED inspections led to the closure of numerous maritime schools and training centers across the Philippines. According to CHED officials, closure orders were issued for 44 BS Marine Transportation and 34 BS Marine Engineering programs, while 21 other BSMT and 24 BSMarE programs faced phase-outs for not meeting quality standards (Brago and Flores, 2013).

To further enhance quality, CHED released Memorandum Order No. 67, Series of 2017, which introduced revised policies, standards, and guidelines for BSMT and BSMarE programs across Maritime Higher Education Institutions

(MHEIs). A notable requirement under these new policies is outlined in Article XV, Section 48, Table 2, which mandates a minimum 60% deployment rate for cadets to complete Shipboard Training (SBT) after receiving their Certificate of Academic Requirements (CAR) from MHEIs.

The University of the Visayas – College of Maritime Education (UV-CoME), situated in Cebu City, is among the maritime institutions committed to delivering quality education aligned with industry standards. Recognized by MARINA, UV-CoME was authorized to admit first-year students to its BSMarE program for the 2017–2018 academic year, having met all the standards and policies established by MARINA and CHED. However, to maintain this recognition, UV-CoME must continue meeting the high standards required, including the new policy on minimum shipboard training deployment rates for marine engineering cadets.

Driven by this background, the researchers set out to explore how marine engineering students transition to shipboard training, a vital step in completing their four-year BSMarE program. This study aims to understand the rate at which students are deployed for this hands-on experience and to uncover the factors that help—or hinder—their placement as apprentice engineers over the past five years. Through this research, we hope to shed light on the challenges and opportunities in shaping the next generation of skilled marine engine officers.

Research Questions

1. How many students participated in the study each school year?
2. What is the status of participants in terms of shipboard training?
3. What factors have supported their deployment in shipboard training?
4. What factors have contributed to participants not being deployed for shipboard training?

Literature Review

Shipboard training is an essential component of maritime education, bridging the gap between theoretical learning and practical application. According to *Maritime Training Council* (2021), shipboard training serves as a critical phase in ensuring maritime cadets gain real-life experience, which is necessary for their professional development. This practical training provides cadets with skills that align with the requirements of the Standards of Training, Certification, and Watch keeping (STCW) convention, which mandates competencies in safety, seamanship, and watch keeping (STCW, 2017).

Despite the recognized importance of shipboard training, many maritime students face challenges in securing placements for their mandatory year-long apprenticeship. *Guntoro & Simanjuntak* (2024) report that limited vessel availability and stringent entry criteria are some factors that hinder students' shipboard training opportunities. Similarly, *Saha (*2023) argue that the increasing demand for on-board training placements has created bottlenecks, leaving many students unable to complete this crucial requirement. In the Philippines, these challenges are exacerbated by the competitive nature of the industry and the influx of new graduates each year (*Chibana, 2023*).
Institutional support also plays a significant role in students' ability to secure shipboard placements. Studies show that maritime institutions that actively collaborate with shipping companies are more successful in deploying cadets for on-board training. *Piterou & Birch* (2016) suggest that universities with strong industry connections are better able to place students, as these partnerships often facilitate apprenticeships. Additionally, the enforcement of *CHED Memorandum Order No. 67, Series of 2017*, requires institutions to monitor and ensure a minimum deployment rate, aiming to improve the chances for graduates to secure placements (*CHED, 2017*).

However, some students still fail to secure placements due to logistical and personal challenges. *Ghaderi* (2019) identified financial constraints, distance from home, and lack of networking opportunities as factors that impact deployment rates. Moreover, the study by *Magsino et al.* (2023) highlighted that institutional bureaucracy and inconsistent quality standards across maritime schools contribute to difficulties in the deployment process. The European Maritime Safety Agency (EMSA) conducted an audit on the Philippines' maritime education and identified specific deficiencies in regulatory oversight and alignment with national quality standards, further complicating placement for shipboard training (EMSA, 2013).

In response to these challenges, the *Maritime Industry Authority (MARINA)* and *CHED* have increased oversight and implemented policies to improve maritime education standards. For example, Maritime Industry Authority *(2019)* reported that joint initiatives with CHED led to the closure of non-compliant maritime programs, aiming to enhance the quality of maritime education. These policy changes are crucial, as higher compliance with quality standards increases the likelihood of placement for students, ultimately supporting the production of competent Filipino seafarers (*Brago & Flores, 2013*).

Methodology

The researchers employed a quantitative descriptive design, using a custom questionnaire to gather key data from respondents. Quantitative methods focus on objective measurements and statistical, mathematical, or numerical analysis, often achieved through polls, surveys, or computational examination of existing data. A descriptive survey method complemented this approach, making it suitable for data collected through both direct and indirect observation, whether in-person or via questionnaires.

Respondents included marine engineering cadets from University of the Visayas –College of Maritime Education who completed their three-year academic curriculum and qualified for a one-year shipboard training apprenticeship between S.Y. 2012–2013 and 2016–2017. Inclusion criteria required that respondents: a) be marine engineering majors at UV-CoME, b) have finished their three-year academic requirements, c) graduated between S.Y. 2012–2013 and S.Y. 2016–2017, and d) were willing to participate in the study. Those not meeting these criteria, along with students recognized in summer or October semesters, were excluded.

The study used quota sampling, an ideal technique for selecting participants based on set standards, ensuring the sample reflects essential characteristics anticipated in the overall population.

The custom questionnaire was structured to evaluate respondents' shipboard training status and factors influencing it, divided into four sections: Part I gathered demographic information (age, gender, civil status, religion, graduation year); Part II assessed training status (deployed, utility, or not deployed); Part III, for deployed respondents, identified factors that aided their deployment; and Part IV, for non-deployed respondents, examined possible hindrances. The questionnaire underwent pre-testing to confirm reliability via Cronbach's alpha and was validated by five marine engineering instructors.

Findings and Discussion

RQ1. How many students participated in the study each school year?
Table 1: number of respondents participated on the study per School Year

School Year	Total No. of recognized BSMarE Cadets	Participated		Did not Participated	
		f	%	f	%
2012 – 2013	118	78	66.1	40	33.9
2013 – 2014	188	112	59.6	76	40.4
2014 – 2015	218	193	88.54	25	11.46
2015 – 2016	258	238	92.25	20	7.75
2016 – 2017	115	89	77.39	26	22.61

Table 1 Above presents the summary of total number of Bachelor of Science in Marine Engineering (BSMar-E) cadets recognized in their respective school year including the percentage of BSMar-E cadets which have participated and did not participated in this study as respondents. It is an important thing to consider since this study was anchored on the CHED Memorandum Order No. 67, series of 2017, stated that the percentage of shipboard training deployment of certain maritime institution should be at least 60 % base on the total number of cadets recognized in that school year. However, there are cadets whom did not participated in this study and it is vital thing to consider as it will have an impact on the result of this study in general.

As reflected in the table above, there were 118 marine engineering cadets recognized in the School Year 2012 – 2013. However, only 66.1 % of this engine cadets participated in this study, the 33.9 % of this cadets did not responded to the researcher's
Invitation to participate in this study. In School Year 2013 – 2014, there are 188 marine engineering cadets recognized and 59.6 % of them participated and 40.4 % did not participated. In School Year 2014 – 2015, total number of marine engineering cadets recognized were 218, 88.54 % of them participated and only 11.46 % did not participated. In School Year 2015 – 2016, there were 258 marine engineering cadets recognized, 92.25 % of them

participated and only 7.75 % did not participated. In School Year 2016 – 2017, 115 marine engineering cadets was recognized and there were 77.39 % of those cadets participated in this study and 22.61 % did not participated.

The percentage of marine engineering cadets which did not participated in this study from school year 2012 – 2013 until 2016 – 2017 was because some of them did not responded to the researchers private messages and e-mails to them, there are cadets also responded but decline to participate, there are few cadets also which cannot be contacted and search by the researchers in the internet.

RQ2 What is the status of participants in terms of shipboard training?
Table 2: Status of Participant's Shipboard Training

STATUS	**S.Y. 2012-2013 N=78**		**S.Y. 2013-2014 N=112**		**S.Y. 2014-2015 N=193**		**S.Y. 2015-2016 N=238**		**S.Y. 2016-2017 N=89**	
	f	%	f	%	f	%	f	%	f	%
Deployed	60	76.92	68	60.71	125	64.77	126	52.94	53	59.55
Utility	0	0	5	4.47	51	26.42	0	0	0	0
Not Deployed	18	23.08	39	34.82	17	8.81	112	47.06	36	40.45

The table 2 above will present the percentage of shipboard training deployment of all the participants in this study. The data in this table will show the answer to the problem or research gap pose in this study. The percentage of deployment, utility and not being deployed of this participants were computed based on the total number of participants which had participated in each school year they belong and not from the total number of cadets recognized in that particular school year. It is because we have to necessarily consider that there were cadets which did not participated in the conduct of this study and it will affect in the computation of the total percentage of shipboard training deployment in each school year they been recognized.

As presented in the table 3 above, out of 78 participants recognized in S.Y. 2012-2013 there were 60 engine cadets or 76.92 percent were already deployed. They are now employed in different shipping companies both local and international, some of them were already licensed engine officers and others were still ratings in the engine department. None of the participants in S.Y. 2012-2013 were in utility status, however there were 18 engine cadets or 23.08 percent which were not been deployed. In S.Y. 2013-2014 there were 112 marine engineering cadets participated in the conduct of this study, among them were the 68 engine cadets or 60.71 percent which was already deployed, there were 5 cadets or 4.47 percent currently in the utility status and 39 cadets or 34.82 percent were not being deployed. In S.Y. 2014-2015 there were 193 marine engineering cadets participated in this study, 125 cadets or 64.77 percent were already deployed in both local and international shipping companies. There were 51 cadets or 26.42 percent also that will be deploy because they were already hired in different shipping companies and currently in utility status, only 17 cadets or 8.81 percent from the said school year were not being deployed. In S.Y. 2015-2016, 238 recognized marine engineering cadets had participated in the conduct of this study. The 126 cadets or 52.94 percent were already deployed and none among all participants in this school year were in utility status. The 112 cadets or 47.06 percent from all the participants from this school year were still applying for their shipboard training deployment and still hoping that soon they will be deploy. In S.Y. 2016-2017, there were 89 recognized marine engineering cadets participated in this study. 53 cadets or 59.55 percent of them were being deployed already, none among all the participants in this school year were in utility status and 36 cadets or 40.45 percent were not being deployed.

RQ3What factors have supported their deployment in shipboard training?
Table 3: Factors Assisting the Shipboard Training Deployment

Assisting Factors	S.Y.2012-2013 N=60		S.Y.2013-2014 N=73		S.Y.2014-2015 N=176		S.Y.2015-2016 N=126		S.Y.2016-2017 N=53	
	f	%	f	%	f	%	f	%	f	%
University Efforts (scholar/placement arrange by the sch.)	13	21.67	1	1.37	68	38.64	0	0	24	45.28
Back-up by family/relatives w/c are seafarer.	10	16.67	23	31.51	101	57.39	52	41.27	49	92.45
Recommended by friends w/c are seafarer.	11	18.33	10	13.70	52	29.55	59	46.82	21	39.62
Recommended by crewing personnel in a company	8	13.33	1	1.37	22	12.50	0	0	5	9.43
Walk – in application	49	81.67	65	89.04	115	65.34	126	100	34	64.15

Table 3 above will present the different assisting factors on the deployment of participant's shipboard training familiarization. It will emphasize what are the factors that help the participants in their deployment onboard.

As reflected in table 3 above, out of 60 cadets deployed from S.Y. 2012-2013 there were 49 cadets or 81.67 percent were assisted by walk-in application, 13 cadets or 21.67 were help by University efforts, 11 cadets or 18.33 percent were recommended by their friends within the shipping company, 10 cadets or 16.67 percent were being back-up by their family and relatives which are also seafarers and there were 8 cadets or 13.33 percent which were recommended by crewing personnel in a company. In S.Y. 2013-2014 there were 68 cadets deployed and 5 cadets were utility. Out of 73 engine cadets 65 or 89.04 percent were hired by walk-in application, 23 cadets or 31.51 percent were being back-up by their family or relatives which are also seafarers, 10 cadets or 13.70 percent were being recommended by their friends in a company and only 1 cadet or 1.37 percent were being assisted by University efforts and by recommendation of crewing personnel in a company respectively. In S.Y. 2014-2015, there were 125 deployed cadets and 51 cadets were utility. Out of 176 of this cadets 115 or 65.34 percent were being hired because of walk-in application, there were 101 cadets or 57.39 percent which were back-up by their family and relatives which are also seafarers, 68 cadets or 38.64 percent were assisted by the University efforts, 52 or 29.55 percent were recommended by their friends in a company and there were 22 cadets or 12.50 percent which were recommended by crewing personnel in a company. In S.Y. 2015-2016, there were 126 engine cadets which were deployed via walk-in application, 59 cadets or 46.82 percent were being recommended by their friends which are seafarers in a company and 52 or 41.27 percent of them were back-up by their family and relatives which are also seafarer. None among the 126 engine cadets deployed in the said school year were assisted by University efforts nor recommended by crewing personnel in the company. In S.Y. 2016-2017, there were 53 engine cadets deployed, 49 of them or 92.45 percent were back-up by their family and relatives which were also seafarers, there were 34 or 64.15 percent of this cadets were hired by walk-in application, 24 cadets or 45.28 percent were assisted by University efforts, 21 or 39.62 percent were recommended by their friends which are also seafarers in a company and there were 5 cadets or 9.43 percent were recommended by crewing personnel in the company.

RQ4What factors have contributed to participants not being deployed for shipboard training?
Table 4: Causing Factors of Not Deployed Status of Shipboard Training

Table 4 below will present and show the different causing factors which lead to the shipboard training familiarization of recognized engine cadets not being deployed. In this table we can identify and determine what are the reasons why there were recognized marine engineering cadets which were not able to get onboard for their shipboard training familiarization.

Causing Factors	**S.Y.2012-2013 N=18**		**S.Y.2013-2014 N=39**		**S.Y.2014-2015 N=17**		**S.Y.2015-2016 N=112**		**S.Y.2016-2017 N=36**	
	f	**%**	**f**	**%**	**f**	**%**	**f**	**%**	**f**	**%**
Medical Problem	0	0	3	7.69	1	5.88	0	0	0	0
Shifted to other profession	11	61.11	0	0	5	29.41	0	0	7	19.44
Prefer to work in land-based jobs	11	61.11	17	43.59	10	58.82	46	41.07	24	66.67
Married after Recognition	1	5.56	0	0	2	11.76	0	0	7	19.44
Personal choice	12	66.67	35	89.74	17	100	112	100	30	83.33

As presented in the table 4 above, there were 18 engine cadets in S.Y. 2012-2013 that were not deployed, 12 of them or 66.67 percent answered that it is their personal choice not to apply for their actual shipboard training. There were 11 cadets or 61.11 percent which shifted to other profession and prefer to work in land based jobs, there was also 1 cadet or 5.56 percent which was married after recognition. None among the 18 engine cadets answers medical problem as reason of their not deployed status. In S.Y. 2013-2014, there were 39 engine cadets which were not deployed, 35 cadets or 89.74 percent of them answered that it is their personal choice, 17 or 43.59 percent of them prefer to work in land based jobs and 3 of them or 7.69 percent point out that they had medical problem. None among 39 cadets from this school year wanted to shift into other profession or had been married after recognition. In S.Y. 2014-2015, there were 17 engine cadets which were not being deployed and all of them answered that it is their personal choice. On the other hand, there were 10 cadets or 58.82 percent that prefer to work in land based jobs, 5 cadets also or 29.41 percent wanted to shift into other profession, there were 2 cadets or 11.76 percent which had been married after recognition and 1 cadet suffered medical problem. In S.Y. 2015-2016, there were 112 engine cadets which were not deployed, all of them answered that it is their personal choice, 46 of this cadets or 41.07 percent prefer to work in land based jobs and none among this cadets answered medical problem, shifted to other profession and married after recognition as cause of their not deployed status. In S.Y. 2016-2017, there 36 engine cadets which were not been deployed, 30 of them or 83.33 percent answered that it is their personal choice, there were also 24 cadets or 66.67 percent that prefer to work in land based jobs and 7 cadets or 19.44 percent shifted to other profession and had been married after recognition.

Conclusion

The findings from this study underscore the significant role of diverse support mechanisms in facilitating shipboard training deployment for Bachelor of Science in Marine Engineering (BSMar-E) cadets, while also revealing that personal career preferences and external factors contribute to non-deployment rates. The study highlights that, despite variability in participation, the University of the Visayas has maintained compliance with CHED's required deployment standards, primarily through the cadets' access to walk-in applications, family and social networks, and university support. Similar research affirms that family connections and self-initiative, such as walk-in applications, are key enablers for cadet placements in the maritime sector (Lau & Ng, 2015). Additionally, the study reveals that some cadets chose alternative career paths or land-based jobs, aligning with previous findings that underscore a shift in career preferences among maritime graduates due to lifestyle choices and perceived employment conditions in seafaring roles(Edirisinghe et.al.,2016). These insights contribute to a broader understanding of deployment dynamics in maritime education and highlight the importance of institutional and family support systems in achieving regulatory compliance while accommodating cadet career aspirations.

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