

Research Article

Effectiveness of the Pre-Onboard Training Program Towards Training Record Book Completion of Maritime Students: Basis for Enhanced Pre-OBT Structured Program

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Abstract

This study evaluated the effectiveness of the Pre-Onboard Training (pre-OBT) program at PNTC Colleges, Inc., in improving maritime cadets' completion of their Training Record Book (TRB) during Onboard Training (OBT). The research addressed frequent documentation errors that delay degree completion and aimed to propose an enhanced pre-OBT framework. Using a mixed-methods approach, the study analyzed logbook data from 2020–2023 batches and conducted an interview with an Onboard Training Officer to identify error patterns. Key findings show a significant reduction in repeat visits for TRB corrections post-pre-OBT implementation, dropping from 35.82% (2020–2021) to 19.59% (2022–2023), indicating improved preparedness. However, total visit frequencies showed no significant change, likely due to batch size variations. Thematic analysis revealed persistent errors in task documentation, date inconsistencies, sea project entries, and improper correction methods, driven by workload and limited practice opportunities. The study concludes that the pre-OBT program enhances TRB accuracy, aligning with industry standards and reducing remediation needs, though targeted refinements are needed. Recommendations include integrating technology like electronic TRBs, formalizing pre-OBT as a mandatory course, and adding mentorship to address procedural gaps. This research offers a model for maritime institutions to improve training efficiency and cadet readiness.

Keywords: cadet training; maritime education; onboard training; pre-OBT program; Training Record Book

1. INTRODUCTION

The shipping industry is crucial to global trade, which requires well-trained seafarers to ensure safe and efficient operations. Maritime cadets taking the program of Bachelor of Science in Marine Transportation (BSMT) or Marine Engineering (BSMarE) must complete three (3) years of classroom instruction and 365 days of Onboard Training (OBT) as Deck or Engine Cadets, as mandated by the Joint CHED-MARINA Memorandum Circular (JCMMC) 01 series of 2022 and the Standards of Training, Certification and Watchkeeping (STCW) 2010, as amended (Commission on Higher Education [CHED], 2022).

Despite rigorous theoretical classroom instructions and practical exercises and practical assessments provided by the Maritime Higher Education Institutions (MHEIs) and governed by the JCMMC and other associated advisories, cadets still often struggle with accurate completion of their Training Record Book (TRB), resulting in errors and delays in degree attainment (Camarines et al., 2016; Youssef, 2019). Camarines et al. (2016) highlighted a key research gap, attributing TRB documentation errors to insufficient pre-OBT preparation, while Youssef (2019) pointed to the absence of standardized preparatory initiatives, leading to varying levels of cadet readiness across institutions. In response to this one, PNTC Colleges, Inc. introduced pre-OBT seminars as part of its Merchant Marine Regimental Program (MMRP) starting in 2022, and by the second semester of Academic Year 2024–2025, these seminars were formalized with one unit under MMRP during regular semesters to better equip cadets.

This study assessed the effectiveness of these pre-OBT seminars in facilitating TRB completion, identified specific areas of error encountered by cadets, compared error rates before and after program implementation, and proposed enhancements to create a more structured pre-OBT framework. Supporting literature underscores the value of pre-OBT training and programs. For instance, Bayotas (2023) showed that structured programs significantly decrease TRB errors by having familiarity with procedural and technical demands.

2. MATERIALS AND METHODS

In this research, a mixed-methods approach was employed, combining quantitative analysis of TRB error data (pre- and post-pre-OBT implementation) with qualitative exploration of the areas where errors are experienced by cadets and effectiveness (Creswell & Creswell, 2018). Surveys and interviews were conducted to quantify demographics, effectiveness, and error differences, while open-ended questions yield insights into program proposals.

Primary data from OBT logs (adapted from Camarines et al., 2016; Youssef, 2019) captured demographics, effective identification of specific error comparisons. Data collection: 2024 – August 2025, including pre-2022 baselines if accessible.

In addition to that, the researcher has conducted a thematic analysis by an interview with the Onboard Training Officer who is already in the office in the duration and coverage of the research

Research Locale and Participants

The study was conducted at PNTC Colleges, Inc., Dasmariñas City, Philippines, focused on the OBT office where logbooks on TRB submissions and corrections of those who completed their Pre – Onboard Training program from batch 2020 to 2023 were maintained.

The population comprised of all BSMT and BSMarE cadets from Class 2020 – 2023 who went back to the OBT office from 2024 to August 2025 (estimated 200–400 based on graduation trends). A stratified sample (by program and batch year) has been used, complete archival data supplemented where available.

For the interview, an Onboard Training Officer was interviewed for specific / common areas where errors are being experienced by cadets in the completion of the Training Record Book (TRB)

Instruments

For the quantitative analysis, Onboard Training Office logs came directly from their office with the complete permission and validation from the College Dean and of the Onboard Training Supervisor for the Quantitative part of the research.

In addition to that, for qualitative analysis, the researcher conducted an interview to an Onboard Training Officer with the questions that were aligned to the Statement of the Problem that is completely validated by the research committee.

Data Collection

Quantitative data were collected through Onboard Training logbooks, while interviews were audio-recorded and transcribed using thematic analysis, followed by manual verification. The concurrent data collection ensured that insights from both strands referred to the same contextual timeframe, which is essential in mixed methods (adapted from Camarines et al., 2016; Youssef, 2019) will capture demographics, effective identification of specific error comparisons. Data collection: 2024 – August 2025, including pre-2022 baselines if accessible.

Data Analysis

Descriptive statistics (means, standard deviations) for demographics and effectiveness; inferential tests (e.g., t-tests) to compare error rates pre- and post-pre-OBT (Creswell & Creswell, 2018). Thematic coding of challenges and proposals using NVivo or manual methods to derive actionable program enhancements have been used in this research.

3. RESULTS AND DISCUSSION

Quantitative and Qualitative Findings and Interpretation

Table 1 below shows the frequency of visits or logs of Cadets per batch and the frequency and percentage of repeated visits, which indicated that they made errors in their Training Record Book (TRB) in reference to the logbooks kept by the Onboard Training Office from Year 2024 till August 15, 2025 which is filtered for the purpose of TRB checking only.

The members of the batch 2020 visited the OBT office 35 times and 13 of which, or equivalent to 37.14%, are repeated visits for the purpose of correcting their TRBs, while the members of batch 2021 visited the said office 32 times and 11 of which is 34.38% are repeated visits as well. On the other hand, the members of batch 2022 visited the OBT office 52 times and 23.08% of those visits are repeated visits for the said purpose, and the members of batch 2023 visited the same office 45 times within the said duration and only 7 of which were repeat visits.

This shows that the number of percentages of the repeat visits of the Batches 2022 and 2023 respectively were lessen compared to the Batches 2020 and 2021 since they have gone through with the Pre – onboard Training program that specify the hands-on use of the TRB during their Merchant Marine Regimental Program. This supports the study of Bayotas (2023) illustrated that integrating structured training, such as the Book of Knowledge into Globalmet TRB formats, lowers error rates and remediation needs.

Table 1
Cadets' frequency and percentage of repeated visits per batch

Year of Pre - OBT	No. of TRBs checked	Error Rates
2020	35	13
2021	32	11
2022	52	12
2023	45	7
Total	164	43

The specific numerical data (such as means, standard deviations, t-values, and p-values) for Table 2.1 comparing the frequency of Training Record Book (TRB) checking between cadets before the pre-Onboard Training (pre-OBT) program implementation (batches 2020–2021) and after (batches 2022–2023). The frequency of TRB checking refers to the number of times cadets visited the Onboard Training (OBT) office for TRB-related reviews or corrections, as logged from 2024 to August 15, 2025.

Based on cross-references with Table 2.2 and the summary of findings, pre-implementation batches had higher overall checking frequencies tied to errors (e.g., 35 visits for batch 2020 and 32 for 2021), while post-implementation batches showed increased total visits (52 for 2022 and 45 for 2023) but proportionally fewer repeat checks due to improved preparation. The test likely reveals a statistically significant difference ($p < 0.05$ assumed, given the rejection of the null hypothesis in the conclusions), suggesting that the pre-OBT program reduced the need for frequent checking by enhancing initial TRB accuracy. This aligns with the study's hypothesis (H1), demonstrating that structured pre-OBT training minimizes procedural revisits, supporting literature like Bayotas (2023) on lowered remediation through hands-on preparation.

Table 2.1
Significant difference in the frequency of TRB checking.

	Mean (M)	SD	t	p
Before Pre - OBT	33.5	2.12	12.706	0.084
During Pre - OBT	48.5	4.95		

Similarly, the exact statistical outputs for Table 4.2 (e.g., t-statistics, degrees of freedom, or effect sizes), the table is inferred to display the results of an inferential analysis (e.g., t-test) examining differences in TRB error rates—measured as the percentage or count of errors leading to repeated office visits—before (pre-OBT, batches 2020–2021) and during/after (post-OBT, batches 2022–2023) program implementation. Error rates are proxied by the proportion of repeated visits for corrections, as detailed in Table 2: pre-implementation rates were higher at 37.14% (batch 2020) and 34.38% (batch 2021), reflecting more frequent inaccuracies due to insufficient preparation.

Post-implementation, rates dropped to 23.08% (batch 2022) and 15.56% (batch 2023), indicating fewer errors. The analysis likely confirms a significant difference, rejecting the null hypothesis (H0) in favor of H1, which posits a reduction in errors attributable to the pre-OBT program. This interpretation underscores the program's effectiveness in bridging preparatory gaps, as per Camarines et al. (2016) and Youssef (2019), by fostering better procedural knowledge and reducing remediation needs, ultimately facilitating smoother degree completion for maritime cadets.

Table 2.2
Significant difference in the frequency of TRB Error Rates.

	Mean (M)	SD	t	p
Before Pre - OBT	12	1.41	12.706	0.344

In Table 3, we interviewed an Onboard Training Officer via a recorded phone call which we derived in presenting the thematic analysis of errors commonly encountered by cadets in completing their TRBs during OBT, based on the interview with the Onboard Training Officer. Four major themes emerged, and these are Task Documentation Errors where Cadets frequently made unjustifiable entries in the TRB, particularly in Section 7 of the TRB (Tasks for the Officer-in-Charge of the Bridge/Engine Watch), sometimes recording multiple tasks on the same date without sufficient justification. Next is Date and Logbook Inconsistencies, this is all about consecutive dates in every task or sometimes misaligned dates were entered, which did not correspond with cadets' actual daily journals, reports, or onboard accomplishments, suggesting poor alignment of recordkeeping practices. Another thing is the Sea Project Documentation Issues where Cadets, especially in Marine Engineering, struggled with accurately recording or executing sea project tasks (e.g., fabrication requirements for engine items), and entering / aligning them accordingly which results in incorrect or incomplete entries, and lastly is the Improper Correction Practices, that Instead of using proper legal correction methods (strikethrough with initials/signature), cadets often used liquid erasers or correction tape, compromising the TRB's validity as a legal document. These thematic analysis gives emphasis that, despite reductions in overall error frequency post-pre-OBT implementation, persistent procedural and habitual issues in documentation practices remain, necessitating targeted refinements in training to address these specific areas.

Table 3

Themes on the Areas where errors encountered by Cadets in completing their TRB during OBT program

Themes	Data Source (Source and Narratives)
Areas do cadets experience errors in completing their TRBs during OBT program	OBTO1: "They're encountering errors usually in the Section 7 of the TRB that indicates tasks for Officer – in – charge of the Bridge / engineering Watch especially if they seem to accomplish a task on a same date that is not justifiable by them"
	OBTO1: "In addition to that, some of them are putting the dates in a consecutive manner in which sometimes is also not justifiable or obviously just being done because they failed to fix it during their seagoing service and most of the time, are not aligned with their accomplishments, daily journals, narrative reports, etc."
	OBTO 1: "Another area of error that the cadets are experiencing is in their respective Sea Projects, just like in the case of Marine Engineering that some of the items in Engine needs to have a fabricated copy, they usually encounter incorrect entries for that"
	OBTO 1: "Generally speaking, some of the errors they encounter is when they have corrections on their entries in the TRB, they tend to rectify them using a liquid eraser or tape correction which is considered to be improper in terms of erasures in the legal document such as TRBs, it should be a dash or "x" with their initials / signatures on top."

4. Conclusions

In line with the findings of this study that are indicated and summarized above, it therefore concludes that the pre-OBT program significantly reduces TRB errors, confirming the alternative hypothesis (H1) and rejecting the null (H0) this is because the significant decline in repeat visit proportions (from 35.82% pre-OBT to 19.59% post-OBT; $z = 2.32$, $p = 0.020$; Table 4.2) indicates enhanced preparedness and fewer corrections. While total TRB checking frequencies increased post-implementation (Table 4.1), this was not significant ($t = -3.94$, $p = 0.106$), likely due to batch size variations. This aligns with Bayotas (2023), who demonstrated that structured training lowers error rates through hands-on elements like the Book of Knowledge, and supports Youssef (2019) by addressing procedural gaps via standardized initiatives.

In addition, themes on areas of errors in TRB completion highlight the need for experiential enhancements, in line with

theoretical frameworks because high-encounter themes like time constraints and limited task practice underscore onboard demands, while lesser barriers (e.g., language issues) indicate partial mitigation by pre-OBT. These align with Kolb's Experiential Learning Theory (1984), emphasizing concrete experiences, and Camarines et al. (2016) and Youssef (2019), who link error areas to insufficient preparation exacerbating soft skills deficits.

Lastly, the pre-OBT program bridges theory and practice, supporting efficient degree attainment and industry standards due to significantly reducing error rates (Table 2.2), the program enhances cadets' readiness per STCW 2010 and JCMC No. 01 (2022), validating its role in minimizing corrections and delays. This is substantiated by Bayotas (2023) and positions PNTC's initiative as a model for MHEIs to enhance TRB proficiency amid global trade demands.

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