

An Analysis of Maritime Alphabet Usage by Students at Politeknik Pelayaran Malahayati

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Abstract

This study aims to analyze the use of the Maritime Alphabet by students of Politeknik Pelayaran Malahayati, focusing on their level of understanding, accuracy, consistency, and the challenges faced in maritime communication. This research employed a descriptive method with a mixed methods approach. The subjects of the study were 48 fourth-semester students of the Ship Electrical Engineering Study Program. Data were collected through written and oral tests, observation, and questionnaires. The results showed that the students' ability in using the Maritime Alphabet was in the "good" category, with an average score of 76.8%. Most students (41.7%) were categorized as good, followed by very good (25%), fair (20.8%), and poor (12.5%). Based on the assessment aspects, pronunciation (72%), accuracy (78%), and fluency (70%) were also categorized as good, although pronunciation was the lowest aspect. The errors identified included mispronunciation, incorrect use of code words, lack of fluency, and the influence of the mother tongue. The questionnaire results indicated that students were aware of the importance of the Maritime Alphabet; however, they still experienced difficulties in pronunciation and lacked confidence. Therefore, practice-based learning such as simulation, role play, and pronunciation drills is needed to improve students' maritime communication competence.

INTRODUCTION

The Maritime Alphabet is widely used in ship to ship and ship to shore communication to convey critical information such as vessel names, call signs, coordinates, container numbers, and navigational instructions, particularly in conditions of weak signals or adverse weather (Ricardou, 2024). Accuracy in its use is essential, as even a single mispronounced letter may lead to serious consequences, including vessel misidentification, navigational errors, or maritime accidents. Therefore, mastery of the Maritime Alphabet is not only a linguistic skill but also a crucial component of maritime safety.

As a maritime education and training institution, Politeknik Pelayaran Malahayati is responsible for preparing students to communicate professionally according to international

standards. Students are expected to demonstrate not only theoretical understanding but also accurate, rapid, and consistent use of the Maritime Alphabet in practical contexts such as VHF radio simulations, safety drills, and onboard training. However, preliminary observations indicate that some students still experience difficulties in using the Maritime Alphabet accurately. Common issues include mixing standard phonetic forms with ordinary pronunciation, incorrect terminology, and inconsistency in usage (e.g failing to use standardized forms like “Alpha” or “Bravo”). These challenges may stem from limited contextual practice, teaching methods focused on memorization, or low confidence in oral communication.

If not addressed, these issues may affect students’ readiness to meet the demands of professional maritime communication, which requires clarity, precision, and the absence of ambiguity. Therefore, this study aims to analyze the level of students’ understanding, accuracy, and consistency in using the Maritime Alphabet, as well as to identify the challenges and influencing factors. The findings are expected to contribute to the development of more effective Maritime English teaching strategies that better align with real-world communication needs in the maritime industry.

Maritime communication plays a vital role in ensuring the safety and efficiency of ship operations. It must be clear, concise, and free from ambiguity, as it is used in high-risk environments where miscommunication can lead to navigational errors, accidents, or delays in emergency response (Bakr, 2009). Given the technical and multinational nature of maritime operations, standardized communication systems are essential. For this reason, the International Maritime Organization (IMO) established the Standard Marine Communication Phrases (SMCP) to minimize misunderstandings among seafarers (Trenkner & Cole, 2010; IMO, 2001).

Within this context, Maritime English, as a branch of English for Specific Purposes (ESP), is designed to meet the specific communication needs of the maritime industry. It emphasizes practical language skills required in real-life situations on board, including radio communication, navigation, safety procedures, and ship operations (Cole, Pritchard, & Trenkner, 2007). As English functions as a global professional language, its role in maritime settings extends beyond communication to becoming a critical tool for ensuring safety (Crystal, 2003).

A key component of Maritime English is the Maritime Alphabet, also known as the NATO Phonetic Alphabet. This system standardizes the pronunciation of letters to ensure clarity in radio communication, especially in conditions affected by noise, signal interference, or accent differences (ICAO, 2007). Incorporated within the SMCP, the Maritime Alphabet is used to spell out vessel names, call signs, positions, and other essential information. Its primary function is to eliminate ambiguity in spoken communication, particularly in multilingual maritime environments (IMO, 2001; Bakr, 2009).

Mastery of the Maritime Alphabet is considered an essential part of a seafarer’s safety competence (Trenkner, 2002). Maritime students are therefore required to use it consistently across various communication contexts. Effective learning methods, such as simulation based training and radio communication practice, have been shown to significantly improve students’ ability to use the phonetic alphabet accurately and automatically (Cole et al., 2007). Without sufficient practice, students often struggle with proper and consistent usage.

Previous studies highlight the importance of standardized maritime communication. Yusrah (2025) Maritime Alphabet as a core component of Maritime English pedagogy, contributing to the development of standardized communicative competence essential for safety and professionalism in maritime education. Trenkner and Cole (2010) emphasize that the Maritime Alphabet is a fundamental communication skill that should be developed during training, particularly through simulation exercises. Bakr (2009) identifies nonstandard and ambiguous language as a major cause of miscommunication at sea, reinforcing the need for

systems such as SMCP and the Maritime Alphabet. Similarly, Cole, Pritchard, and Trenkner (2007) argue that Maritime English should be taught with a safety-based approach, noting that limited mastery of standard language leads to difficulties in radio communication.

However, these studies mainly focus on professional seafarers and do not specifically examine students in maritime education, particularly in Indonesia. Existing research in the Indonesian context indicates that maritime students still face challenges in oral communication, especially in pronunciation and the use of standard terminology. This suggests a gap between required international communication competencies and students' actual abilities. Therefore, further research is needed to analyze how maritime students use the Maritime Alphabet in both learning and practical communication contexts, particularly at Politeknik Pelayaran Malahayati.

METHODOLOGY

This study was conducted at Politeknik Pelayaran Malahayati from April to June 2026. The population consisted of all students in the Sistem Kelistrikan Kapal Study Program, while the sample included two classes from the fourth-semester (SKK IVA and IVB).

The research employed a descriptive design with a mixed-methods approach, combining quantitative and qualitative data to provide a comprehensive understanding of students' ability to use the Maritime Alphabet. It aimed to describe actual conditions without applying experimental treatment.

Data were collected through tests, observations, and interviews. Written and oral tests were used to measure students' understanding, pronunciation, and practical use of the Maritime Alphabet. Observations were conducted during communication simulations to assess accuracy, fluency, and consistency. Semi structured interviews were used to explore students' experiences, difficulties, and influencing factors such as learning methods, practice intensity, and confidence.

The research instruments included mastery tests (written and oral), observation sheets, and interview guidelines. Quantitative data were analyzed through scoring, percentage calculation, and categorization into performance levels, while qualitative data were analyzed using thematic analysis, including data reduction, classification, presentation, and conclusion drawing. This approach enabled the study to identify both the level of students' competence and the factors affecting their use of the Maritime Alphabet.

FINDINGS

This study involved 48 students (two classes: SKK IVA and IVB) of Politeknik Pelayaran Malahayati as respondents. Data were collected through tests on the use of the Maritime Alphabet, observation of communication practices, and questionnaires to determine students' levels of understanding and difficulties.

Students' Ability in Using the Maritime Alphabet was assessed based on test results in using the Maritime Alphabet in communication (spelling, call signs, and message delivery). The assessment categories were as follows:

- 81–100%: Very Good
- 61–80%: Good
- 41–60%: Fair
- 21–40%: Poor
- 0–20%: Very Poor

The test results are presented below:

Table 1. The Result of Students' Test

No	Category	Number of Students	Percentage
1	Very Good	12	25%

2	Good	20	41.7%
3	Fair	10	20.8%
4	Poor	6	12.5%
5	Very Poor	0	0%
Total		48	100%

Table 1 presents the distribution of students' test results based on five performance categories. The findings indicate that the largest proportion of students (41.7%) achieved the Good category, followed by 25% who attained the Very Good category. Meanwhile, 20.8% of the students were classified as Fair, and only 12.5% fell into the Poor category. Notably, none of the students were categorized as Very Poor, indicating that all participants demonstrated at least a basic level of mastery of the assessed material.

The overall mean score of the students was 76.8, which falls within the Good performance category. This result suggests that, in general, students have acquired a satisfactory level of competence in the tested subject. The predominance of students in the Good and Very Good categories (66.7% combined) reflects the effectiveness of the instructional process in facilitating students' learning outcomes. However, the presence of students in the Fair and Poor categories (33.3%) indicates that some learners still encounter difficulties in mastering the material. Therefore, additional instructional support, remedial activities, and more intensive practice are recommended to help these students improve their academic performance and achieve higher levels of proficiency.

Analysis of Maritime Alphabet Usage

Students' ability was analyzed based on three main aspects:

Table 2. The Percentage of the Assessment Aspect

Assessment Aspect	Percentage	Category
Pronunciation	72%	Good
Accuracy	78%	Good
Fluency	70%	Good

Table 2 presents the students' performance across three assessment aspects, namely pronunciation, accuracy, and fluency. The findings show that all three aspects were classified in the Good category, indicating that students generally demonstrated satisfactory competence in using the Maritime Alphabet during the assessment. Among the three aspects, accuracy obtained the highest percentage (78%), suggesting that students were generally able to identify and apply the Maritime Alphabet correctly in communication tasks.

Pronunciation achieved a score of 72%, while fluency received the lowest score at 70%. Although both aspects remain within the Good category, the relatively lower percentages indicate that students continue to face challenges in producing clear pronunciation and maintaining smooth communication. Since the Maritime Alphabet requires precise articulation and rapid information exchange to prevent communication errors, these findings suggest that pronunciation and fluency require greater instructional attention than accuracy.

Overall, the results demonstrate that students have developed a solid foundation in using the Maritime Alphabet. Nevertheless, the differences among the three assessment aspects imply that further practice, particularly through pronunciation drills, simulation-based learning, and authentic communication exercises, is necessary to strengthen students' oral proficiency and improve their confidence in real maritime communication contexts.

Errors in Using the Maritime Alphabet.

Based on observations and test results, several common errors were identified:

1. Pronunciation Errors: Students have not fully followed international pronunciation standards.
2. Incorrect Use of Code Words: Mistakes in selecting phonetic codes (e.g., confusion between “G” and “J”).
3. Lack of Fluency: Some students hesitate and pause during communication.
4. Mother Tongue Interference: Local accents affect pronunciation clarity.

Table 3. Students’ Perceptions of the Maritime Alphabet

Statement	Percentage
Maritime Alphabet is very important	94%
Understand its usage	80%
Confident in using it	70%
Experience pronunciation difficulties	68%
Need more practical training	96%

Table 3 presents students' perceptions of the Maritime Alphabet based on five key indicators. The findings reveal that the vast majority of students (94%) consider the Maritime Alphabet to be an essential communication tool in maritime operations. This result indicates a high level of awareness regarding its significance in ensuring effective and standardized communication at sea. Furthermore, 80% of the respondents reported that they understand how the Maritime Alphabet is used, suggesting that most students have acquired the fundamental theoretical knowledge required for its application.

Despite this positive level of understanding, only 70% of the students expressed confidence in using the Maritime Alphabet during communication activities. This discrepancy between knowledge and confidence suggests that theoretical understanding alone is insufficient to develop communicative competence. In addition, 68% of the respondents acknowledged experiencing difficulties in pronouncing the Maritime Alphabet accurately. This finding highlights pronunciation as one of the primary challenges faced by students, particularly because effective maritime communication requires clear articulation to avoid misunderstandings in operational contexts.

The strongest response was observed in the final statement, where 96% of students indicated the need for more practical training. This overwhelming percentage demonstrates that students recognize the importance of repeated practice and simulation in mastering the Maritime Alphabet. Overall, the findings suggest that while students possess positive perceptions and adequate conceptual understanding of the Maritime Alphabet, there remains a substantial need for intensive pronunciation practice and communication-based learning activities to enhance their confidence and practical proficiency.

DISCUSSION

The findings show that students' overall ability in using the Maritime Alphabet is in the *Good* category, with an average score of 76.8%. This indicates that most students have adequate understanding and skills, particularly in spelling, call signs, and message delivery in maritime communication contexts.

The distribution of ability levels shows that most students are in the *Good* category (41.7%), followed by *Very Good* (25%), *Fair* (20.8%), and *Poor* (12.5%), with none in the *Very Poor* category. This suggests that the current learning process has been relatively effective in

building students' basic competence. However, some students have not yet reached optimal performance and require further improvement.

In terms of assessment aspects pronunciation (72%), accuracy (78%), and fluency (70%) all fall within the *Good* category. However, pronunciation remains the weakest aspect. This indicates that students are generally better at recognizing and selecting correct phonetic codes than pronouncing them accurately according to international standards. In other words, their cognitive understanding is sufficient, but their phonological skills still need improvement.

The identified errors support this finding. Pronunciation errors are the main issue, largely influenced by mother tongue interference. Students tend to pronounce phonetic codes using Indonesian sound patterns, reducing clarity and adherence to international standards. Errors in code selection also occur, although less frequently, indicating some confusion in distinguishing similar phonetic codes.

Fluency is another important concern. Some students still show hesitation, pauses, and repetition during communication, suggesting that their use of the Maritime Alphabet has not yet become automatic. In maritime communication, which requires speed and precision, this issue must be addressed through more intensive and continuous practice.

Questionnaire results further highlight students' perceptions. While most students (94%) consider the Maritime Alphabet very important and 80% claim to understand it, only 70% feel confident using it, and 68% still face pronunciation difficulties. Additionally, 96% of students expressed the need for more practical training. This indicates a gap between theoretical understanding and practical ability.

These findings align with language learning theories emphasizing that speaking skills especially pronunciation and fluency cannot be developed through theory alone but require repeated practice in real contexts. Therefore, more communicative and practice based teaching methods are necessary. Suggested strategies include VHF communication simulations, role play activities (ship to ship and ship to shore), intensive pronunciation drills, and integration of Standard Marine Communication Phrases (SMCP). Such approaches are expected to improve students' pronunciation accuracy, communication fluency, and confidence in using the Maritime Alphabet effectively.

CONCLUSION

This study found that the overall ability of Politeknik Pelayaran Malahayati students to use the Maritime Alphabet was in the *Good* category, with a mean score of 76.8%. Students performed best in accuracy, while pronunciation and fluency remained the most challenging aspects. Observation data further revealed that pronunciation errors, hesitation, and mother tongue interference were the primary obstacles affecting effective maritime communication. The questionnaire results showed that although students recognized the importance of the Maritime Alphabet and understood its application, many still lacked confidence and required more practical training. These findings indicate a gap between theoretical knowledge and practical communication skills.

Therefore, Maritime Alphabet instruction should emphasize simulation-based and communicative learning, including pronunciation drills, VHF communication practice, role-play activities, and the integration of Standard Marine Communication Phrases (SMCP). Future research should examine the effectiveness of these instructional approaches using larger and more diverse samples.

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