



The Convergence Of Maritime English And Green Shipping: Enhancing Collaboration Through Effective Communication

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Abstract. The rapid evolution of green shipping technologies necessitates a corresponding enhancement in communication skills among maritime professionals, particularly in maritime English, the lingua franca of the global shipping industry. This study explores the critical role of maritime English in the effective implementation of green shipping practices, emphasizing the importance of clear and precise communication in ensuring the successful adoption of environmentally friendly technologies. By analyzing the intersection between maritime English proficiency and the use of green shipping technologies, this research identifies key areas where improved linguistic competence can facilitate better collaboration, reduce misunderstandings, and enhance safety and efficiency in maritime operations. The findings underscore the need for a comprehensive approach to maritime English training that integrates knowledge of green technologies, thereby equipping seafarers with the necessary tools to navigate the complexities of modern, eco-conscious maritime environments. Ultimately, this study advocates for the convergence of maritime English and green shipping as a means to promote sustainable practices within the maritime industry through enhanced communication and collaboration.

Keywords: Maritime English, Green Shipping Technology, Effective Communication

1 Introduction

In the rapidly evolving maritime industry, the pursuit of sustainable shipping practices has brought about significant changes in operational frameworks. Among these, the rise of "green shipping" initiatives is reshaping the global shipping landscape, focusing on reducing environmental impacts and promoting sustainable development. However, as this paradigm shift gains momentum, the role of effective communication, specifically maritime English, becomes increasingly critical (World Maritime Academy, 2024).

Maritime English, the standardized language of communication at sea, serves as a common linguistic foundation for seafarers from diverse nationalities. Clear and precise

communication is essential not only for operational efficiency but also for ensuring safety in a multilingual and multicultural environment (Evangelos, T. 2002). The adoption of green technologies and environmentally friendly practices introduces new terminologies, concepts, and procedures, creating demand for an updated linguistic framework that accommodates these innovations.

The convergence of maritime English with green shipping principles presents both challenges and opportunities. As the industry transitions toward more sustainable practices, the ability to effectively communicate these changes becomes a key factor in their successful implementation (Progoulaki, M., & Roe, M. (2011). The question at the heart of this convergence is: How can linguistic competence in maritime English facilitate better collaboration, reduce misunderstandings, and ultimately enhance the safety and efficiency of maritime operations? Addressing this question is crucial for the successful adoption of green practices within the maritime sector.

Furthermore, the integration of maritime English with green initiatives emphasizes the need for consistent training and education that equips seafarers with the necessary linguistic tools to understand and implement these new practices. Enhanced communication competency can lead to smoother operational transitions, more effective teamwork, and the reduction of risks associated with misunderstandings or misinterpretations at sea (Ghosh, S., Bowles, M., Ranmuthugala, D., & Brooks, B. 2017). In this context, maritime English becomes not only a tool for everyday communication but also a vital component of the industry's move towards sustainability.

Some reviews of related literature have been conducted for this journal. Review of related literature talking about maritime English and green shipping, the need for standardized maritime English as a global solution to communication problems. The use of International Maritime Organization (IMO) Standard Marine Communication Phrases (SMCP) is advocated to promote clarity (Ziarati et al., 2014). Talking about green shipping, the authors focus on the dual challenge of enhancing maritime safety while promoting environmental sustainability. They argue that reducing emissions in shipping is not only a technological issue but also one that hinges on effective communication, particularly in implementing green shipping regulations. By improving communication through maritime English, particularly among multinational crews, the risk of accidents can be minimized while ensuring that environmentally friendly practices, such as fuel efficiency and waste reduction, are properly understood and adopted. The paper highlights the importance of linguistic competence and collaboration in achieving both safety and sustainability goals in maritime operations (Yang, Z., and Zhang, D. 2016).

On the other hand, some scholars stated that improving linguistic competence not only enhances operational efficiency but also significantly reduces the likelihood of misunderstandings during emergencies or routine tasks. The paper advocates for standardized communication protocols and continuous language training as essential measures for improving maritime safety (Brunila, O. 2018). Language barriers can hinder the enforcement of international maritime regulations, especially those related to environmental sustainability, such as green shipping initiatives. By ensuring clear and standardized communication among maritime professionals, particularly in multinational environments, policy implementation becomes more efficient, reducing operational errors and misunderstandings (Roe, M., 2013).

This journal explores the intersection of maritime English and green shipping, delving into how effective communication can bridge the gap between traditional maritime practices and the future of sustainable shipping. By examining the role of linguistic competence in fostering collaboration, improving operational outcomes, and mitigating risks, we aim to highlight the importance of language in driving the industry towards a greener, safer future. The discussion extends to the broader implications of how enhanced communication can contribute to the global efforts of creating a more environmentally conscious maritime industry, where both operational success and sustainability are prioritized.

This research holds both theoretical and practical significance by bridging linguistic theory and real-world maritime communication challenges. Theoretically, it advances the fields of discourse analysis and psycholinguistics by exploring how maritime English, a standardized form of communication, adapts to the emerging demands of green shipping. The study contributes to understanding how language shapes professional discourse communities and influences cognitive processing in high-stress environments, thereby enriching theories related to language, cognition, and communication efficiency in specialized domains.

Practically, the research aims to enhance safety and efficiency in maritime operations by demonstrating how improved linguistic competence in maritime English can reduce misunderstandings and support green shipping initiatives. It offers practical recommendations for integrating new environmental terminologies into maritime English, ensuring that crews can effectively communicate about green technologies without compromising safety. This, in turn, supports the industry's transition to sustainability while maintaining operational excellence.

2 Methodology

This study adopts a qualitative research design, guided by the framework proposed by Sugiyono (2017). The qualitative approach is chosen to delve deeply into the nuances of how the convergence of maritime English and green shipping can enhance collaboration and communication among maritime professionals. By focusing on qualitative methods, the study aims to provide a rich, detailed understanding of the complexities involved in effective maritime communication.

The data for this research were sourced from officers and students at PIP Makassar. To ensure the study is both manageable and representative, a purposive sampling method is employed to select participants who have pertinent experience and insights into maritime operations and green shipping practices. Specifically, the study analyzes data from a sample representing half of the total population of these groups.

Data collection in this study is accomplished through a combination of observation, interviews, and questionnaires. Observations were carried out to gain a firsthand account of the current communication practices among maritime professionals and students. This involves attending and observing relevant activities such as training sessions

and operational meetings. Detailed notes were taken to capture the dynamics of communication, the application of maritime English, and the integration of green shipping principles.

Interviews were another critical method of data collection. Semi-structured interviews were conducted with selected officers and students to gather in-depth perspectives on their experiences and views regarding maritime English and green shipping. The interviews were guided by open-ended questions designed to explore the effectiveness of communication in their roles, the challenges they face, and their opinions on green shipping practices. The interviews were audio-recorded with participants' consent and subsequently transcribed for analysis.

Additionally, questionnaires were used to collect both quantitative and qualitative data from a broader group of officers and students. The structured questionnaire includes a mix of closed and open-ended questions, allowing for a comprehensive capture of participants' attitudes, knowledge, and experiences related to maritime English and green shipping. The responses were analyzed to identify prevalent themes and patterns.

The data analysis involves thematic analysis, which entails coding the collected data to identify and organize themes that reflect participants' experiences and perceptions. This analysis focuses on uncovering key themes related to communication effectiveness, the role of maritime English in fostering collaboration, and how green shipping practices were integrated.

To analyze the data, the writers followed the approach outlined by Miles and Huberman (2014), which involves three key steps: data reduction, data display, and conclusion drawing/verification. In the data reduction phase, the writers were simplifying, summarizing, and organizing the large volume of data collected from interviews with officers and students at PIP Makassar. This includes selecting relevant segments of the interviews that directly address the research questions about the convergence of maritime English and green shipping. By condensing the data, the writers focused on the most important aspects of linguistic competence, collaboration, safety, and efficiency within the maritime context, ensuring the analysis remains focused on the core issues.

Next, the writers used data display techniques to present the findings in an organized manner, allowing for clearer interpretation. This step involves creating visual matrices or charts that help illustrate the relationships between different variables, such as the levels of maritime English proficiency and its impact on safety or operational efficiency. Finally, in the conclusion drawing and verification phase, the writers carefully interpreted the patterns emerging from the data displays, drawing conclusions that were grounded in the evidence. Throughout this process, the writers were constantly verifying the conclusions by revisiting the data and ensuring that the writers' interpretations were consistent and reliable.

To ensure the validity and reliability of the research findings, several strategies were employed. Triangulation is used to cross-verify data through multiple collection methods—observation, interviews, and questionnaires. Member checking is also conducted by sharing preliminary findings with participants to validate the accuracy of the interpretations. Furthermore, peer review is incorporated by seeking feedback from colleagues or experts in the field on the analysis process.

Ethical considerations were paramount in this study. Informed consent is obtained from all participants prior to data collection, ensuring that they are fully aware of the study's purpose and their role. Confidentiality is maintained by anonymizing data and securing it appropriately. Participation is voluntary, and participants were informed that they may withdraw from the study at any time without any repercussions.

3 Results

3.1 Improved Collaboration through Unified Linguistic Competence

The ability to communicate clearly in maritime English has become essential in modern maritime operations, particularly due to the increasing globalization of the shipping industry. During interviews, both officers and students consistently highlighted that effective collaboration in a multinational maritime environment depends heavily on linguistic competence in maritime English. As ships often have crew members from diverse linguistic backgrounds, maritime English serves as the common language that facilitates communication between all parties. Without this shared language, misunderstandings and communication barriers could severely hinder operational efficiency.

Several officers noted that one of the major challenges in ship operations is the need for quick and accurate information exchange, especially during complex operations such as docking, navigating through congested waters, or coordinating with port authorities. Officers emphasized that teams with higher proficiency in maritime English experienced fewer communication breakdowns and were able to complete tasks faster and more accurately. For instance, specific technical terms related to green shipping—like fuel efficiency systems, emissions control, and waste management—require precise understanding. This linguistic competence ensures that team members are on the same page when coordinating efforts, particularly during time-sensitive situations. The officers agreed that Maritime English acts as a unifying tool that streamlines procedures and enhances overall collaboration, allowing crews to operate as a cohesive unit, even when working under pressure. To support those arguments, the writers would formulate the data analysis as the following extract 1, which is the data analyzing results.

Extract 1. Interviewee, Officer, Age 35

"When we are working on the bridge, we have crew members from different countries—some from the Philippines, others from Indonesia, India, and Ukraine. We all have different native languages, but when we use maritime English, it's like we're speaking one language. It helps us coordinate quickly and efficiently, especially when docking or communicating with port authorities. Without maritime English, there would be delays and miscommunication, but with it, everyone knows what to do, and the operations run smoothly."

Moreover, students at PIP Makassar indicated that their ongoing training in maritime English helped prepare them for real-world scenarios. Many of them have experienced simulations or actual shipboard training where collaboration between crew members from different countries was required. They observed that language fluency not only

helps in the execution of day-to-day tasks but also fosters a more cooperative and less stressful working environment, as everyone feels confident in their ability to express ideas, clarify instructions, and resolve issues collaboratively.

3.2 Reduction of Misunderstandings and Operational Errors

A key result of this study is the reduction of misunderstandings and errors in maritime operations due to improved linguistic competence in maritime English. Both officers and students frequently pointed out that communication errors were a common cause of safety incidents and operational inefficiencies. This is particularly true in the context of green shipping, where new, environmentally focused technologies and practices were being integrated into traditional maritime operations. These technologies come with specialized terminology, and a lack of familiarity with these terms can lead to misinterpretation or confusion, resulting in mistakes that compromise both safety and environmental compliance.

The officers provided numerous examples where miscommunication has led to near-miss incidents. For instance, one officer mentioned a case where the failure to understand instructions on operating an emissions-reduction device resulted in temporary non-compliance with international environmental regulations, exposing the ship to potential fines. However, after crew members underwent further Maritime English training, the team experienced fewer instances of communication-related errors. The standardized vocabulary that comes with Maritime English proficiency reduced ambiguities, particularly in the use of technical jargon. This improvement helped the crew better understand complex instructions related to green technologies, ensuring smoother operations and more accurate adherence to protocols. To support those arguments, the writers would formulate the data analysis as the following extract 2 which is as the data analyzing results.

Extract 2. Interviewee, Officer, Age 45

"There was an instance where we were dealing with a new emission control device. The instructions were complex, and one of our crew members misunderstood the procedure because they weren't familiar with the specific terms in English. This led to an incorrect operation, and we almost violated environmental regulations. After further training in maritime English, specifically the technical terms, such misunderstandings were minimized, and we've had no such issues since."

Furthermore, the students at PIP Makassar reported that their maritime English training has made them more confident in their ability to communicate effectively during complex operations. Many students emphasized that the course not only improved their vocabulary but also taught them how to use the language in real-world contexts, such as issuing or responding to emergency commands. This has prepared them for situations where clear communication can be the difference between a minor operational issue and a major safety hazard. As a result, both students and officers confirmed that proficiency in maritime English is key to minimizing misunderstandings, thus preventing errors that could jeopardize safety or result in costly operational delays.

3.3 Enhanced Safety and Efficiency through Effective Communication

Safety is paramount in maritime operations, and the interviews revealed that maritime English plays a critical role in ensuring safety, especially in the context of increasingly complex green shipping practices. Maritime safety regulations often involve strict protocols that must be followed precisely to avoid accidents, and these regulations are typically communicated in Maritime English. Both officers and students underscored that linguistic competence in maritime English directly contributes to safer and more efficient operations.

For example, during emergency drills, officers explained that they rely heavily on clear and concise communication to ensure that everyone on board understands their roles and responsibilities. Whether it's directing the crew during a fire drill or coordinating responses to a man-overboard situation, the ability to communicate swiftly and accurately in maritime English has been shown to improve response times and reduce confusion. One officer recalled an instance where poor communication during a drill led to disorganization and delayed responses. After providing additional language training to the crew, subsequent drills ran more smoothly, demonstrating how improved communication directly impacts safety outcomes.

In addition, officers highlighted that green shipping introduces additional layers of complexity, particularly regarding energy efficiency, pollution control, and waste management. These practices require precision in both execution and communication. For example, managing emissions or handling ballast water following international environmental regulations demands not only technical know-how but also the ability to issue clear instructions in a standardized language. Several officers remarked that when crew members were fluent in maritime English, they were more capable of understanding and implementing these new practices, ensuring that the ship operates efficiently and complies with environmental standards.

The students at PIP Makassar also shared their experiences, explaining that their training in maritime English equipped them with the skills to understand and follow complex safety procedures. One student mentioned a simulation exercise involving the operation of a new energy-saving device. During the exercise, those with higher proficiency in maritime English were able to grasp the instructions more quickly and complete the task with fewer mistakes. This experience reinforced the idea that effective communication is key not only to safety but also to the efficient implementation of green shipping practices. To support those arguments, the writers would formulate the data analysis as the following extract 3, which is the data analyzing results.

Extract 3. Interviewee, Students, Age 21

"During one of our safety drills, we had to simulate a fire evacuation. At first, there was some confusion because a few crew members didn't understand the instructions well. But after practicing more in maritime English, we were able to communicate better, and everyone understood the emergency procedures clearly. This made the drill much faster and more organized, which is crucial in real emergencies where time is everything."

In summary, the data from the interviews illustrate how maritime English proficiency is crucial in enhancing safety and efficiency in maritime operations. Facilitating clear and precise communication ensures that crews can collaborate effectively, minimize misunderstandings, and successfully implement the green initiatives that are increasingly shaping the future of the maritime industry.

4 Discussion

The results of this study highlight the crucial role of maritime English in promoting collaboration, reducing misunderstandings, and enhancing safety and efficiency in maritime operations, especially within the context of green shipping. The maritime industry relies heavily on effective communication, and with multinational crews working together, the use of maritime English provides a common language that bridges cultural and linguistic gaps. This not only improves teamwork but also ensures smoother coordination during complex tasks such as navigation and port operations. By fostering a sheered linguistic competence, maritime English helps unify crews, making operations more seamless and collaborative.

Misunderstandings in communication were a major risk factor in maritime operations, and this study found that proficiency in maritime English significantly reduces such risks. Particularly when dealing with the technical terminology associated with green shipping technologies and procedures, linguistic competence helps to avoid costly mistakes. The integration of new environmental practices into traditional maritime operations adds a layer of complexity, and the ability to clearly communicate these processes ensures compliance with environmental regulations and reduces the chances of operational errors.

Moreover, the study demonstrates that effective communication in maritime English directly impacts safety aboard vessels. Whether in routine operations or emergency drills, clear communication is essential for quick and efficient responses. As crews adopt new, eco-friendly technologies, the need for precise communication becomes even more critical. By minimizing delays and ensuring that everyone understands their roles, proficiency in maritime English enhances overall safety and prevents potential accidents.

The study's findings also indicate that maritime English is essential for maintaining operational efficiency, particularly as the maritime industry increasingly adopts sustainable practices. Green Shipping introduces new technologies that require precise execution, and linguistic competence allows crews to implement these innovations without compromising the vessel's performance or safety. As a result, maritime English has become not only a tool for day-to-day communication but also a key enabler for the successful adoption of green technologies.

In conclusion, the convergence of maritime English and green shipping creates a more effective and safer working environment for maritime professionals. By investing in ongoing language training, shipping companies can ensure that their crews are prepared to meet the challenges of an evolving industry while adhering to international safety and environmental standards. The study highlights the importance of maritime

English in facilitating the transition to more sustainable maritime practices, which will be essential for the industry's future.

5 Conclusion

The study "The Convergence of Maritime English and Green Shipping: Enhancing Collaboration through Effective Communication" highlights the critical role of Maritime English in improving collaboration, reducing misunderstandings, and enhancing safety and efficiency within the maritime industry. The findings demonstrate that proficiency in maritime English facilitates effective communication among multinational crews, enabling smoother coordination during complex maritime operations. It also reduces the risk of operational errors and misunderstandings, particularly when dealing with the technical terminology associated with green shipping practices. Furthermore, clear communication in maritime English significantly contributes to safety by ensuring that crew members understand emergency procedures and operational protocols. As the maritime industry continues to integrate sustainable practices, the importance of maritime English as a tool for effective communication and operational success will only increase.

The following advice and suggestions can be given to those who may be concerned about the green shipping industry and maritime English. Shipping companies and maritime educational institutions should invest in comprehensive maritime English training programs. These programs should not only focus on general language skills but also include specialized training in technical terminology related to green shipping technologies and practices. This will ensure that all crew members are equipped to handle both routine and complex tasks effectively.

To maintain high levels of linguistic competence, regular assessments, and refresher courses in maritime English should be implemented. This approach will help identify any gaps in knowledge and provide ongoing support to improve communication skills. Encourage collaborative learning environments where crew members from different backgrounds can practice and improve their maritime English skills together. This could include simulated exercises, drills, and team-based activities that mirror real-world scenarios. Collaborative learning will enhance not only language proficiency but also teamwork and communication skills.

References

1. Brunila, O. (2018). The Role of Language in Maritime Safety: A Quantitative Study. *Journal of Maritime Studies*, 10(2), 145-162.
2. Evangelos, T. (2002). Language barriers and miscommunication as a cause of maritime accidents. Master's thesis, Merchant Marine Academy of Macedonia.
3. Ghosh, S., Bowles, M., Ranmuthugala, D., & Brooks, B. (2017). Improving the validity and reliability of authentic assessment in seafarer education and training: A conceptual and practical framework. *WMU Journal of Maritime Affairs*, 16, 455-472.
4. International Maritime Organization (IMO). (2020). International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended. Retrieved from IMO website.

5. International Maritime Organization (IMO). (2018). The 2017 Guidelines for the Development of a Ship Energy Efficiency Management Plan (SEEMP). Retrieved from IMO website.
6. Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative Data Analysis: A Methods Sourcebook* (3rd ed.). SAGE Publications.
7. Progoulaki, M., & Roe, M. (2011). Dealing with multicultural human resources in a socially responsible manner: A focus on the maritime industry. *WMU Journal of Maritime Affairs*, 10(1), 7-23.
8. Roe, M. (2013). *Maritime Governance and Policy-Making*. Routledge.
9. Sugiyono. (2017). *Metode penelitian kuantitatif, kualitatif, dan R&D (Quantitative, Qualitative, and R&D Research Methods)*. Alfabeta.
10. World Maritime Academy. (2024). *Maritime English: The Language of the Seas*. World Maritime Academy. Retrieved from <https://e-wma.com>
11. Yang, Z., & Zhang, D. (2016): Safety and sustainability in shipping: Reducing emissions and increasing communication effectiveness.
12. Ziarati, R., et al. (2014): Safety at Sea: The Importance of Maritime English. This article discusses how the proper use of Maritime English can enhance safety and operational efficiency.

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