

# Using Innovative Technologies in the Process of Teaching Maritime English

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## Using Innovative Technologies in the Process of Teaching Maritime English

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**Abstract:** This study explains the using innovative technologies in the process of teaching maritime English. English is always important in Maritime, especially in using innovative technologies such as: robotic technology, Artificial Intelligence (AI), networked sensors, advanced monitoring system, and blockchain technology. In teaching Maritime English, the maritime sector needs English as a language in communication medium to promote understanding between the teachers and students. The Maritime Communication Program helps maritime industry professionals to communicate better in English and across cultures. Through a research approach qualitative descriptive, to get the innovative technologies in teaching Maritime English. By using the theory of Standards of Training, Certification and Watchkeeping for Seafarers (STCW). The results in this study are developed business English course for the shipping industry and other maritime sectors, help professionals with different nationalities and cultural backgrounds communicate effectively and with ease. This is imminent for safety reasons, but it also supports companies that employ people from all over the world maintain main quality standards in a very dynamic and competitive environment.

**Keywords:** Maritime English, Teaching English, Innovative Technologies, STCW

## INTRODUCTION

Language is our most important source of communication. In today's modern world, several factors make English an essential component of communication and the importance of learning foreign languages makes it easier to communicate with people all over the world. As always, English is the common language of communication and everyone needs to learn that language in order to get it on an international level. By speaking it, you can communicate not only with English speakers, but also with people from all over the world.

English is essential in education. It is also accepted as the common working language of the maritime world and its proper use is essential for the safety of ships, their crews and the marine environment. The need to establish ME (Maritime English) proficiency standards is essential for all maritime professionals and is becoming an important tool for ensuring security at sea, land and port.

The Maritime Communication Program helps maritime industry professionals to communicate better in English and across cultures. Communication at sea is essential to the effective and safe operation of ships. It takes place inside the ship itself, between ships and seashore stations, between ships and other ships, and sometimes between ships and aircraft. To

avoid the confusion and mistakes that often result in accidents and other situations, we must ensure that our verbal communications are as accurate, simple and clear as possible.

According to *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW 1978)*, operating specialized vessels poses communication problems and challenges for multicultural crews. The International Safety Management (ISM) Code focuses on the implementation of shipboard procedures, the interpretation of written and verbal procedures and orders, and communication in a common language that makes clear that responses often deviate from the original the purpose. Maritime English concepts are therefore constrained by the requirements of IMO Standard Marine Communication Phrases and IMO Model Course 3.17 Maritime English. Adequate knowledge of English to enable navigators to use nautical charts and other nautical publications and to understand weather information and messages regarding vessel safety and operations communicate with other ship shore stations and her VTS (Vessel Traffic Service) center to perform officer duties including the ability to use and understand IMO Standard Maritime Communication Phrases (SMCP).

To elaborate the arguments, the author begins the study by illustrating the teaching maritime English. In order to get the results by using the theory of Standards of Training, Certification and Watchkeeping for Seafarers (STCW). According to STCW 1978/95, prospective Deck Officers and Engineering Officers must be proficient in this technical term otherwise they will not be awarded a Certificate of Competence. Today's legislation emphasizes the importance of English skills for safety at sea. So that, the purposes of the study are: 1) To explain the depiction of the teaching maritime English; 2) To describe the process of the teaching maritime English with innovative technologies; and 3) To explain the kind of technologies that uses in Maritime nowadays.

## RESEARCH METHOD

This study uses the qualitative descriptive approach to analyse teaching maritime English with innovative technologies. The author is referred STCW's theory about command of this specialized language, especially using English. Furthermore, the term of The International Safety Management (ISM) Code requires communication in a common language that makes it clear that the implementation of shipboard procedures, the interpretation of written and oral procedures and orders, and the responses to them often deviate from their original intent. Emphasis. Maritime English concepts are therefore constrained by the requirements of IMO Standard Marine Communication Phrases and IMO Model Course 3.17 Maritime English.

## RESULTS AND DISCUSSION

### Teaching Maritime English

Communication is one of the most important factors for professionals in the maritime sector. Good communication is a fundamental principle for working safely and preventing accidents on board. Cooperation and coordination of people within a team can only be achieved through effective communication. This is essential for building a safety culture in the workplace. Language is the means by which ideas, opinions, instructions and warnings are conveyed, and the ship's working language should always be used.

Traditional educational approaches have always been teacher-centered, with students and learners taking a passive stance. This leads to a decrease in student interest in learning and a dead atmosphere in the auditorium, which makes the lesson inflexible and boring, which of course has a negative impact on the lesson. <sup>18</sup> In recent years, there has been a growing awareness of the need to select the best technique for teaching Maritime English. When teaching Maritime English, instructors should take the best approach to developing core language skills such as oral and acoustic speech, grammar, reading and listening. Maritime English, an international language, is used as a means of communication in the maritime industry.

Based on *Maritime English*, teaching needs to enable students to communicate in the "real world" that must reflect real-world language use. A learner must be proficient <sup>1</sup> in each of these skill areas in order to use the language system effectively in combination. Successful knowledge, however, requires more than the ability to integrate language systems and skills. We need to know the conventions for using the language in certain situations (telephone, telex, etc.) and, importantly, some strategies for dealing with misunderstandings when communication is interrupted. <sup>1</sup>

When new material is explained, students may not understand everything, every word, but the use of pictures, diagrams, and gestures can help. This is a very important part of developing the skills needed to understand language in real-life situations. <sup>1</sup> The advantages of active teaching method have been recognized in world pedagogy for decades. The benefits of active education methods are recognized in pedagogy around the world.

According to Tchkonja and Vakhania (2018) in *Active Readiness Method for Trainings and Seminars*, the best teaching method is "learn by doing". Learning by Doing - The most important teaching tool is student activity in learning during the work process. Such learning may be under the direction of a trainer (such as the traditional master-student relationship or the support of a scientific advisor), under the advice of relatives or older friends, or as part of self-education. In general, the learning process for all disciplines is an active knowledge. This

can only be achieved by learning through practice. "Perform" should be interpreted in its broad and general sense, not its literal meaning. For example, native and foreign language natural commands (when students learn by speaking, i.e., "writing"). The same is true when learning to read and write (just by "doing" it). Similarly with psychology and mathematics, students don't actually learn what they hear, they study on their own.

Lack of English skills at work level can lead to accidents. Knowledge of English at management level will therefore help minimize communication problems and prevent the recurrence of these accidents. Corrective and preventive actions for submitting commitments to external parties also require English writing skills. The usual language for handling claims is also English, and relevant correspondence and objective evidence are listed in the reporting mechanism.

### Teaching Maritime English with Innovative Technologies

In shipboard safety and environmental management systems should introduce English as a second language. This has a direct impact on training needs and methods in maritime education and training institutions. Maritime English is an example of English for Specific Purposes (ESP) and is primarily used in the maritime sector. To work safely onboard and maintain quality standards, you need to be able to communicate easily and without misunderstandings in English. The maritime organization IMO (International Maritime Organization) has developed a list of phrases and words that are important to shipping and logistics workers, such as SMCP (IMO Standard Marine Communication Phrases). The purpose of using SMCP (Standard Marine Communication Phrases) is to improve navigational safety. These phrases help sailors improve their English pronunciation, expand their nautical vocabulary, and increase their understanding of spoken English.

According to *Maritime English*, appendix C of this model course contains additional guidance specific to assessing English proficiency. There are standards of competence that seafarers must meet, which are defined in the Convention on Standards for Training, Certification and Watchkeeping of Seafarers, STCW Code 1995, as amended. This course will cover the use of various methods to demonstrate competencies and criteria to assess competencies expressed in the STCW Code.

The author analyses relevant courses and programs with technical experts. Young people often become seafarers with a strong motivation to study history and learn about other cultures. However, seafarers have to live and work together for long periods of time in a closed community with people from different cultures. Without knowledge of international languages, it would be impossible to live with a multilingual crew for so long. Most sailors are not native



English speakers. They attempt to carry out their professional activities in English. Therefore, the need for English training for Captains, Petty Officers and Non-Commissioned Officers should be reconsidered and detailed in this study.

The using of innovative technologies such as linguistic technology consisting of videos on a central platform in English to provide users with detailed feedback on their pronunciation. These phrases are important for working safely and efficiently, and for communicating with colleagues, workers and officials in port and onshore. It is vitally important to give English teachers with limited knowledge of the technical aspects of seafaring practical opportunities to interact with staff from other departments to enhance their understanding. Technical her trainer can also improve student's English skills.

Based on Tchkonja (2016) in *Collegiality and its efficiency in maritime English language education development*, marine professional instructors need a proper English culture. Cross-departmental collaboration must be ongoing and requires formal approval, coordination and review to be effective. Organizing collaborations between English teachers and professional teachers in taking over Marine English courses is one way she does to improve the knowledge of Marine English teachers. A professional teacher can learn English from an English teacher and improve your level of English. English teachers can gain professional knowledge from professional teachers to enrich their areas of study.

Some students were asked questions about integrated learning. 146 students participated in the survey. We received positive feedback from all the students. Among them, 95% of students felt that their ILM (Integrated Learning Methodology) improved their comprehension and study skills. 77% feel ILM enhances intellectual aspirations and provides conceptual accuracy. 84% spoken that the knowledge gained in ILM would help them in their research activities. 88% spoken he would perform better on exams if taught ILM, but only 12% said he would perform better on exams if taught TLMs. bottom. Thirty-nine percent of his students said that repeating the same things during a general lecture distracts them and makes the class boring. 96% of students support the implementation of regular general lectures. 21% of students said they were surprised by the practical aspects of their English teacher's presentation. 60% of students said these integrated lectures would be more helpful if they were interactive.

The study included 96 third-year students' semester of Marine Engineering and Maritime Navigation. A pre-tested questionnaire was distributed to assess existing knowledge levels. Students were divided into two groups using a simple random method. A study group of 48 students received comprehensive instruction, including didactic lectures, and a control

group of 48 students received conventional lectures. A post-test was performed after 3 days. After testing, mean knowledge scores for the conventional and integrated groups were 12.40 and 14.46, with standard deviations of 1.869 and 1.864, respectively. On the other hand, the settings have mean values of 36.95 and 60.00 with standard deviations of 1.972 and 1.977. Significant improvements were found in both the knowledge and attitudes of students in the integrated group compared to the conventional group.

### Innovative Technologies in Maritime Sectors

In recent years, digital transformation has become a mandate, forcing companies in all sectors to adapt. The maritime industry has seen significant technological innovations affecting the entire supply chain. The introduction of digital platforms for tracking ships and cargo, as well as digital communication and collaboration tools, has become commonplace in the industry. But other innovative solutions also stand out, offering exciting opportunities in a variety of areas. The aim is to make shipping faster, safer, more efficient and more environmentally friendly. The innovative technologies that use nowadays such as: robotic technology, Artificial Intelligence (AI), networked sensors, advanced monitoring system, and blockchain technology.

Robotic technology has the potential to free people from monotonous, dangerous and physically demanding jobs. At port terminals, automated cargo handling systems contribute to fast and efficient operations, reduce the risk of human error, reduce emissions, and minimize vessel waiting times at anchorages and quays. For example, autonomous cranes are used in all major ports in the United States, Canada, Asia (China, Singapore, India, etc.), Europe (UK, Germany, France, Spain, Holland, etc.), Australia, etc. The development of robotic technology also aims to address labor shortages and improve overall productivity compared to manual labor.

Artificial intelligence has become an essential tool for success in the digital services era. AI-based modules help maritime industry professionals calculate estimated arrival times, monitor air and water quality, and assess underwater noise for any vessel in the world. Artificial intelligence is also important in developing towards smart ports, combined with 5G connectivity, big data, Internet of Things (IoT) and blockchain technology. Ports such as Los Angeles, Rotterdam, Quebec, Le Havre, Hamburg, Shanghai and Singapore show how technology can enable digital transformation and ensure efficiency, transparency and sustainability.

Networked sensors on board trucks, ships, advanced navigation systems, or other devices provide a variety of data such as position, speed, and capabilities on a continuous basis

or via special software, pre-defined data. sent as often as <sup>8</sup> Combined with GPS and satellite observations, <sup>5</sup> this information is used to track cargo and <sup>11</sup> plan operations at the next port of call. IoT also plays a key role in predictive maintenance, leveraging historical and real-time data along with alerting systems that immediately notify affected teams when anomalies occur. This reduces response time and avoids time-consuming repairs.

<sup>8</sup> Advanced monitoring systems used in the Maritime industry are designed to constantly monitor environmental conditions <sup>17</sup> (air and water quality, weather conditions, vessel traffic) in real time. These systems use a combination of <sup>5</sup> sensors, satellite imagery and other technologies to collect and analyze data about the ocean and surrounding environment. Data collected by these systems are used to create detailed maps and models of the ocean, alerting vessel operators and authorities to potential environmental hazards and emergencies. This information helps prevent pollution and protect marine ecosystems while reducing clean-up costs in the event of an environmental disaster.

<sup>9</sup> Blockchain technology is increasingly being used in the maritime industry to improve transparency, visibility, security and efficiency in various areas such as supply chain management, ship registration and cargo tracking. A core concept of blockchain involves a distributed digital ledger that provides a secure and transparent way to record transactions. For example, due to its decentralized architecture, blockchain <sup>5</sup> can create an immutable record of vessel movements, which helps prevent fraud and enhance security. In addition, using smart contracts instead of paperwork on blockchain platforms can automate various processes, reduce delays and save costs.

## CONCLUSION

<sup>2</sup> Language barriers and confusion are often cited as causes of maritime accidents. language learning programs help prevent misunderstandings and develop intercultural communication skills. English nautical publications and messages related to vessel safety are correctly interpreted or written. Knowledge of spoken and written English to communicate information related <sup>14</sup> to the safety of life at sea, the safety of ships and crew, and the protection of the marine environment. When planning the syllabus for the new semester, deans should be asked to set up meetings to link English classes with other subjects. We English teachers collaborate with faculty from other departments to maintain an integrated educational linkage between the departments. English teachers and technical teachers can observe each other's classes. This helps both sides understand what to do and how to learn to solve the problem. English teachers also need to know how technical teachers equip students with the practical skills they will need at sea. When students request a required course that includes elements of



maritime English, English teachers should use this context for language teaching and practice such as communication skills and strategies. This way, English teachers can be confident that they are using authentic assignments and materials to make the materials easy to understand. The innovative technologies is used in recent years such as robotic technologies, artificial intelligence (AI), networked sensors, advanced monitoring system, and blockchain technology, are make more the shipping faster, safer, more efficient, and greener in Maritime sectors.

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