

REVISITING THE IMO STANDARD MARINE COMMUNICATION PHRASES THROUGH THE LENS OF COMMUNICATIVE COMPETENCE

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Abstract

This study revisit purposely examines the communicative elements being employed in the crafting of the International Maritime Organization's Standard Marine Communication Phrases (SMCPs), though they may not represent a comprehensive maritime English syllabus. This investigation anchors on the theories of language and learning that clearly underpin the design of any English syllabi and in turn have definitely changed the different aspects of language teaching and learning. Central to this is the notion of communicative competence that treats communication as the primary function of language use. So, the theories of communicative competence as backbone of Communicative Language Teaching together with the theories of learning serve as the point of reference in this undertaking. In this vein, English for Specific Purpose (ESP) has emerged as a pedagogical construct. This research study then uses textual analysis as a qualitative method of data analysis where it possibly explores to examine and describe the communicative element contents of the SMCPs syllabus. Results imply that in the effective delivery of the SMCPs via maritime education and training, the users are required to have a thorough grounding of the Models of Communicative Competence and Performance because specific communicative forms needed to realize language functions are left to the users' strong linguistic knowledge in order to satisfy every communicative language classroom task where the learner's interest and needs have to be situated securely at the forefront of teaching and learning.

Keywords: Communicative Competence, ESP, SMCPs, Form and Function

I. Introduction

The theories of language and learning have always been the driving force of the design of English syllabi. In this vein, Thayniath [1] asserts that this reality has paved way for a lot of changes occurring in different aspects of language teaching and learning because of the emergence of new approaches and theories.

Viewed from the foregoing, one language theory that has currently stood out in the design of an English syllabus posits that the primary function of language use is

communication; thus, it has to be spoken. On this, Richards and Rodgers [2] affirm that the Communicative Language Teaching (CLT) approach has the primary goal to develop communicative competence (Hymes [3]) among the learners, or simply put, communicative ability using real-life situations that necessitate communication (Principles of Communicative Language Teaching and Task-Based Instruction, [4]). Equally important in the design of an English syllabus is to consider learning theories because Parrott (1993 in Theories of Language Teaching, Language Learning, and Syllabus Design,[5]) emphasizes the need for teachers "to take account of the ways in which their students are predisposed to learn and to recognize the range of different predispositions which may be found in most groups of learners". For these reasons, Reilly [20] punctuates that to design a syllabus is to decide what gets taught and in what order, adding that, on one hand, the theory of language explicitly or implicitly underlying the language teaching method will play a major role in determining what syllabus is adopted and, on the other hand, the theory of learning plays an important part in determining the kind of syllabus used.

It is for these reasons that the study attempts to look into the communicative elements being reflected in the crafting of the International Maritime Organization's Standard Marine Communication Phrases. Though, the IMO SMCPs may not provide a comprehensive maritime English syllabus (IMO SMCP [6]), it has still found its significant position in maritime education and training. Thus, this revisit is undertaken to investigate the scope of communicative elements embedded in the IMO SMCPs that a modern language teaching has always advanced.

II. Theories of Language and Learning

Discussed below are the different theories of language and learning that underpin the design of English syllabi.

A. Theories of Language

Leung [7] claims that the English language, both as a set of linguistic resources and as a medium for communication, has witnessed profound developments in the last few decades. To him, it is used by huge numbers of diverse speakers in varieties of ways that could not have been envisaged in the 1960s and 1970s. He argues that the concept of communicative competence, which has provided the intellectual anchor for the various versions of Communicative Language Teaching (CLT) that appear in a vast array of ELT teacher training and teaching materials, is itself in need of examination and possibly recasting.

As a start, Lee [8] explains that the idea of communicative competence in language teaching is not really new. She said that it got its first popularity in the 1960s and 1970s when communicative approach was initially adopted. This approach for her could be said to be the product of educators and linguists who were dissatisfied with the audiolingual and grammar-translation methods of foreign language instruction. They believed that students were not learning enough realistic, whole language; they were at a loss to communicate in the culture of the target language.

So, Fauziati [9] theorizes that for a learner to communicate in the Foreign/Second language requires the knowledge of the language and the ability to use that knowledge to interpret and produce meaningful texts appropriate to the situation in which they are used. This premise clearly corresponds with Ellis's (1996 cited in Fauziati, [9]) statement that the goal of learning a Foreign/Second language "entails with the ability to use language in communicative situations" and the point of language teaching is to help the students communicate or to develop what Hymes [3] referred to as "communicative competence". An article entitled "Principles of Communicative Language Teaching" [9] describes communicative competence as the ability to interpret and enact appropriate social behaviors, and it requires the active involvement of the learner in the production of the target language (Canale and Swain 1980; Celce-Murcia et al. 1995; Hymes [3]). Such a notion encompasses a wide range of abilities: the knowledge of grammar and vocabulary (linguistic competence); the ability to say the appropriate thing in a certain social situation (sociolinguistic competence); the ability to start, enter, contribute to, and end a conversation, and the ability to do this in a consistent and coherent manner (discourse competence); the ability to communicate effectively and repair problems caused by communication breakdowns (strategic competence).

In a survey of language teaching methods that have prevailed in the 20th century, Fauziati [9] produces a good review by citing that the notion of communicative competence was first coined by Hymes [3] as a reaction to Chomsky's [10] notion of competence and performance. He points out that Hymes reacted to Chomsky's description of linguistic competence and linguistic performance with his description of communicative competence in 1971 (as cited in Savignon [11]). In Chomsky's theory, linguistic competence refers to "the speaker-hearer's knowledge of his language" [3]. Speaker and hearer then are defined as those ideal individuals in a completely homogeneous speech community. This Chomsky's description of language use was controversial, especially among sociolinguists since he was concerned with cognitive linguistics and so his description of linguistic performance was based primarily on a speaker's ability to produce grammatically correct sentences by using his or her preexisting knowledge of grammatical systems.

The foregoing has prompted Hymes to show his dissatisfaction by asserting that communication was more than the speakers' display of their knowledge of grammar, "how something is said is part of what is said" (Hymes, 1986: 41 cited in Fauziati, [9]). In other words, speakers for him must have more than simply linguistic competence in order to successfully and appropriately communicate in any given situation. The ideal speaker-hearer simply does not exist because a completely homogeneous speech community is simply nonexistent. The language used for communication in social interaction calls for a wide variety of meanings being negotiated that competence must address performance. For Chomsky, the focus of linguistic theory was to characterize the abstract abilities speakers possess that enable them to produce grammatically correct sentences in a language (Chomsky [10]). Hymes in arguing Chomsky's linguistic competence said that such a view of linguistic theory was incomplete, that linguistic theory needed to be seen as part of a more general theory incorporating communication and culture. Thus, to the notion of competence Hymes [3] added the 'communicative' element and described it as "...rules of use without which the rules of grammar would

be useless. Just as rules of syntax can control aspects of phonology, and just as rules of semantics perhaps control aspects of syntax, so rules of speech acts enter as a controlling factor for linguistic form as a whole". So this competence-performance model advances Hymes' call (Lee, [8]) to take interest in the sociability of language serving as a catalyst for the field of language education as it expanded the scope and epistemic content of target competence that concerns L2 curriculum.

In an attempt to clarify the concept of communicative competence, Widdowson (1983 as cited in Bagaric & Djigunovic [12]) made a distinction between competence and capacity. In his definition of these two notions, he applied insights that he gained in discourse analysis and pragmatics where he defined competence, i.e. communicative competence, in terms of the knowledge of linguistic and sociolinguistic conventions. Under capacity, which he often referred to as procedural or communicative capacity, he believes that the ability to use knowledge is a means of creating meaning in a language. According to him, ability is not a component of competence. It does not transform into competence, but remains "an active force for continuing creativity", i.e. a force for the realization of what Halliday called the "meaning potential" (Widdowson, 1983 in Bagaric & Djigunovic [12]). Having defined communicative competence in this way, Widdowson (in Bagaric & Djigunovic [12]) is said to be the first who in his reflections on the relationship between competence and performance gave more attention to performance or real language use. Strengthening the preceding statements, Bagaric and Djigunovic [12] elucidates more that unlike Hymes, Canale and Swain or even Widdowson, Savignon [11] puts a much greater emphasis on the aspect of ability in her concept of communicative competence by describing communicative competence as the ability to function in a truly communicative setting – that is, in a dynamic exchange in which linguistic competence must adapt itself to the total informational input, both linguistic and paralinguistic, of one or more interlocutors" (Savignon 1972 cited in Bagaric & Djigunovic [12]). According to her, and many other theoreticians (e.g. Canale and Swain, 1980; Skehan, 1995, 1998; Bachman and Palmer, 1996 etc.), the nature of communicative competence is not static but dynamic; it is more interpersonal than intrapersonal and relative rather than absolute. It is also largely defined by context. As to the distinction between competence and performance, Savignon (in Bagaric & Djigunovic, [12]) referred to competence as an underlying ability and to performance as an open manifestation of competence. So, in her opinion, competence can be observed, developed, maintained and evaluated only through performance.

B. Theories of Learning

Over decades past, educational psychologists and researches advanced many theories explaining how learners acquire, organize, and deploy skills and knowledge (Learning Theories [13]). Their works resulted to the categorization of three basic learning theories. The discussion of the three focuses much on factors within each that influence learning. First of these is Behaviorism (Ertmer & Newby [14]) where the environmental conditions receive the greatest emphasis because behaviorists assess the learners to determine at what point to begin instruction as well as to determine which reinforcers are most effective for a particular student. For them, the most critical factor, however, is the arrangement of stimuli and consequences within the environment. In designing instructional materials, they explain that the theory was used

as the basis for designing many of the early audio-visual materials and gave rise to many related teaching strategies, such as Skinner's teaching machines and programmed texts and more recent examples include principles utilized within computer-assisted instruction (CAI) and mastery learning. Second to these is the Cognitivism and like behaviorism, it emphasizes the role that environmental conditions play in facilitating learning in which instructional explanations, demonstrations, illustrative examples and matched non-examples are all considered to be instrumental in guiding student learning (Ertmer & Newby [14]). On the idea of instructional design, it can be seen that many of the instructional strategies advocated and utilized by cognitivists are also emphasized by behaviorists, yet usually for different reasons. An obvious commonality is the use of feedback where a behaviorist uses feedback (reinforcement) to modify behavior in the desired direction, while cognitivists make use of feedback (knowledge of results) to guide and support accurate mental connections (Thompson, Simonson, & Hargrave, 1992 in Ertmer & Newby [14]).

And third is the theory on constructivism wherein both learner and environmental factors are critical to them, as it is the specific interaction between these two variables that creates knowledge arguing that behavior is situationally determined (Jonassen, 1991a cited in Ertmer & Newby [14]). To them, just as the learning of new vocabulary words is enhanced by exposure and subsequent interaction with those words in context (as opposed to learning their meanings from a dictionary), likewise it is essential that content knowledge be embedded in the situation in which it is used. Relative to the design of instructional materials, the constructivist designer (Ertmer & Newby [14]). specifies instructional methods and strategies that will assist learners in actively exploring complex topics/environments and that will move them into thinking in a given content area as an expert user of that domain might think. They added that knowledge is not abstract but is linked to the context under study and to the experiences that the participants bring to the context. As such, learners are encouraged to construct their own understandings and then to validate, through social negotiation, these new perspectives. Thus, consideration of learning theories in the design of a syllabus promotes a paradigm that ensures student's learning success.

III. The Syllabi based on a Communicative Approach

It can be gleaned that Richards and Rodgers (1994 in Thayniath [1]) affirm that syllabi and teaching methods today are based on the Communicative Approach aiming to (a) make communicative competence the goal of language teaching and (b) develop procedures for the teaching of the four language skills that acknowledge the interdependence of language and communication. Thayniath [1] continues to explain that Breen (1989) defines syllabus as "...a plan of what is to be achieved through in teaching and in students' learning". This shows for her that a syllabus is a plan of work drawn up for the purpose of teaching and learning a course. Consequently, during different periods, different approaches to teaching have been used and different syllabuses have been utilized for different approaches to language teaching where the use of a syllabus depends on the approaches to teaching. Underlying each approach to language teaching is a theory of language and a theory of learning which determine the

syllabus and methodological procedures of the approach as illustrated in the preceding discussion.

The aforesaid then indicates that the last few years have seen a change from the teaching of grammar and usage to the teaching of real language use and the teaching of communicative functions in which the communicative syllabus looks at the needs of the learners (Ellis, 2003 in Thayniath [1]). With regard to addressing the language needs of the learners, the search for a communicative syllabus brings out the development and the promotion of needs analysis that White (1988 in Raine, [15]) states it to be “the teacher or planner investigating the language required for performing a given role or roles” and that “needs analysis specifies the ends which a learner hopes to achieve”, but not “the means by which the ends will be reached.” Raine [15] discloses that Wilkins (1981) provides the idea that “starting from an awareness of the learners and their needs, it is proposed that from the total set, those categories should be selected that are relevant to the particular population of learners.”

A direct consequence to preparing learners communicate in the target language has been the emergence of the ESP concept. As Hutchinson and Waters (1987 in Theories of Language, Language Learning & Syllabus Design, [5].) comment, "ESP was not a planned and coherent movement, but rather a phenomenon that grew out of a number of converging trends. So, concurrent with the shift in attention from the formal aspects of language to the contextual and the subsequent analysis of kinds of language and kinds of use, there developed a concept that concentrated upon the learner and his needs – English for Specific Purpose (ESP), a pedagogical construct that attracted the attention of course designers who perceived the urgent necessity of relating the learner's setting with the syllabus contents. In other words, courses then consisted of what was judged to be typical of the field in terms of vocabulary and structures of sentences. The categorization of the language was labelled "special" as being restricted to a selection of language according to the special features detected in the target field. From this “special” demarcation, offshoots appeared to cater for the language needs for academic settings (EAP) and language needs for occupations (EOP). Significantly, both have important bearing to the study of the IMO SMCPs. Strevens (1977 in Theories of Language, Language Learning & Syllabus Design [5] explains in his taxonomy of ESP that the first dichotomy was between English for Science and Technology (EST) and ‘others’ — these being classified dichotomously as occupational (EOP) and educational (EAP). He believed that "ESP courses are those in which the aims and the content are determined, principally or wholly not by criteria of general education (as, for instance, when English is a foreign language in school) but by functional and practical English Language requirements of the learner." Hence, Strevens posits that the identification of appropriate language elements and communicative purposes which the learner would require, was essential for an ESP syllabus design (Theories of Language, Language Learning & Syllabus Design [5]).

Gleaned from the aforesaid, it can be argued that the communicative syllabus is based on speech acts or language functions rather than on units as grammar (Thayniath[1]). Relative to the preceding discussion, three prominent types of syllabi based on the Communicative Approach have found their influence to the important perspective of teaching and learning. Firstly is the **Situational Syllabus**. According to

Wilkins (cited in Syllabus Types [16]), the situational syllabus has constructed on the analysis of situations and behaviors. In a situational syllabus, the content is either real or imaginary situations where language occurs. This language is in dialogue form or in conversations. The learner has to practice the dialogues and memorize useful expressions. However, grammar and vocabulary also plays an important role. Main aim of the situational syllabus is to teach the language that occurs in different situations. An example of the situational syllabus is (a) At the hotel, (b) At the bank. (c) At the restaurant, and (d) At the airport. Yalden (1987 in Syllabus Types [16]) says that the situational model will comprise units indicating specific situations, such as 'At the Post Office', 'Buying an Airline Ticket', or 'The Job Interview'. The topical or thematic syllabus is similar, but generally employs the procedure of grouping modules or lessons around a topic, something like barnacles clinging to the hull of a ship. In situational approach, the use of dialogues is very common as this form the basis of communication within a specific situation. Secondly is the **Functional-Notional Syllabus**. It has been understood that the starting point for the functional-notional syllabus is the communicative purpose and conceptual meaning of language, i.e., notions and functions as opposed to grammatical items and situational elements which remain but are relegated to a lesser role. Finnocuaro and Brumifit (1983 in Syllabus Types [16]) surmise that the functional- notional methodology attends to meaning more than structure and form, contextualization is a basic premise, language learning is learning to communicate, reading and writing can start from the first day and communicative competitive is the desired goal. In a functional- notional syllabus, the teaching activity in the classroom should be learner centered, and all course components are viewed as a systematic whole. It has been claimed that the notional-functional syllabus was one of the first syllabuses to be theoretically based on a learner-centered, communication-oriented approach to language instruction in which it is based on the communicative approach by the aspect of communication-oriented feature (Syllabus & Materials Design [17]).

Thirdly then is the **Task-Based Syllabus**. Skehan (1998 cited in Syllabus Types [16]) claims that a task is an activity that should adhere to the criteria: (1) meaning is primary, (2) there is a goal which needs to be worked towards communication, (3) the activity is outcome-evaluated, and (4) there is a real-world relationship. From these criteria, he says that it becomes apparent, therefore, that activities are not chosen in order to teach a specific lexical form, but that meaning is far more important. To him, furthermore, activities focused on language itself are not tasks, as they need to have a real-world relationship. For Skehan (1998 in Syllabus Types [16]), "What counts, in task-based approaches, is the way meaning is brought into prominence by the emphasis on goals and activities". As all of these criteria are required by Outcome-Based Education, this type of syllabus could be utilized within the context of Curriculum 2005 (cf Chapter 3).

IV. Methodology

The present undertaking uses **textual analysis** as a qualitative method of data analysis that examines and describes the communicative element contents of the IMO SMCPs syllabus.

In this analysis, content analysis serves as the textual analysis approach that is found to be significant in attaining the objective of the present study and that is to investigate the scope of the communicative elements embedded in the IMO SMCPs that a modern language teaching has always advanced. This approach is used to identify, enumerate, and analyze occurrences of specific linguistic choices that are believed to represent a statement of what is to be learned, a reflection of language and linguistic performance in the crafting of the IMO SMCPs.

V. The Communicative Elements in the IMO SMCPs

This part of the study reveals the scope of employing the communicative elements in the crafting of the International Maritime Organization's Standard Marine Communication Phrases (SMCPs). Looking at it in general context, external and onboard communications form the two main types of maritime communication. As can be seen, tables 1 to 2 below give the external communication, while tables 3 to 4 provide onboard communication as data for qualitative analysis where they are specifically found under the first column in each table. The second column in each table then indicates the communicative elements of these types of maritime communication (syllabus lesson) expressed by the representation of form and function of language.

Table 1: External Communication: Vessel Traffic Service (VTS) Standard Phrases

Phrases for providing VTS Services	Communicative Elements
A1/6.3 Handing over to another VTS A1/6.3.1 ...VTS this is ... VTS: MV ... position is bearing ... degrees, distance ... kilometers/nautical miles from... Working frequency is VHF channel... Your target. Please confirm A1/6.3.2 ... VTS this is... VTS: MV... position bearing is ... degrees, distance ... kilometers/nautical miles from... I confirm. My target A1/6.3.3 ...VTS this is... VTS: MV ... position is bearing ... degrees, distance ... kilometers.../nautical miles from... I am unable to take over this target.	Language Function: Handing over to another VTS Grammar Focus: Present Tense of the Verb, First Person and Demonstrative Pronouns, Simple Sentence

*Taken from IMO 2005

Table 2: External Communication: Urgency traffic

Technical Failure	Communicative Elements
A1/2.1 Technical failure A1/2.1.1 I am/MV... not under command A1/2.1.2 What problems do you have/does MV... have? A1/2.1.2.1 I have/ MV... has problems with engine(s)/steering gear/propeller/... A1/2.1.3 I am/MV...is maneuvering with difficulty A1/2.1.4 Keep clear of me/MV... A1/2.1.5 Navigate with caution A1/2.1.6 I require/MV... requires tug assistance/escort/... A1/2.1.7 I try /MV... tries to proceed without assistance A1/2.1.8 Stand by on VHF channel.../frequency... A1/2.1.8.1 Standing by on VHF channel.../frequency...	Language Function: Sending urgency traffic due to technical failure Grammar Focus: Present Tense (Verb), WH-Questions, Simple Sentence, Imperative

*Taken from IMO 2005

Table 3: Onboard Communication: Safety on board

Phrases on General Activities	Communicative Elements
B2/1.3 Checking status of escape routes B2/1.3.3 Check the escape routes and report B2/1.3.1.1 All escape routes are clear B2/1.3.1.2 The escape route(s) from ... (to...)/via ... is/are blocked/not clear (yet) B2/1.3.1.3 The escape route(s) from... (to...)/via ... will be clear in ... minutes	Language Function: Checking status of escape routes Grammar Focus: Present Tense of the Verb, Simple Sentence, Imperative

*Taken from IMO 2005

Table 4: Onboard Communication: Pilot on the bridge

Anchoring	Communicative Elements
A2/3.5.2 Leaving the anchorage A2/3.5.2.1 How much cable is out? A2/3.5.2.1.1 ...shackle(s)is/are out A2/3.5.2.2 Stand by for heaving up A2/3.5.2.3 Put the windlass in gear A2/3.5.2.3.1 The windlass is in gear A2/3.5.2.4 How is the cable leading? A2/3.5.2.4.1 The cable is leading ... ahead/astern ... to port/.to starboard ... round the bow ... up and down	Language Function: Leaving the anchorage Grammar Focus: Present Tense of the Verb, WH-Questions, Simple Sentence, Imperative

*Taken from IMO 2005

Discussion:

Generally, the prevailing observation as seen in both sample data types of maritime communication reveals the very clear presence of the function and form of language. The former allows students on (Form and Function [18]) what they can do with language as they engage with content and interact with others because functions represent the active use of language for a specific purpose and in the case of the present study, it is in the maritime context where students use language functions in order to express ideas, communicate with others, and show comprehension of content; while the latter deals with the internal grammatical structures of words and phrases as well as the word themselves which are definitely the linguistic realization of language use. In other words, while functions address what students do with language, forms are the language structures and vocabulary that are used to support those functions (Form and Function [18]). So new developments in language teaching which have already detached on purely analyzing language and on solely focusing on language use yield language teaching theories that have been significant influence in proving that usage and use or the form and function are interrelated in the learning and acquisition of different communicative skills at the same time.

Specific to the present undertaking, it can also be observed that in both types of maritime communications, the language functions (Handing over to another VTS, Sending urgency traffic due to technical failure, Checking status of escape routes, and Leaving the anchorage) represent the communicative activities of the maritime business wherein the vocabulary and structures of sentences can be explicitly identified to be "special" being restricted to a selection of language according to the special features detected in the target field – Maritime English whose specific goal is to prepare students to acquire English geared toward Occupational Purposes as discussed in the given literature.

Meanwhile, in communicative language teaching, the provision of language structure alongside language function has proven that the linguistic binary of fluency and accuracy is seen to be complementing each other. This is a telling indication why in the second column of tables 1 to 4 above, grammar focus in each language function helps realize language use that in bits and pieces of language function, it can contain

more than two structures to realize the communicative characteristics of language. Savignon (2002 cited in Breshneh & Riasati [18]) assert that grammar is important; and learners seem to focus best on grammar when it relates to their communicative needs and experiences. She said that disregard of grammar will virtually guarantee breakdown in communication. In a more recent language teaching strategy, focus on form (FonF) is considered to be a central construct in task-based language teaching where learners' attention is attracted to linguistic forms as they engage in the performance of tasks (Ellis [19]). Qualifying this strategy, however, Skehan (1998 in Syllabus Types [16]) makes it very clear that activities are not chosen in order to teach a specific lexical form, but that meaning is far more important. Thus, form and function should adhere to balance complementation in the execution of any language activities in order to ensure learner's acquisition of communicative competence.

Based on the analysis of the preceding context, it can now be said that the form and function of language are indispensable elements in strengthening learner's communicative competence and are found to be clearly embedded in the crafting of IMO SMCPs, the very core of what the syllabus has.

VI. Conclusion

As shown from the results of the present undertaking, the scope to which the communicative elements are employed in the crafting of the International Maritime Organization's Standard Marine Communication Phrases (SMCPs) is found to be considerably solid. Communicative competence theories highly consider that form and function, usage and use, accuracy and fluency have to complement in a balance way because in the course of communication, they strengthen what the speakers have to say, influence speakers' relationships, and intensify appropriateness of their involvement in communication. This argument is supported by the language theories espoused by Canale and Swain, Celce-Murcia et al., and Hymes describing that communicative competence deals with the ability to interpret and enact appropriate social behaviors, and it requires the active involvement of the learner in the production of the target language. This principle as highlighted by the said applied linguists encompasses a wide range of abilities: the knowledge of grammar and vocabulary (linguistic competence), the ability to say the appropriate thing in a certain social situation (sociolinguistic competence), the ability to start, enter, contribute to, and end a conversation, and the ability to do this in a consistent and coherent manner (discourse competence) as well as the ability to communicate effectively and repair problems caused by communication breakdowns (strategic competence).

This complementation of form and function justifies Hymes' reasoning by rationalizing that linguistic theory is needed to be seen as part of a more general theory incorporating communication and culture. Thus, to the notion of competence, he added the 'communicative' element and described it as "...rules of use without which the rules of grammar would be useless. Just as rules of syntax can control aspects of phonology, and just as rules of semantics perhaps control aspects of syntax, so rules of speech acts enter as a controlling factor for linguistic form as a whole". So this competence-performance model advances Hymes' call (Lee, [8]) to take interest in the sociability of

language serving as a catalyst for the field of language education as it expanded the scope and epistemic content of target competence that concerns L2 curriculum.

With these findings, teachers teaching maritime English using the SMCPs in the syllabus are required to possess a strong linguistic knowledge in order to satisfy every communicative language classroom task where the learner's interest and needs have to be situated securely at the forefront of teaching and learning.

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The Ship Intelligence versus the position of the IMO SMCP in maritime practice: Future or Futuristic?

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Abstract

Nowadays our society faces new and urgent challenges. Research and innovation represent the first steps to take so to come out of the current economic downturn. Tougher competition and the arrival of new world players leave us the only alternative but to invest in the future through the development of research and innovation.

Today it is common to use the cruise control of our car when driving along the highway and there are even cars that can park themselves. In the aviation industry the introduction and further development of drones has made unstaffed flying possible. What about the shipping industry? Over the last few years, there have been a number of initiatives concerning autonomous or uncrewed ships. On these levels, new definitions of the *Ship* and *Master of the ship* are on the horizon. Where do we go from here? Is there a reinvented definition of the IMO SMCP available for what is to be the Shore Control Centre (SCC)?

This paper tries to find the position of Maritime English and the IMO SMCP when sailing under specific conditions, in its attempts to analyse the Obstacles and Disadvantages when no crew is required on board; this could jeopardize the statute of seafarers, and not every aspect of unstaffed shipping is all roses.

Key words: *unstaffed vessels, communication, crews, IMO SMCP*

Introduction

In March 2014, the Robotics Business Review (RBR) staff presented autonomous ships and their “unmanned bridge of the future”, where “*ship captains in 2025 will use heads-up displays to turn the bridge into an augmented reality control system*”. They took this step after Rolls Royce’s announcement in February 2014 about their intention to build crewless cargo ships

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to serve a global shipping industry. The report indicated that was worth an estimated \$375 billion annually: „By 2025, crews manning the bridges of tugs, cargo ships, and platform supply vessels could be using new bridge technology being developed by the VTT Technical Research Centre of Finland (VTT) in collaboration with Rolls Royce Marine and Aalto University of Finland. The future ship's bridge, [...] could also help crews sail the seven seas without getting their feet wet, by supporting remote operation of a range of seafaring vessels. On-board versions of the bridge automatically detect which crewmember is at the console and automatically adjusts to the user's predefined settings. The bridge window acts as a heads-up display with information about the location of the ship (and other vessels)” [1].

More than that, the same report gave information about another \$4.8 million European project called *Maritime Unmanned Navigation through Intelligence in Networks* (MUNIN) to be concluded by end of 2014. The project main objective was to „develop prototypes of a range of technologies, including autonomous route finding and collision avoidance systems, and shore-side control” [2]

In this paper, the authors invite you to venture into your imagination to navigate on autonomous-unstaffed ships and on crewed vessels as well, so to manage after that to focus on reality and to bring to light their advantages and/or obstructions in the maritime industry, along with the major changes that the use of autonomous-unstaffed ships presume.

2. The future of navigation: the great contradiction of our society

From times immemorial, ships transported a maximum quantity of goods (ships' cargoes) across the seas, and they are still doing that. People say if ships stop operating half the world will die of hunger and the other half will freeze to death. There is no question that nowadays ships cannot run on fuel and sophisticated equipment only. A sufficient number of adequately trained, qualified and experienced seafarers must operate the ships to sail safely, and the cargo be delivered to destination in as good conditions as it was received.

In today's digital age, new technologies such as the Internet of Things (IoT), artificial intelligence, robotics and virtual reality, are set to innovate the maritime industry, including ship design, operations and managerial patterns, in order to reduce costs and increase profits. That is not easy to do as there are many steps to take; moreover, the open-ended digital technology pushes the companies to arrange how they Identify, Operate, Evaluate Risks or Fail these new technologies. Digital solutions offer opportunities to scale rapidly and disseminate fast when the solution answers a crucial need. If companies hope to preserve their competitive edge and avoid division, then they must use the new technologies and facilitate the rapid dissemination of digital assets.

Each digital innovation is a building rock to create new combinations for innovation and division. The expertise and equipment knowledge makes some companies the ideal partners to

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transform current-days vessels for *tomorrow's needs*. Therefore, remote and autonomous ships will be safer, more efficient and cheaper to build and operate. More than that, they are solutions to reduce human-machine interaction by remotely controlled tasks and processes, while keeping the human at the centre of critical decision-making.

Alan Tovey in his article published on April 11, 2016, in *The Telegraph* (Business page) announced the crewless 'drone ships' will be sailing the seas by 2020, citing Oskar Levander, head of innovation for Rolls-Royce marine unit: *"This is happening. It's not a question of if, it's a question of when. We will see a remote controlled ship in commercial use by the end of the decade."*[3] Oskar Levander also predicted the system could turn ships into a seaborne version of car service Uber, with the potential to change completely the current shipping sector: *"Drone ships will allow the creation of new services, which will support existing players to make their businesses more efficient and enable new entrants with new business models to the sector, with a potentially similarly disruptive effect to that caused by Uber, Spotify and Airbnb in other industries"*[4].

As a result, the ships will be steered from 'virtual bridges' based on shore. Crews could control a number of ships from shore simultaneously. Sensors such as radar, lasers and computer programs will allow the ships to pilot themselves, with shore-based captains taking over if there is a problem or for complex docking procedures, although the seafarers will be on board ship at first to oversee the pilot projects. In the long term, one of the most important advantages of this innovation is the fact that crewless 'drone ships' are expected *"to help overcome the staffing shortages in the marine sector, with people increasingly reluctant to take on careers that mean months away from home"* [5]. Therefore, "virtual" captains and crews will be able to monitor the vessels from ashore, meaning *normal home lives*. They have predicted that crews stationed around the world will be ready to be transferred by helicopter to crewless "drone ships", when the latter might encounter problems they could not handle themselves.

Sailing on the Ariadne's thread, there are some questions to ponder: Can you think of a specific situation where having seafarers present would be an advantage over just having users and display of information? How about a situation where users tend to be an advantage? What about if there is a situation that poses a danger to the ship and voyage? Would you rather have seafarers, who might cope and find solutions against e.g. sea pirates' attacks, or users, who are less likely to cope but a lot easier to "write off"? Can you think of *cyber pirates that can hack a ship*?

Taking into consideration the challenges for MET institutions and shipping organizations as well in facing the Digital Era, the shipping companies often fail to recognize what an attractive target they are to cybercriminals. The NotPetya cyber-attack in June 2017 affected badly several shipping companies, including the shipping giant A.P. Moller Maersk group. On 18 August 2017, Chris Baraniuk, a technology reporter, analysed *"How hackers are targeting the shipping*

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industry”, and „breaking into a shipping firm’s computer system could allow attackers to access all kinds of sensitive information”[6]

The current-day ships, increasingly computerised, are vulnerable. For many involved in the maritime domain, this is the greatest headache. Malware, including NotPetya and many other pains, can spread from computer to computer on a network. That means connected devices on board ships are also potentially vulnerable.

On April 03, 2018 the online editor at ComputerworldUK and Techworld, Tamlin Magee wrote on his blog:” *Security researchers have for years been warning the maritime industry that it is low hanging fruit as incredibly high-value cargo is transported on ships with legacy systems, combined with poor processes and awareness, while the seaports they dock in often suffer from the same problems. In 2015, Kaspersky Labs went as far as to claim shipping was ‚easy meat’ for hackers. [...] The Russian cybersecurity vendor reported on a wave of significant hacks: these ranged from a drilling rig that was hacked and tilted from its site in South Korea towards South America – in 2010. [...] In 2012, a criminal gang hacked into the systems of the Australian Customs and Border Protection Service agency, so they could be one-step ahead of authorities that placed containers under suspicion. [...] Maritime security company CyberKeel warned that ships were switching off their navigation systems when travelling through waters where armed pirates are to operate – sometimes faking the data to make the ships appear they were elsewhere. [...] A daring scheme in the Belgian port town of Antwerp meanwhile saw criminals gain access to systems that controlled the movement of containers to smuggle cocaine, heroin and guns. ‚If your goal is to steal cargo there are easier ways of approaching piracy than some of the more sophisticated headlines demonstrated by security researchers’. [...] In 2017, a cargo ship travelling from Cyprus to Djibouti lost control of its navigation system for 10 hours – preventing a captain from manoeuvring and with the intention of steering it into territory where it could be easily boarded by pirates and robbed”[7].*

Accordingly, hack the Electronic Chart Systems (ECDIS) and you can send a ship to wrong way, or you may be able to crash the ship, particularly in fog. Very often there is a lack of network segregation on vessels. Hack the satcom terminal and you connect yourself to the vessel network. If the ship is remotely controlled and communicating with satellites, that means hacking could play a role in future piracy at sea. “Spoofing” is a technique that sends different GPS coordinates to a vehicle with the aim of throwing it off course. Rather than a hostile attempt to crack into a computer system, spoofing simply tries to feed GPS readers incorrect information. Could you imagine what it would take to spoof a ship?

Experienced seafarers describe their younger mates as working ‘screen fixated’ all too often, believing the electronic screens instead of looking out of the window. All the above-mentioned examples have a common feature: crewmembers working in departments and positions on board vessel. Therefore, MET institutions should be increasingly connected to

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explore the challenges of maritime cyber security in order to understand the issues with securing vessels at sea, along with the shore based centres. Our students should be trained to face the severity of the problem. A human crew is advantageous in many ways in terms of ship security. On the first place, they may be able to verify that the ships' systems function as intended. On the second place, if these systems are modified to query the crew during potential cyber-attacks, it is more difficult for a cybercriminal to go undetected. It is prudent to take advantage of humans on board ship. That is why the seafarers' training on how to keep these systems secure is very important. In order to keep the vessel safe, it is useful to impart the use and protection of passwords and access keys, the proper use of the ship's system, what a cybercriminal looks like, together with how to disable, restart, or suspend certain systems in case of distress or a hazard situation.

Statistics published by Sam Chambers on March 28, 2018 shows shipping as the softest target for hackers: *„A survey of nearly 6,000 active seafarers carried out by Futureonautics has shown 47% of respondents said that they sailed on a vessel that had been the target of a cyber-attack. Moreover, only 15% of seafarers had received any form of cyber security training. Just as alarming only 33% of seafarers said the company they last worked for had a policy to regularly change the passwords onboard and just 18% of those polled said the company they last worked for had a policy to change default equipment passwords on board [...] More seafarers than ever before had had access to connectivity and communications. Seafarers who can use the internet at sea has increased by 527,000 since the last survey in 2015, and those who can access it for free has increased by more than 200,000. Also of note, 53% of seafarers are now reporting that crew communications have led to a decline in social interactions on board”* [8].

Taking notice of all these, how worried should we be? Like so many challenges we encounter daily, the answer to whether or not we should be concerned about ships being hacked depends on understanding the fact that even one item easily accessible in the above-described manner is enough to cause a disastrous accident. In addition to thinking of the type of cargo carried by the ship, we must find ourselves taking all these kind of vulnerabilities a lot more seriously while thinking of cooperation between crews to find solutions to any problems.

3. Crew or crewless ships of the future?

„So the Reindeer, crewless, lay across the estuary at the sandspit”.

Jack London, *John Barleycorn*, Chapter XI, 1913

Maritime transport is the backbone of world trade and globalization. Ships are the cost-effective way to carry cargoes to all places of the globe. Following the first steps towards driverless cars on land, companies are starting to imagine ships without crews or with crews, but remote ones. The latter will oversee the ship by satellite and control it from consoles on shore. In most cases the drawing plans for autonomous ships are not mainly about security. Instead, these

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are cost-savings schemes. Crews cost money, and because of their "troublesome" needs like, e.g., accommodation on board ship, seafarers take up some space that could instead fit more cargo loading. Removing the crew from the ship should translate into cheaper operating costs and could even reduce the numbers of accidents caused by human factor. Still, they say the ships would not be entirely alone at sea. There will be supervising humans tracking their progress by Shore Control Centres (SCC) and sensors on the vessels alerting the humans to fix the problems via monitors. We might consider these humans will be the 'seafarers' of the future. If so, and on the basis of COLREG, regulation 2, on good seamanship (section 4.4.1), it must be presumed that remote operators will, as a minimum, be required to complete the usual training programme for navigating officers and meet the requirements for this under the STCW Convention [9]. To this, they should add other competences necessary to steer an autonomous ship, especially education and qualifications within operational technology and other relevant technology of importance to the operation of autonomous ships. Furthermore, they should also make an amendment to the ISM Code that establishes the principles for remote operators. Such regulation could cover organisational and decision structures, means of communication and emergency procedures and should be based on the principles and requirements made in relation to the "Master's Responsibility and Authority" in part A, regulation 5, of the ISM Code [10]. Remote operators will presumably be specialised as either operators with navigating tasks and operators with engineering tasks. In the long term, the operator's role will presumably include both elements of the deck officer's and the engineer officer's functions.

This is a concept for the future, but putting in place the satellites, autonomous ships, remote monitoring, and drone stations to inspect underway vessels is the work of years, if not decades.

Crewless ships, experts say, will be a game-changer for marine underwriters. An example: They will change the way insurers view risk and handle claims. Exactly how that plays out, time will tell. At this point, insurers have more questions than answers about these crewless vessels. On March 01, 2018, Caroline McDonalds published her article "*The Rising Tide of Maritime Shipping Risks*", in *The Risk Management Magazine*. She cited Capt. Andrew Kinsey, senior marine risk consultant at Allianz Global Corporate & Specialty, who considered "*Crewless ships will no doubt be deployed, but the jury is still out on whether safety concerns and regulations will clear the way for ocean-going autonomous vessels in the near future. Ultimately, [he believes] technology will support, rather than fully replace, ship crews.*"[11]

Above all, they have concerns by the number. Cyberattacks, piracy, casualty management, vessel maintenance, assignment of liability and safety, all have a spot on that list. There is no question: Before crewless vessels hit international waters, they must navigate a sea of regulatory changes.

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After examination of all the above data, the authors of this paper consider that the comprehensive introduction of autonomous shipping seems to be less a technological problem though also here quite a few essentials remain unsolved so far. It is more safety, security, legal and similar aspects, which bar the application of uncrewed vessels within a predictable period of time.

Just to name a few:

A) Development of an internationally agreed regulatory framework most likely to be done by the IMO. Knowing somewhat the lyrics of the legislative process of that Organization, the authors of this paper strongly doubt that practicable solutions can be achieved keeping up with the speed of the technological progress involved.

B) Safety issues arising, for instance, from collisions between, e.g., crewless vessels themselves (or with what “floating object” ever) or, even worse, with passenger liners. It is surely beyond the imaginative power of even the most enthusiastic supporter of an autonomous shipping that one of these far away days cruise liners will sail the seas without a qualified navigation/engineering staff on board.

C) Emergency considerations including environmental aspects. The decision-making activities to fight a fire or to limit an oil spill, e.g., are normally very complex and may hardly be mastered without action by whatever crew.

D) What will happen when technology fails – there isn’t any infallible technology – or when ships will be attacked by cybercriminal actions, the hazard potential of them are presently not even visible yet.

E) The autonomously sailing fleets have to be operated and controlled by (national/international?) closely coordinating Shore-based Control Centres. It is hardly imaginable that under the conditions of a violent competition in maritime trade any kind of successful coordination will be manageable.

It is interesting to see that the most optimistic opinions regarding the introduction of autonomous shipping are preferably expressed by scientists, theoreticians, academics and the like. More realistic views, scepticism and even demurring comments are first of all given by Master Mariners who know the industry in depth.

In coming years Germany will start a kind of experiment with unstaffed vessels: crewless barges of about 30 to 50 TDW will be operated on the tight-meshed network of inland waterways, probably in Berlin. This procedure is similar to the operation of autonomous streetcars, the development of which has already reached a comparatively high level. The outcome of this experiment remains to be seen, but conclusions cannot be drawn 1:1 as these barges will be under close supervision on each metre they will cover, and in case of an unforeseen technical incident intervention can be started immediately. Communication between those barges will play no part. The shipbuilder Vard Holdings will build a container ship, *Yara Birkeland*, for fertiliser

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group Yara, the first autonomous and electric commercial ship for a Norwegian project. This Norwegian group expects *Yara Birkeland* will remove 100 diesel lorry journeys from Norway's roads per day by using a battery-driven container vessel, reducing NO_x and CO₂ emissions and improving safety on local roads. Vard has agreed to build this self-piloting and zero-emissions ship at its shipyard in Romania and Brevik, Norway, for delivery that is anticipated to be in 2020. *Yara Birkeland*'s hull will be built at Vard Braila shipyard in Romania and transported to Brevik for further construction and outfitting. Then the vessel will gradually move from manned operation to fully autonomous operation by 2022.

4. Quo vadis IMO SMCP?

"It is, I suppose, only to be expected that an activity such as seafaring, which is international by nature, should feel the need for an international language. It seems reasonable that this language should be English."

Commodore T. W. Stevens, Royal Mail Lines Limited, 1961

The IMO Working Group on the Standard Maritime Communication Phrases (SMCP) worked about eight years to develop *"this standardized safety language enacted in 2001-IMO 2002"* [12]. After that, it took another couple of years to familiarize the ships officers with the proper use of the SMCP as required by the STCW Convention 1978/95 as revised. To accomplish this section, the Maritime English teachers and instructors of the MET institutions played a prominent part.

Regarding onboard, ship-to-ship and ship-to-shore communication in the current-days: Maritime English in general and the IMO SMCP in particular is the internationally agreed medium for verbal communication among people performing their jobs on board vessels, in ports and in maritime administrations such as VTS Centres. This will remain as it is for the foreseeable future, will say as long as human beings are involved.

Assuming that one of these days still beyond the horizon autonomous fleets will sail the oceans, then verbal interchange of intelligence will no longer play a role – shipping will dispense with seafarers in our traditional understanding and consequently with Maritime English and the SMCP as well. In this case electronic data streams between vessels and from shore to vessels (and vice versa) will perform the routine jobs of ship operation such as fixing position, determining/altering course and speed and other navigational tasks.

It is conceivable that maintenance and repair in shipyards will remain for a longer period of time as one of the rare fields where highly qualified personnel will depend to a certain extent on a clear verbal medium for the exchange of intelligence, and this could be English. The SMCP, however, are not suited and not intended to master the demanding communication challenges in this area.

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5. Conclusion and Recommendations

Worldwide, the number and scope of projects dedicated to autonomous crewless vessels is increasing. Additionally, increased autonomy raises complex questions regarding the maritime labour force and staffing levels of the future. How might autonomous ships breakthrough in the future affect seafarers?

It seems that experts understand our concerns when they explain: *“I wouldn't be too worried, however, because there will also be manned vessels in the future, autonomy is not for all ships...it will not drastically reduce the number of seafarer jobs in the future.[.] In my mind, the breakthrough happens when the IMO allows operation of unmanned vessels in international waters”* [13]. That definitely not happened yet.

As Maritime English teachers, we are thinking of our students. *“We cannot ignore that the concept of MELF (Maritime English as a Lingua Franca) at SEA with all its associated demands, has now been subtly and almost imperceptibly incorporated in the syllabi, methodologies, and teaching goals of marine higher education institutions [..] Cross-curricular approaches, intercultural considerations, the learning of languages following content-based teaching, materials development for the new curricula and methods constitute areas of current research worldwide. The challenging new ideas aspire to add useful insights into the relevant issues and promote ideas and practices”* [14]

Advanced navigation and engineering technology is no stranger to students as Generation Y. Is the ‘breakthrough’ year here? Is technology transferable to operate and control navigation and engineering systems in large crewless ships? Regarding this, another problem may sooner or later have a direct impact on us, the MET institutions: How can we convince young men/women to time-consuming qualify for the challenging profession of a deck or engineer officer when they learn that their job is a dying breed? That is why the main goal of this paper is to illustrate that the reasons for creating and applying the SMCP are still on the agenda, as *“an efficient and specific device for verbal communication in order to promote safety at sea, on board vessels and in ports if taught applying appropriate methods”*.

To sum it up: Should a comprehensive autonomous shipping come true with all its aspects, then the SMCP will have no job to do as there will be no persons who have to use this standardised safety language for a clear intercommunication. For the time being, however, and for a foreseeable future counting by decades, MET institutions are well advised to teach their students and cadets the highest possible competence in mastering Maritime English including the SMCP as required by the STCW Convention, 2010. Full speed ahead, ME teachers!

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Maritime English for Stutterers: A Tale of Adaptability

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Introduction

In recent years, our team of English lecturers at Antwerp Maritime Academy has witnessed the enrollment of students with mild to severe stuttering problems. Whilst posing certain pedagogical challenges in the classroom, this phenomenon has especially led to an ongoing discussion about matters of certification and enrollment prerequisites, and for which we would greatly welcome the input of the IMEC-community. After all, even if it seems a matter of course that the EFL and ESP educators autonomously assess the linguistic proficiency of the learners and subsequently award a pass or fail grade, our institution does not foresee specific guidelines for stuttering. This is problematic in several ways: it would seem self-evident that a stuttering student, typically incapable of communicating clearly and coherently in stressful situations, cannot meet the minimum requirements for the Maritime English curriculum – taught across all three years of undergraduate study. And since these courses are mandatory for obtaining the bachelor's degree in Nautical Sciences, the student simply could not graduate. However, matters are slightly less straightforward. For one a student could – theoretically – pass on aggregate if their other marks for the non-oral components are sufficiently high. Moreover, the Maritime English ‘problem’ might stand out further, and even lead to a legal quandary, if the student passes all other courses – including, most notably, the GMDSS-exam, which even the worst stutters have passed in the past on behalf, most notably, of the virtually unlimited time available to produce the required situational SMCPs. A third empirical element, moreover confirmed in the specialized literature [1], finally, compounds our legal quandary as stutterers are typically seen by the general public *as well as* speech pathologists and language professionals *alike* as holding the so-called ‘stuttering stereotype’ – i.e. the belief “that people who stutter are frustrated, anxious, shy, nervous, weak, involved or affected psychologically” (ibid.). In short, then, it transpires that we have a problem in class, that we do not know how to remedy it institutionally, and that an observed bias demonstrably impacts our global assessment of these students’ performance beyond their oral proficiency to boot. In a proactive attempt to move out of this infelicitous situation, this paper, accordingly, will propose an assessment of the teaching context at Antwerp Maritime Academy, followed by a conceptual elaboration of the condition of stuttering, before finally presenting to the IMEC gathering of maritime communication experts a set of discussion points centered round the notion of *adaptability* – and this in the ultimate hope of clarifying our pedagogical position on the matter, streamlining institutional procedures with national

guidelines, as well as hopefully contribute to the formulation of international industry recommendations.

Situation

The aforementioned aspects of certification and enrollment prerequisites at Antwerp Maritime Academy are both tributary to the overarching question of future employability. And aside from posing a threat to our own academic credibility – especially with Antwerp-based industry partners – the issue of stuttering seafarers in the current situation creates a conundrum calling for considerable expert reflection. Stuttering, as we have noted over the course of the last couple of years, has proven problematical in terms of certain STCW-related subjects, not in the least Maritime English and GMDSS. Our institution conversely does not organize intake exams, nor does it specifically assess the candidate's communication skills prior to enrollment. In contrast, the STCW-code [section A-I/9] stipulates that certified seafarers should:

“2. Demonstrate adequate hearing and speech to communicate effectively and detect any audible alarms; 3. Have no medical condition, disorder, or impairment that will prevent the effective and safe conduct of their routine and emergency routines on board during the validity period of the medical certificate.” [2]

Under our current institutional regulations, however, said medical certificate does *not* cover effective oral communication, while the GMDSS certificate in turn can apparently be obtained without time constraints being systematically enforced, thus creating an entirely artificial and professionally non-representative situation. But one which, sadly, can nonetheless generate frustrations for all concerned: the student may come to harbor unrealistic expectations, while the Maritime English lecturers will likely bar them from obtaining the BA in Nautical Sciences despite the student obtaining the GMDSS STCW certificate, and professional recruiters finally be baffled by the poor communicative skills of these candidates.

Definition

Stuttering in the professional literature is defined as “a fluency disorder whereby a speaker's forward flow of speech is impeded.” More specifically for this condition, “the speaker knows what he or she wishes to say, has the message formulated, but has difficulty getting the speech sounds out to produce the message in a fluent manner [whereby] the speech sounds are repeated, prolonged and/or blocked

so that the speaker has difficulty moving forward to the next sound” [3]. The implications thereof are not slight – especially in the psychologically challenging years of adolescence and young adulthood, as is obviously the case for our students. They may rightly interpret their stuttering to mean that a career involving speaking cannot be pursued. On the other hand – and this is the phenomenon we are witnessing – some may respond to their condition with resilience and will uncompromisingly pursue coursework within their interest area, irrespective of the importance of speaking. Needless to specify, hence, that the condition poses substantial challenges; both to the individual candidates, to their teachers, as to their future employers – and especially so in the shipping industry, where effective communication is key to safety and, indeed, certification.

Further problematized by the study of Anderson *et al.* on the self-regulatory skills of stuttering students, which demonstrated their (far) lower adaptability to change and concomitant increased likelihood of more severe stuttering in unpredictable or novel situations, the notion of *adaptability* arguably warrants particular methodological focus – both from the angle of learners and lecturers alike. As Anderson *et al.* demonstrated that stuttering students are more focused upon mistakes in their speech and thus more likely to react with tension and struggle against these mistakes, which can exacerbate stuttering [4], it would not be unreasonable to focus on this coping mechanism itself. After all, even if the outcome is often that what was to be avoided, the underlying strategy is constructive, and one that arguably warrants further attention.

Adaptability

If we follow the basic tenet of cognitive science that “Cognition equals recognition” [5] and apply it to the principle of adaptability, its methodological importance for remedying stuttering problems in the Maritime English curriculum immediately transpires. After all, our faculty to adapt relies on the cognitive concretization of heterogeneous impulses, and as such constitute analogous relations that ‘connect’ before they ‘confuse’ – the positive basis, so to speak, before moving on to a potentially negative outcome. It is on the former that we should focus more, since our faculty to think analogically according to semiotician Umberto Eco after all is a “neurological fact” [6] that sidesteps causal limitations while recuperating and repurposing the ‘slippage’ from the unforeseen into applied adjustments. Additionally, as French philosopher and sociologist Bruno Latour has argued, ‘meaning’ is partly dependent on ‘speech’ and both concepts are the socialized products of individual associations between entities which themselves do not necessarily form coherent entities but are nevertheless interpreted by means of momentary relations [7]. In short, as pedagogues we could do worse than intervene and/or offer assistance in the intrinsically resourceful signifying *process* rather than concentrate on responding to the problematic ‘product’ of the stutterer’s impaired speech – provided, of course, that the institutional framework stays the same and stuttering students can keep

enrolling in the Nautical Sciences curriculum. Given the overcompensating nature and resilient efforts produced by the stutterer to ‘stay afloat’ in such an environment, it would arguably be wasteful and pedagogically disingenuous not to try at least to capitalize on such resourcefulness and try to ‘adapt’ our own practices accordingly.

Remediation

To recapitulate this overture towards remedial possibilities, an overview of the situation’s constituents is in order:

- There is a growing influx of stuttering students at Antwerp Maritime Academy;
- STCW certification is obtainable for these students due to ‘unrealistic’ testing situations;
- The ‘regular’ Nautical Sciences BA/MA degrees are far less accessible to them;
- A legal quandary is a distinct possibility – not in the least due to mixed messages;
- A medical certificate is needed under Belgian law to sail in the merchant marine;
- Said medical certificate does specify ‘adequate speech’ but stuttering is *not* tested;
- The information brochure at AMA does *not* specify stuttering, either, under the list of medical impairments disqualifying a candidate from obtaining the NS-degree;

The recurring formula in Belgian law, the STCW-code, and the school’s statutes is “effective oral communication,” yet there are noted loopholes on all three levels. Therefore the questions brought here before this international assembly of maritime communication experts would be the following:

- 1) Is “effective communication” the sole responsibility of the maritime academy, of the future employers, or the IMO (and thus of the jurisdiction in the individual member states)?
- 2) At what point should prospective students who stutter be screened when seeking enrollment at Antwerp Maritime Academy?
- 3) What should be the position of the academy with regard to stuttering students?
- 4) How should we concretize and implement the principle of *adaptability* – both for the stuttering student, and in our own teaching practice?
- 5) Would it be useful to develop an international industry standard regarding stuttering?

On behalf of my colleagues I thank you for your attention, consideration, and recommendations.

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A long-term strategy for modifying linguistic DNA: Personal Language Log

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ABSTRACT

Teaching Maritime English can be a blessing and a burden at the same time. It is a blessing to reach a stage where communication with engineering students from a multilingual background is fluent. However, it can be extremely tough to get to a level of communication where incidents on board or, in the worst case, fatal accidents are not triggered by a lack of knowledge of grammar, vocabulary, poor writing and speaking. Hence, concentrating on enhancing students' level of General Maritime English (GME) at operational level improves the chance of ensuring a good level of Specific Maritime English (SME) at management level. The objective of this paper is to share an analytical strategy for dynamic Corrective Feedback (CF) in language training that improves the abilities of English for Specific Purposes (ESP) learners by, firstly, raising awareness and, secondly, eliminating typical mistakes. The "Personal Language Log" (PLL) method stimulates ESP learners to analyse their mistakes and keep track of their mistake itinerary. The comprehensive method has proven its longitudinal benefits at Antwerp Maritime Academy (Belgium) with students of a range of nationalities, who by discovering their "linguistic DNA" of errors have become more efficient language users. The method is not meant to be the sole way of improving linguistic competence; neither should it be continuously applied. The PLL immersion is a strategic, intermittent wake up call for students caught in their own restricted perception of language acquisition.

Keywords: General Maritime English, Specific Maritime English, Personal Language Log, dynamic Corrective Feedback, analytical rubric, linguistic DNA, de-automation, motivation

INTRODUCTION

With the increasing ubiquity of Maritime English in the shipping industry, students with a wide range of language competence profiles study at maritime colleges and universities. As the Belgian education system prohibits entry exams at the majority of higher education institutes, Antwerp Maritime Academy (AMA) is annually confronted by first bachelor students with a kaleidoscopic variety of language levels of General English. Because it is the only maritime academy in Belgium, a country with three language regions, education officially takes place in both Dutch and French with minorities coming from the East-Belgian region (German-speaking), France and several African countries (French-speaking). Erasmus students attend AMA as well, with a substantial number coming from Spain.

As a senior lecturer of Maritime English at AMA, guiding marine engineers in achieving the compulsory STCW competences for English has been challenging over the years. Despite their certificates in English, most African students are beginners, followed by French students, who on average have a beginner-intermediate level after secondary school graduation. Most incoming Flemish students have an intermediate-advanced level. Although AMA runs a six-week Refresher Course for General English in a maritime context (based on Marlins, Study Pack 1), test results in November traditionally do not level out language differences of students with heterogeneous educational backgrounds.

Over the last 12 years as an AMA tutor, I have become increasingly frustrated with the role of language correcting, a process that is often numbing and robotifying as each academic year delivers a new batch of students making the same recurrent language errors. The Personal Language Log (PLL) at AMA was introduced in a pedagogical attempt to make students responsible for their own language competence training.

In this introduction I will clarify the concepts of Corrective Feedback and the Personal Language Log. In the subsequent discussion, the paper will address several CF strategies, elaborate four determining factors that establish successful CF, and finish by reflecting on the balance between GE / ESP with respect to the use of the PLL. As a kind of endnote, IT implementations are briefly mentioned.

Corrective Feedback

The PLL is an analytical tool for dynamic corrective feedback. Corrective Feedback (CF) is an indispensable part of language acquisition. Whether it is oral (OCF) or written (WCF¹), direct or indirect, its goal is always to mirror erroneous behavior to a standard in order to create optimal communicative functionality in society, irrespective of the culture. CF starts from early childhood on, when, for example, more experienced members of a language community (parents, siblings, peers, etc.) correct the regular verb form (e.g. *I swimm~~ed~~*) by the accepted, irregular one (e.g. *I swam*), using **motherese** (Fernald, 1982). Although not a straight, developmental line, this informal OCF gradually shifts towards a more formal WCF when a "learner" moves on through primary and secondary school to higher education. The use of rubrics, for instance, i.e. performance and achievement criteria, contribute widely to this formalised approach.

¹ Cfr. Ferris, Liu, Sinha & Senna (2013) on WCF for individual L2 writers

PERSONAL LANGUAGE LOG - OVERVIEW		CODE	MISTAKE	CORRECTION
	GRAMMAR	VER VER b (Construction)	He didn't knew the right course of the ship. The captain looking for the correct map.	He didn't know the right course of the ship. The captain is looking for the correct map.
		TES T ense S witch (Time, Form, Voice)	I have seen the bosun yesterday.	I saw the bosun <u>yesterday</u> .
		TIS T ime S witch	<i>I took my uniform and go to the navigating bridge.</i>	<i>I took my uniform and went to the navigating bridge.</i>
		FOS F orm S witch	<i>I sleep right now.</i>	<i>I am sleeping right now.</i>
		VOS V oice S witch	<i>The cargo hold has emptied.</i>	<i>The cargo hold was emptied.</i>
		IVE I rrregular VE rb	The SAR boat seeked for the man overboard.	The SAR boat sought for the man overboard.
		3PS 3 rd P erson S ingular	The Chief Engineer have a lot of work.	The Chief Engineer has a lot of work.
		ART ART icle	Philippines is a seafaring nation.	The Philippines is a seafaring nation.
		AVE Ad jective Ad VErb	He paints the railings quick. The swiftly speedboat bounced on the waves.	He paints the railings quickly . The swift speedboat bounced on the waves.
		SIP S ingular P lural (Noun)	The Chief Engineer have a lot of work. The stevedores loads the cargo on the ship.	The Chief Engineer has a lot of work." The stevedores load the cargo on the ship.
		PRE PRE position	Ratings rely of each other. The second engineer is proud on him.	Ratings rely on each other. The second engineer is proud of him.
		PRO PRO noun	The new ship is ready. It is beautiful. (personal) How many money did the pirates steal? (indefinite) This manuals are in the locker. (demonstrative) Every containers are stored away. (indefinite) The deckhand, which is Russian, fell overboard. (relative)	The new ship is ready. She is beautiful. How much money did the pirates steal? These manuals are in the locker. All containers are stored away. The deckhand, who is Russian, fell overboard.
		WOO WO rd O rd (Syntax)	They check always the manual. What means this safety sign? I often read in winter a book. (Verb/Object) Then map the officers the route.	They always check the manual. What does this safety sign mean ? I often read a book in winter. (Verb/Object) Then the officers map the route.
		MPT M anner P lace T ime	I wear the uniform <u>every day at my job neatly</u> .	I wear the uniform <u>neatly at my job every day</u> .
		REG REG ister (Formal – Informal – Slang)	The steward (is) gonna do it. Cheers. (end of a formal mail)	The steward is going to do it. Kind regards. (end of a formal mail)
	VOCABULARY	MOT MO ther T ongue	It is ware. (Het is waar.) / It is vrai. (C'est vrai.)	It is true.
		WOR WO rd	How do you say "boeg/proue" in English?	bow
	WRITING SKILLS	SPE SPE lling	The IMO spokesman gave an interviewu.	The IMO spokesman gave an interview .
		PUN PUN ctuation (.,;?! ")	Where is the quay / Give the safety goggles to me ! Let's go to the mess room and eat cadets. She boarded went to the deck and enjoyed the view. Finally the boat arrived in port. He said give the ear defenders to me!	Where is the quay? / Give the safety goggles to me! Let's go to the mess room and eat, cadets. She boarded, went to the deck and enjoyed the view. Finally, the boat arrived in port. He said: "Give the ear defenders to me!"
		CAP CAP ital	He went to london every year. the engine broke down.	He went to London every year. The engine broke down.
		STY STY le (Coherence - Sentence length)	The boat trip is adventurous. The boat trip is also interesting. I like it.	The boat trip is adventurous and interesting. That's why I like it.
		SOD SO und	ship / sheep	ship (short vowel) / sheep (long vowel)
SPEAKING SKILLS		STR STR ess	consist <u>ent</u> vVv	consist <u>ent</u> vVv
		VOI VOI ced / VOI celess (Consonant)	bed [bet] = voiceless	bed [bed] = voiced

Figure 1. PLL Overview - Source: author's own

Personal Language Log

The PLL consists of two parts, i.e. a coded overview of mistake analysis and a log. The **overview** (illustrated in Figure 1), on the one hand, is subdivided into four categories, i.e. grammar, vocabulary, writing skills and speaking skills; the former two containing all mistakes not exclusively related to skill training. The codes (i.e. abbreviated analytic rubrics) are based on the most frequent mistakes, and have been designed through induction and refined in my classroom over the years. Each code is clarified by a faulty sentence and followed by a corrected version.²

Let us look at some specific features and possible design challenges.

1. Split offs. New codes split off the main code because of frequent recurrence, as is the case with **IVE** (Irregular VERb), **3PS** (Third Person Singular) and Tense Switch (**TES**) which originally belonged to **VER** (VERb). Also **CAP** (CAPital) has been split off from the generic code **SPE** (SPelling) as well as **MPT** (Manner Place Time) from **WOO** (WOrd Order).
2. Overlaps. Although some of the codes in the system can possibly lead to misunderstanding since there is a certain amount of overlap, it is important to understand that codes only highlight mistakes in a particular context. For example, a **SIP** (Singular-Plural) mistake can also be referred to as a **3PS** (Third Person Singular) issue (e.g. *The ratings paints the railings*) as can **MOT** (MOther Tongue) errors also be categorised under **SPE** (SPelling) issues (e.g. *The route is approximatively 26 nM. / French: approximativement*).
3. Big denominators. Some codes denominate many word classes, as is the case, for instance, with the **SIP** code, which refers to verb errors (e.g. *We works as deck cadets*), noun deviations (e.g. *Two mens fell overboard*) and the erratic use of the adjective (e.g. *The beautifuls ships are leaving port*).
4. Levels. Some generic categories, such as Tense Switch (**TES**), should be used at beginner's level whereas the three specific subcodes, i.e. switches between different times (**TIS** e.g. *I have seen the bosun yesterday*), forms (**FOS** e.g. *I sleep right now*), and voices (**VOS** e.g. *The cargo hold has emptied*) are possibly more applicable for advanced language users.
5. Variation. Although the PLL is globally applicable, a needs analysis should be conducted as to whether the examples in the template are sufficiently relevant to the context (country, language family, etc.) and need alteration. Moreover, the system should be flexible enough to let new codes emerge for users of other language families. In the end, codes should be considered as temporary linguistic buoys signaling several and different fairways as should they remain manageable and comprehensible for any student.

² Interestingly, Zhenyan (2009), in his essay on Chinglish, lists four writing error types students make in papers: i.e. capitalization (CAP), number of the noun (SIP), ambiguity and collocations (PRE).

		MARITIME ENGLISH		Name: Class:		Nr: Date:	
Pieter Decancq				PERSONAL LANGUAGE LOG			
GRA VER TES TIS FOS VOS IVE 3PS ART AVE SIP PRE PRO WOO MPT REG							
VOC MOT WOR		WS SPE PUN CAP STY				SS SOD STR VOI	
DATE	CODE	CONTENT + CORRECTION					

DATE	CODE	CONTENT + CORRECTION					

*Figure 2. PLL Log
Source: author's own*

The **log** (illustrated in Figure 2), on the other hand, is a constructive tool as students are asked to keep tally sheets which list mistakes by error (e.g. all TES mistakes) or by context (e.g. all mistakes made in a debate). A top 5 - or 10 - list can then be made but should be updated at regular intervals and can even be discussed or compared if needed³.

DISCUSSION

The question whether CF is an effective strategy in improving language accuracy is strongly supported by some and fiercely opposed by others. Truscott's experiment on written feedback revealed that performance results of corrected groups were so poor that he even challenged his initial research question "How effective is correction?" and opted for "How harmful is correction?" (Truscott, 2007:271). Although researchers and language educators have had animated debates about "whether to correct, what to correct, how to correct, and when to correct" (Ellis, 2009:16), most CF researches suggest minor to major positive outcomes⁴.

Obviously, the first step in a successful CF strategy is to make students **notice** that there is a gap between the expected level of competence and their current level (Hyland, 2013). Students should not only learn to communicate fluently but also accurately and thus try to diminish the gap between non-target and target language⁵. Once they do, their implicit language knowledge can be altered gradually by means of explicit instruction⁶.

³ Cfr. Evans, Hartshorn & Strong-Krause (2011) on WCF

⁴ Cfr. Dewi & Setiyaningsih (2017)

⁵ Dewi & Setiyaningsih (2017) use the terms non-target speech and target speech.

⁶ Cardeño (2008) on the Theory of Noticing by Noonan III

Strategies

There are a number of CF strategies available to tutors depending on the learning situation. Ellis (2009)⁷ has created a **taxonomy** of CF strategies, categorised into implicit/explicit and input/output as an effort to showcase a range of CF intensities. Input-providing strategies are either implicit (e.g. *recast*) or explicit (e.g. *explicit correction*), just as there are implicit (e.g. *repetition* and *clarification request*) and explicit (e.g. *metalinguistic explanation*, *elicitation* and *paralinguistic signal*) output-prompting strategies. Other linguists refer to input-providing strategies as direct CF and output-prompting strategies as indirect CF⁸, but the distinction is not always clear-cut because, as in the case of the PLL tool, metalinguistic feedback can either be referred to by codes (more implicitly) or be explained more elaborately (more explicitly). Nevertheless, it is reassuring that tutors have a substantial array of tools at their disposition.⁹

CORRECTIVE FEEDBACK	IMPLICIT	EXPLICIT
INPUT (<i>direct</i>)	Recast	Explicit correction
OUTPUT (<i>indirect</i>)	Repetition Clarification request	Metalinguistic explanation Elicitation Paralinguistic signal

Figure 3. CF strategies
Source: Ellis (2009) & author's own

Deep Dredging

Classroom experience indicates that CF tends to be higher if the occasional error indication is **embedded** in a more **comprehensive** scheme, which offers students OCF and/or WCF to speech and/or writing activities, grammar and vocabulary included. Elaborating on the genetic metaphor, the errors only reveal the linguistic phenotype of a language learner, whereas the whole idea is to modify the linguistic genotype by giving relevant metalinguistic feedback. Metalinguistic explanation creates a deeper context in which students find key understanding to prevent the same mistake from occurring when the next occasion arises. Every exposure to an error offers an opportunity to improve and could be viewed as a metaphorical “treatment” (Bitchener & Knoch, 2010) or “deep dredging”, to use a nautical analogy. In order to guarantee “deep dredging”, Evans, Hartshorn and Strong-Krause (2011) established four indispensable factors, i.e. CF should be **timely, constant, meaningful**, and **manageable**; terms I will elaborate on in this paper.

⁷ Cfr. Tedick & Gortari (1998) on error correction. Cfr. Ellis, Sheen, Murakami & Takashima (2008) on focused and unfocused WCF

⁸ Cfr. Li (2013) on OCF

⁹ Cardenio (2008) uses a pyramid of five stages: elicitation, explanation and controlled stages, structural and quasi activities.

1 - Estimated Time of CF

Research on WCF suggests that indirect CF (underlining, circling, etc.) tends to be less effective than direct feedback with correct alternative. Direct feedback with metalinguistic explanation is even given a top ranking (Ellis, Sheen, Murakami & Takashima, 2008). Bitchener and Knoch (2010:216) argue that “the provision of clear, simple meta-linguistic explanation, namely, explanation of rule(s) with example(s), is the best type of written CF for long-term accuracy” and that essays should be accompanied by “an attached sheet of paper and, using asterisks or similar marks following each error in the targeted category, direct the writer’s attention to the attached explanation”. The PLL keeps all options open as the tool can be used for classroom strategies in which either the relevant code and/or metalinguistic background is communicated or left out in order for students to be more inquisitive. With this said, CF demands some discipline from tutors as the metalinguistic codes must certainly be given in a **timely** fashion, i.e. during or immediately after language activities to guarantee its efficacy¹⁰. Thus the PLL becomes an effective CF aid for a wide range of (maritime) speech activities (SMCP, presentations, debates, instructional practices, etc.), writing challenges (reports, essays, emails, portfolio work, etc.), written and oral exams.

2 - Long Sailing

Obviously, the PLL system will only reap long-term benefits if used on a **constant** basis, whilst applying an intermittent method, i.e. alternating between intense classroom treatments and low-key CF. The tool is designed to be not only **cross-sectional** as it dissects a student population at certain stages at AMA. It also tracks proficiency levels **longitudinally**, with students readjusting their top ten tally scores at regular intervals from the first to the third bachelor. The cross-sectional results are excellent for remedial advice to students, who then should commit to doing additional exercises and/or studying the metalinguistic rule(s) by themselves. Obviously, the line of progress is not a straight one but rather “slow, gradual, and often arduous” (Guenette, 2007:52).

At AMA the PLL has proved its worth since recurrent mistakes gradually disappear in language activities over the years, which is indicative of an effective CF strategy, according to Ai (2017)¹¹. The intensity of CF also largely depends on the student. Some students prefer intensive overall linguistic treatment, others prefer a one error – one treatment based CF. Obviously, for some surfacing errors more feedback treatments are desirable (Bitchener & Knoch, 2010), especially when students are not amenable to particular grammatical issues at a certain stage. Regular needs analysis is necessary to (re)negotiate which treatment a particular student or student group requires.

¹⁰ Ellis (2009) argues that CF in language acquisition (or learning in general) happens during the interaction and not so much as a result of interaction, based on sociocultural theory.

¹¹ Ai (2017) discusses “the efficacy of gradually modifying the explicitness or specificity of CF as a function of a learner’s response to the feedback”. She argues that “the type and extent of CF needed by a learner, as suggested by Vygotsky (1978), sheds light on whether a learner is developing his or her abilities in a particular area and the ways in which they do it.” (Abstract)

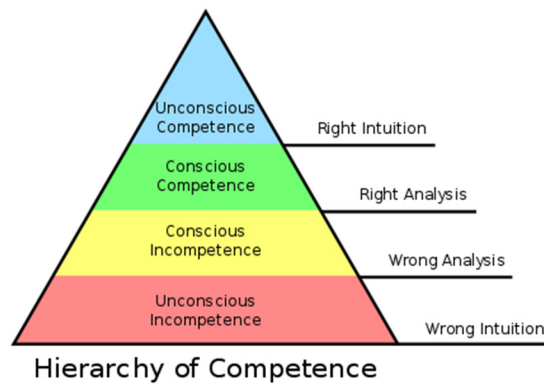


Figure 4. Four stages of Competence
Source: Wikipedia

The longitudinal factor is reminiscent of the **four stages of competence** (Burch, 1970), a learning model in psychology originally developed in the seventies, in which the learner moves along an ideal path of being an incompetent learner, firstly unconscious (e.g. *I don't realise my Maritime English is faulty*), then conscious (e.g. *I realise my Maritime English is faulty*), to a competent user, firstly conscious (e.g. *I realise my Maritime English has improved*¹²), then unconscious (e.g. *I don't realise my Maritime English has improved*). The two middle steps are obviously the most interesting ones from an educational perspective. Step two, for instance, highlights the fact that frustration is not a taboo in language learning when a student realises he/she is not able to use English adequately. Similarly, as a swimming and lifeguard instructor, I have always embraced the necessity of **de-automation** in the learning process, a stage in which you feel you are swimming worse than before you started taking lessons because you have to get rid of wrongly acquired movements. Obviously, this takes time. According to the Skill Acquisition Theory “a large amount of practice is required to decrease error rate and (...) such practice leads to gradual automation of knowledge” (DeKeyser in Kregar, 2011:73). Instant reproduction is a myth¹³. It takes time for students to alter the current state of linguistic knowledge by using external memory tools such as the PLL to internalise language forms and increase control of that same linguistic form in various language actions (Ellis, Sheen, Murakami & Takashima, 2008).

3 - Get onboard

Ideally, the PLL is best used as an **interactive** communication tool between student and tutor (“ship-shore”), student and student (“ship-ship”) and as a form of self-reflection (“onboard”). Moreover, the CF rendered through the PLL should be **meaningful**, i.e. maritime students should understand the feedback given and should then be able to implement this in both writing and speaking. However, as

¹² Cfr. Polskaya's (2009:103) concept of “linguistic awareness” with respect to the interaction between knowledge and discourse management through “inner qualities as imagination, will, logic and emotional characteristics”.

¹³ Cfr. Cardéno (2008)

in all maritime matters, interaction can go wrong quickly. It is important for maritime students to stay motivated despite drawbacks at any stage in their learning process. Teachers should keep a balance **between fluency training and structural input**¹⁴. In my classroom I have experienced that excesses on both sides, i.e. fluent but flawed language users and grammar wizards afraid of engaging in communication are to be avoided. From the perspective as a teacher I have swung back and forth from one position to another, i.e. being either too lax (“pampering”) or excessively critical (“nitpicking”). Over the years I have adopted the role of tutor (Hyland, 2013), backgrounder and guide (Villamin et al. (1994) in Cardeno, 2008), facilitator (Orbe, 2013) or even consultant (El-Sayed, 2009). In this context, discovering the reasoning behind mistakes (Parr & Timperley, 2010) marine engineers make, is as important as transferring content knowledge. The PLL certainly contributes to “empower, not impede” students to become autonomous learners and enjoy the merits of communicative accuracy. In the end, ME tutors should not forget that maritime students will become practically oriented engineers and navigators and not future linguists (Ion, 2014). In other words, “ship-shore communication” (between student and tutor) should remain intact at all times.

However, the **perception** marine engineers have towards their own progress is often more influential than, for instance, capability. In other words, students should be aware that their “onboard communication” influences them more than they think. Therefore, structural feedback should ideally be communicated as **mechanical** contributions rather than personal statements about students’ capacities. Easier said than done, since as a tutor I see that negative feedback is often perceived as corrective in intent and positive feedback can often be ambiguous (Ellis, 2009): e.g. *This essay is better than the last one* does not necessarily mean it is a good essay. Pedagogically, the PLL is an effort to give students a CF framework that will log progress rather than being a testimony of failure. In that sense, it contains some constructivist elements, as described by Hu (2008). Hu applies the theory of constructivism to ESP learning and argues that teachers should encourage collaborative learning. They should help students construct a self-assessment system to enhance autonomous language learning. In the end, it is important to realise that the PLL is just a tool and not the goal. It is part of a bigger holistic pedagogical strategy: errors are structural, success is personal.

However, there is a limit to what tutors can do with the PLL. If my marine engineers are not committed, no type of CF will help¹⁵. Browsing through the IMEC proceedings, I have noticed that motivation pops up regularly as a key factor to successful competence¹⁶ as it is linked with willingness to improve yourself¹⁷. Despite the fact that some of my students overestimate their language abilities¹⁸

14 Cfr. Ion (2014) and Cardeno (2008). Also see the factors of proficiency, i.e. accuracy, fluency, appropriateness and discourse in the IMO based Yardstick developed by Trenkner & Cole (2008).

15 Cfr. Guenette (2007) on feedback as a pedagogical strategy

16 Cfr. Orbe (2013) on language beliefs among maritime instructors. Cfr. Demirel (2013) on language problems among Turkish merchant marine cadets

17 Cfr. Hozayen (2009) on Arab maritime students and autonomous learning

18 Cfr. Hozayen, Seddeek & Ghoneim (2010) on teaching materials for second assistant marine engineers

at times, the PLL has helped remediate accuracy deficiencies, reduce anxiety and made students more confident¹⁹.

The psychological concept of motivation has often been researched since the seventies and is popularly used in terms such as extrinsic and intrinsic motivation (Hummel, 2014). Applied to ESP pedagogics, students learn Maritime English as part of the maritime curriculum because it will provide them with a job after graduating (a tangible goal, **extrinsic** motivation) or because they enjoy the merits of improving language skills and are stimulated to be continuously immersed in a Maritime English context (non-tangible goals, **intrinsic** motivation). Irrespective of the intentional purpose, it is crucial that students of Maritime English acquire at least some level of motivation since it is indispensable for a life-long learner profile and thus a successful career.

4 - Energy efficiency

The PLL is a **manageable** tool for both students and tutors because it is energy efficient. Firstly, by quickly exposing errors in all the language skills of a marine engineer, it reduces **comprehensive** CF work. Most CF studies only research either written or verbal accuracy, but in my lab sessions it is often clear that, for instance, a double negative (e.g. *He didn't swam*) will often appear both in reports and in speech of the same student of Maritime English. Another advantage is that analytic **rubrics** (e.g. CAP / PUN) often resonate with wider holistic rubrics, such as *The student can structure thoughts* since the inability of speaking or writing in a structured fashion by means of paragraphs (writing) or bulleting (speaking) will very often be reflected in the omission of capitals (CAP) and deviant punctuation (PUN). Thirdly, **synchronicity**. The PLL enables my students to make a list of, for instance, frequent SOund (SOD) and STress (STR) errors²⁰ and thus helps them become aware not only of their personal phonemic DNA but also of the phonemic DNA of their language (or even broader: language family). Students of a particular language traditionally synchronise phonemically / allophonically and make a limited subset of similar SOD/STR mistakes (e.g. *French marine engineers taking English classes*). Mutual intelligibility²¹ stays intact as long as they communicate within their restricted circle or subset (e.g. *French marine engineers talking to each other*). Hence, most language users of a subset feel no need of linguistic scrutiny towards own mistakes (which then become blind spots) but experience deficient communication when interacting with someone from another language group (e.g. *French marine engineers talking to Dutch marine engineers*), who has another (blind spotted) subset of phonemic / allophonic variations. Although sound variation influences the interlinguistic world of the shipping industry, both phonemic (accepted / unaccepted) and allophonic

19 Cfr. Özenir (2016) on productivity among senior engine cadets on writing and speaking

20 A coded catalogue of simple phonetic errors, i.e. "adjustment strategies", was created by Carrascal (2011) and makes use of visual symbols instead of three-letter codes that directly refer to the linguistic issue.

21 Cfr. Choi & Park (2015) on Lingua Franca Core

(accepted) differences can seriously hinder effective communication. A famous example is the radio answer the German coastguard gives to a ship suffering from a mayday mayhem: *What are you sinking about?* (Unaccepted phoneme sinking / thinking). Frequently, seafarers stick to their own linguistic subset of the English lingua franca (*Frenglish*, *Spenglish*, *Chenglish*, etc.) due to affective attributions such as cultural dominance, pride, fear, insecurity, group behaviour, etc. The PLL can definitely contribute to surfacing the blind spotted variations and at least make students aware where / when they are responsible for ineffective communication with different language users. Obviously, one unaccepted phoneme does not make a ship unsafe, whereas a sequence of unaccepted phonemes often does, as the subsequent example clarifies.

	STR	SOD	SOD	SOD	SOD	SOD
	Vv / vV	h	ed	u	s	long / short
English text	The vessel	has	picked	up	two signals	from the beach.
French sound	ðə vɛsəl	æz	pɪkət	üp	tu signəl	fɾəm ðə bi:tʃ

Figure 5. “Top 6” French allophones and unaccepted phonemes
Source: author’s own

Hopefully, the PLL can help contribute to a realistic balance between heavy subset-synchronicity (all the English variations²²) and superset-synchronicity (lingua franca) and keep a balance between a utopic, unaccented version of Maritime English²³ and a too heavily pidginised version of it. The fact remains that future seafarers will have to juggle different geographical accents and there is nothing wrong with that either. Unsurprisingly, cross-cultural “phonetic competence” leads to a higher self-confidence and efficient communication (Wang & Lin, 2008).

Less is not always more

An additional item I would like to highlight in view of the PLL tool is the balance between GE and ESP. In ESP training, such as Maritime English, the negotiability and creativity of General English (GE) is gradually reduced in favour of specialised use of the language, such as General Maritime English (GME) and even more restricted, Specific Maritime English (SME)²⁴.

However, focus should not imply linguistic impoverishment and it is pedagogically absurd to equate ESP with GE subtracted by Redundant English. Obviously, GME/SME will always be inevitably embedded in GE as a subset relates to a superset. That is why the PLL is a quintessential part of the

22 Cfr. Other IMEC papers on communication challenges between different accents: Wang & Lin (2008) on Chinese, Takagi (2010) on Japanese, Magallon (2010) and Takagi & Uchida (2011) on Filipino and Carrascal (2011) on Spanish.

23 Cfr. Win (2012) on accent neutralization in Maritime English

24 Both categories were developed during the Revision of IMO Model Course 3.17 Maritime English in 2015 to match the desired competences with realistic classroom situations at MET institutions around the world.

GE superset but “marinates” itself strategically in the subset GME at operational level and SME at management level. Obviously, the PLL will be more relevant in GME, with a focus on linguistic competence, than in SME, which gradually gravitates towards communicative competence²⁵. The GE superset, however, remains the matrix of GME/SME not only because the focus on methodology is much more prevalent than in ESP training (Yongliang, 2014), but also because maritime students who have a good grasp of GE will be more proficient in their use of the language during their career at sea and, later, ashore. They are more flexible when switching between registers and they will be more apt later to avoid “linguistic penalty”²⁶, a derogative term to indicate the disadvantage non-native speakers experience in both formal communication (meetings, negotiations, reporting, recruitment, assessment, etc.) and at informal occasions (mess room breaks, bridge chatter, off-duty among colleagues, etc.). Unsurprisingly, the linguistic arrearage starts early in education as students who have already a good grasp of linguistic competence in GE tend to have more success in ESP courses such as Maritime English (García de la Maza, 2016)²⁷. In that respect, too early linguistic specialization (Demydenko, 2010) can possibly create more collateral damage and leave a maritime student with an SME competence in a linguistically parsimonious GE superset.

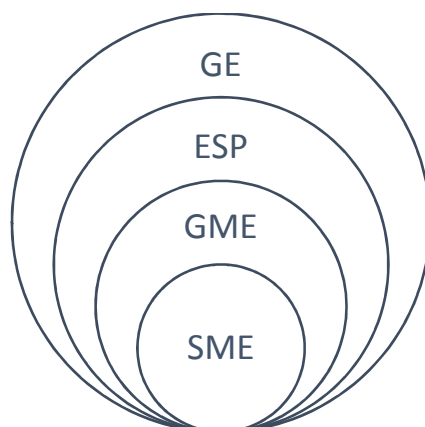


Figure 6. Super/subset GE-ESP-GME-SME
Source: author's own

IT applications

Noteworthy, CF is already quite widespread in IT applications in language courses but to a lesser extent in ESP courses including Maritime English. Maritime tools and platforms such as MarEng (2007), MarEng Plus (2010), INTERMAR (2013), SeaTALK (2015) and MariLANG (2018) are not furnished with a metalinguistic CF tool. Yet, research findings suggest that digital CF plays a facilitative role and improves learning outcomes. As noted before, (digital) CF is best provided immediately following the exercise / test as CF has a diminished impact over time (Kregar, 2011). Obviously, visual enhancements can help customise CF learning experiences. Future research will hopefully help to implement digital CF in Maritime English applications.

²⁵ Cfr. Demydenko (2010), Chirea-Ungureanu (2017)

²⁶ Vangehuchten, Van Parys & Noble (2011:23) use “linguistic penalty”, based on Bourdieu’s (2001) term “linguistic capital”.

²⁷ Cfr. Tenieshvili (2013) on the importance of General English for mastering Maritime English

CONCLUSION

As a keen proponent of CF, I have reviewed the strategic PLL tool and discussed both advantages and challenges. Although the tool is certainly fit for GE, it has also proven its benefits as a scaffold for ESP purposes in the marine engineering department at AMA for many years. Despite the fact that the tool is not corroborated by statistical findings, the qualitative reflection in this paper has hopefully contributed to more effective classroom CF with respect to students of marine engineering.

Regional variations can and should customise the PLL scheme and thus make it accessible for students in the global maritime community. The PLL is neither a discreet CF tool but dynamic, since it encompasses a wide range of language issues; nor does it claim to be the ultimate recipe for CF. However, taking into account the increased longitudinal proficiency level of the average student at AMA, it certainly has made a significant contribution.

As discussed, implementing the PLL tool requires active participation as a tutor, more than that of a lecturer. By doing so, it enhances the pedagogical effect and hopefully triggers the student's developmental readiness. Finally, motivation plays a key role in CF strategies because, in the end, if students take no further initiative themselves in researching how to improve, nobody else will alter their "linguistic DNA".

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BIO

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INTERACTIVE FICTION TO MAKE READING MORE ACTIVE.

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Abstract: This paper presents the creation of a computer game used for teaching General Maritime English (GME). The game makes use of interactive fiction, a literary genre popular in the 1980s. The program is a digital *Cluedo*, a “whodunit” in which the learner/player, impersonating a federal agent of the NCIS (Naval Criminal Investigative Service) must solve a criminal case committed on-board a fictitious warship of the US Navy. To do this, the learner must extract meaningful information from a large amount of textual data, without (it is the main aim of the program) a reading grid.

At first, readers are guided into selecting meaningful elements of the text, and using them to obtain more relevant information, useful for solving the case, but gradually they must select meaningful elements themselves, make hypotheses about them, test their relevance and act consequently. This is done primarily by gathering clues and asking characters in the game about them.

The program is not a “chatbot”, although it uses a similar technology. It is a text “parser”: it is capable of understanding commands given in natural English. It currently understands about 80 English verbs and as many nouns as the user wishes to define. The paper will explain how the game is created, what the caveats of such a creation are and how it is used (collaboratively) in class to maximize learning.

Keywords: Interactive fiction, active learning, task-based language teaching (TBLT), game-based learning (GBL), computer-assisted language learning (CALL).



Introduction: Task-based language teaching

Task-based language teaching (hereafter TBLT) is a language teaching and learning framework in which tasks (defined as goal-oriented activities that require the use of language) serve as the foundation for designing and assessing language teaching and learning within a course [12]. In much of the TBLT literature, such tasks often reflect both pedagogical i.e. form-focused [9], and work-related or vocational goals that learners may be required to reach both within and beyond the classroom [10].

The Common European Framework of Reference for Languages (hereafter CEFR) advocated TBLT and put a focus on action through language, and thus promoted learning tasks rather than simple exercises. The approach advocated:

“(...) is an action-oriented one in so far as it views users and learners of a language primarily as ‘social agents’, i.e. members of society who have tasks (not exclusively language-related) to accomplish in a given set of circumstances, in a specific environment and within a particular field of action.” [1] Chap 2; p15.

This has created a shift in the teachers’ focus. Instead of preparing instructions by which we would guide students through learning exercises which would focus on the form of the language used, we are to give less language-focused guidance, and center the learning tasks on non-linguistic, more performative goals, such as obtaining information or getting someone to do something, as a result of a language interaction. In such a context, learners are free to choose which linguistic assets and tools they summon (in terms of grammar, lexicon and syntax) to achieve the extra-linguistic goal. This, of course, applies more easily to oral communication than to reading or writing, because of the intrinsically interactive nature of oral communication.

Reading comprehension is different, however. In a language class, learners are typically asked to read a document, and then given a reading grid of some sort, which will direct their attention to specific segments of the written document, for instance by asking questions about these segments. The questions used in these exercises are always of the same types: true/false questions, multiple choice questions, or open-ended questions to which the learners are expected to answer by quoting or paraphrasing the document. They can be matching exercises (where learners must match a piece of meaningful information such as a number, the name of a person, or a specific word or phrase with what it stands for), etc. The learner will then scan through the designated part of the document, find the answer to the question by use of techniques such as the analysis of



the context of key words (usually those which appeared in the question), a focus on words which indicate a logical link or the absence thereof between two clauses (“but”, “and”, “or”, “because”) or relative pronouns (“what”, “which”, “whose”, etc.) which will explicit the logical relationship between the parts of the sentence. Questions can also focus on points of lexical interest such as new or specific vocabulary, derived forms, synonyms and antonyms, etc., (matching exercises, where the learner must match a new word with its definition, deduced from the context, for example).

Although such widely-used techniques have proven their efficiency, they still remain quite artificial and not akin to real life language tasks at all, since they direct the learner’s attention to the most important (i.e. meaningful) parts of the document: in real life (outside of the classroom), people are rarely asked a question with the sole goal of checking they have understood, because in real (professional) life, people will ask a question for a real-life reason such as to cause an action, or to find out about missing information. When people ask a question, they generally do so because they do not know the answer, while teachers *do* know the answer of the question they are asking a learner, and generally give them feedback if their answer is incorrect. In real life, however, learners must devise their own strategies to check they have understood. Most of the time this is done by *doing* something, rather than by speaking: for instance, when instructed to do something at work, one will verify one understands the instructions/information given simply by doing what is expected. Failure to meet the expectations of the person issuing the request will indicate poor understanding. Similarly, when a person has sought specific information about something (such as the time and place for a meeting), they will know they misunderstood the information if they do not find the place or get there but nobody else does. There is therefore a discrepancy between learning language tasks and real-life language tasks, particularly when it comes to reading comprehension (because there is nobody around to check one has understood written information).

Fan fiction / interactive fiction

The goal of the learning task presented in this paper was thus to create an environment in which the learner would be confronted to a large amount of textual data, would have to make sense of it, but would not be given a reading grid to do so. The learner would thus have to select, extract and use the most meaningful information from the written document, to achieve a goal. Upon successful selection and use of the relevant information, the text would regularly give appropriate



feedback to the learner, slowly leading him/her to complete the task at hand. I chose a computer program because such an environment can allow *each* individual learner to be confronted to the full exercise, instead of simply waiting for another learner to solve the puzzle (or even failing to try because of too slow a speed).

For many years, my research work has focused on game-based learning [2], [3], [4], [5] and I have been a gamer (of digital games, of board games) all my life. Recently the work of John et al. [7], [8] and Takagi et al. [11] on the use of conversational *chatbots* has fascinated me and encouraged me to explore the possibility of creating a puzzle game for learning, in which a solution to a problem would be found through the accumulation and use of clues, obtained gradually, throughout the game, solely through language-based interaction with a computer program. The classic board game *Cluedo*TM is a particular form of such gameplay, set in the context of a crime. In the game, a murder has been committed, and the players must identify the murderer, and explain how he/she committed the crime. The learning game presented in this paper, is a digital *Cluedo*, set in the context of the Navy.

Fan fiction can be defined as writing that continues, reimagines or derives from characters and plots that others have already written or made films or series about [6]. For the game presented in this paper, I chose to create an adventure of the characters of a popular TV series set in the context of the US Navy, *NCIS*. In other words, I wrote the script for an episode of the series. The story is a police investigation (a “whodunit”) conducted by the NCIS (Naval Criminal Investigative Service, i.e. the federal police of the US Navy). The player-learner is in control of an NCIS Special Agent and his team. The adventure is set onboard a fictional US Navy warship, on which a murder has been committed. For the learners, the goal of the activity is to discover who the murderer is, how he committed the crime and why. From the teacher’s point of view, the goals of the activity are two-fold:

1. a lexical goal: the text is full of specific vocabulary, relating to the Navy (warships, ship parts, equipment, ranks and ratings and the military career, functions on board, naval lingo, etc.) and to criminal investigations (to search, a warrant, a BOLO, CSI, post-mortem, etc.).
2. a methodological goal: the activity mainly aims at having students read a large amount of L2 text, select meaningful elements of information within it, without a reading grid, combine and use them in context to accomplish the task at hand.



The tool: *ADRIFT 4.0*

In terms of form, the game uses a (primarily) text-based interface: it is reminiscent of “gamebooks” and “text-based adventures”, a literary genre which was popular in the 1980s, in which the reader was able to choose how the plot unfolded, by making choices throughout the book, which led to different outcomes, based on a mixture of chance, and choices. The game is multimedia since it also features pictures, sound effects and a map. It was created with a freeware program called *ADRIFT 4.0*, initially designed to create interactive fiction. In that (digital) literary genre, each story begins like a regular novel, but after a few introductory pages, the text stops. The reader is then able to instruct the main protagonist of the story as to what he should do next, by issuing a written command, using plain English language. The program is a text parser and command interpreter, capable of “understanding” natural language in the imperative form (verb + object) by deducing the grammatical nature of words based on their position within the sentence. The program currently “understands” about 80 verbs and is able to filter out articles (a, an, the) and other determiners (demonstratives, quantifiers, distributives) and makes sense of pronouns and possessive determiners. It will thus make sense of commands such as “take the key then unlock the portside door”, “read the maintenance manual”, “ask the doctor about the cause of death”, “examine his badge”, etc.

With *ADRIFT 4.0*, the teacher creates the text of the story, which the learner must read and understand, and in which the meaningful information that the learner must use is contained. The novel can be written in the first person: the main protagonist says what he sees or does:

`"I open the door to starboard and enter the wardroom. A young officer is there, sitting on a chair, reading a book. He raises his eyes and nods at me, as if to say hello."`

It can also be written in the second person, allowing the player himself to be the main protagonist:

`"You open the door to starboard and enter the wardroom. A young officer is there, sitting on a chair, reading a book. He raises his eyes and nods at you, as if to say hello."`

For reasons of style, I chose a first person narrative, more common in traditional private eye stories.

Moreover, the tool also allows for the definition of other para-diegetic elements, such as events which will happen automatically, either at random or as a consequence of a player's actions, logical tests used to check if the player has accomplished a specific task or knows about something, characteristics for each meaningful person, object or place in the story, etc. These meta-textual elements are of 5 types: objects, characters, places, tasks and events (Figure 1). Each of them is described below:

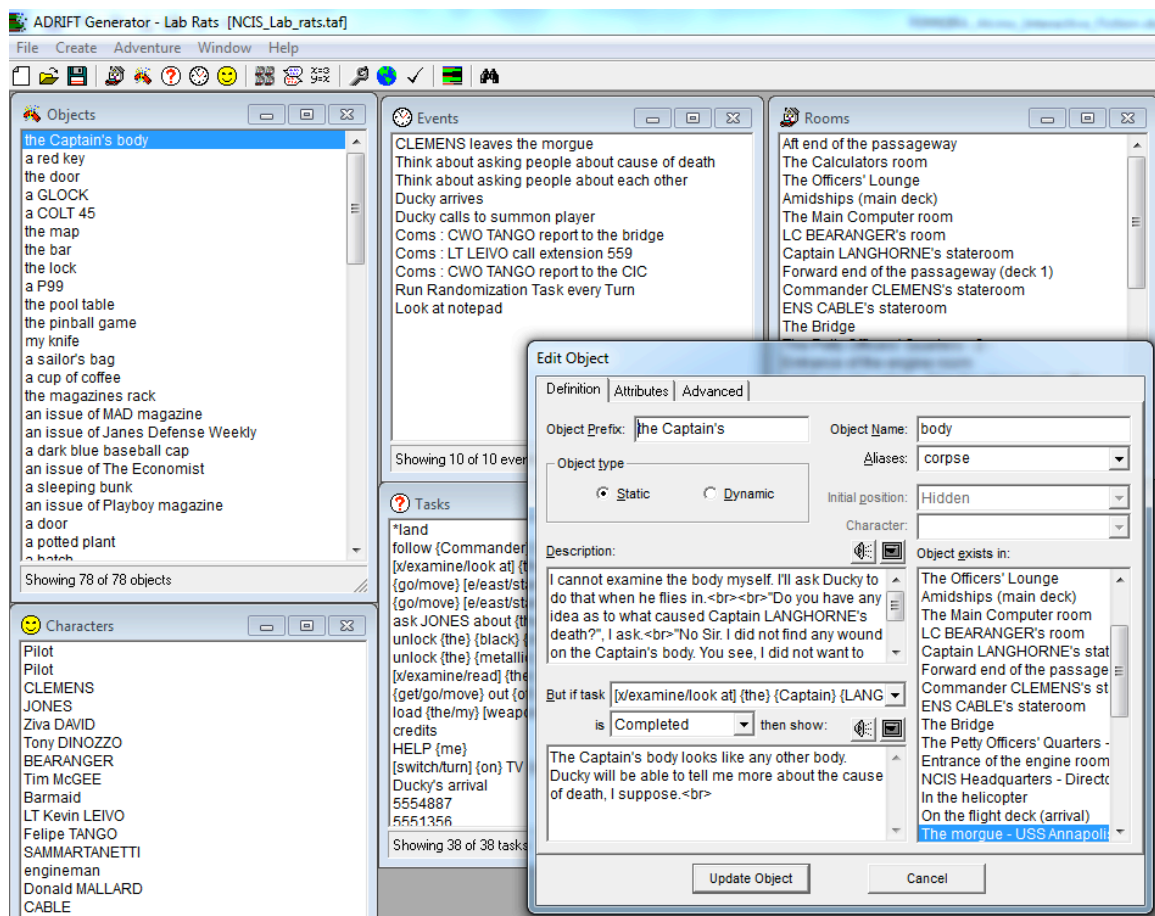


Figure 1: ADRIFT 4.0: main editing interface

- **Objects** mentioned in the text of the story can be examined (by typing “examine [object]”). When the learner does so, the program displays an extended description for that object. For example, the text will mention the fact that there is a corpse on an autopsy table, and upon careful examination, the protagonist will notice a meaningful detail which he will then ask the medical examiner about. Or, an oilskin coat will be mentioned as hanging in a locker, and careful examination of the coat will reveal a key in one of its pockets (useful later to unlock a drawer). Besides their short description and detailed description, objects have many extra-diegetic

characteristics (used in the game) which must be defined by the teacher, in the software. They can be fixed (a windlass, a ladder) or moveable (a hammer, a fire hose), edible (an apple, a painkiller pill) or toxic (a glass of acid, a bottle of paint thinner), heavy (a large wrench) or light (a screw) and small or large. The main character can only take a certain amount of weight, thus limiting the number of objects in his inventory. Some of the objects can be worn (a hard hat, a uniform), used as tools or weapons, some can be containers, some can be put inside others, some can be eaten or drunk, some can be read (books, magazines, and reports) and some can be open, closed, locked, or used as keys to unlock others. Most objects can be given to or obtained from characters, or simply picked up. The main character also has a cellphone, used to summon team mates and/or to contact characters who are not there.

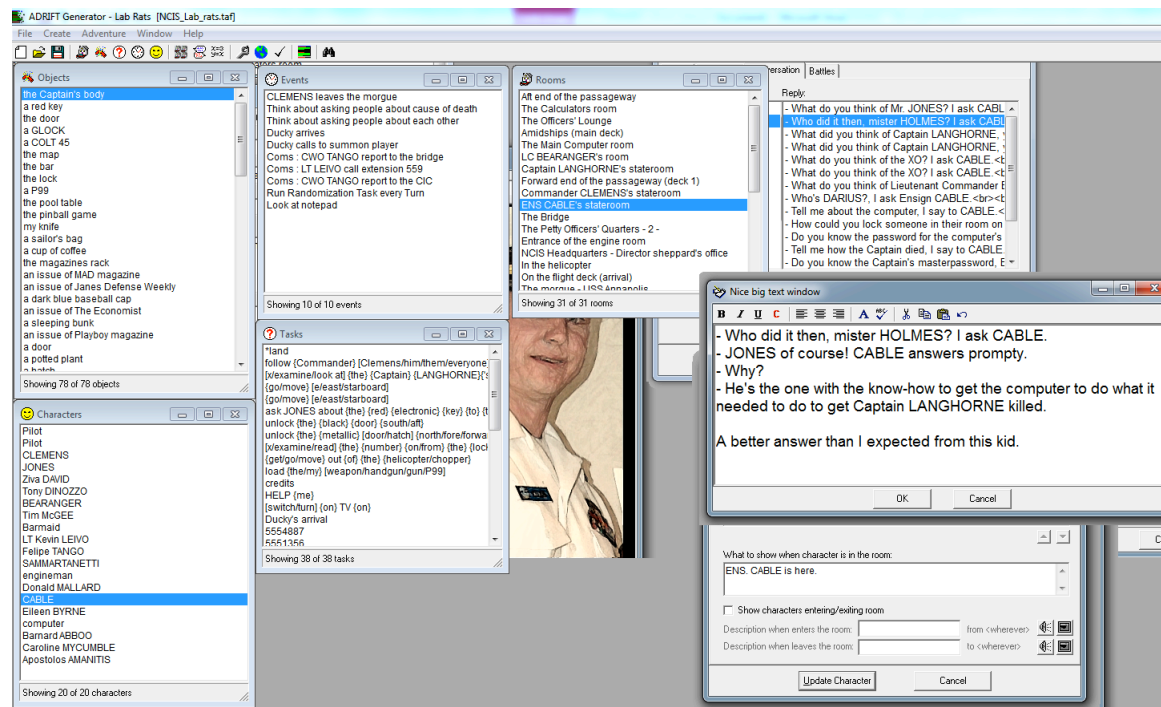


Figure 2: the character editing window

Characters (Figure 2) can be human, animal, male, female or neutral, small or large, weak or strong, friendly or aggressive, etc., each of these characteristics being used within the game. They can move within the diegetic space (at random and/or according to scripted commands). Most importantly, characters can be asked about things (“ask [character] about [topic]”). Each of them will thus have something to say about a number of topics, these being specific to each character. One of the main ways to solve the puzzle is to speak with characters to discover new “topics” for conversation and to match them with the character(s) most likely to



have something to say about them. Some will tell the truth, some will involuntarily give false information, and others will lie. Some will give only trivial information (fluff text, designed only to give some depth to the character), while some will provide meaningful clues that will help the player advance through the plot. Some will give a different response depending on what the player knows at a particular moment of the story or depending on who else is in the room. While some characters are absolutely necessary for solving the case, many are not, and are there just to “populate” the ship.

- **Places** have a description, which is displayed the first time the narrator comes in them, and one or several other descriptions used thereafter (the description of a place can be changed by advances in the plot, random events, or scripted actions). Each place is connected to other places in 8 possible directions (north/forward, south/aft, west/port, east/starboard, up, down, in and out) and players will move within the narrative space either by issuing commands (“starboard”), by mentioning a specific place (“go to the bridge”), or by use of a graphical user interface. To facilitate these movements, a conceptual map of the narrative space is provided in a side window, in which each place is represented by a rectangle with a caption (Figure 3). However, in order to avoid spoilers, the map begins empty and new places appear gradually, as the story unfolds.
- **Tasks** are actions accomplished by the main protagonist. They are used to keep track of what he knows, or has done, and may thus conditionally trigger events (for example, if the main protagonist enters the engine room without pumping out the CO₂, he will suffocate). This feature is also used for preventing cheating: if a learner uses information which his character does not yet know about (because the learner got it from a fellow student), the game will issue a puzzled response. Finally, this is also used for keeping track of progress (through a score).
- **Events** are elements of the narrative which happen either at random to simulate the unpredictability of real life (for example, characters will randomly move through the ship, and broadcasts will be issued on the ship’s loudspeaker system, ordering personnel to go to a specific compartment, or call a specific person), or as a consequence of player actions (e.g. one of the characters will be flown in only after something has been done).

For each of these 5 elements of the paratext, the teacher must define which words (and synonyms) will work. For example, if the player wants to examine the X.O of the ship he can refer to him as “Clemens”, “the X.O”, “LtCdr Clemens”, or simply “him” (if he is the only male there). Similarly, the story requires the player to find and use a certain number of keys. Thus, each of them must respond to a specific phrase (“a rusty key”, “a small key”, “a blue electronic key”,



etc.). The program is “smart” enough to infer meaning based on the context (if there is only one key in the room, it will assume it is that key), and to make sense of pronouns based on context (if the protagonist just picked up a hammer and there is a female in the room, the program will understand the command “ask her about it” and assume “her” is that female and “it” is the hammer), and a pronoun mistake will trigger a response such as:

`“Him... who? Do you mean her (Lt SMITH)?”`

If the target character is not there, the program will tell the player/learner about this. The program also has default responses: if no detailed description has been set for an object, upon examination the program will respond a standard phrase such as “the [object] looks pretty standard to me” or “this is your regular [object]... nothing special about it”, drawn from a list of equivalent sentences (so as not to be always the same). Similarly, the program has predefined humorous responses to the use of rude words or swear words, which generally surprises students, and sets them in the appropriate playful state of mind which is best-suited to play a game (albeit a learning game).

Implementation

The game was designed to be collaboratively solved in two to three hours by a pair of B1 or B2 learners. Students are generally teamed up in pairs, and the activity is conducted in a computer lab. Students wear a headset which allows them to communicate with their partner while remaining “deaf” to the rest of the class. It also allows the instructor to monitor their discussion (and their screen), from his desk and communicate with the pair, to ask them to explain what they are doing, or help them out if they are lost. If no computer lab is available, a simple computer room will be sufficient, even though it will mean that learners can eavesdrop to know what other groups are doing, and that the teacher will be required to move around the room, from one group to another.

Throughout the activity, students are encouraged to work collaboratively, propose actions (“why don’t we...”, “we should...”, “let’s ask ...”) and argue, if they disagree. They make hypotheses (“maybe...”, “if we...”) and test them. Some of the comments are about the spelling/form of the commands typed into the interface (students correct each other’s wrong spelling or typos). Yet, the teacher may choose to have students play the game individually, although it seems less efficient and less engaging.



Difficulties, caveats

One of the difficulties of the activity is the relative “fog” in which the learners are placed. All they are told is that this is a crime story, and that they must solve the case. Too detailed information would spoil the game, however, since the clarification of what happened constitutes the elucidation of the puzzle. Thus, I resorted to a few narrative “tricks” to help them get feedback:

First, in the beginning of the story, the players are given hints (Figure 3). The main character thinks out loud, suggesting what to do next (for example, when the X.O of the ship leaves, the main character says “maybe I should **follow the X.O**”; when he finds a key he says “this is a nice key: it probably opens a fine piece of furniture”, which is a hint to search the “fine mahogany desk” which is in the cabin). This is done to teach them to consider the text as a source both of clues and of useful vocabulary.

Secondly, some actions in the game are tracked and given a point value. When the character accomplishes them, the player’s score (in percentage) is incremented so that the student knows that 1) he/she is making progress and that 2) he/she has done 25% or 30% of the required tasks to “win”.

There are so many ways of asking someone about something that it would be easy to miss something important because of a bad choice of words. Therefore, students are told that some words will be highlighted (in a different color) in the text, and that these should be noted down and used as topics for conversation. Hence, when the main character discovers about a “door locks” problem, the phrase is highlighted in the text, and the learners later (“ask [someone] about the door locks”)... of course, they must first find whom to ask.

The large amount of information in the text is another element of difficulty. To limit it, the context chosen is that in which the learners work (a warship), and the text is written in a way that will facilitate deduction from the context. For example, if the student does not know the word “panel”, the context will facilitate understanding.

“The engineman tells me that I should check on the control panel if the white button is lit. If not, he adds, it means the panel is off. I should simply push it to bring the panel on.”

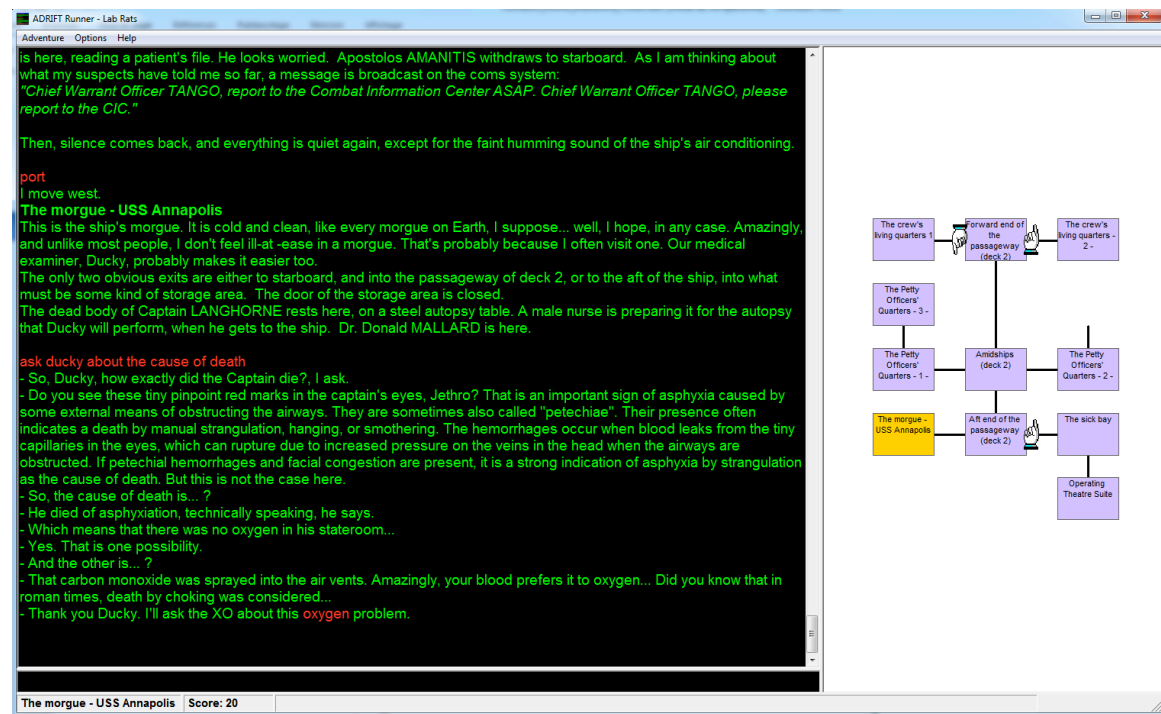


Figure 3: Hints appear in the text, and a map is provided

Also, some of the characters are known (they are derived from a TV series which most learners know and like. Thus the game is more interactive fan-fiction). Only the suspects (6 people) are new. What is more, each person can be examined and a picture will be displayed, to reduce the memory load. For the same reason, a map is provided to facilitate a mental representation of the narrative space (Figure 3).

Benefits, advantages

One of the benefits of interactive fiction lies with teaching lexicon. When a word is not known or understood, the context may clarify it, but even when it does not, further learner action will. If for example the main protagonist enters a cabin and reads “a gray rug is on the floor” and the learner does not know the word, he can type “examine the rug” to try and understand what it is. The program’s response will both explicit the meaning of the word, and may trigger another player action (lift the rug), which may either advance the resolution of the plot, or explicit the word further:

“The thick gray rug decorates the floor of the cabin. It is made of wool. It must feel great to walk on it,



barefoot, at reveille. Maybe I should lift it to see if the dust was swept under it.”

If for example the teacher wants to teach the word “wrench” he could write something like:

“The bolt is tight, too tight to unscrew it with my bare hands. I need to find a tool to do that. A wrench would be perfect. Maybe there is one in a toolbox nearby.”

Then, a toolbox would be placed in a locker, in the same compartment. The learner would direct the character to open the locker, get the toolbox, open it, take the wrench, possibly examine it (a picture would be displayed along with a description) and then unscrew the bolt with it.

Another major benefit is in terms of methodology and of learner autonomy. The micro-tasks required to achieve the macro tasks set by the teacher are all chosen, accomplished and assessed by the students themselves. It is their job to choose what to do, how (with which linguistic tools and assets), and to evaluate whether their solution was appropriately chosen or not. Once the game begins, they are (mostly) on their own. This maximizes learner engagement, which is not always the best when doing reading comprehension activities in class.

Finally, another great advantage is that each pair of student can do the activity at their own pace and that each of them must be engaged in the activity, because simply hearing others say the correct answer will not work.

Conclusion

The game described in this paper has been played by semester 2 officer cadets (during the ‘crime at sea’ module) and also by petty officers with a career of 6 to 10 years in the navy, on a lifelong learning course (during a module on law enforcement at sea). Both groups enjoyed the activity, even though the two groups have very different profiles. While the officer cadets were academically ‘good’ students with no professional experience, the petty officers were academically less successful, but with an experience of life on board. Even though the petty officers had declared themselves as ‘someone who very rarely reads literature in English’, they also enjoyed the activity. Both groups particularly appreciated the fact that the game was a fan fiction (they knew the characters before). Both groups also appreciated the style (sarcasm, irony, and sometimes political incorrectness) in which the story was written. Also, the game includes private jokes directed at the students, which generally made them smile.



This paper does not claim any efficiency of the game presented. This would require proper empirical research, with a control group, a pre-test and a post-test. I am happy with the fact that the game was enjoyed by the students. Yet, it seems to me that this can help in teaching vocabulary, although I cannot (and do not wish to) prove it.

Interactive (fan)fiction may be an interesting teaching tool because it gives readers a purpose, other than ‘to answer the teacher’s question’. Information within the document has a value in and by itself: it will allow the learner to solve the puzzle.

Further developments are plenty: interactive fiction does not have to be a puzzle. Very different games could be written, for engineers, for example. It is not difficult to imagine a scenario in which the main character would be an engineer who would have to inspect the engine room to solve mechanical issues on a ship. What is more, the fact that this would happen in a game would allow the instructor to simulate breakdowns or accidents that would be too dangerous or too expensive to do in real life. By adding images to the game, the lexical load could be increased.

Furthermore, the program is able to play sound effects. Thus, further developments in the future could include games in which all dialogs would be recorded, and played back for students, rather than written on screen. This would allow a focus on listening comprehension, rather than reading comprehension.

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PEER TEACHING IN THE MARITIME ENGLISH CLASSROOM: WHEN STUDENTS TEACH, STUDENTS LEARN.

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Abstract: This paper presents a teaching method used for General Maritime English (GME) classes, known as “Peer Teaching”, in which all students prepare part of a class, which they then teach to their peers. The method encourages an active posture for the learners, by banning any passive task from the classroom since the preparation of the documents and of the lesson is done by the learners collaboratively and in class, instead of being done as homework, and alone.

In the method presented, the teacher leads the group of students through:

- the selection of one or several media (audio, video or text),
- the selection of linguistic objectives that the document can help attain (these can be expressed in terms of grammar, lexis, or communicative functions such as enquiring, arguing, reporting, etc.),
- the adaptation of the document to a lesson (through the creation of classroom activities such as reading comprehension, listening comprehension, writing, or speaking tasks),
- a series of classes, each led by a pair of learners, after having checked, corrected and added to their documents, when required.

The first part of the paper describes how the course is organized, how time is managed, and how the logistics of the course are handled. The second part of the paper discusses the quality of the documents produced, the advantages and caveats of the method presented as well as the conditions for it to be successful. Among the advantages, and beyond the fact that it keeps learners active, and seems to facilitate recall by improving the “memory footprint” in the teaching peer’s mind, it is the focus on the metacognition aspect of learning a foreign language which is the main benefit of the method.

Keywords: Peer teaching, active learning, metacognition.

Introduction

A language is, perhaps more than other academic subjects, heavily dependent on practice, because the *end* of the study (i.e. proficiency in understanding and expressing oneself in the L2) is the same as the *means*

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used to accomplish it (the L2 itself): it is by using the L2, that mastery can be reached. Therefore, it seems unlikely that language learning should happen if students are passive, in part because knowledge of the vocabulary and the grammar rules governing a language is not equal to competence in using them. In other words, one cannot be taught a language, but has to teach oneself instead. Teaching a language is a myth. Only learning exists.

Of course, the provocative statement above is exaggerated; yet, it aims at stating a simple truth: maintaining a high level of learner engagement seems paramount to the success of a language course, both in and out of class.

Still, language classes have too often been teacher-centered, i.e. revolving around the role of the teacher to choose documents, ask questions, and give appropriate feedback to student responses. This tends to reduce student engagement since it reserves a large amount of class time to the teacher's speech, and reduces the time allocated to the productions of students. Indeed, the more the teacher talks, the less the student is encouraged to actively participate in the co-construction of learning, during class. Thus, in an ideal language class, the teacher would remain completely silent while the students design learning tasks, distribute work, and accomplish it.

Yet, too often, the default classroom mechanic has a teacher ask a question about a document (orally or in written form), then a learner answers the question (only learners who trust they have the correct answer will volunteer an answer), which is followed by feedback from (again) the teacher. Such feedback only strengthens the negative self-perception of less proficient learners, while it further encourages proficient learners to continue to be active, and make progress, thus further perpetuating the divide between the “best” and the “weakest”: in class, proficient students speak more than less-proficient students, while it should be the contrary.

Peer teaching: a definition

Peer teaching (or “peer tutoring”) is not a new concept. The origins of peer teaching date back to Aristotle's use of *archons*, or student leaders ([8]:3, quoted in [7]:17). Arising from school budget woes in the late 18th and early 19th centuries, peer teaching was first implemented systematically by Andrew Bell, a Scot who was the superintendent to a military male asylum in India. Andrew Bell organized peer teaching into a theory [1], and it was implemented into French, English and American schools in the 19th century.

Not to be confused with “peer instruction” – a teaching method put forth by Harvard professor Eric Mazur in the 1990s [5] –, peer teaching is a method by which one student instructs another student (or class). “Near-peer” teaching refers to situations where one of the students is more advanced than the other, while “co-peer” teaching refers to situations where both students have similar (equal) status.

Most teachers today would agree with French philosopher Joseph Joubert who believed that “to teach is to learn twice” (quoted in [4]). Of course, what Joubert meant was not that to teach is a repetition of learning.

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Instead, he meant that teaching others often deepens one's understanding of the taught material and roots it further in one's memory. Over the past 40 years, peer teaching has become increasingly popular in both the primary and secondary school systems of several countries, all over the world.

Goodlad and Hurst [3] and Topping [6] have explained that academic peer tutoring at the college level has, in some form, become part of the typical teaching organization of most modern universities. This takes many different forms, from surrogate teaching (in which graduate students are given jobs as teaching assistants, with the responsibility to teach their undergraduate peers), to proctoring programs (which involve one-on-one tutoring). Cooperative learning divides classmates into small groups, with each person in the group responsible for teaching others, and contributing to the group's learning, while in reciprocal peer tutoring (RPT), a more specific version of cooperative learning, classmates are paired to tutor each other. The peer teaching method presented in this paper belongs to the "cooperative teaching" trend, since *all* students teach their peers, in turns.

Method: the course

The method presented in this paper has been used at Ecole Navale, in the officers' curriculum, in the semester 3 General Maritime English (GME) course, a 16-hour module which focuses on 2 themes: "Disasters at sea" (collisions, groundings, rescue at sea, salvage operations) and "Environmental issues" (protection of marine species, marine pollution, and renewable marine energies).

The course is organized as follows:

	Duration	Description
Phase 1	4 hours	- Teacher-led. - Documents prepared by teacher → focus on form
Phase 2	4 hours	- Group work - Choice of documents - Determination of learning objectives and corresponding learning tasks - Writing of student/teacher versions
Proofreading of documents by teacher		
Phase 3	6 hours	- Student-led (40 min/each) - Documents prepared by students - Teacher remains as silent as possible

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Final test	2 hours	- Listening comprehension (3 documents) - Reading comprehension (2 documents) - Writing (1 hour: writing an accident report based on provided factual data)
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Table 1: Organization of the course

During the initial four hours of class (phase 1, cf. Table 1), the documents used are provided by the teacher. It is important, at the end of these classes, to draw the attention of the students to the *form* of the documents (to help them see the learning outcomes which the teacher aimed at, and the techniques used to reach them). For example, it is important to explain the difference between a general comprehension and a detailed comprehension exercise. Similarly, it is necessary to show various types of exercises and questions, to explain what their respective goals are, and how this has an impact on their form. For example, students rarely realize that often, the linguistic difficulty of a question is not in the text itself, but in the question which the teacher asks about it. They will instinctively think that the question is meant to elucidate the document, while sometimes the teacher uses the question to teach a new word, or a new grammar form, while the text is only a pretext to confront the learner to something new. Similarly, students should be told why crosswords are used: they help remember the correct spelling of words (for example by drawing attention to double consonants).

During phase 2 (the preparation classes), the students (in pairs or groups of three) are instructed to choose a theme (per group) such as “marine pollution” or “renewable marine energy” and cooperate to prepare the corresponding lesson. Each student will focus on one or two skills (reading comprehension, listening comprehension, writing, or speaking) and choose the corresponding media (a video, an audio track or a text), and each of them must produce two documents:

- the activity sheet which will be printed for their peers,
- the “teacher version” for themselves and the teacher, with expected answers and, in the case of reading comprehension, relevant segments of the text highlighted.

In this phase the teacher goes from group to group and students must present the media they chose to their partners and to the teacher and describe the learning outcomes they will be targeting (for validation). For example, they will highlight the lexical load of the document, or explain what speaking task the document will support. The teacher will make sure the choice is appropriate and the learning objectives are relevant. All students are required to aim at:

- a comprehension objective (reading or listening comprehension),
- a focus on language, with exercises (targeting vocabulary for most of them, even though the bravest ones will aim at grammar), in context. In doing so, they must produce their own content,
- a production task, when relevant (in speech or in writing).

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Between phase 2 and phase 3, the students send their documents to the teacher who must review/proofread them, amend them if required, sometimes add some material if necessary (if too short), and send back the final version to the students. The teacher then sends the student versions to the print shop.

In phase 3 (6 hours), each group will lead the class in exploring one of the chosen themes. Each student aims to lead the class for no longer than 40 minutes, so that all 10-12 students can teach the class at some point. In this phase, students are in charge: they hand out the documents, distribute tasks, ask the questions, play the audio/video documents, write important or new vocabulary on the whiteboard, and give feedback or correct mistakes. Typically, two students will cooperate as such:

- Student 1 will choose a text which he will transform into a reading comprehension activity. His learning tasks will check the general comprehension (with open-ended questions), the detailed comprehension (with true/false questions, and matching exercises), and will focus on the lexical load of the text (for example in a crosswords or a matching exercise).
- Then student 2 will target the recognition of the same vocabulary in a video document (while adding some more), and direct the group to a speaking task where the same lexicon is re-used, before concluding with an exercise which will focus on a point of grammar for which the document is well-suited (for example, if many passive forms are used in the video, the student will create an exercise in which she asks her peers to choose between present perfect [HAVE + V-EN] or passive [BE + V-EN]. Of course, all sentences in her exercise will be her own, and their topic will be the content of the video.

Results:

The method has been tried with several groups, of different levels of proficiency (groups of generally 12 to 16 students between B1 and C1 level; some were petty officers on a lifelong learning training course, while others were officer cadets, with no professional experience). There seems to be a threshold beneath which the learners do not understand the media well enough to be able to produce learning activities for their peers.

In most cases, however, the pedagogical quality of the student-made documents is (with the instructor's help) not far from that of documents produced by a teacher. Some students have surprised me with learning games, roleplay activities, presentations (unrequested), debating tasks, etc.

Most importantly, learners are much less passive in class.

Discussion

Advantages...

The first advantage of the method is in terms of attitude. Briggs [2] cites the following as benefits of peer teaching (among others):

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- Students receive more time for individualized learning.
- Direct interaction between students promotes active learning.
- Peer teachers reinforce their own learning by instructing others.
- Students feel more comfortable and open when interacting with a peer.
- Peers share a similar discourse, allowing for greater understanding.

Research also indicates that peer teaching has “a positive effect on team-building and improves psychological well-being, social competence, communication skills and self-esteem and [fosters] higher achievement and greater productivity in terms of enhanced learning outcomes” [2].

Students appreciate to have their work used in class. They will spend some time on the layout of their document so that it “looks professional”. When this is the case, and they feel they have reached their objectives, their self-esteem is boosted. In a naval academy, most students endeavor to be leaders.

Interestingly, I have observed that more students raise their hands to answer the questions of shipmates than to answer mine. Some of the students who usually remain silent willfully speak when the class is taught by a fellow student. It is not clear whether this is so because they feel less insecure with their peers than with the professional teacher, or if they simply wish to alleviate the work of the teaching peer (perhaps in hope that they do the same when their turn comes to teach the class).

Another advantage of peer teaching is that each learner’s engagement is increased. Each learner is active 100% of the time during the preparation lessons (phase 2). Those selecting a reading document must first read several articles, while those in charge of a listening exercise must watch several videos or listen to several recordings. In all cases, they must first try to understand the documents (globally). Once this is done, each of them moves on to the detailed comprehension phase, during which they will use digital resources (online dictionaries, translation engines, aligned corpora, phonetics transcriptions, provided transcripts or *YouTube* subtitles, etc.).

Lastly, peer teaching improves metacognition. By being put in a position to teach, learners realize that there are some tasks which facilitate recall, and others that ease elucidation. They realize that if they are not asked to use newly-learned words, it is unlikely that it becomes part of their *active* vocabulary: they may understand it next time they come across it, but will probably not be able to use it. What is more, the process of making the documents seems to facilitate learning: in past attempts, I have been able to attribute good final test results to the class work done by one particular peer instructor. Upon reading her final test, I was able to detect elements of lexicon and an example that came from the document she had prepared for her peers. She was the only student to mention that in her test, which seems to indicate that the act of preparing the learning material and leading the group had helped secure that knowledge in her memory in a way it had not for any other student.

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... And caveats

It is important not to assume that all students master word-processing software as this could lead to the production of unpractical or unusable documents. Therefore, in phase 2, the instructor must show learners how to produce a document in which their peers will have enough space to write (double spaced), how to hide the text of the answers within the document, how to add line numbers to a text for easy reference, how to lay out a matching exercise, etc.

Questions of form should not be overlooked. If we do not draw the attention of the peer teachers to the fact that, for example, the grammatical nature of words (adjective, noun, verb, adverb) should appear in vocabulary exercises (because it will help their peer learners), or that there are online tools to find the phonetic transcription of new words (and include it in the document), they will not guess it. Students do not know that crosswords are good to memorize spelling and that there are online tools to generate crosswords easily, that *Youtube* generates subtitles for its videos automatically (and potentially with mistakes), that grammar is better taught in context, or that the blanks in a text are not chosen at random. If we do not tell them, they cannot guess it.

In terms of relevance and variety of learning tasks, the role of the instructor is equally of paramount importance. In phase 1, it is capital to select as examples documents which propose *varied* and *meaningful* learning tasks (in reading/listening *and* speaking/writing): since we are their model, students will replicate the classroom tasks which we propose. If we regularly ask them to organize in subgroups and cooperate to prepare an argument to confront another group, if we give different documents to some of the students to generate an information gap, if we often focus on the correct pronunciation, intonation and stress, they will likely do the same. Conversely, if we propose only dumb fill-in-the-blanks exercises... it is unlikely that they come up with anything more relevant.

Lastly, during phase 3, the teacher should endeavor to remain as silent as possible: if we were to interrupt the teaching peers, they would not feel in charge, as we would somehow “steal their thunder”. Therefore, unless a huge mistake is being taught, the teacher should not “teach”.

IMEC – PAPER TEMPLATE

Conclusion

Further empirical research should be conducted to validate the effects on recall of the peer teaching framework. I have a hunch that the focus on the form of the documents facilitates memorization, but this needs to be proven.

I have shared the method with my fellow teachers and several of them have tried it; others are planning to. One possible development we have thought of would be to cross-teach: students from one group would teach students of another group. To go further, we could select student-made documents for the final test (thus boosting student motivation).

I am very satisfied with the method because it makes students much more active in class: they are active during the preparation classes (working with a peer, on a computer), but also during the peer-led classes (somehow, they seem to want to make things easy for their teaching peers, who rarely have to “push and pull” like I sometimes do, on mornings when students are tired or uncooperative).

I have extended this method to other courses and student populations, with equal success, even though I did fail to implement it with a group of less-proficient (A1) learners. There seems to be a minimum competency level required below which the cognitive load prevents the accomplishment of the tasks.

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THE EFFECT OF OBE-OBTL APPROACH IN THE ACADEMIC PERFORMANCE IN SPEECH COMMUNICATION WITH IMO-SMCP AMONG BSMT STUDENTS

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The paper presented at IMLA-IMEC30 by Frial, E.M.F., Palma, M.M.J.S., Salinas, C. C., and Somosa, B. S. was previously published in the *Institutional (Faculty and Staff) Research Journal*. Thus only the abstract is included in these proceedings.

Details of the publication are given below.

Frial, E. M. F., Palma, M. M. J. S., Salinas, C. C., and Somosa, B. S. (2016). The effect of OBE-OBTL approach in the academic performance in speech communication with IMO-SMCP among BSMT students. *Institutional (Faculty and Staff) Research Journal*, 2(1), 2-9.

Abstract This descriptive study sought to investigate the effect of the OBE-OBTL approach in the academic performance in Speech Communication with IMO-SMCP among BSMT students in



John B. Lacson Foundation Maritime University - Arevalo. This study utilized five sections among the second year students who are taking up English 3 (Speech Communication with IMO-SMCP). An 80-item pretest was conducted before exposing to the OBE-OBTL approach in the classroom. A teacher-made activities duly designed by the English instructors were used in order to help facilitate learning through the OBE-OBTL approach. Students were made to discover in the learning process through individual, paired, and group activities. Furthermore, specific activities were done in each of the terms to evaluate students' academic performance. Students were made to give a self-introduction speech during the prelim term, an impromptu speech during the midterm and a mock-job-interview during the final term. Pretest results were as follows: Diphda – 41.84%, Fomalhaut – 49.55%, Gienah – 59.60%, Menkent – 40.91% and Rasalhague – 32.46%. It must be noted that the pretest was given to these sections prior to exposing them to activities that helped them facilitate learning. There was an increase in the average of the posttest. Section Diphda which had the average of 41.84% during the pretest achieved 76.15% during the posttest; Section Fomalhaut from the average of 49.55% during the pretest to 80.97% in the posttest; Section Gienah from average of 59.60% in the pretest garnered 87.25% in their posttest; Section Menkent from 40.91% to 75.57% and Section Rasalhague from 32.46% to 70.29%, respectively. These showed that the use of OBE-OBTL approach in facilitating is effective in English 3 subject. There is a significant difference in the pretest and posttest results. This showed that the effective use of OBE-OBTL approach in the classroom eventually affects the academic performance of these selected BSMT students.

Keywords: *OBE, OBTL, Speech Communication with IMO-SMCP, BSMT, JBLFMU-Arevalo*

Greater Efficiency And Better Results On Maritime English For Engine Crew.

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Abstract

This paper shows a new English interdisciplinary methodology developed for Marine Engineers in order to begin the establishment of a common Marine Engineering English phraseology, considering the learning integration through a real professional experience, understanding the most relevant cycles of the maritime main and auxiliary engines, their functionality, maintenance, components, handbooks and failures. The Study is a result of the author teaching experience on Technical Maritime English for all hierarchy levels of the engine department crew in order to achieve their seaman's book through the Brazilian navy authority (DPC) and operate for the Merchant Navy.

Keywords: Marine Engineering English, Marine Engineers, Interdisciplinary, Competency, Continuous training, Engine Room Simulator.

Introduction

In 1977, the Maritime Safety Committee adopted the Standard Marine Navigational Vocabulary (SMNV) using English as a common language for navigational purposes. Twenty years later in 1997, the Maritime Safety Committee adopted the Draft IMO Standard Marine Communication Phrases (SMCP) developed by the Sub-Committee on Safety of Navigation. Finally, in 2001 IMO – SMCP was adopted as resolution A.918(22) and the ability to use and understand it still been required for the certification of officers in charge of a navigational watch and recommended for all maritime education authorities, in order to support compliance with the standards of competence as required by table A-II/1 of the STCW Code.

However, The IMO Standard Marine Communication Phrases (SMCP) in spite of been a great instrument avoiding accidents caused by communicating mistakes, is still limited in number of engineering related phrases which does not cover the wide amount of procedures involved into the Engine Department. For this reason, the Marine Engineering English phraseology *combined with a continuous operational training* was idealized by the author in order to preserve the efficiency and safety of onshore-offshore procedures involving the main and auxiliary engines of merchant and offshore vessels, since the maneuvering into restricted areas, transshipment of cargo from and to oil platforms, berthing, shipping procedures etc.

Fundamentals

The scope of this study is the integration between Competence and Collaborative Learning (knowledge, skills and attitudes) that combines the capacity to apply learning results adequately according to marine engine context, not considering only some academic theories but also techno-practical and social skills, ethics and values. This process focused on learners to motivate students at different English levels and professional experiences to perform together a common goal in a collaborative environment into which learning becomes the relationship among students that encourage positive interrelationships, social skills and individual responsibilities.

For the efficiency of the marine Competence and Collaborative learning procedure, teachers should develop and boost students' ability to learn. Keep their motivation and let them thinking through real-engine problems. Activities must be guided by specific objectives observing the real demands of the contemporaneous marine business environment including the advance of technologies and labor operational changes (eg. Automation, reduced crew onboard, unmanned engine room etc.)

It is also important to concern that Marine English is not the same as general English that we use for our daily communication. This is a precise-simple-unambiguous operational language with some restriction of use, especially in use of grammar, as mariners have their own terminology to indicate different type of things or circumstances which are not the same as we use in general speaking.

Analyzing the sea water system from a common ship, for example, the word "strainer plate" from *sea chest* has a different meaning than other "strainer/filters" from *fuel systems* or the "oil gratings" from the *crankcase*. The same occurs with other expressions, such as "Port" which means the left side of a Ship but can also be related to "Port Station" meaning Harbor and the expression "Stand by" that means "wait for an order" different than "stop". All of these terms and expressions carry out specific definition according to their own function into a particular system or environment considering the procedures related to each equipment of Engine or Deck departments, its routine, devices, Etc.

Challenges

The interdisciplinary in research seems to be a dynamic-continuous knowledge of transformation providing the advance of fundamental understandings among concepts or theories from two or more disciplines. This collaborative mechanism became essential for maritime studies, mainly broken sentences.

The Petroleum Law (Law No. 9,478) and the creation of the National Petroleum Agency in 1997 had ended the monopoly on oil exploration, production,

refining and transportation in Brazil and opened the state doors for the most major multinational oil companies. Since then, the biggest question as a maritime English professor has been in charge with the development of new methods of teaching to ensure the safety at sea life as well as teach English for marine engineers, professionals and cadets, into heterogeneous English classes resulted by a formed multinational work environment. Considering the difficulties faced by students in memorizing so many marine technical terms and phrases as well as remembering them when necessary.

Methodology

This English teaching methodology created and applied by the author for marine engineers and offshore engine operators integrates and correlates some aspects of engineering subjects into maritime English to some notions of naval architecture, ship's nomenclature and maneuvering (considering all the most relevant procedures involved in the engine room of merchant ships or offshore vessels).

The study aims at the learning integration through a real professional experience, considering also the communication exchange between crew in real situations using the linguistic structure adapted for specific purposes in order to avoid ambiguity, been clear and precise and provide efficiency among operations. Mainly when under circumstances in which officers work under pressure and must share tasks in short periods. For this, communication must be **short, simple and precise**. It also includes the use of engine room simulators, technical visits to vessels and simple drafts made by students under the orientation of the professor to reach better academic results. Communicative language skills and technical knowledge, all together combined as a relevant method of interdisciplinary teach which makes the knowledge consolidation easier for non-English-spoken students and their integration with English spoken ones into the same classrooms.

Learning Method

Objective:

Bring to English language meaningful learning within the maritime environment and for students the ability to communicate even with unforeseen and low formal proficiency of traditional English communication in order to reach the adequate knowledge of this language to enable the marine engineers at all operational levels to use engineering publications and to perform engineering duties clearly and understandable. According to IMO Model Course 3.17 [1].

Instructors Competency:

Marine English Instructor must be a qualified teacher of English language with a wide understanding of maritime subjects, considering the comprehension of the

operational cycles in which technical vocabularies are applied. According to IMO Model Course 3.17 [1].

Content:

The method consists of BASIC AND TECHNICAL UNITS, both essential and interdependent, providing the integration of different language skills.

Each of those units must consider some knowledge, understanding and proficiency for acquiring the best teaching method (techniques). The most relevant applied approaches for all procedures are:

- Make a simple draft of the system
- Understand the main components and principle of the system including valves, pumps, pressure indicators, viscosimeter, level sensors, tanks etc. (eg. “centrifugal pump” - centrifuge force - water - impeller - eye of impeller - volute - discharge nozzle - decrease velocity/rise pressure)
- Use images of the many equipment involved in the system for a better comprehension of the technical vocabulary
- Use common verbs to describe the operation of the system and work routine. (eg. Control, activate, check, open, start, clean etc.)
- Use of word order to describe the system using present simple (active and passive forms – writing and oral communication approaches) – always remember: communication must be clear, unambiguous and precise.
- Understand the use of engine and wheel orders according to IMO – SMCP [2] (If engines are answering or not the Bridge commands, alarm acknowledgement, shutdown, etc.
- Description of procedures correlated to the respective cycle (eg. Starting the engine - “Start Air System” – manometer - Check the minimum pressure required to start engine)
- Students needs to choose the best option of communication according to the context and situation, for this reason, group learning tasks based on engine

systems tends to motivate students cooperation, involvement into engine real context, problem solving and organizing learning. Instructors must also encourage self-correction and assessment of students on those group activities.

- Use of the Marine Engine Simulator as an instrument to develop communicative approaches with focus on communication, based on content, meaning, relevance and interest of the learner according to their goals. The Engine Simulator when used into interdisciplinary context (what means the use of its screen into English classroom in combination with technical simulation applied at Engine Simulator room as well as combined classes with both professors) permit students get immerse into engine room context.
- Finally, let students (already divided into groups) value the procedures involved, give opinion, provide new challenges, guess new possibilities of operation and so on. Let them thinking into marine English!

Basic Units:

B1 - Type of vessel x type of cargo

B2 - Basic conceptions of naval architecture

B3 - Ship's nomenclature – compartments- stations

B1 - Type of vessel x type of cargo:

Consists on identify the type of vessel as Merchant Ship or Offshore Vessel, analyze its particularities, type of operation, cargo handling, etc.

B2 - Basic conceptions of naval architecture:

Use the previous unit as a base of naval architecture comprehension, identifying the main parts and structures of the vessels according to their procedures and type of cargo.

B3 - Ship's nomenclature – compartments- stations:

Most relevant vocabulary expressed on IMO- SMCP and other relevant ones according to each type of vessel, considering their application into maneuvering, Berthing, Unberthing, Anchorage procedures. (eg. Port / Starboard, Bows/Quarters,

trim/capsize, engine room, steering engine room, azimuth propeller room, Bridge/Engine Control room, mooring loners, engine/wheel orders etc.)

Technical units:

T1 - Engine room systems (Functionality – maintenance – components - handbooks – failures)

T2 - Steering gear (Functionality – maintenance – components - handbooks – failures)

T3 - Auxiliary engines (Functionality – maintenance – components - handbooks – failures)

T4 - Interconnection of systems (real maneuvering examples)

Consists on understand each system, its maintenance, operation and failures, separated and also interconnected.

Conclusion

This research assures the real necessity of the marine Competence and Collaborative learning procedure in which teachers should develop and boost students' ability to learn, considering not only the notorious advanced knowledge into English but also other technical skills that make professors able to share specific proficiency with a multidisciplinary context of teaching. It also considers the previous knowledge of each student as an instrument to conduct the start of English learning, in which students became able to communicate between themselves resulting on a natural communicative approach that would let them into a real engine room context. The application of this methodology will result on *Marine Engineering English phraseology combined with a continuous operational training* consisting on the integration of language skills with technical knowledge.

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Riding waves of information: information literacy and critical thinking skills in seafarers' education

Increased worldwide societal expectation demands that graduates of tertiary education, including seafarers in management positions, must have developed essential critical thinking skills before shouldering professional roles. For seafarers in management positions, critical thinking may involve ability to deal objectively and relevantly with both written and spoken information that can literally hold very critical importance for the preservation of human life. However, critical thinking for this target group also implies critical and goal-oriented leadership in complex intercultural settings when effective communication becomes a decisive factor for success. There is reason to believe that critical thinking skills tightly interconnect with language proficiency and information literacy skills, which fundamentally condition objective and relevant understanding of facts and their implications in critical decision making. This paper describes how secondary and tertiary maritime education and training in Sweden is scaffolded to support the development of good communicative, critical thinking, and information literacy skills, according to changing employment requirements and society expectations.

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Introduction

Closing in on Horizon 2020, “the biggest EU Research and Innovation programme ever”, and “a means to drive economic growth and create [sustainable and inclusive growth] jobs” [1] the World Economic Forum [2] published in 2016 a report on *The Future of Jobs*. The report identifies drivers of change affecting business models, and consequently also industry and employment perspectives, based on a survey representing “more than 13 million employees across nine broad industry sectors in 15 major developed and emerging economies and regional economic areas” (pg. V).

The main drivers of change anticipated to re-design industry needs and expectations by 2020, including shipping, will be technological (most of which driven by development in the areas of mobile internet, cloud technology, processing power, big data and new energy supplies – see the development of unmanned ships for example [4] – and demographic and socio-economic (most of which being driven by a changing nature of work to flexible work, the rise of middle class in emerging markets and climate change and natural resources). Inventive, talented individuals, aspiring to succeed in international collaborations, will influence world markets, communities, government policies and industrial sustainability and most likely move autonomy and independence from the national platform to the corporate framework [2]. All of this predicts raised mobility of workforce opportunities, and therefore a need of globally equivalent sets of skills, preferably determined by a relatively easily determined common denominator.

It is largely known that the International Maritime Organization has long invested in the development of an internationally equivalent Maritime Education and training, aiming to bring trainees of various educational backgrounds and different international educational systems on the same page [3-9, 18, 28]. One of their investments in this sense are the IMO Model Courses, among which number 3.17 [3], Maritime English, designed to increase language and communication competence in correspondence to the “specific professional objectives” [3]. The ability to comprehend language, communication and information as intertwined and reciprocally dependent (see below, the framework of the Association of College & Research Libraries [14]), is reinforced in the Model Course 3.17 Core Section 2, as conditional for the achievement of “specific professional objectives”, [3, pg 44-49, sections 1, 3, 6-9]. With a focus on Maritime Education and Training, this paper describes ways in which secondary and tertiary education in Sweden aim to scaffold good communicative, critical thinking, and information literacy [5] skills, according to changing employment requirements and society expectations.

According to the American Library Association (ALA), the currently pervasive definition of Information Literacy (IL) is “*Information literacy is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning.*” [11] which implies that an information literate person will have internalized strategies needed to adapt to various social circumstances, to enrol in progressive development of industry processes, to sensibly identify problems and implement flexible, reasonable solutions and to constantly improve learning, and expression and implication of knowledge. If the ALA framework is to be implemented in education, as a recommended framework, then from the pedagogical perspective, the responsibility to develop Information Literacy skills is placed on the stakeholders, the student, the librarian and the teacher, and not the employer/industry/business at this stage. It is thus suggested that students have a responsibility to understand these skills and the teaching faculty together with the library have an even greater responsibility to design teaching, learning and assessment for these skills [11].

Information Literacy was mentioned already in the 1970s by Paul G. Zurkowski [12] and there has been a variety of ways developed to teach information literacy, since then. It is, however, not until

lately that governments, industries and international training institutions have come closer to a joint understanding of the imperative impact that rather the lack than the acquisition of IL skills can have (negatively) on society.. For example continuously falling results in the PISA surveys have been one of the triggering factors for a new set of requirements implemented in the Swedish National Curriculum for Upper Secondary School in July 2018 [13, 34], which explicitly address digital and IL-skills. In Europe, at national and international levels, investments are now being made to integrate IL in the curricula and to raise awareness of the personal responsibility we have as citizens to understand the value of contextual relevance in information, as imperative to development [1, 11, 13, 19-22, 24, 25]. We aim so show examples below, of how the Swedish education system currently works in this direction.

Information Literacy – a background

To support IL-education, the Association of College & Research Libraries (ACRL) [16], a part of ALA, has compiled and updated the *Framework for Information Literacy for Higher Education*. It is one of the latest, fundamental contributions to the development of IL-skills worldwide, and it can be used in education and in industry. *“The framework is organized into six frames, each consisting of a concept central to information literacy, a set of knowledge practices and set of dispositions”* [11] which can/should be implemented contextually to best fit a particular teaching circumstance and its respective learning outcome.

The six frames are [16]:

- *Authority Is Constructed and Contextual – each discipline has its own experts and the information they produce reflects their contextual knowledge and credibility.*
- *Information Creation as a Process – information is produced in various formats to present a message, and the resulting product reflects that process. E.g researching results in scholarly material but journalism results in news articles.*
- *Information Has Value – information can be used to educate, to influence or to mislead. A skilled user of information understands that all information isn’t free and respects the intellectual property, and the creator of information understand their rights.*
- *Research as Inquiry – research is a process depending on the perpetual generation of complex questions addressing complex answers.*
- *Scholarship as Conversation – the community of scholars, researchers or professionals are engaged in conversations, discussions and debates to both teach and learn new insights in their field.*
- *Searching as Strategic Exploration – searching information is a complex process that re-generates itself based on constantly changing and inter-changing inquiry parameters; the more information we find, the greater responsibility to redefine the original question and thus generate more information, and new knowledge.*

The WEF report on *The Future of Jobs* [2, pg. 21] establishes cross-functional sets of skills and abilities expected to determine employability by 2020, also based on Information Literacy. Furthermore, in their report, WEF investigate how the need of particular cross-functional skills will have changed depending on society demands and expectations, by 2020, and find that Content, Process and Social Skills (see table below) are on the rise.

In the table, WEF [2, pg 22] aims to identify what skills that will be imperative in different industry sectors (Basic and Infrastructure, Consumer, Energy, Financial Services and Investors, Healthcare, Information and Communication Technology, Media, Entertainment and Information, Mobility and Professional Services) in 2020. Their findings show that 20-40% of all the jobs by 2020 will require complex problem-solving skills, social skills, and process skills. Because technology will increase automation, [automates], technical skills will be less and less important. The expectations of ability

to adapt to various social (cultural, inter-cultural, sub-cultural) circumstances, of flexibility, reasoning and problem sensitivity, of ability to understand projects/development/research in interconnected and/or inter-dependent steps/levels and the ability to learn, understand and express knowledge, are to phrase employability for 2-4 jobs out of 10, compared to 2-4 out of 20 requiring technical skills. In other words, it will be more and more important, and therefore attractive on the labour market, to understand the impact of decisions on future (globalised) societies and meaningfully act according to that understanding in a proactive manner. "Meaning is expressed using information but the extent to which information is meaningful [something well defined in Information Literacy] depends on the degree to which it can be trusted" [15]. From this perspective, there is reason to believe that in the near future, employability will overall be determined in direct correlation with distinct IL and communication skills.

Abilities	Basic Skills	Cross-functional Skills	
Cognitive Abilities » Cognitive Flexibility » Creativity » Logical Reasoning » Problem Sensitivity » Mathematical Reasoning » Visualization	Content Skills » Active Learning » Oral Expression » Reading Comprehension » Written Expression » ICT Literacy	Social Skills » Coordinating with Others » Emotional Intelligence » Negotiation » Persuasion » Service Orientation » Training and Teaching Others	Resource Management Skills » Management of Financial Resources » Management of Material Resources » People Management » Time Management
Physical Abilities » Physical Strength » Manual Dexterity and Precision	Process Skills » Active Listening » Critical Thinking » Monitoring Self and Others	Systems Skills » Judgement and Decision-making » Systems Analysis	Technical Skills » Equipment Maintenance and Repair » Equipment Operation and Control » Programming » Quality Control » Technology and User Experience Design » Troubleshooting
		Complex Problem Solving Skills » Complex Problem Solving	

WEF (2016), pg 21, Core work-related skills [2]

Being an, above all, intellectual trait, Information Literacy is fundamentally defined by extensive metacognitive abilities, as critical thinking, planning abilities, comprehension of information relevance for given parameters, implementation of learning strategies, awareness of contextual relevance, self-evaluation, self-regulation, and strategic application of knowledge which is conditional for decision making processes. All of these are in turn conditioned by good communication skills. Some of the largest Scandinavian shipping companies, (see examples in attachments A – Stena Line, B – Maersk and C – Wallenius) expect co-workers to be able to deal with digitalization, sustainability, customer needs and expectations, diversity, international business awareness, provide excellent leadership, generate/develop innovative ideas and technologies, adapt to a dynamic culture, have broad industry knowledge, international experience and communication skills and techniques, re-invent processes and quantify the benefits they can gain through technology-enabled change, challenge conventional thought, stay on top of business and technology trends, anticipate society, industry and customer expectations. This discloses too an abstract, information literate language, and the list can be made much longer, provided we chose to refer to only three work descriptions and some generic company presentation from www.walleniusmarine.com, www.stenaline.se and www.maerskline.com.

it can be assumed – which motivates all the ALA efforts as described above – that all metacognitive abilities, or at least good fundamentals for their continuous development, are to be achieved through education and training so that the employees of 2020 will have learned strategies to adapt to the rapidly changing technologies which revolutionize access to information at such a pace that education programs cannot keep up, and also make sense of this information [2, 15]. In other words, students need to be taught how to anticipate and proactively deal with the more or less unpredictable circumstances of the future.

Supporting life-long learning – which is a distinct IL-trait – from this perspective means not only the opportunity to receive a good critical-thinking education, but also prompts the need to keep developing as a professional [10]. *“It is [therefore] critical that businesses take an active role in supporting their current workforces through re-training, that individuals take a proactive approach to their own lifelong learning and that governments create the enabling environment, rapidly and creatively, to assist these efforts”* [2, pg V]. In the CDNL (Conference of Directors of National Libraries) UNESCO report from 2004 [10], the authors find that *“Information literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environments and to all levels of education, while recognizing the disparities in learning styles and in the nature and development of literacy in different countries”* (pg 1). Particularly in industries which are regulated by international law, as the seafaring industry [11], these disparities will lead to a disproportionate development of professional skills. From the perspective of the seafaring industry, the responsibility for lifelong professional development can be placed on the shipping companies and the seafarers, but raised mobility and globalization of the industry also raise the expectation that already during training, Maritime Education and Training Institutions must develop a joint curriculum that supports internationally equivalent skills and abilities [12]. Companies who trade on international markets need to employ informed decision makers who understand and can cope with the developing needs of the international markets overall (as expressed in the work descriptions attached, A, B, C). Employees of a particular shipping company, as WEF [2] suggest, can/should also be continuously trained internally.

An informed curriculum under lifelong development - Sweden

New tools and strategies to help professionals keep up with societal and resource development, must be established and maintained, and the critical approach provided by information literate co-workers is imperative [13]. This is difficult to achieve without perseverance in the collaboration with IL scholars. In Sweden, IL skills are prompted already at upper secondary school level [7] in the Swedish National Curriculum for Upper Secondary School whose latest amendments date from July 1st 2018.

The common curriculum is divided into two parts, the first of which 1. *Values and Tasks* deals with the fundamental values that the overall Swedish school system is based on such as democracy, humanity and understanding. Objectivity, diversity and equivalent education between different municipalities throughout the nation as well as rights and obligations are also dealt with in the introductory part. Only then follows a description of the pedagogically specific mission of Swedish Upper Secondary School [13]. (Since this is where most of the new wording of the last amendments occurs, see the author’s full translation in appendix D).

The Upper Secondary School Mission’s [13] main task is to convey knowledge and enable students to acquire and develop knowledge. The school must communicate fundamental values based on democratic values and human rights. Students should also be able to orient themselves and act in a complex reality with high information flow, increased digitalization and rapid change. Their ability to find, acquire and use new knowledge therefore becomes important. Students should learn how to think critically, to review information and relationships, and to understand the consequences of different options.

Through the studies, students will strengthen the basis for lifelong learning. All students should develop their ability to take initiative and responsibility and to work both independently and with others. The school shall help all pupils to develop approaches to knowledge that promote **entrepreneurship, enterprise and innovation thinking**, which will increase opportunities for future employment. The school shall help students to develop an understanding of how digitization affects the individual and the development of society. They should also be given the opportunity to develop a critical and responsible approach to digital technology, in order to see opportunities and understand risks as well as to evaluate information. [13]

The underlined above and the few words in bold above (develop approaches to knowledge that promote **entrepreneurship, enterprise and innovation thinking**) replace an earlier single sentence reading “hereby increasing students’ possibilities to start their own business. Entrepreneurial skills are valuable for working life, social life and further studies”. This suggests an increased emphasis on competence related to both WEF’s set of skills and the ALA IL-framework.

The second part of the Swedish National Curriculum for Upper Secondary School 2. *Goals and Guidelines*, contains a list of learning outcomes, which all graduates, regardless of school or programme, should have reached by the end of their Upper Secondary School years. Here, the former paragraph of the curriculum addressing abilities to “use book and library knowledge and modern technology as a tool for knowledge seeking, communication, creation and learning” has been extended into two paragraphs stating the school’s responsibility to ensure that each pupil:

- can use both digital and other tools and media for knowledge seeking, information processing, problem solving, creation, communication and learning,
- can use libraries and their resources.

Not only the wording itself has changed but also the position of the paragraphs, from being the very last item (number 20) on the list, to number 8 and 9 respectively. Further on, in the curriculum text the obligations of all school personnel are now listed. The new task for the individual teacher is to organize and carry out the work so that students “get the opportunity to use digital tools in a way that promotes knowledge development” and the head master has to ensure that “The education is designed so that all students, in order to be able to seek and develop knowledge, are given supervision and have access to and conditions for using quality teaching materials as well as other teaching tools for a continuous education, school libraries and digital tools” and the “school library activities are used as part of teaching and to strengthen students’ linguistic and digital competencies,”. The competent use of digital tools in school is largely emphasised in the curriculum, but so are the vulnerabilities of the same as it is important to draw attention to both “the opportunities and risks posed by the increasing digitization.” [13]

In the wake of the new and reinforcing wording concerning digital competence, the Swedish National Agency for Education has also launched a series of “modules” [20] aiming at scaffolding both teachers and pupils into improved digital literacy. Presently, there are seven different modules for Upper Secondary School: Digital Narrative, Critical Use of the Network, Lead and Learn in Technical Classrooms, Mathematics Teaching with Digital Tools I and II, Safe Use of the Network and Text work in Digital Environments. Below is a translated outline of one such module, Critical Use of the Network with the scaffolded IL-skills underlined.

Being able to search and evaluate information are necessary skills to handle the flow of information in our digitized society. It is also clearly stated in the curricula that students need to learn this in order to complete their studies in different subjects. The aim of this module is to trigger discussions about

information retrieval and source criticism in classrooms and school libraries, preferably as an integral part of the school's subjects.

The module consists of five parts:

1. Information search online
2. The importance of key criticism and algorithms
3. Critical criticism online
4. Critical criticism in new forms of publication
5. Critical criticism in digital media - a didactic challenge

According to the Swedish National Agency for Education the following learning outcomes are to be taken into consideration while assessing digital (and information) literacy [21]:

Learning outcomes for digital competence in upper secondary school [21]

Search and select			Evaluate	Use selected material
Use a search engine • identify issues • formulate keywords • evaluate and select search results • restrict and expand searches • return to a previous search • recognize a "dead end"	Read a web page • read different graphic formats • look over • locate clickable links, icons, etc. • switch between web pages	Choose content • locate text / information • assess the own understanding and the usefulness of the content • compare different sources • save as favorite, copy links • download web page, copy text	• own understanding • relevance • credibility, reliability, correctness • objectivity, position, purpose	• create a whole and a context • create structure and balance • show familiarity with content and language • use multiple sources, enter sources, quote etc.

In practice, according to the above, pupils graduating from upper secondary school must, in order to pass English, which equals grade E, be able to choose texts *"from different media and to use the chosen material in their own production and interaction in a **relevant** way"*. This implies not only good use of language but also comprehension and coordination of content in different contexts and an ability to choose context depending on context. For a higher grade (grade C) the pupil needs to do the above not only in a "relevant" but in a *"relevant **and efficient** way"* and for the very highest grade (grade A) the selection and use of material has to be done in a *"relevant, efficient **and critical** way"*. The learning outcomes as such are phrased to form the prerequisites that tertiary education in Sweden can expect students to have as they initiate their studies at the universities, following up on the expectations of the Bologna [22].

The ability to efficiently and critically evaluate information considering its contextual relevance and ethical societal impact for decision making processes is closely connected to the level at which we understand and strive for lifelong learning, a core trait of Information Literacy. A fairly recent content analysis of 185 research articles about lifelong learning published in 2015 by Head, Van Hoeck & Garson [23] concludes that *"In this new world order no one will ever be able to say they have completed their [tertiary] education. This, however, assumes equitable access for all, which we have found from our analysis, is more of an ideal than a reality"*. In the study, a majority of the articles were from the European Union, which can be motivated by the long-established governmental

policies for lifelong learning in the European Union. The purpose of the European reference frame is to promote lifelong learning to improve employability, mobility and social inclusion for workers and students in the EU. 43% of the articles analyzed by Head, Van Hoeck & Garson [23] were from business literature, with a predominant focus on lifelong learning activities in relation to employment. The same focus is enhanced by a report from the Government Offices of Sweden [24] with the recommendation to modernize the education systems by strengthening the links between education and working life through lifelong learning. Following this lead, the Maritime Education and Training programs at Chalmers University of Technology in Gothenburg, Sweden invest actively in the integration of IL skills in selected courses.

Chalmers University of Technology – riding waves of information

As mentioned above, IL skills require improved intellectual, metacognitive abilities from a lifelong learning perspective, and in the phrasing of their programme learning outcomes, the Maritime Education and Training programs at Chalmers express in different ways, the achievement of such abilities. Please see below suggestions in bold, which refer to and can integrate the ALA IL frameworks above [25, 31-33]:

After completion of the course the student should be able to:

- Acquire and **apply advanced knowledge** in the field of technology education programs, **including insight into current development**,
- A holistic approach to independently identify, formulate and manage complex matters and analyze and evaluate these on a deeper level,
- Plan and, using appropriate methods, analyze and evaluate data within a given framework due to theoretically and methodologically comprehensive reasoning,
- Identify, apply and critically evaluate methods in relation to a chosen scientific issue,
- Critically and systematically use knowledge to model, simulate, predict and evaluate events due to relevant information
- During the specific thesis, identify issues regarding the role of technology in society with regard to environmental and ethical issues, and
- Addressing a particular target group, orally and in writing explain and discuss information, problems and solutions with the highest standards of structure, formality and language, and successfully defend a scientific study.

Given that you can ditch some of the paragraph information above, you ought to have space left for an introductory paragraph and probably even a section heading here to indicate the new and specific focus on exemplifying curricular designs used at Chalmers in the maritime studies programmes. An introductory IL intervention is being taught to all of the first-year students, in conjunction with their first written assignment in introductory level courses. The assignment is designed by the division for Language and Communication together with the content teacher. A librarian gives a one-shot lecture in the beginning of the selected course, with a focus on the library's resources, databases, choice of information, critical analysis and reading strategies, relevance to context, correct referencing, copyright and plagiarism. The lesson is divided into short workshops with students working in small groups, focusing on active learning, and some interventions comprise mandatory blended learning components, online course modules and tutorials. This was presented at the European conference in Information literacy, ECIL in 2017 by Nordfeldt & Wernbro [26].

IL is progressively integrated in eleven language and communication interventions at the Marine Engineering programme, five different courses at the Shipping and Logistics programme, six different

courses at the Nautical Science programme and one course at the Ship's and engineering officers' class VII programme. There are, in other words 22 courses currently taught at Chalmers Maritime Education and Training programs, which are designed to introduce, develop and/or apply information literacy and language and communication skills tailored to meet the professional expectation that the shipping industry may place on an informed decision maker (please see example of assessment criteria in appendix E). To support students in their research, but also throughout their studies and even after their studies, an extensive online guide has been developed by Chalmers librarians and the main page of this can be seen below. A large number of literature, data bases and other publications are displayed and during some of the IL-interventions in courses, students work through assignments that help them understand, evaluate and apply the IL tools offered in the guide (front page displayed below) <http://guides.lib.chalmers.se/ShippingMarineTechnology>.

The screenshot shows the Chalmers Library website for the Shipping and Marine Technology Subject Guide. The header includes the Chalmers Library logo and a breadcrumb trail: Chalmers University of Technology / LibGuides / Shipping and Marine Technology / Welcome. The main title is 'Shipping and Marine Technology : Welcome'. Below the title is a search bar with the text 'Search this Guide' and a 'Search' button. A navigation menu contains links for Welcome, Encyclopedias and Handbooks, Books, Databases, Journals, Dissertations and Articles, Patents, Rules for Classification / Standards, Organizations, and Guide in Swedish. The main content area is divided into three columns. The left column, 'Search for books, articles and journals', lists links to Chalmers Library, Libris, and Publications from the Department of Shipping and Marine Technology. The middle column, 'Welcome to the Marine and Shipping Technology Subject Guide', features a photo of a large blue cargo ship named 'SEA-CARGO' with the text 'Bob och Baltic Spirit, Lindholmen 2013. Photo: Christina Johansson' below it. The right column, 'Free Resources', lists links to Google Scholar, Directory of Open Access, WorldCat, and Espacenet. A 'Quick links' section at the bottom left includes links to 'Book a librarian', 'Book a group study room', and 'Copies and Print-outs'.

Furthermore, from 2017 the Marine Engineering, the Shipping and Logistics and the Nautical Science programs have an additional Information Literacy intervention in conjunction with the bachelor's degree project, outlined as follows:

- One shot lecture designed as an active learning intervention. Focus is on search engine and information evaluation, citations, communication, copyright and referencing.
- Drop in hours in the Learning Commons in the beginning of the writing process.
- Online module with focus on plagiarism and copyright.
- Bookable tutoring session when the students are half way through their writing process.

It is important that the students learn how to find peer reviewed references to their thesis and are made aware of the so-called grey literature. Specific databases connected to the maritime domain are therefore introduced, including Web of Science or Scopus. In 2016, we changed the arrangement from only one 60 minutes lecture and 45 min workshop to a new outline based on blended learning. We still had a no longer mandatory lecture, and in addition we offered a mandatory online module

and tutoring sessions. This setup was presented at the European conference in Information literacy, ECIL in 2017 [26] The first time we implemented this change it was offered to all the BSc students; approximately 500 students studying at the main campus. The course evaluation showed that the students were more satisfied than earlier. Since it was a good outcome the Maritime Education and Training programs also requested the same intervention, implemented since 2017.

Considering the above, one can say that Information Literacy skills are currently to be progressively aligned and integrated in conceptual learning outcomes, throughout the education system in Sweden, both locally and nationally and the ambition is to keep developing consistent strategies to improve IL competence in education at all levels.

Riding waves of information – insights for the future

According to the International Chamber of Shipping (2018) [27], 90% of the world trade is carried by sea. This indicates the immense extent of the shipping industry's impact on world economy, welfare and climate change, particularly as it claims itself to be *"the least environmentally damaging form of commercial transport"*. It is through the IMO [8] that the world's entire commercial fleet (173 member-countries) run its safety and security issues, legal affairs, international regulations, and environmental concerns. It is also through IMO that all flag states set their standards for seafarers' competence.

Therefore, the globalization of the maritime industry is one of the developments that has been instrumental in the international standardization of maritime training given the legal obligations of the IMO Standards of Training, Certification and Watchkeeping [28] and the Convention on the Safety of Life at Sea [23]. Not only communication at sea has been standardized, with Maritime English as the world's only legalized language for specific purposes, but in the IMO *Code of Ethics* (2016) there are high expectations set on the ethical and inter cultural competence of the seafaring industry's integrity, accountability and respect for human rights [30].

Unsurprisingly, this also shapes the industry's requirements on employee's accountability with regard to decision making processes. To quote from above (see **Background**), *"Stena Line, Maersk, and Wallenius, expect co-workers to be able to deal with digitalization, sustainability, customer needs and expectations, diversity, international business awareness, provide excellent leadership, generate/develop innovative ideas and technologies, adapt to a dynamic culture, have broad industry knowledge, international experience and communication skills and techniques, re-invent processes and quantify the benefits they can gain through technology-enabled change, challenge conventional thought, stay on top of business and technology trends, anticipate society, industry and customer expectations"* and much more. It is of great importance to establish the extent to which different shipping companies, other shipping regulating international agencies and international maritime education and training centres translate the above enumerated employee expectations in a similar way. At what different levels can one show ability to deal with digitalization, and in how are different positions distinguishing between these levels of ability. The same may be considered with regard industry knowledge, or dynamic culture or goal-oriented leadership.

Apart from eloquently phrased work descriptions, there is currently very little reference interconnecting Information Literacy and lifelong learning with company domestic competence development opportunity, to relate to. Therefore, a qualified question to ask shipping companies would be to determine the tools they use to bring their expectations on the same page with the learning outcomes of the international training centres, or regulating agencies. Another would be to what extent they are prepared to interfere in the design of revolutionizing Information Literacy training programs, as to establish international compatibility and equivalence in the definition of all the above enumerated expectations. Yet another qualified question to ask shipping companies would be how/if they have established a lifelong learning environment among their employees and what kind of incentives they have to motivate lifelong learning among they employees. A final qualified question to ask shipping companies would be to what extent they monitor training programs around the globe today, when choosing work force, and to what extent do they prioritise Information Literacy skills integrated in those training programs. It is, one can conclude, not yet evident how/if countries, training institutions and businesses have synced and supported equivalent skill expectations.

All these questions are currently investigated At Chalmers University of Technology, alongside some mapping of the existing teaching activities at different Maritime Education and Training institutions which aim to support the development of IL skills. The project *Information Literacy for seafarers – digital tools to upgrade decision-making skills (at the work-place)* aims to determine a design for educational tools/support (e-learning, e-platforms, other publications) that more accurately scaffold Information Literacy interventions specifically tailored for Maritime Education and Training at Chalmers, but also worldwide¹.

The aspired (necessary) impact of the informed decision maker on society has been made clear above through concrete regulations (and input) at

- international levels [2, 14, 22]
- at national levels [21, 24, 31-33]

and through concrete expectations (not necessarily input) at

- national and international levels together in a globalized, internationally regulated seafaring industry (see examples in work descriptions in the attachments A, B, and C).

From the training perspective, based on the programme aims and objectives of the Maritime Education and Training programs at Chalmers (attachments, A, B, C), as far as Sweden is concerned, graduates from Chalmers Maritime Education and Training programmes, are all introduced to the concept of professional accountability through IL skills, as expected in the global compatibilities (ethical, economical, legal, environmental) of an industry that serves 90% of the world trade. Furthermore, due to the extensive provisions on Information Literacy at European level as explained above, alongside the WEF [2] efforts to maintain the same, one can assume that even world-wide, most education institutions and national agencies recognise the imperative consequence of IL skills for an informed decision maker. It remains to investigate, determine and keep supporting the ways in which also industry is prepared to follow up on education in the pursue of the multidimensionally Information Literacy competence, thus place responsibility adequately on all IL stakeholders, the students/employers, the training institutions and national agency, and likewise, the business of the seafaring industry.

¹ For more information please contact annamaria.gabrielli@chalmers.se or liza.nordfeldt@chalmers.se

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Stena Line AB

Transformation Manager - Fleet operations to **Stena Line**

HJÄLP

KOMMUN: GÖTEBORG | **YRKE:** VERKSAMHETSKONSULT, IT

PUBLICERAD: 23 augusti 2018, kl 08:55 | **SÖK JOBBET SENAST:** 6 september 2018 |
ANSTÄLLNINGSFORM: Heltid, Tillsvidare | **LÖN:** Fast månads- vecko- eller timlön | **ANTAL PLATSER:** 1 |
ANNONS-ID: 7894868

Are you passionate about digital technology, transformation and change management? Do you want a job where you get to challenge, influence and improve the daily operation and company success by business process automation? Then, we got the job of your dreams!

Would you like to be a part of transforming Europe's leading Ferry Company?

Stena Line is in an exciting period of change, when it comes to digitalization and truly being an innovative forward-thinking company. The company are transforming the way they work to meet both the business' needs as well as customer's expectations. **Stena Line** want to become an even more customer focused, digital and sustainable company that is attractive both for customers, employees and partners. **Stena Line's** Group Transformation team might be the biggest player in this process and is keen to have you on their team!

What will you do?

As a Transformation Lead you will get to challenge **Stena Line** on how to use technology to re-invent processes and quantify the benefits they can gain through technology-enabled change. It is your responsibility to lead and coordinate the digital business development of the Ports & Terminals and Fleet Operations. You will improve fleet and port operations and provide new capabilities for safer and more sustainable ferry journeys, as well as help improve operational efficiencies and overall performance.

Some of your key responsibilities:

- Drive Digital business development in partnership with representatives from the business regions, functions & **Stena** IT to coordinate all transformation efforts within area of responsibility
 - Develop a digital roadmap, plan and execute initiatives with robust business cases and continuously follow up development, timelines & business impact
 - Ensure alignment of digital transformation initiatives across the business regions and functions, including transparent communication of priorities, plans and status
-
- Drive automation through technology-enabled change to reduce cost of production and increase margins.

- Challenge conventional thought by staying on top of business and technology trends within your area of responsibility
- Facilitate digital cooperation with digital experts, partners and customers in our extended value chain

Who are you?

At **Stena Line** your personality matters as much as how good you are at what you do. In this case you need to be passionate about using digital technologies to develop ship safety, efficiency, environmental sustainability and overall fleet performance across 38 Ferries. You thrive when working to optimize flows for more efficient port operations that in turn will improve customer experience and strengthen competitiveness.

With your strong coordination skills, drive and determination you can overcome internal barriers and work in mixed teams of colleagues. Your enthusiasm and entrepreneurial mind-set can move mountains and you enjoy giving guidance and to help others develop. You stay true to who you are – you play to your strengths and bring your individuality.

The must-have's:

- Digital advisory/management consulting background or similar, working with digital business development within fleet operations and/or ports & terminals optimisation
- Experience from delivering digital business development supported by technologies such as Internet of Things, Artificial Intelligence, Analytics, Cloud Computing, etc.
- 5 to 10 years of experience in working with transformation and change management in an industrial setting
- A Master's degree in Business/Engineering or equivalent work experience

Interested?

This is a fulltime, permanent position based in Gothenburg within **Stena Line** Transformation team. In this recruitment **Stena Line** collaborate with Sigma Recruit. If you would like to know more, contact the responsible recruitment consultants Patrik Jensen +46702375734, patrik.jensen@sigma.se (mailto:patrik.jensen@sigma.se) or Mikaela Jahreskog +4670 248 72 41, Mikaela.jahreskog@sigma.se (mailto:Mikaela.jahreskog@sigma.se) Welcome with your application on www.sigmarecruit.se/jobb (<http://www.sigmarecruit.se/jobb>). Selections and interviews will be held continuously, please apply as soon as possible.

About **Stena Line**

Stena Line is one of the world's largest ferry companies and has Europe's most comprehensive route network. Our business focus is on transportation of both passengers and freight. We operate in Scandinavia, around UK and the Baltics and employ over 5 000 people, the majority working with service and sales. At **Stena Line** we believe everything starts with Care. For us it means that we care about our customers, our business, the environment and we care about each other.

We want to make sure that our company is a fair and inclusive place to work for everyone. For

us it is never acceptable to discriminate and we are firmly committed to equal employment opportunities regardless of age, religion, gender, sexual orientation, gender identity, ethnicity or disability. Join us on our journey!

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- Verksamhetskonsult, IT: erfarenhet efterfrågas

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Arbetsgivarens webbplats

 <http://www.sigmaitc.se> (<http://www.sigmaitc.se>)

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11531 Stockholm

@ Arbetsgivaren vill att du skickar din ansökan via mejl till: mikaela.jahreskog@sigma.se

 Ansök på arbetsgivarens webbplats: <https://sigma.easycruit.com/vacancy/application/2089765/144771?channel=amv&iso=se>

Sök jobbet senast **6 september 2018**

HJÄLP

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Mina sidor (/For-arbetssokande/Mina-sidor.html)

Maersk Sverige AB

Global Care Business Partner

HJÄLP

KOMMUN: GÖTEBORG | **YRKE:** MARKNADSKOMMUNIKATÖR

PUBLICERAD: 16 augusti 2018, kl 11:03 | **SÖK JOBBET SENAST:** 24 september 2018 |
ANSTÄLLNINGSFORM: Heltid, Tillsvidare | **LÖN:** Fast månads- vecko- eller timlön | **ANTAL PLATSER:** 1 |
ANNONS-ID: 0018-459311

Maersk Line is the world's largest container shipping company, known for reliable, flexible and eco-efficient services. We operate 610 container vessels and provide ocean transportation in all parts of the world. But not only do we power some of the world's largest ships - we also propel the growth ambitions of businesses and individuals all over our planet. Every day our 7,000 seafarers and 25,000 land-based employees at 374 offices share their expertise with our customers around the world to optimize their supply chains, maximize their distribution networks and most of all realize their business potential. We are devoted to creating simple and reliable solutions for our partners, continuously lifting industry standards and enabling global trade in the most sustainable manner possible. What we do is more than shipping. We deliver promises. Promises from customers and businesses all over the world. Your promise. Delivered.

Number of employees: over 100

Customer Service is looking for a Global CARE Business Partner (GCBP) to serve one of our Global Key Clients. The role offers great development opportunity for those who possess extraordinary customer service skills, thrive on developing senior customer relationship and want to be part of expanding the business with our most important customers!

GCBP will need to confidently deliver our service delivery performance to key stakeholders and executives, and provide compelling stories that promise ease of doing business for the customer which can be used favorably in ongoing business discussions to further grow and strengthen our partnership. GCBP will work closely with a local CBP who is responsible for the customer's local interaction with **Maersk** Line Customer Service.

We Offer

In this role, you will gain industry knowledge, international experience, develop communication skills and techniques relevant to customer service and sales. This will equip you with the competencies required for customer-facing roles, deepen your potential and career development as well as contribute to your team's success.

The Global CARE Business Partner will be part of our Key team, and part of the larger Customer Service team with approx. 30 CARE Business Partners in total.

Key Responsibilities

- Be the customer's first point of contact for the customer on global level
- Act as a sparring partner to the Key Client Manager in engaging with the customer on global

customer service matters

- Monitor customer performance and follow up on commitment and forecast
- Build strong relationships with the customer, understand the customer's business, service needs, drivers and desires
- Build network and strong relationships with CARE Business Partners globally
- Ensure smooth execution of the end to end shipment lifecycle
- Own and escalate customer issues and engage relevant stakeholders as required
- Own and improve the customer satisfaction
- Seek out and act on continuous improvements opportunities both in relation to the customer and internal/external stakeholders
- Proactively monitor shipments globally
- Manage and improve the customer processes and handle issues and requests from customer
- Work according to defined objectives and KPIs
- Handle daily communication with internal and external customers and stakeholders

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Who we are looking for

The ideal candidate is a service minded team player with a commercial mindset, result-driven and enjoy challenges. You have excellent communication skills and genuinely appreciate the interaction with other people. You are able to take on multiple tasks with a sense of urgency and strive to deliver excellence in the details. We value the ability to identify improvement areas, take actions and initiate appropriate solutions.

- Commercial experience (from sales or customer service)
- Experience from transport industry/shipping
- Holistic understanding of the supply chain management
- Manage without authority - manage teamwork among colleagues within/outside own cluster or function
- Capability of taking up discussion with senior-management and Key Client Management
- Great communication skills (verbal and written)

Arbetslivserfarenhet

- Marknadskommunikatör: erfarenhet efterfrågas

Om anställningsvillkor

Permanent

Arbetsgivarens webbplats

 <http://www.maersk.com> (<http://www.maersk.com>)

Kontaktinformation

Företagets adress

Mölnadalsvägen 24

Postadress

Maersk Sverige AB
41263 GÖTEBORG

Telefonnummer

-

@ Arbetsgivaren vill att du skickar din ansökan via mejl till: Elzbieta.Piasecka-Haas@maersk.com

Sök jobbet senast **24 september 2018**

HJÄLP

Meritmind AB Stockholm

MERITMIND 

HJÄLP

Senior Business Controller to **Wallenius** Marine

KOMMUN: STOCKHOLM | **YRKE:** BUSINESS CONTROLLER

PUBLICERAD: 17 augusti 2018, kl 00:00 | **SÖK JOBBET SENAST:** 16 september 2018 |
ANSTÄLLNINGSFORM: Heltid, Tillsvidare | **LÖN:** Fast månads- vecko- eller timlön | **ANTAL PLATSER:** 1 |
ANNONS-ID: 22752532

Om dig

Preferred background and experiences

To have a suitable background for the position you will need to have at least 8 years of relevant experience in accounting, controlling and financial planning from an international company. You hold a university degree in finance or business with strong analytical and presentation skills. You have a commercial mindset and have the ability to communicate effectively with various stakeholders. Previous experience from the shipping industry is a merit. A requirement is a professional level of written and verbal communication in Swedish as well as in English.

Personal characteristics

You will need to have strong interpersonal- and social skills. You enjoy an innovative work environment and thrive in a position where you can make use of your commercial mindset. You have a pro-active approach to all activities you come upon. You are driven and easily takes own initiatives in your work. You value your accountability, always try to deliver in time and have a high integrity.

Dina arbetsuppgifter

Do you have extensive background within Business Controlling and are used to work in a commercial business environment? Then this could be the perfect position for you! We are now looking for a Business Controller to **Wallenius** Marine. **Wallenius** Marine offers a unique portfolio and services of highest standards range from New Design and Ship Building to Ship Management. **Wallenius** Marine is part of Soya Group and as Business Controller you will be part of the organization of Soya Group Support. You will be responsible for maintaining an effective control function for **Wallenius** Marine and be team leader for an assistant Business Controller. As Business Controller you will be part of the Management Team of **Wallenius** Marine and report to Head of Business Control, Soya Group Support. You will be working at **Wallenius** Marines Head Office situated in Södermalm, Stockholm, and have close contact with customers and colleagues around the world.

Specific tasks and responsibilities

- Responsible for effective and efficient operations of **Wallenius** Marine business control function including team leader for Assistant Business Controller
- Ensure processes are in place and operating effectively to support accurate and timely business- and financial reporting to management, owners and customers
- Lead and coordinate the forecast process at **Wallenius** Marine
- Actively participate in strategy work and business cases
- Provide insight and recommendation for actions to management and other stakeholders
- Identify, evaluate and follow-up on projects and initiative

HjÄLP

Övrigt

Arbetsplats

Stockholm

Om oss ()

About **Wallenius** Marine

Wallenius Marine offers a unique portfolio of services and products to customers. Competencies and services of highest standards range from New Design and Ship Building to Ship Management. The services can cover the full life cycle of a vessel – from design and building, to daily operations and crew management, to recycling. With the help of Performance Monitoring, vessel operation is optimized, improving its energy and cost-efficiency.

Wallenius Marine's two main services are:

Ship management – promoting a performance-based maintenance model.
Ship design and newbuilding, focusing on highly efficient and innovative tonnage with superior financial and environmental performance over a vessel's lifetime.
Since the mid-1990s, **Wallenius** Marine have managed and delivered close to 70 newbuildings and conversions. www.walleniusmarine.com
(<http://www.walleniusmarine.com>)

 <http://www.meritmind.se> (<http://www.meritmind.se>)

Kontaktinformation

Företagets adress

Vasagatan 12 STOCKHOLM

Postadress

Meritmind AB Stockholm
Box 17007
10462 STOCKHOLM

Telefonnummer

086169960

Wallenius Marine collaborate with Meritmind for the recruitment process. For further information please contact designated recruitment consultant Casper von Sivers at 070-029 11 41. Selection and interviews will be conducted on a rolling basis, so we advise that you apply as soon as possible.

📄 Ansök på arbetsgivarens webbplats: <http://meritmind.se/karriar/senior-business-controller-wallenius-marine-stockholm/>

HjÄLP

Sök jobbet senast **16 september 2018**

Wallenius Marine collaborate with Meritmind for the recruitment process. For further information please contact designated recruitment consultant Casper von Sivers at 070-029 11 41. Selection and interviews will be conducted on a rolling basis, so we advise that you apply as soon as possible.

Upper Secondary School Mission

The main task of the upper secondary school is to convey knowledge and create the conditions for pupils to acquire and develop knowledge. The education should promote student development to responsible citizens, who actively participate in and develop professional and social life. It should contribute to the students' versatile development.

The school has the task of communicating fundamental values and knowledge to the students and to prepare them for working and acting in society. The school should convey such more permanent knowledge, which based on fundamental democratic values and human rights includes everybody and forms the common frame of reference in society. Students should also be able to orient themselves and act in a complex reality with high information flow, increased digitalization and rapid pace of change. Their ability to find, acquire and use new knowledge therefore becomes important. Students should learn how to think critically, to review information and relationships, and to understand the consequences of different options. In this way, the students approach a scientific way of thinking and working.

*Through the studies, students will strengthen the basis for lifelong learning. Changes in working life, digitization and technological development, internationalization, and the complexity of environmental issues make new demands on people's knowledge and ways of working. The school shall stimulate students' creativity, curiosity and self-confidence as well as their want to try and put ideas into action and solve problems. All students should develop their ability to take initiative and responsibility and to work both independently and with others. The school shall help all pupils to develop approaches to knowledge that promote **entrepreneurship, enterprise and innovation thinking** which will increase the students' opportunities for future employment through entrepreneurship or employment. In an increasingly digitized society, schools shall also help develop students' digital skills. The school shall help students to develop an understanding of how digitization affects the individual and the development of society. All students should be given the opportunity to develop their ability to use digital technology. They should also be given the opportunity to develop a critical and responsible approach to digital technology, in order to see opportunities and understand risks as well as to evaluate information. Through these skills and approaches linked to digital skills, entrepreneurship and innovation thinking, students develop competences that are important in both work and social life as well as in further studies. Furthermore, the school shall develop the students' communicative and social skills and pay attention to health, lifestyle and consumer issues. The school should also strive to provide students with the opportunity to regular exercise and other physical activities. [13]*

Appendix D – Riding waves of information: information literacy and critical thinking skills in seafarers' education

Chalmers University of Technology

Steam and Refrigeration Techniques 7,5 ects – Maritime English intervention

Marine Engineering Programme, year 2, first semester. Chalmers University of Technology 2018/2019

After completion of the course the student shall be able to:

- Demonstrate an understanding of marine engineering texts and critically discuss and analyze marine engineering content.
- Reflect upon the advantages and drawbacks of different refrigerants, and based on critical assessment of relevant research, evaluate important aspects when converting to a new refrigerant.

Content

- Critically reporting oral and written evaluation of refrigerants and refrigeration plants, in English.
- Written, reflective assessment of reviewed literature addressing refrigerant converting practice, in English

Mark	Language	Structure	Content
Pass	<i>Grammar:</i> appropriate language throughout; variation in structures <i>Vocabulary:</i> advanced and accurate in terms of range and variety. Good use of terminology. <i>Style and Register:</i> consistent with regard to academic style	<i>Organization:</i> informative introduction including a summary and commentary topics; logically ordered and well-connected paragraphs; clear conclusion that ties back to the introduction <i>Cohesion/Coherence:</i> appropriate and advanced use of linking both inside and between paragraphs; highly unified; one can easily see progression throughout the text. <i>Sentence Structure:</i> varied, and appropriate constructions	<i>Development:</i> The text takes a critical/analytic approach, either by explaining or interpreting arguments/information; information is relevant and explained well; main ideas are well-articulated and well-developed. <i>Progression:</i> content is presented effectively so that it enhances reader understanding. <i>Source Material:</i> selected and used so that it shows understanding of and support for content. <i>References:</i> in-text references used in a deliberate way; both in-text references and reference list follow guidelines
4	<i>Grammar:</i> language communicates well (although there may be isolated errors) <i>Vocabulary:</i> well-chosen in terms of range and variety, few unidiomatic phrases and words <i>Style and Register:</i> well-adjusted to the task with little informal language	<i>Organization:</i> functional introduction including commentary topics; logical arrangement of paragraphs; communicative conclusion which summarizes the main points of the text <i>Cohesion/Coherence:</i> effective use of linking both inside and between paragraphs; unified <i>Sentence Structure:</i> construction is accurate; good variation of sentence types	<i>Development:</i> the text analyses, explains and describes; information is relevant; main ideas are sufficiently supported. <i>Progression:</i> content stays on topic and it is easy to follow <i>Source Material:</i> used to support content <i>References:</i> in-text references generally do not interfere with reading; both in-text references and reference list follow assigned guidelines
3	<i>Grammar:</i> language communicates on the whole (although there may be some errors) <i>Vocabulary:</i> functional in terms of range and variety, some unidiomatic phrases/words and wrong words used <i>Style and Register:</i> generally appropriate, with some informal language	<i>Organization:</i> introduction, main body, and conclusion present. The text conveys a clear idea on the whole. <i>Cohesion/Coherence:</i> functional use of linking both inside and between paragraphs; generally unified <i>Sentence Structure:</i> construction is accurate on the whole, though there may be several errors	<i>Development:</i> the text is rather descriptive, with some analysis of similarities/differences between style and content in academic vs popular science publications. <i>Progression:</i> it is possible to follow the content though several ideas may not stay on topic and/or are difficult to follow <i>Source Material:</i> used to support content <i>References:</i> in-text references and reference list are present, and presented so that it is possible for a reader to retrieve sources
U	<i>Grammar:</i> several errors, some of which disturb communication <i>Vocabulary:</i> many incorrect word choices, meaning difficult to grasp in places <i>Style and Register:</i> inappropriate for the task and/or inconsistent	<i>Organization:</i> no organization is evident; understanding is compromised in places <i>Cohesion/Coherence:</i> insufficient use of cohesive devices; no unity <i>Sentence Structure:</i> many errors	<i>Development:</i> Insufficient information provided to meet the stated objective <i>Progression:</i> content difficult to follow at times <i>Source material:</i> not present or used in a way that disturbs understanding (confusing) <i>References:</i> incorrect referencing; large chunks plagiarized
	<i>Adherence to task requirements:</i> fulfills length and is written in your own words, i.e. no plagiarism.		YES (3-5) NO (U)

Intercultural Communication Training with Pictures

By Erik Hemming

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Introduction

In order to achieve intercultural competence, experiencing communication with other cultures is not enough. Reflection is necessary. Reflection leads to formulation of theoretical statements (Kolb, 2014). As we set out on our journey to deeper understanding these theoretical statements are often faulty, based on preconceived notions, rather than facts. Later on we learn how to see more clearly - if we begin to feel more at home with other cultures (Bennett, 2004). Learning is facilitated by feelings of security (Rogers & Freiberg, 1969).

Seafarers, as well as many professionals, are not familiar with the vocabularies of the social sciences. Therefore it is better to formulate theory with simple words as long as that is possible. Even better with pictures. Pictures can clarify statements and sometimes convey almost the complete idea of a simple theory. This works the same way as a simile or a metaphor. By using very familiar contexts teachers such as Jesus Christ were able to keep the attention of the multitudes, also with precision. This is only possible with limited aspects of theory, but nevertheless possible, unlike using unknown words in new combinations.

The fundamental concept of culture is very abstract and hence often misunderstood. The subject matter is mainly invisible, so it is not surprising. Add to that words like perception, values, attitudes, power and the like and the meaning will be very much up to the receiver to interpret. In fact, interpretation (decoding) is another key concept in all communication. That means that the receivers have to use their sets of mental categories in order to achieve some kind of understanding. When we understand we say “I see” - an indication that our visual sense is the most powerful way to use our intelligence.

By using simple visual ideas and experiences that all grown-ups are already familiar with, a transfer of basic understanding of what intercultural communication is, can be successful. The purpose is of course that a deeper understanding of ICC will lead to better communication at work (and in one's spare time) and that mistakes will be avoided, that can lead to the breakdown of communication.

2. 2. Ideas on learning

2.1 Multimodality

Multimodality is the use of several modes when creating one text. The word text derives from the Latin “textus” meaning tissue, i.e. something woven. Hence it is natural to include more than just words in a text. If a picture is “woven into” a text (spoken or written) it directs the reader's understanding powerfully.

Pictures are processed in parallel, as opposed to words which are taken in sequence one after the other. The parallel processing is natural for visual input. Our brains are at least ten times more well-

equipped for visual stimuli, than aural. (Written words are visually processed, but not more than a few at a time.) So, it is said that a picture says more than a thousand words. Napoleon Bonaparte allegedly said: "A good sketch is better than a long speech" (French: Un bon croquis vaut mieux qu'un long discours).

One conclusion that can be drawn from the extensive PISA testing of learning results, is that girls are better at reading comprehension than boys (Lesesenteret, 2017). In fact, globally girls do better in school than boys in general, BUT not when it comes to reading maps. It is probably so that boys are more motivated to study information which is presented as drawings, infographics, or photographs.

2.2 Political implications

Many political parties claim that it is better for a country to stay culturally homogenous - or at least not to become multicultural. It is implied that the people from different countries intrinsically are different, and hence behave differently as a result of those differences. It can be argued, however, that a person's role and position in a society is a more important factor, if we want to understand her behaviour.

In intercultural communication the dynamics of the four possible explanations of behaviour are often presented as a grid (figure 1). It is a very simple picture, but if a person is open to hold back her judgement for a few seconds, it is possible to take a look at the situation and the possible state of mind of people who find themselves in that situation and find keys to understanding them there (Wikipedia, 2018). Unfortunately it is common to attribute psychological traits as the cause of behaviour. And traits are easily confused with culture: "That's the way they are!", as if a whole population would share the same traits. It is enough to take a look at one's own home town, to realise that there are many differences between the minds of its inhabitants.

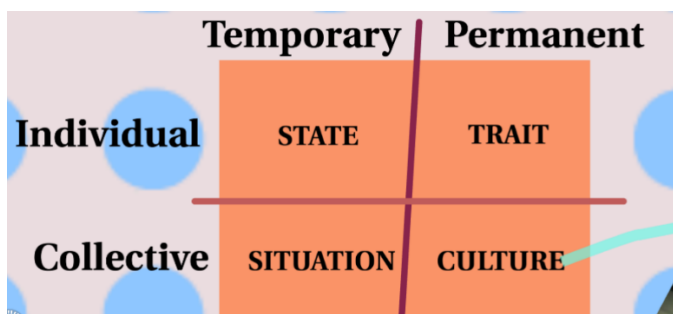


Fig. 1. Four ways of explaining behaviour

3. A few useful metaphors and pictures

To give an audience a picture is both to stimulate their minds, hence raising attention levels, and to direct that attention in a specific direction. Both are key in teaching and leadership.

3.1 The Circle

Human communication tends to form circles. Indeed, all forms of nature form circles! A basic sociogram of, say, a shipping company, shows how persons organise themselves in social circles and end up in more or less central positions (Moreno, 1956). We all have many experiences of this, certainly from school groups, see fig.1.

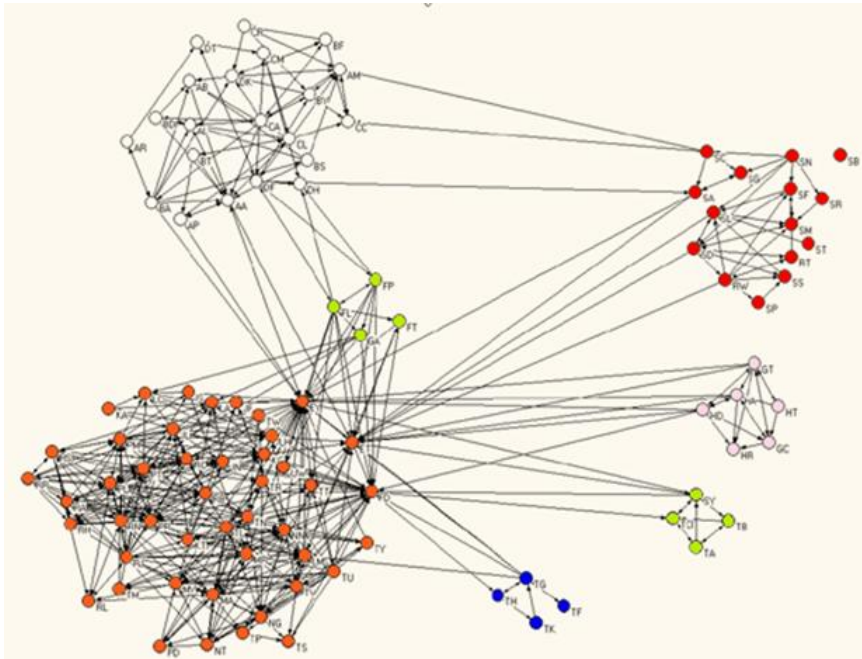


Fig. 2. Sociogram (Sociograms, n.d.)

Why are some people central and others peripheral? In both macro and micro societies it depends on competition for the control of the communication. The centre is worth fighting for, since there one can gain more of the good things in life and avoid more of the bad ones. The French sociologist Bourdieu categorised these things under ‘capital’ (Bourdieu, 2016):

- Economic capital (money)
- Social capital (friends and fame)
- Political capital (influence, power)
- Cultural capital (knowledge and good taste)
- Physical capital (looks and muscles)

These forms of capital are also tools to move up in social circles. A person can exchange one kind for another. This year we may consider the rise of the Trump family as an example of this.

Due to how we communicate and act on a daily basis we can move inwards or outwards in the circle. It’s a fast game and we make mistakes, from which we normally learn lessons.

3.2 The maze

The people we meet may stop us or let us pass. The image of the maze can describe the level of complication well (fig.2). To feel lost is normal, to need help as well. Having arrived in a new place in a foreign land we must accept to start out from the periphery. Only a few people make it to the centre - or to the top, as the expression goes. When trying to move inwards we meet key people whom we need to communicate with successfully. These can be seen as gatekeepers.



Fig. 3. The maze at Villa Pisano in Venice (Insidecom, 2014)

Being poor isn't helpful at all; our basic needs have to be met first, before we can worry about the next level. Unless we are gifted with capitals other than money, we're stuck. Maslow's hierarchy of needs can be imagined as a circle as well (see fig.3.) The idea is that we need to understand that people can't be expected to reach their full potential until they have been allowed to move inwards in the circle.

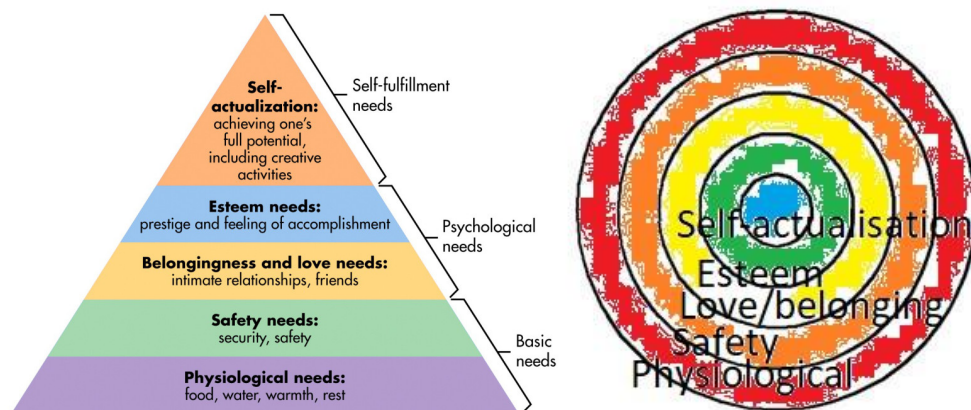


Fig.3. Maslow's hierarchy of needs (Lester, 2013) and an adapted version

Why is it so? The satisfaction of our needs is linked to the types of capital listed above. A person at the top brings all her capital with her into each interaction with others. The halo effect makes us believe that a person with one or two popular qualities have even more than those, whereas a person with one or two less valued traits have even more deficiencies (The Economist, 2009). The diagram in fig.4. describes *othering* as a result of this cognitive bias when it is combined with prejudice. By distancing the categories to the left from those on the right they will be seen as less normal - hence less positive - in every encounter in society. Obviously gatekeepers will be more reluctant to allow them to move inwards.

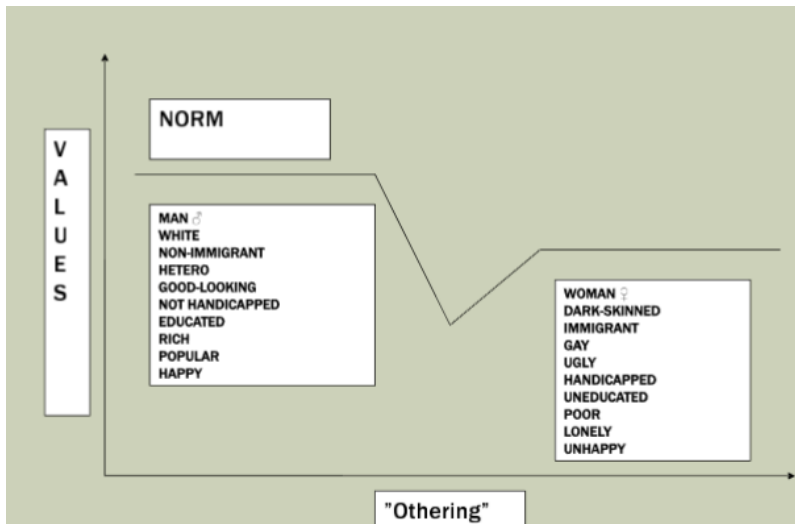


Fig. 4. Othering

As in most groups the leader is the person towards whom the highest number of noses point. In society, people's attention is directed inwards, towards the centre. People are interested in that which lies between their position and the centre. That and those who are on the outside are not "cool" - hence others don't know much about them. Those near the centre are seen, which feels good, and those outside are unseen, marginalised. To the seen, it matters what they do, but the unseen might end up not being seen by anyone but the police.

As Hjalmar Söderberg (1905) so aptly put it: "One wishes to be loved, for want thereof admired, for want thereof feared, for want thereof hated and despised" (Söderberg, 1905). Perhaps that quote can help to understand awful behaviour. The centre-periphery dynamics influence everybody's thoughts, feelings, and actions.

3.3 Computer game

As young men today are very keen on playing games online, it is fortunate that so much in the challenges of a globalised society are analogous with those present in computer games. The different forms of capital discussed above are analogous with the superpowers gained and used in games, see fig.5.



Fig. 5. Superpowers in the Fallout game (Bethesda, 2008)

Challenges to overcome tend to be in the form of enemies, sometimes in cooperation with allies. This brings us to the much used metaphor of the icebergs in intercultural communication: US and THEM.

3.4 Icebergs

Since so much of what we intend by the word culture is invisible, the iceberg metaphor lends itself naturally as a means of clarifying what goes on in communication. If two icebergs collide it probably happens under the water. This is similar to two persons or groups who miscommunicate or compete and who have negative feelings (clash) for the others. In figure 6 a few key words have been inserted. A better idea is to provide the list of keywords and have students insert them in the proper places in the picture.

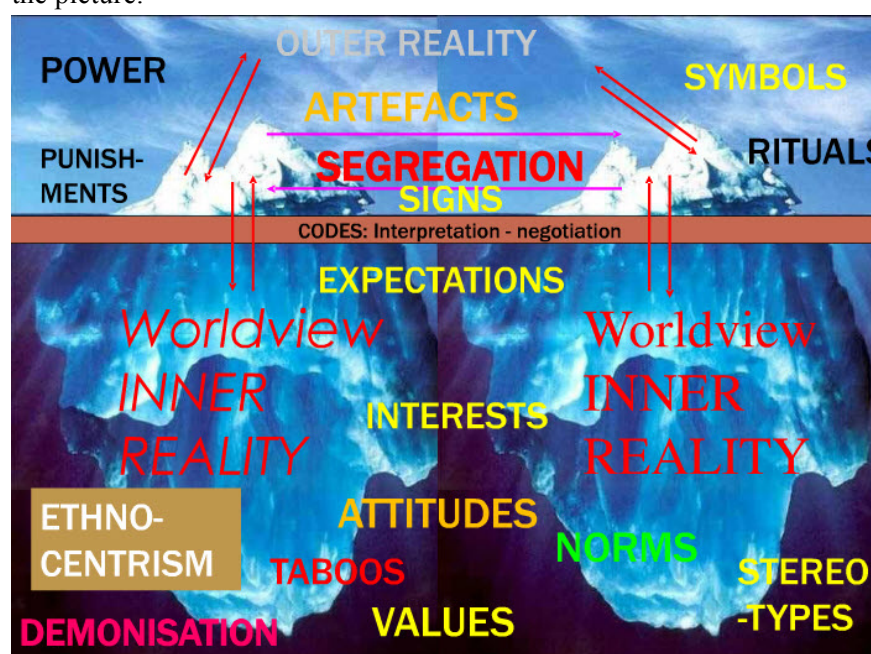


Fig. 6. The iceberg metaphor, us and them (unknown artist) – adapted by author

This figure is overloaded with content, so it is recommended to use it as a table of contents and starting point for the whole module. The word *segregation* is to be seen as the opposite of communication, at least minimal and negative communication. A regular group of students often display segregation, for example when some of them don't speak to some other students and don't even know their names.

In the absence of communication, myths can grow. The less knowledge, the more room for prejudice. Today we can witness a growing lack of trust between countries and also inside countries as citizens communicate inside so-called filter bubbles (Weisberg, 2011).

3.5 The culture tree

As trees are common on the earth, using them as metaphors comes naturally. The invisibility of the roots is also a good reference to the roots of culture. The tree metaphor might be best to leave out in the beginning of a course since it is intended to demonstrate something other than the icebergs, fig.7.



Fig. 7. Roots, trunk, and branches of a tree (Jacobs, 2014)

In the culture tree metaphor, the *roots* stand for: geography, economics, history, demography, religion, ideologies, and traditions. The *trunk* symbolises the learning of cultural patterns - attitudes, values, taboos, experiences, perception, whereas the *branches* refer to the visible cultural pattern - 1) language, gestures, 2) groups, hierarchies, 3) work, 4) sex roles, 5) territories and conceptions of space, 6) conceptions of time, 7) education, 8) play and leisure activities, 9) protection and defence, 10) ideas on nature and technology (Hall, 1959).

3.6 The house metaphor

It is easy to find analogies between the connotations of a house and those of a culture. When asked to come up with such, students often state protection, traditions, climate, building materials, vantage point, etc. but often other quite surprising and clever ones come up. Whatever comes up – it is a sure sign of understanding.

4. Conclusion

When we understand, we say: I see! It is a sign that the understanding at least “feels like” seeing. It is a fact that our brains are more powerful and fast when processing information in the form of pictures than as words. With carefully selected metaphors and similes complicated basic facts about sociology can be transmitted to groups of students or citizens.

It is of critical importance that seafarers, co-workers and citizens avoid simplistic explanations of the behaviour of others. The next step will be solidification of prejudice and unnecessary othering. It is easy to see that good communication at work and in societies depend on seeing other people as they are – not as exponents of categories. People with low intercultural competence levels tend to have broad and negative categories of people from places other than their own (Bennett, 2004).

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Unified English Language Communication as Service for Seafarers.

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Vladlen Shapo

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Abstract. The idea of subject-based teaching in English must be preceded by teaching professional terminology to all non-native speakers. It is especially a hot topic for seafarers all over the world.

The creation of communication platform is absolutely necessary for them, taking into account their life-long education due to the specific character of their job which gives rise to a lot of psychological and technological questions. How should provision be made to access Internet synchronous conferencing, to develop supportive learning environment, to provide e-quest lectures in EL professional terminology, to accommodate the learning styles of different kinds of students (their nationality, age) into their learning experience? The other side is to adapt teacher’s behavior, experience, style to a learning environment where they have a reduced sense of control of teaching process. Finding the answer to these questions will contribute to coming from language in content to language in action, from abstract language to decontextualised discourse in computer-mediated communication in self-selected groups of students/seafarers, geographically dispersed.

The approach, proposed in the paper, allows to formalize and automate server hardware characteristics choosing (processor subsystem productivity, memory subsystem productivity and volume) at hardware placement in information system of organization or in the case of cloud model using (virtual machine type, productivity and cost choosing) with taking into consideration possible cost/productivity ratios.

Keywords: communication platform, subject based, professional terminology, learning environment synchronous, system productivity.

Introduction

Unified communication platforms are created at worldwide level for different commercial and industrial purposes. Their goal is to enhance business, educational communication and collaboration within the framework of integrating various asynchronous and real-time communication tools [Rouse, 1].

Unified communication platform/platforms may be a solution in compensating lack of English language subject-based education of seafarers. As the nature of their job keeps them away from regular classes with traditional face to face contact “teacher-student” most of their life-long time.

New technology enables to shift educational framework as the level of computer-mediated and on-line delivery of any kind of information to the recipients: clients, teachers-students/cadets, seafarers.

We'd like to create (with our Partners from Ireland, Finland, Spain, Romania, Cyprus) IT communication platform as Unified communication service for teaching-learning subject-based professional terminology in maritime business: navigation, engineering, management in two modes: synchronous and asynchronous. As we expect, cloud-based unified technology will provide open-source project with self-supporting and interactive, integrated learning environment [Berge, 2].

In order to solve this complicated universal task it is necessary to interlink many aspects: pedagogical, linguistic, psychological, technological, etc.

First of all, we've started our research from a needs analysis of seafarers by means of questionnaires, interviews and analyses of their industrial experience in mastering English for professional purposes. Statistics shows that seafarers are strongly motivated to study professional and general English by job insistent demands and their aspiration to self development. Most of the seafarers interviewed, noticed that their failure in self-studies comes from wrong chosen approach to linguistic technique, lack of time and volition. All resources for English language studies accessible and to seafarers at sea and ashore are in use by many of them. About 85-90% of the interviewed persons study English language not systematically and express their wish for flexible programmes of English language studies. The main purposes for reaching English language proficiency level by seafarers are:

1. to communicate and understand crewmembers and authorized persons native speakers in various contexts;
2. to talk with colleagues on routine and professional topics;
3. to keep business correspondence in shipping.

To keep business correspondence, grammar aspects of different types of documents are the most complicated tasks for learners researched by us. Also work with audiomaterials, translation of complicated professional texts, spontaneous interaction, dialogues in daily professional routine prove difficult for our learners..

Absolutely new professional linguistic material delivered verbally to the recipient, quick tempo of speech of communicators bewilders listeners very often. About 70-80% of seafarers interviewed are ready to study English language by e-manuals, computer programs, online courses.

These seafarers stress the fact that they need professional terminology in English language almost for all kinds of work and activities on board the ship, i.e.:

1. Operation of deck and engine-room mechanisms, gear, appliances;
2. Working with manuals and instructions;
3. Conducting VHF talks;
4. Keeping ship's correspondence;
5. Carrying out life-boat, fire-fighting, "man overboard" drills;
6. Restoring ship's controllability;
7. Preventing oil pollution at sea;
8. Evacuation of injured persons from the enclosed space;
9. Providing ship's security.

The second stage of the research is connected with the verification of the operational code and operational chart of navigators', engineers' and managers' activities in the shipping industry. For example, for navigators an operational chart includes activities and knowledge in the following:

- | | |
|---|---|
| 1.1. Shipboard training | 1.13. Mooring |
| 1.2. Ship Construction | 1.14. Clearing the Ship in |
| 1.3. Types of ships | 1.15. Ship Agent's Duties |
| 1.4. Navigation aids | 1.16. Cargo Operations and Shipping Documents |
| 1.5. Communication at Sea | 1.17. Types of Cargo and Cargo Handling Care |
| 1.6. Survival Techniques | 1.18. Cargo Claims |
| 1.7. Accidents and Incidents on board | 1.19. Prevention of Pollution at Sea |
| 1.8. Ship Handling | 1.20. Towing Operations |
| 1.9. Passing through Narrows and Canals | 1.21. Fire-fighting at Sea |
| 1.10. Collisions | 1.22. Piracy |
| 1.11. Pilotage | 1.23. Terrorism and Security |
| 1.12. Anchoring | |

We've made the attempt to construe for our research as complete picture of seafarers' activities as possible.

The analysis fulfilled gives us the opportunity to create as detailed picture as possible of the job description of 3 main specialties in the maritime industry. Also it is easier to estimate English language professional terminology corpus necessary for learners to acquire to perform their professional duties competently. This corpus is subject to the principles of

1. frequency of terms usage;
2. steady links of terms into terminological combinations with their indirect interpretation;
3. possibility of substituting the terms with appropriate synonyms or opposing them by the antonyms.

And all the functioning programs/platforms for learning English language for special purposes are based on these principles.

Learning foreign/English language for general and specific purposes in online mode is provided by thousands of courses on 10 and more unlimited top platforms. The possibilities in using different devices for computer-mediated communication with real or virtual teacher are enormous. English language platforms for seafarers already exist: Marlins Test Platform, SeaTalk, MARTEL Plus, MARTEL-Maritime Tests of English Language, Captains- Maritime Training. They are based on mainly non-translational methods and cover the professional terminology of all shipboard qualifications and competences. Programmes for English language studies are aimed mostly at intermediate and advanced levels for acquiring seafarer's competence in subject-based knowledge in English language.

By our questionnaire as for self-estimating their English language knowledge and skills 70% of seafarers evaluated their level as average, closer to pre-intermediate level.

Our idea is to create universal English language communication platform, based on Cloud technologies, for seafarers all over the world targeted at non-native speakers, levels A1/A2 reaching B1/B2.

This Unified communication solution coming from the IT Platform (i.e. public cloud) will provide:

- comprehensive presence: Users can see “always-on” contextual presence information from the unified communication administrator;
- comprehensive connectivity voice, video and conferencing capabilities;
- native support for mobile devices;
- regular update;
- comprehensive functionality;
- cost possible avoidance [Cisco, 3].

Virtual environment system we are going to present in the article will in our opinion provide these functions. Possible scheme of multitude users interconnection with applying of different devices with big range of operating systems, application software, hardware and communication interfaces, based on cloud technologies, is presented on Fig. 1.

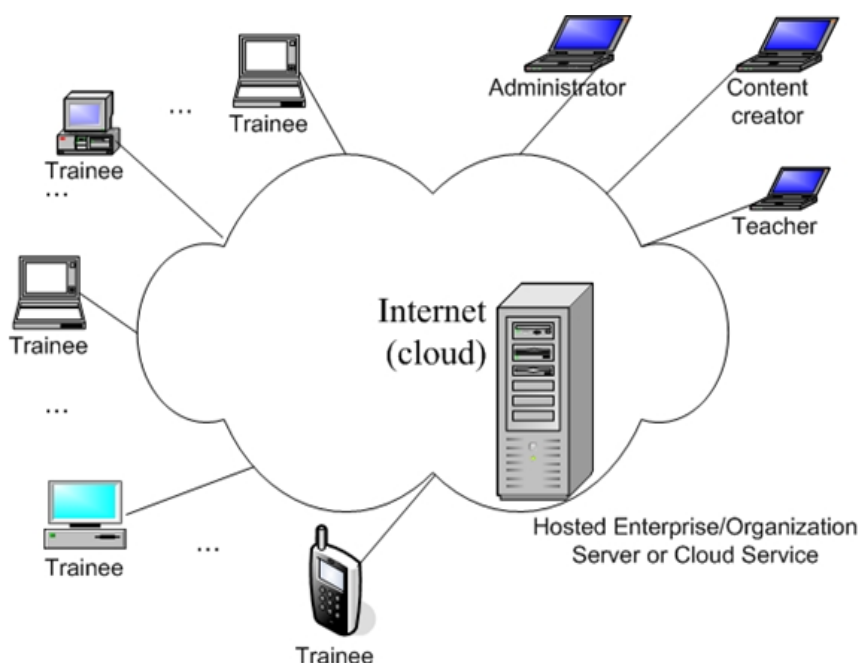


Fig. 1. Interconnection between different participants of the project using cloud technologies

Technological parameters of this system, its data transfer network, bandwidth, its data storage system characteristics will be discussed later.

Linguistic aspects of the contents of virtual environment system and database for off-line studies are the following.

Interactive teaching will link the abstract language to the concrete.

The high value of any educational process is based on its cognitive load and creation of cognitive learning environment. We try to unite the technical possibilities of the unified communication platform with its educational advantages. Face to face element communication in virtual laboratory, “utterance-to-text” – based tools, voice-based applications, video-based services, web conferencing platform, real-time presence in collaboration platform or “virtual teacher” presence will be good in conglomeration with methodology of accelerated learning foreign languages (ALFL) and learning modalities [Peacheyl, 4].

ALFL will give positive results in facilitating the terminological competence of a professional, in our opinion, when following next strategy:

1. enlisting key vocabulary with audio support;
2. checking pronunciation comparing with the standard;
3. developing skills of composing terminological combinations reflecting the professional topic in key terminological sets/families ;
4. accumulating and recycling the comprehensive vocabulary covering the topic step by step finding and drilling it in definitions, exercises (filling in the gaps, matching completing), textual information;
5. simplicity in presenting textual information – in short, gradually by increased in extended texts, accumulating professional terminology on the subject and involving more and more terms describing the topic ;
6. developing all types of language , speech activities in the conditions of defined framework of communication (mobile or stationary) service in virtual lab;
7. concise graduation of lexico-grammatical difficulties of acquired speech patterns with keeping their communicative tendency;
8. time allotted regular “real-presence” course studies which will promote learners foreign language mechanism of inner speech basics and transforming it into natural, dynamic condition , with natural tempo parameters.

Learning modalities such as visualizing, auditory and kinesthetic ones should be taken into account when planning course for synchronous and asynchronous EL subject-based studies. Modality elements such as graphs, charts, diagrams, symbols; listening, rhythms, tone; gestures, object manipulation, positioning will reflect vividly the nature of the topic within the framework of the communication service [Wikipedia, 5].

“Virtual teacher” or “tutor” will provide auditory modality of the teaching process, pictorial background of each demonstration portion will, in our opinion, enforce its linguistic description in three dimensions: contextual, communicative and applied/behavioral ones [Siemens, 6].

The contextual dimension of each topic will be measured by key words, key expressions, definitions of these key words, accumulating in dozes and reflecting essential vocabulary on the topic, textual information.

Communicative dimension will involve the learner in the learning environment as an active communicator with the tutor, reproducing standard English language pronunciation with best efforts and distracting from national peculiarities of articulation variations on the terminological corpus.

Behavioral dimension of each topic will be measured by creative activity in different kinds of exercises and dialogues and correctness of learners’ performance. It will be checked by standard samples, reinforced by audio control of a tutor.

The supposed scheme of each unit/submit is the following:

- I. Look through the slides with key words, listen to their pronunciation and translation .
- II. Read the key expressions to the topic, listen to their translation, try to remember them.
- III. Study the definition.

- IV. Study the expressions with the key words, guess their meanings, listen to their translation into native language.
- V. Rearrange the following words into sentences, check your answers with the keys below.
- VI. Study the extended version of key words and word combinations in two Dozes: Doze 1 and Doze 2
- VII. Work through the word families (clusters) with the topical words:
- VIII. Match the term (verb, noun) with the right definition.
- IX. Check-questions
- X. Read the following words and expressions to Text 1. Try to guess their meanings listen to their translation.
- XI. Answer the questions to the text.
- XII. Complete the sentences.
- XIII. Give the beginning of the sentences.
- XIV. Guess the term or give the definition of the term.
- XV. Read the extended Text 2 on the topic. Answer the questions to the text.
- XVI. Make as many sentences as possible using the following verbs or give as exact example from the text as possible with the following words and expressions.
- XVII. Read Case Study 3 very attentively.
- XVIII. Transform the following affirmative sentences from the text into negative ones or vice versa.
- XIX. Show the condition of proper professional actions of (master, watch keeper) or Describe the necessary modality of the following actions(their insistency).
- XX. Play the dialogues.

Every unit of the course will consist of three sub-units, and finalised by the test on the topic, aimed at learner's self-control.

The content of the course will be regularly updated by content creator, administrator of the Cloud Service will provide accessibility to the course content.

Real teacher/s (they may be residents in different teaching centers) or virtual teacher/s will create the effect of teaching laboratory where multiplicity of linguistic norms of learners of different nationalities will be reduced by the teacher accompanying teaching procedure with translation into learners' native language. Homological framework of the course material should be constructed in our opinion, with taking into account three types of accent variability:

I type –systematic or inventory variability when different speakers have different sets of phonemes;

II type-realisational variability to the ways in which a single phoneme may have different phonetic realization

III type-“lexical” variability-use of different series of phonemes for the same word.

Non-standard speakers can discuss technical subjects without switching to standard English, i.e. use double negation, irregular formation of the reflexive, etc. [Kerswill, 7].

Supportive and corrective action of the teacher who can take into account four intersecting criteria: age, social class, acquisition and “regionality” of learners, will be successful.

Any general provisions and theoretical considerations have to be connected with practical realization and co-work with concrete methods, algorithms, etc. at implementation into practice. Further in this paper proposed some mathematic expressions and real existing technologies, which will help to automatize corresponding calculations of cloud system important parameters and characteristics and to find bottle-necks in developing or working multi user cloud system at sound/video traffic exchange.

At design, installation, exploitation and modernization of any modern data transfer network, which has to transfer sound/voice/video traffic, it's necessary to take into consideration variety of different standards and protocols, which are created by different proprietary developers and with participation of ISO, IEEE ITU and other standardization organizations. Variety of protocols supporting will allow to attract a lot of users which have absolutely incompatible or obsolete hardware and software (operating systems and application software).

Using of wide spectrum of different devices, operating systems, application software, network equipment, etc. potentially may cause problems with compatibility and network faults. In these situations it's recommended to use corresponding professional software to analyze network traffic [Garland,8]

Fig. 2 presents model of voice/sound traffic exchange between individual users and users workgroups applying cloud technologies. $(V_{t1}, V_{t2}, ..., V_{ti}, ..., V_{tm-1}, V_{tm})$ is vector of different voice/sound protocols data volumes.

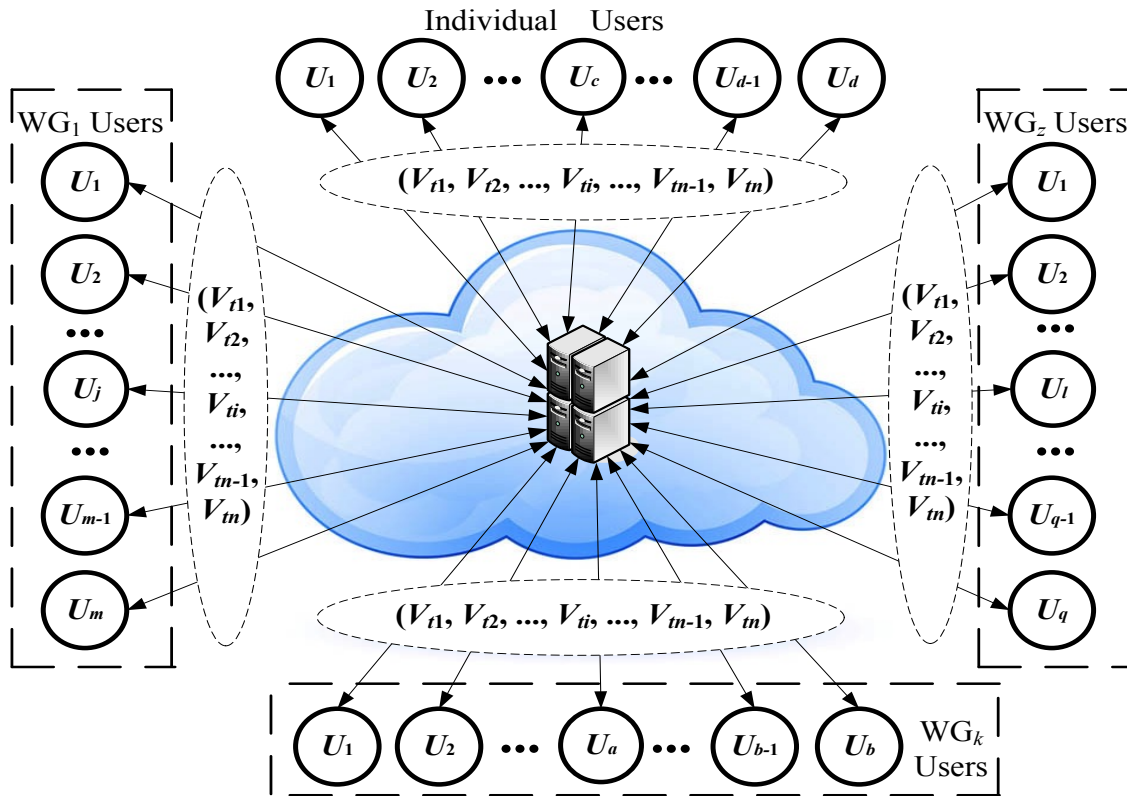


Fig. 2. Model of voice/sound traffic exchange between individual users and users workgroups using cloud technologies

Let in data transfer network (local or based on cloud technologies) it's necessary to process voice/sound data, incoming from n devices, appliances and so on. In the general case these devices it's possible to subdivide to

t subtypes for getting of exact values of each subtype devices influence for network and equipment with digital interfaces loading during network exploitation or its upgrading planning, when certain number (k) of each subtype devices exists already or may be planned for installation, meanwhile $n = \sum_{i=1}^t k_i n_i$.

In the general case volume of transferring data V_f and minimal demanded data transfer network segment or internetwork (Internet) channel bandwidth B_f are accordingly

$$V_f = \sum_{i=1}^n V_i, \quad (1)$$

$$B_f = \sum_{i=1}^n B_i, \quad (2)$$

where V_i – volume of data, transferring to control computational system (local or cloud) from i -number device.

B_i – data transfer network bandwidth, demanded for data transferring from i -number device.

Implementation of one or more local control computational system allows to reduce expenses for cloud system model choosing taking into consideration following parameters: necessary processor(s) productivity, random access memory volume, data store volume and productivity and to minimize expenses for Internet channel rent. Local control computational system may be used if some users use the same network (cloud) service but simultaneously work in the same local network. Detailed analysis of technical and organizational requirements and mathematical expressions, dedicated to cloud educational resources development and implementation, described in paper [Shapo, 9].

Conclusion

The final purpose of the learner-centered education in distant mode using the selected, created platform is to instill a mindset of lifelong learning in others. Distant educators should focus on the notion: what makes a difference in content retention and transfer is not so much what is done by teachers, but what students as learners can be encouraged to do themselves.

In this paper very actual and perspective approach on implementation of modern information and cloud technologies and distance learning (e-learning) in English language studying in maritime branch is proposed. This approach will allow to enhance the quality of language studying, to wide the horizons of trainees getting new knowledge and virtual acquaintances at studying process, to dive into language deeper thanks to the inclusion of a variety of accents and speaking styles of people from different countries and continents, to attract and gather more potential participants of this project. From technical point of view proposed some mathematic expressions, which allow to calculate most significant characteristics of such cloud systems like processors performance, memory volume, data storage system performance and volume, to choose optimal model of exploitation taking into consideration price/quality (expenses/performance) ratio, specialized software using at bottle necks analyzing at different modes of proposed system loading. Also it's important to

recognize that raised problems and challenges are only the tip of the iceberg and that this branch offers a vast field for further investigation.

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Fundamental Dialogues for Improved Communication in Mixed-Cultural Environment On-board

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Abstract Almost all ships engaged in ocean-going trades have more than 2 different nationality of crews. Consequently it is urgent to train and nurture ships' crews to respond to the globalization in the shipping industry for maritime communication skills and global cultural capabilities. This paper intends to explore the fundamental dialogues during ships' daily work through literature survey, interviews and questionnaire survey. First of all, the authors reviewed some Maritime English(ME) text-books to find out most common works & dialogues for ratings. In the meantime, the authors interviewed shipowners who employ foreign crews, crew management personnel and crews who work on the ships. Finally, made questionnaire survey to weigh the importance and frequency of the essential daily tasks which is performed on a vessel as well as required communications. The fundamental dialogues based on daily-tasks groups should be identified in next step.

Keywords: *daily tasks, mixed-cultural environment, communication, globalization, cultural difference, interview, questionnaire survey*

Introduction

In 1991, Korean shipping industry started to employ foreign seafarers to overcome the shortage of skilled ratings. The number of foreign seafarers were being increased continuously, and reached to 25,301 seafarers (2,503 Officers and 22,798 Ratings) at the end of 2017.

The foreign seafarers account for about 40% of seafarers on Korean flag ships, and they have been increased 12% every year while Korean crew has been decreased 0.5% annually.

The communication difficulties and cultural differences in multinational vessel can lead to great and small marine incidents. In reality, great and small incidents have not stopped on board, especially on fishing vessels. Therefore there is an urgent need to train and nurture ships' crew to respond to the trend of globalization in multilingual shipping industry as mandatory requirements for maritime communication skills and global cultural capabilities in coastal vessels too.



In this research, we conducted a number of interviews with Korean coastal shipping companies which currently employ foreign crews, and with crews on board for the purpose of analysing the status of communication between Korean and foreign crews and grasping the actual needs for fundamental dialogues to improve understanding each other working under cross cultural environments.

The shipping companies employing foreign crews answered that they sincerely welcome the system of educating foreign language focused on fundamental dialogues. Especially, as for Korean vessels where Korean and foreign crews are mixed together, it was found that foreign crews who are able to communicate in Korean despite basic skills like satisfying minimum standards are expected to contribute to efficient and positive shipboard working environments and the prevention of marine accident arising from communication problems and different cultures.

On top of that, these employers emphasized that once foreign crews become capable of partaking in basic Korean conversation aboard ships, they would really prefer those crews and be eager to employ continuously and give additional encouraging system such as incentive wages.

Even though the crew answered that common working language on the ships is English, but their English proficiency is not sufficient including foreign crews. Their shipboard life seems not good for communication, i.e., insufficient time to talk with foreign crews due to ships' tough works and schedules (Altaf, 2007). The crews answered they tend to get along with crews from the same nationality, that is, Korean with Korean and Myanmar with Myanmar only.

Secondly, there always seem to exist risks with regard to near-miss or accidents on the ships resulting from difficulty in communication with each other. More seriously, these crews did not tend to think of miscommunication or language barriers as serious. Also, besides English, almost none of foreign crews were able to communicate using Korean, even for the simplest conversation such as greetings. Unfortunately, they scarcely have intention or willing to study basic Korean, either. For this reason, many Korean crews, especially relatively old felt that it is seriously necessary to understand fundamental dialogues of each other not only in English but also in Korean due to their vulnerability to foreign language.

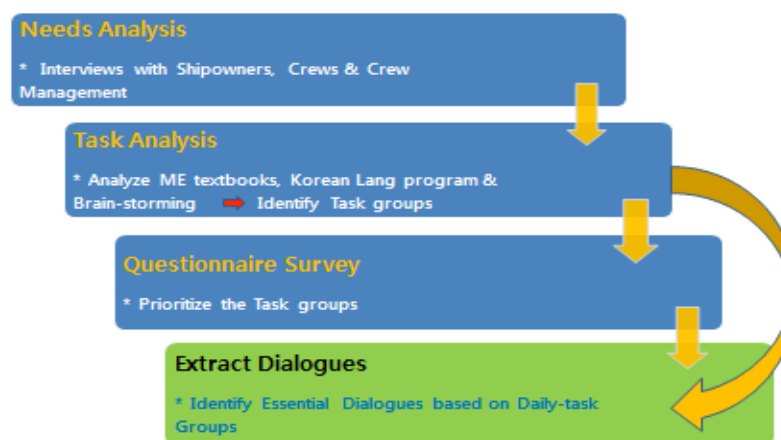


Fig. 1 Flow chart of research procedures



Consequently, this study intends to suggest some fundamental dialogues during ships' daily works for ratings to enhance the ability of communication between Korean and foreign crews.

Chapter 2 reviewed the Maritime English and Maritime Korean textbooks and teaching materials to identify most common task groups which are carried out on board. Then we conducted questionnaire survey in Chapter 3, to find out the importance and frequency of the daily-tasks which were identified in Chapter 2. Fig.1 shows the overall procedure of this study.

Literature Survey

Maritime English

Four(4) Maritime English(ME) textbooks used in higher maritime education and training (MET) institution were reviewed to extract common subjects which were in the books. First, we examined the title (name) of each unit, which are described in the table below.

Each textbook stated above is composed of 13~15 units, and as <Table 1> shows although each textbook adopted different method of organizing they have similar contents.

Table 1 Composition of units in ME textbooks

	T.N. Blakey	Luo LI	T. Grice	A. Ferreira
1	Shipping	Joining and leaving Ship	Ship Knowledge	Alphabet & Numbers
2	Ship Types	Ship Familiarization	Crew	Sailors & Mariners
3	Ship Construction	Safety Onboard	Getting Underway	In Port
4	Manning	Preparing for Arrival and Departure	Nautical Charts	Ships
5	Seamanship	Safe Working Practices	Navigation	On Board
6	Cargo Work	Environment Matters	On the Bridge	On a Sea Chart
7	Navigation	Meeting with Shore Personnel	In the Engine room	Movement, Positions
8	Main Engines	Health and Medical care	Meteorology	Pilot On-Board
9	Auxiliary Machinery	Navigation Watchkeeping	Distress	The Weather
10	Maintenance	Engine Room Watchkeeping	Medicine	Health Matters
11	Safety Aboard	Deck Maintenance	Rules of the Road	VHF Basics
12	Communication at Sea	Engine room Operation & Maintenance	Passenger care	VHF Routines
13	Radio Communications	Response to Emergency	Pilots	VHF Priorities



14	Shipboard Electronics	IMO Legislation Requirements	Berthing	
15		Going Ashore	Cargo	

Contents that are included in common are as in the following. First, content regarding 'emergency situation (distress, fire, attacks by pirates etc.)' is found in all four books. Details are rescue facilities, emergency procedure, emergency signals etc. Moreover, units that explain 'Types of ships and names of ship parts' are also included in all four books. Second, common contents in three textbooks are 'organizations of ship crew(position and duty)', 'navigation(navigating instruments, routes)', 'safety(injury, first aid, saying about symptoms)', 'maintenance of deck and engine room', 'arrival and departure', 'weather(visibility)'. Third, common contents that are included in two books are, 'cargo works', 'watchkeeping', and 'sea chart'.

Maritime Korean

Although ME textbooks are a good material to find out the fundamental tasks, the textbooks examined above are designed for university cadets. Therefore it is difficult to extract tasks of ratings.

Since the history of Maritime Korean education is comparatively short and most of the textbooks are in-house material, we can get only two materials edited by the crew manning agent (Table 2). The textbooks of Maritime Korean (MK) made by the agents are aimed at foreign crews who are all ratings working on a coastal vessel.

Table 2 Composition of units in MK textbooks

Ⓐ company		Ⓑ company	
1. Deck	1. Navigation	1. Life on board	1. Keep Manner
	2. Cargo work		2. Ask questions and answer
	3. Arrival & departure		3. Speak feeling
	4. Ballasting		4. Keep health
	5. Chipping	2. Safety Drill	1. Fire & Water fighting
	6. Painting & Cementing		2. Lifesaving & Abandon drill
	7. Cleaning up the deck		3. Ask for help
2. Engine room	1. Maintenance & repair	3. Working on deck	1. Port entry(1)
	2. Arrival & departure		2. Port entry(2)
	3. Bunkering		3. Cargo work
	4. sludge, bilge disposal		4. Sailing
	5. Welding		5. Chipping
	6. Arranging		6. Repair & Maintenance
	7. Cleaning		7. Cargo hold cleaning

3. Living area	1. Galley		8. Loading & discharging ballast or liquid cargo
	2. Crew organization and manner		1. Port entry & sailing
4. ISPS		4. Working at engine room	2. Repair & Maintenance
			3. Bunkering
			4. Welding & fitting
			5. Arranging & Cleaning
			1. At galley
		5. Cooking & dining	2. Mess room
			3. Receiving guests

As mentioned earlier, MK textbooks are made for foreign ratings working on a coastal vessel. Therefore these textbooks contain the contents that describe rating's practical daily tasks on deck or in engine room, such as 'chipping', 'painting' and 'cleaning up the deck' etc. For the same reason that the target of ME and MK textbook is different, even though the name (title) of unit is same it contains different contents. For instance, the unit 'Navigation' describes how to describe the passage plan, how to give headings or how to explain the routes in ME textbook.

However, on MK textbooks unit 'Navigation' includes contents about navigational watch and assist officers. Meanwhile, similar contents are also found in both textbooks. Contents regard to 'emergency situation' of all four ME textbooks above, appears as 'safety drill' on MK ⑤. In addition, 'maintenance of deck and engine room', 'arrival and departure', 'cargo work' are included on both ME and MK books.

Through analysing ME and MK textbooks, we were able to get a general idea of tasks that are accompanied by conversation. Add to this, through the brainstorming of researchers and experts, we identified 10 task groups of deck part and 7 categories of engine part. Details are shown below in Table 3.

Table 3 Task groups

	Deck Part	Engine Part
1	Meeting	Meeting
2	Deck repair and maintenance	Engine room repair and maintenance
3	Navigational watch	Engine room watch
4	Arrival	Arrival and departure
5	Departure	
6	Cargo operation	Receipt and transfer of fuel/lubricating oil
7	Cargo watch	-
8	Gangway watch	-
9	Drill and training	Drill and training
10	Other duties	Other duties

Questionnaire Survey

Questionnaire configuration

In order to weigh the importance and frequency of tasks which were identified above, we have carried out questionnaire survey targeting crews on coastal vessel in August, 2017. The score scale for each sub-task is divided into five scales, so that the respondents are able to mark the importance and frequency of their tasks as score scale. Fig. 2 is an example of the questionnaire to derive a fundamental dialogue.

Duty Categories	Details	Importance of duties			Frequency of duties		
		not important at all	↔	very important	do not perform at all	↔	perform very often
(1) Meeting	Responding to orders and instructions	①	②	③	④	⑤	① ② ③ ④ ⑤

Fig. 2 The example of the questionnaire

The result of the survey

In this research, a total of 314 questionnaires were distributed to the crews of 23 ships, and 211 questionnaires were collected to record a recovery rate of 67.2%. Table 5 is a general characteristic of the respondents. The respondents were 60 deck officers (28.4%), 74 deck ratings (35.1%), 56 engineer officers (26.5%) and 18 engine ratings (8.5%), and the average age was about 34 years old.

Table 4 General characteristics of the respondents

Characteristics			Frequency (%)
Position	Deck Part	Officer	60(28.4)
		Rating	74(35.1)
	Engine Part	Officer	56(26.5)
		Rating	18(8.5)
	Other		3(1.4)
	Total		211(100)
Average Age (year)			34

For the comprehensive analysis of the importance and frequency of sub-tasks, each score was arithmetically averaged and added together to derive final priorities for the work. Fig. 3 shows the comprehensive analysis results of departmental duty categories

Although the composite scores on deck part and engine part were slightly different, both showed higher score on task of 'Arrival & departure' and 'Watch'. Table 5 and Table 6 show the priorities from 1 to 20 using the score of the sub-tasks.

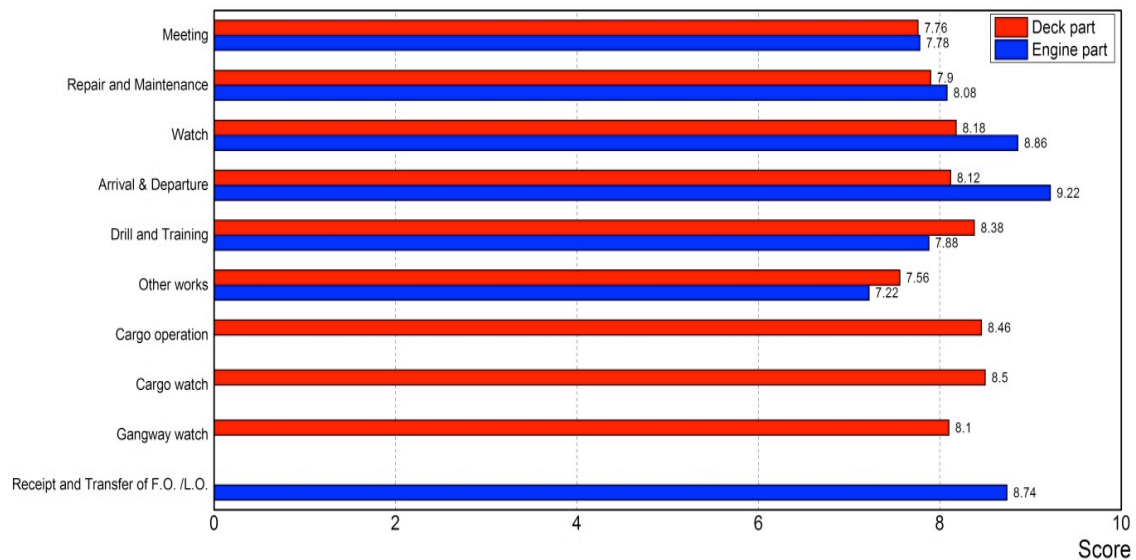


Fig. 3 The composite score of task categories

Table 5 The priorities for sub-tasks of Deck department

Priority	Category	Sub-tasks	score
1	Cargo Operation	Opening/Closing the hatch cover	8.74
2	Watch	Look-out	8.72
3	Watch	Taking over the watch	8.64
4	Cargo watch	Handing over the watch	8.62
5	Cargo Operation	Opening/Closing the hose valve	8.61
	Cargo Operation	Connecting the shore cargo hose	8.61
7	Cargo watch	Taking over the watch	8.59
8	Drill and Training	Notification of the start and end of the drill	8.54
	Arrival & Departure	Mooring operation	8.54
10	Cargo watch	Report of any abnormal situations	8.52
	Drill and Training	Spraying water with use of fire hoses	8.52
12	Watch	Handing over the watch	8.49
	Meeting	Responding to orders and instructions	8.49
14	Arrival & Departure	Unmooring operation	8.48
15	Repair & Maintenance	Recording a ballast tank sounding	8.43
16	Watch	Assist in steering	8.42
	Drill and Training	Lowering / hoisting of a life boat	8.42
18	Cargo watch	Reporting on visitors	8.37
	Cargo Operation	Cleaning the hold(Hold cleaning)	8.37
20	Cargo Operation	Setting the accommodation ladder	8.36

Table 6 The priorities for sub-tasks of Engine department

Priority	Category	Sub-tasks	score
1	Watch	Checking L.O quantity of M/E, G/E and etc.	8.74
2	Arrival & Departure	Assist in preparation for running M/E	8.72
3	Arrival & Departure	Checking any oil or water leakage	8.64
4	Watch	Report of any abnormal situations	8.62
5	Watch	Checking the machinery in operation	8.61
	Receipt & Transfer of F.O/L.O	Checking any leakage	8.61
7	Watch	Checking any oil or water leakage	8.59
8	Repair & Maintenance	Wearing PPE	8.54
	Watch	Draining compressed air tank	8.54
10	Watch	Checking the water level of the boiler	8.52
	Receipt & Transfer of F.O/L.O	Closing each scupper	8.52
12	Watch	Cleaning strainers and filters	8.49
	Repair & Maintenance	Identifying the name and purpose of tools	8.49
14	Watch	Checking the bilge and sludge tanks	8.48
15	Repair & Maintenance	Confirmation of the work from an engine officer	8.43
16	Watch	Draining fuel oil tank	8.42
	Receipt & Transfer of F.O/L.O	Preparation of pollution response materials	8.42
18	Repair & Maintenance	Report of the process and result of the work	8.37
	Receipt & Transfer of F.O/L.O	Monitoring the mooring status of a supply boat	8.37
20	Receipt & Transfer of F.O/L.O	Measuring the level of fuel oil tank for remainder	8.36

In analysing of the duty categories and sub-tasks, the fundamental dialogues of the Deck part appeared as a conversation in the cargo operation, cargo watch and navigation watch duties. While ‘cementing’ and ‘welding job’ in ‘repair and maintenance’ task are marked relatively low score.

Also, in the case of the Engine part, the dialogue conducted during engine room watch, receipt & transfer of fuel/ lubricating oil, repair & maintenance, and arrival & departure work were identified as fundamental dialogues. On the other hand, ‘assist in cleaning tanks or cargo holds of deck part’ and ‘assist in repair and maintenance of fresh water generator’ are evaluated as less important than other jobs.

Summary and Conclusions

Before everything, the necessity to learn fundamental dialogues under a cross cultural and multilingual environment should be taken into account in order to understand each other, get



friendly and connected together while working on the same ship. These would include basic expressions such as greetings, name of tools and works, verbs and other essentials.

Surprisingly, it was revealed that the language barrier looks more serious among multilingual crews than expected through the interview. Moreover, their Maritime English proficiency is not enough to communicate effectively even though they answered that English is the common working language on ships. In addition, the use of slang by Korean crew worsen the situation, i.e. ‘O-Hamma’ (sledge-hammer), and many others.

Ten(10) most-common task groups of Deck part and seven(7) categories of Engine part were identified through the literature survey of Maritime English & Maritime Korean textbooks and teaching materials, and brainstorming steps. The most-common task groups of Deck part are Navigation watch, Cargo operation, Cargo watch, Arrival/departure, and etc., while Engine room watch, Receive/Transfer FO/LO, Repair & maintenance, and etc. in Engine part.

The questionnaire results provide the weight (score) on each sub-task, which indicates the importance and frequency of the sub-tasks. The higher score means more important and frequent task.

‘Opening/Closing of Hatch cover’, ‘Look-out’, ‘Taking over/Handing over the Navigation watch’, ‘Opening/Closing Hose valve’ are the top five(5) sub-tasks in Deck part. On the other hand ‘Check LO quantity’, ‘Assist in preparation for running ME’, ‘Check oil/water leakage’, ‘Report abnormal situation’ and ‘Checking machinery operation’ are the most important sub-tasks identified by the questionnaire survey.

Nonetheless, all of crews who had the interviews agreed unanimously that it would be very helpful to prevent accidents and increase efficiency of shipboard works once crews get to know fundamental dialogues of foreign languages at hand. The detailed dialogues will be developed in next step of research.

It is absolutely necessary to establish professional and systematic program of teaching basic foreign languages prior to working on the ships. This issue should be approached together with considering other social and cultural points such as foods and shipboard lives as well as language communication.

Additionally, managerial officers of companies, and governments need to pay attention to how to overcome existing problems as an effort to prevent marine accidents and enhance maritime safety and efficiency, because more problems are expected to come up as crews get older and many positions are replaced by foreign crews in addition to more and more multilingual and multicultural shipboard environments.



Acknowledgements

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INTERNATIONAL MARITIME ENGLISH EDUCATION IN THE CLASSES IMPLEMENTED BY JAPANESE AND TAIWANESE INSTRUCTORS

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Abstract The maritime technology departments in the five National Institute of Technology (NIT) colleges in Japan namely Toyama, Toba, Hiroshima, Yuge and Oshima College have been working together to improve the ability of Japanese students and instructors to use Maritime English without any trouble. The English study and training program has been performed at NYK (Nippon Yusen Kabushiki Kaisha) - TDG (Transnational Diversified Group) Maritime Academy (NTMA) in the Philippines and has been referred to as the “NYK project” since 2015. We decided to join the project with Japanese students and instructors. Aside from the students’ English training, we, Japanese instructors, were given several chances to give lectures to Filipino students. This paper reviews how the English training and teaching experience worked for Japanese instructors at NTMA. For the second step, one of the NIT colleges, Oshima College, invited a professional instructor from National Kaohsiung Marine University in Taiwan. We requested him to conduct the technical educational program and onboard ship training simulation in English based on STCW (*Standards of Training, Certification and Watchkeeping for seafarers*). We conducted a survey questionnaire amongst the Japanese students, and analyzed the students’ thoughts about English and the invited foreign instructor depending on each year and



course. The results reflect how we should prepare course information and understandable topics as well as teach skills by using the active learning style.

Keywords: *Maritime English, NTMA, STCW, NIT maritime colleges*

Introduction

Maritime officers are specialists handling ship navigation and maritime engineering. As for international maritime officers, a deep knowledge of theory, operating skill and maintenance for the ship is a very important requirement for them. Aside from that, they should speak English for internal or external communication between ship to ship or ship to shore. Actually, in practice, almost of all seafarers have different nationalities.

All Japanese teaching staffs focus on how to teach maritime English effectively. All training in maritime technology departments like the course ‘Boat Handling, Experiments and Practice’ and Onboard Training are conducted in the Japanese language, but actually they should speak English for internal communication on merchant ships in the future. There is no doubt about that.

The maritime technology departments in the five NIT colleges in Japan have been working together to enhance the motivation and ability of the students to be international maritime officers and ship managers at sea [1]-[3]. We decided to bring the Japanese students to NTMA in the Philippines for short-term English training. The purpose is to experience the importance of English by living with Filipino students of the same age who are strongly aiming to be seafarers. NTMA promotes the standards in maritime education based on a variety of teaching methods delivered by highly qualified faculty members. We, Japanese instructors were given several chances to give lectures to Filipino students who are involved in maritime technology. It is very important for Japanese teachers who are non-native English speakers to practice teaching maritime technical subjects in English. It must be connected with students’ motivation for English studying. This paper reviews how the English training and teaching experience worked for Japanese students and instructors at NTMA.

For the second step, one of the NIT colleges, Oshima College invited a professional instructor from National Kaohsiung Marine University in Taiwan. We requested him to conduct the technical educational program and onboard ship training simulation in English based on STCW (*Standards of Training, Certification and Watchkeeping for seafarers*). We collected the data from the questionnaire for the program, and analyzed the students’ thoughts about English and the invited foreign instructor depending on each year and course. The results reflect how we should

prepare the course information and understandable topics as well as teaching skills by using an active learning style.

Ph



We concluded that the international Maritime English program in the Philippines and Japan was successful to enhance students' motivation to study English and teachers' professional English communication ability. Thus, the practice of international Maritime English education in the classes should be affordable for teachers and students in maritime colleges in Japan.

Teaching in English on technical subjects at NTMA

NYK-TDG Maritime Academy (NTMA) in the Philippines promotes standards in maritime education through a competency-based and maritime industry-driven curriculum that employs a variety of teaching methods delivered by highly qualified faculty members.

During the first half of the stay, the Japanese instructors, Jongdoc Park and Osami Yanagisawa had a chance to be a school inspector sitting in the classes, and Japanese students acted as a temporary participants. Photo 1 shows the lecturing view at NTMA illustrating the U-shape seat arrangement. This arrangement in the classroom is totally different from the Japanese style.

A non-native English speaker NIT instructor gave lectures in maritime technical subject such as Marine Auxiliary Machinery engineering in English at regular classes. Also a NIT instructor gave a presentation of Japanese culture and geography in English for all NTMA students. They



listened intently to the class discussion, and there was an exchange of ideas. They raised questions and participated in the class discussion.

At NTMA, the classes were conducted in various ways, such as students' discussion, presentation and exercises with the instructor. During most of the classes, the instructors give their lectures using visual methods such as Powerpoint, Video, etc. to raise the students' understanding on the subject matter.

Questionnaire to the Filipino students on how they evaluate the invited lecturer from NIT

The question lists are as follows:

- Q1. Is the lecturer's teaching well-organized?
- Q2. Are you interested in the topics of the lecturer?
- Q3. Have you understood the content of lecture?
- Q4. Are you completely satisfied with the lecture?
- Q5. Is the lecturer's English effective?
- Q6. Is the lecturer's attitude (gesture, posture, and eye contact) effective?

For the feedback on the lecture at NTMA, we asked the Filipino students to select one number from a scale of one to five (see below) for each question:

- 1 = very disagreeable
- 2 = disagreeable
- 3 = neither disagreeable nor agreeable
- 4 = agreeable
- 5 = very agreeable.

Figure 1 shows the average values for each question. A NIT instructor gave lectures three times for each of classes in Crankshaft, Flywheel, and Journal. They were all 3rd year students and 81 students in total. The class Journal got the highest score while the Flywheel got the middle score, and the Crankshaft got the lowest score. This means that the NIT instructor (lecturer) had become used to teaching in English in the classes. The lowest score shows in the Q3 as shown in the figure. That is why the students do not completely understand the content of lecture. Lectures aren't just boring. They are ineffective too. Overall, they gave high values to the invited lecturer.

Figure 2: The results from all 3rd year students at NTMA

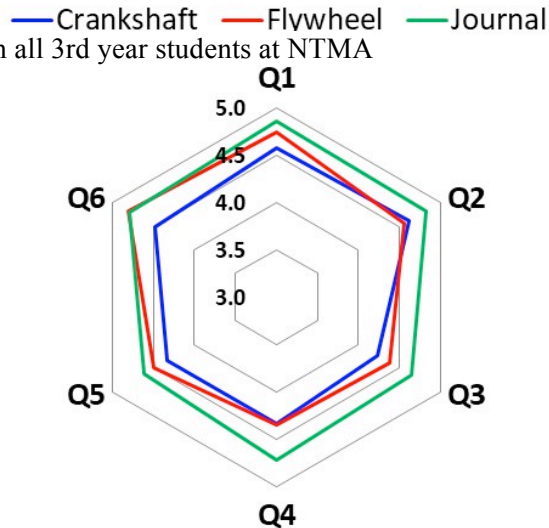


Figure 1: Average values to each ques

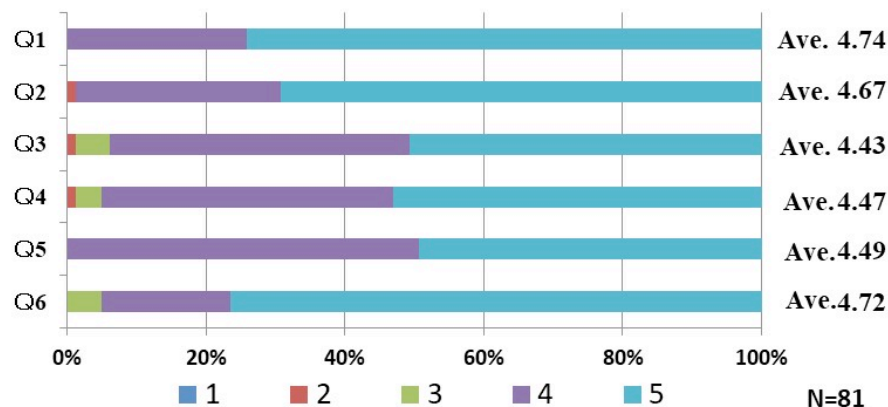


Figure 2 shows the average values for each question to the different way. For example, as for the Q1 (Is the lecturer's teaching well-organized?), the color of purple which indicates number 4 shares about 25% and the sky blue indicating number 5 shares about 75% of 81 students in total. As a result, it is a fairly high score and a good indicator that NIT did well in the lecture. The Filipino students generally gave high values on number 4 or 5 (means agree or very agree for questions) of 90% in total number. The several students agreed on giving a lower score for Question 2 to 4 (means slightly not interested in the topics of the lecture). There are only two colors in Q1 and Q5. This means that the students do agree or very much agree with that the

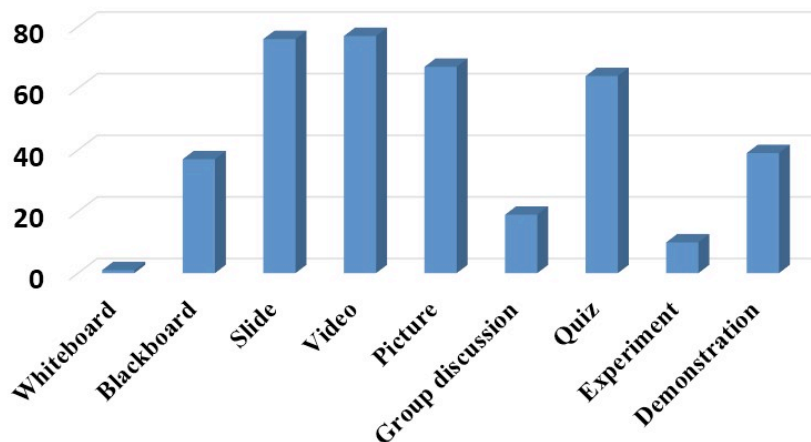


lecture's organization and the lecturer's English was effective. We learned a lot from the results as to how we should prepare the interesting and understandable topics as well as teaching skills by using active learning.

Figure 3: Effective teaching methods in the class at NTMA

In addition, Figure 3 shows what kinds of teaching methods are effective in the class. Students think the use of video is one of the most effective tools in teaching. They prefer a prepared visual presentation such as Slide, Video and Picture. The trend of preference of students on digital material or media is an indicator of people's fondness for social media. They also want some games or ice breaker to be incorporated in the lesson. That's why the quiz category ranked number 4. The demonstration is also chosen by the student because this activity involves people moving about and doing something in practice.

Teachers don't have to use the same teaching methods all the time. For the purpose of variation, the teacher has to use different teaching methods so that students won't get bored in the class. The following illustrates the students' comments about the invited lecturer from NIT.



NTMA student's comments for the NIT lecturer in the classes

- *We would like to recommend that more sample quizzes and activities*
- *Icebreaking for the class needs for the long discussions*
- *More video or demonstration on each topic will be understandable*
- *It would be better adding some catching slides that will energize the students*
- *You could give some personal experiences on-board*

- *It will be more effective if more examples, videos and pictures will be used.*
- *Sometimes we must proceed to the engine room to demonstrate the actual process*
- *It would be better if you will make your voice louder*
- *We suggest more animation and more interesting examples like the superman example*
- *Before your talk, you need to find out the things what the students didn't know.*
- *You may also ask first what are the student's pre knowledge to know where to start the lecture*
- *Some pictures could not be seen and should speak more clearly*
- *There should be some ice breaking and fun discussion to have it lively like having group activities*
- *It would be much better if there are more examples and seat works*
- *We needed additional video presentation and more examples for calculations*
- *We would suggest that some difficult problems must be elaborated for the understanding to everyone*
- *Let the students answer the problems to see if they know how to solve it*
- *We could not understand clearly the statement of the lecture in English.*
- *Having a little joke in the class is good to keep the class good mood*

Maritime English Seminar in Japan

For the second step, one of the NIT colleges, Oshima College invited a professional instructor from National Kaohsiung Marine University in Taiwan (see Photo 2). We requested him to conduct the technical educational program and onboard ship training simulation in English. He was also a non-native English speaker like the other Japanese teachers, so English was the only means of communication in the class. The students were able to identify the maritime technical professional words used in every subject, and to determine the meaning of the maritime



Photo 2: Seminar view at Oshima College



terminology and their functions in the classes. For speaking comprehension, students were assigned to do a group activity where they have to make a plan on what to do. They had to speak in English and use some maritime terms correctly while doing the task.

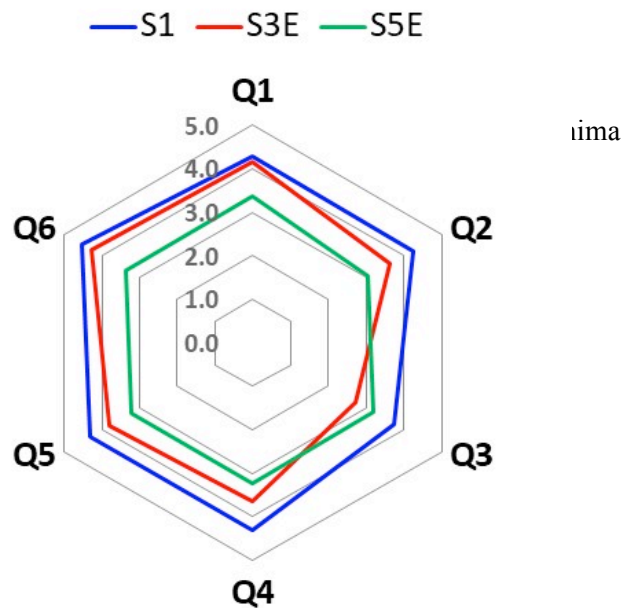


Figure 4: Average values to each q
College

Questionnaire for the invited lecturer from Taiwan in Japan

We conducted a survey questionnaire in the Japanese classes on how the Japanese students evaluate the Taiwanese lecturer. It is the same survey that we did in the Philippines.

As shown in Figure 4, you can see a hexagon chart. S stands for shipping technology department, and the number stands for the year level of the students. E stands for the course in the department which is the engineering course. Each year level is represented by the color blue, red, and green. Q1 to Q6 means questions 1-6. Inside of it is the score from 0 to 5. The S1 shown with blue color got the highest score from Q1 to Q6 in the chart. While the S3E shown with red color evaluated the second high score overall, but as you can see in Q3 (Have you understood the content of lecture?) they have got the lowest score among the other group. S3 students have not yet mastered the basics of the professional subjects, so the content seems to be difficult for students to understand in English. The S5E shown with green color had a consistent low score from Q1 to Q2 and Q4 to Q6, but only in Q3 their score is a bit higher than the red color. The results speak for



the fact that the lower year level of Japanese students are interested in English lecture and they are very satisfied with the invited lecturer. However, as the grade level become higher, their evaluation becomes worse.

Questionnaire about learning English for Japanese students

The question lists are as follows:

Q7. Do you feel the need to learn English?

Q8. Do you hesitate to speak English in public?

Q9. Do you think that your English ability in the class is more than "Average"?

Q10. Do you have opportunities to expose you to English?

Q11. Do you think that an Active Learning style lesson is necessary rather than conventional lecturing style lesson?

For the feedback on the lecture, the Japanese students chose one number from the scale of one to five (see below) for each question:

1 = very disagreeable

2 = disagreeable

3 = neither disagreeable nor agreeable

4 = agreeable

5 = very agreeable.

Figure 5 shows the survey for Japanese students about learning English in the shipping technology department. It is shown in this graph how students responded to the survey. As you can see in Q7, the majority of the students strongly agreed that learning English is very important, which means the Japanese students are very interested to learn English. In Q8, the opinion of the students are divided. Only a few students are confident enough to admit that their English skills are good and that they would not hesitate to speak English in public. In Q9, students answer from maybe to “NO”, meaning they don't think that their English ability in the class is more than average. Q9 leads Q10. In Q10, students' opinions are divided but the rating is almost equal from ‘strongly disagree’ to ‘strongly agree’. In Q11 finally, students respond from maybe to “YES” meaning a majority of the students believe that Active Learning style is necessary than conventional lecturing style, even though Active Learning style lesson is not common in Japan.

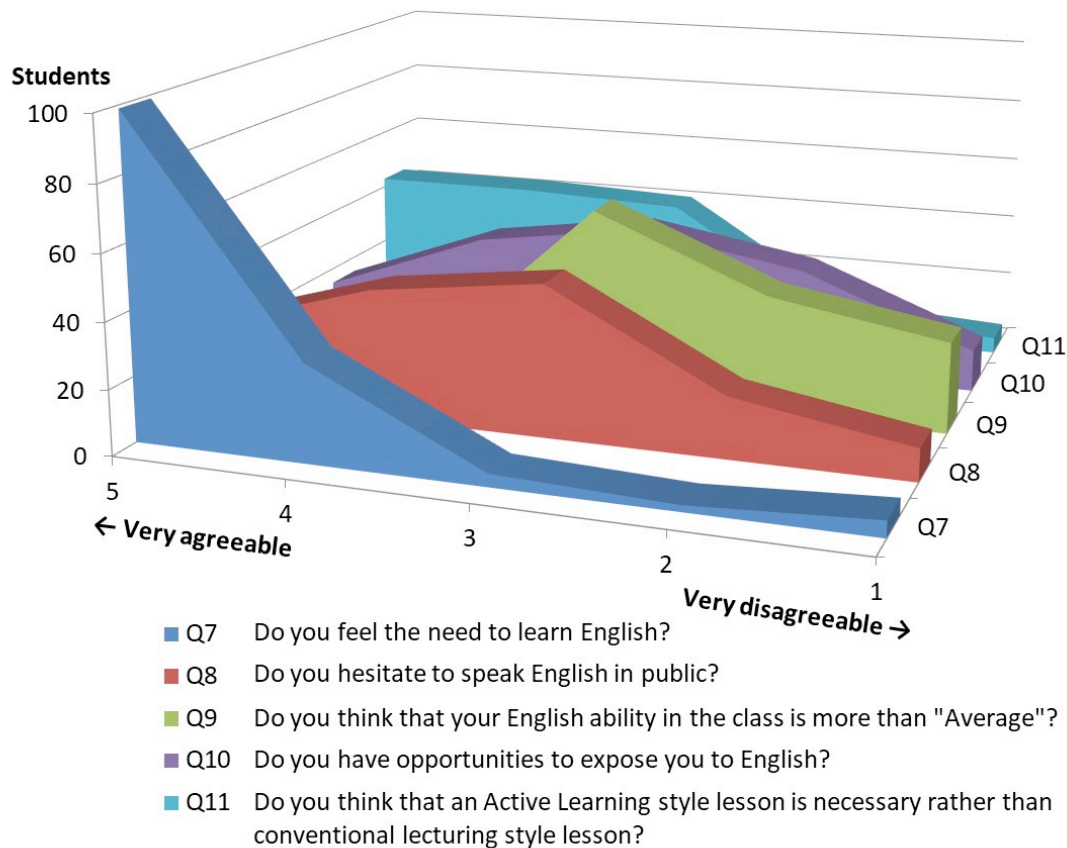


Figure 5: Questionnaire results for the shipping department

Self-evaluation vs year level of Japanese students about English

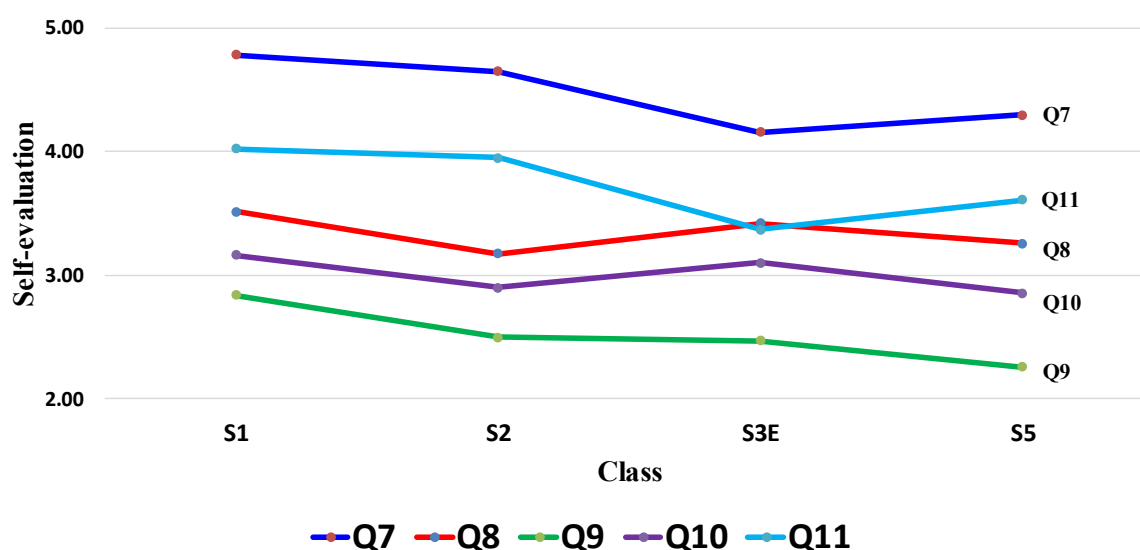
As you can see in the Figure 6, it shows the self-evaluation vs year level of Japanese students about English in the shipping technology. The Y-axis is represented by self-evaluation. You will see a score range of 2.0 to 5.0. On the other hand, the X-axis is represented by the year level of the students from S1 to S5. The S4 is omitted because they had shipboard training. Q7 to Q11 represent the question lists. Q7 obtained the highest score while Q9 got the lowest score. The students desire to learn English because of the following reasons: 1. Inspiration. They are in shipping technology and they will be using the English language when they become seafarers in the future. 2. Globalization. They might consider working in a foreign country so they really think English is important for them. Q11 ranked second from the highest. Active learning is necessary



for their study since there is interaction between the student and the teacher. In this way, they can practice expressing their thoughts about a particular topic and also they can participate in the discussion. For Q10, the students have little opportunity to expose themselves to English. They have experience like engaging in the International Exchange Program and Internship at the upper level. The reason for obtaining a medium score is that the opportunity to go abroad is not enough.

Figure 6: Self-evaluation vs year-level of Japanese students about English in the shipping technology department

For Q7, the S1 students obtained the highest value as compared to other levels. Q9 has the similar trend in slope with Q7. This shows that the desire for the S1 is higher among the other levels. Everything that they learn in Junior High School is perhaps still fresh in their minds so they are enthusiastic to learn more about English. However as the year progresses, the slope gradually goes down, perhaps due to lack of enthusiasm. Their interest for learning English gradually fades away because their focus is now diverted to the professional subjects. Hopefully, at the upper level students can join the International Exchange Program and Internship, so they will have the desire again to learn English.



Conclusions

Through the International Maritime English Education in the classes, teachers could improve the management and teaching skills of professional subjects in English, and also students could



learn professional Maritime English. For the students, it is expected that the passing rate of CoC and TOEIC score will improve as a result of English training. The instructor from Taiwan had gained Maritime English Education experience in Japan where non-native English speakers are, so we were able to obtain mutual effects. The questionnaires for the training were reported to prove their comprehension about Maritime English [7]-[11].

However, the motivation to learn English passively cannot last a long time, and it disappears as time goes by. Only the learner's inner desire to improve is stimulated strongly, and this could be the real source of learning English. At the same time, teachers should, without doubt, meditate on the course information to fit students' needs.

Japanese people are not English native speakers and the medium of instruction in schools is not English. Exposure is important because it is one of the effective ways of applying and using the English language. Learning is an active process and is activated by the learners. The learners are the center or the key players in the teaching-learning process. All the activities or learning experiences should be Active Learning style to assist in teaching such as applying charts or tables, using videos, websites or computer simulators, and collaborative learning or peer tutoring etc. Consequently, Japanese students will gain the desire to learn English if they are willing to join the International Exchange Activities and Internship programs that are now offered by each Japanese maritime college.

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Maritime English for mechanical engineers in MAAP: a review of the Bridging Course

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Abstract

The demand for competent and qualified marine engineers on ships has led to the recruitment and training of the mechanical engineering graduates to take the bridging program for marine engineering in the Maritime Academy of Asia and the Pacific. The student has to enroll in 13 professional courses including Maritime English, leading to the degree of Bachelor of Science in Marine Engineering. This study evaluates the course content of Maritime English for Marine Engineering in addressing the competencies required to be learned by the mechanical engineer graduate. The results showed that competencies are achieved with the teaching-learning activities used or in the assessment. However, SMCP is not sufficient for the students to learn more the maritime vocabulary specifically on troubleshooting. Simulation or role play of scenarios contributed strongly to language practice. Writing reports and more simulation speaking exercises are recommended to be increased in the course time allocation.

Keywords: *Maritime English, bridging course, learning outcome, teaching-learning activities*

Introduction

The demand for competent and qualified marine engineers on ships has led to the recruitment and training of the mechanical engineering (ME) graduates (<https://www.marineinsight.com/careers>) to take the bridging program for marine engineering (MarE) in the Maritime Academy of Asia and the Pacific. The Philippine government and private entities have responded to the labor-related demand. The Commission on Higher Education (CHED) issued the Memorandum Order 38, Series of 2005, prescribing the pre-qualification for mechanical and electrical engineers as candidates to the marine engineering bridging program (www.ched.govt.ph). This allows all graduates and licensed mechanical and electrical engineers to become a marine engineer after completing some academic units required to earn the degree in Bachelor of Science in Marine Engineering. In support of this professional or career development of the Filipinos, the Overseas Workers Welfare Administration (OWWA) has offered scholarship grants to those qualified beneficiaries in enrolling for the Bridging Program for Marine Engineering. Only a few institutions in the

country offer the bridging program, and one is governed by the Associated Marine Officers' and Seamen's Union of the Philippines (AMOSUP) through the Maritime Academy of Asia and the Pacific (MAAP). Aside from the Philippines in Asia, there are institutions overseas that offer the same Bridging Program, for example in Malaysia and India. However, the schools that offer the program in the Philippines slightly vary on the number of courses included in the program from 1 to 2 courses. It was observed that others do not have Maritime English. In completing the degree in Marine Engineering in MAAP, a 3-unit course of Maritime English is mandatory. Also, it is a similar case in the Bridging Program of MAAP. This study would like to look into the course content of Maritime English for marine engineering (MarE) on how the mechanical engineering (ME) students perceived the course, specifically on the learning outcomes, teaching-learning activities and assessments; and how the scores in the assessments corroborate. The course should help ME students in acquiring the language competence in the STCW, *"The use of English language in written and oral form"*. This study will answer the questions specifically on:

1. Do teaching-learning activities and assessments achieve the competencies?
2. Which lesson in Maritime English has helped with the study other marine engineering courses?
3. What other lessons may be included in the Maritime English course as part of the Bridging Program?

The Bridging Program

The Bridging Program for BS Marine Engineering in MAAP started in 2005 after some shipping companies sought help from the Academy to design and deliver the program. These stakeholders have a certain number of candidate intake depending on the manpower demand for engineers on-board, hence, the Bridging Program is not offered yearly in MAAP. The shipping companies have recruited and screened their prospective students and MAAP is the delivering learning institution. Since its inception, there have been seven batches of graduates in this program. Mechanical engineering and marine engineering have many common undergraduate courses in obtaining their bachelor's degree (CMO No.38, s2005); and this has led to the bridging program. In order to complete the MarE Bridging Program, the candidate has to take 13 courses, such as the Marine Power Plant 1&2, Engine Room Watchkeeping, Introduction to Naval Architecture, Ship Routines & Construction, Maritime English, Marine Pollution, and many more. The student has to stay in MAAP for two semesters taking all the courses and 3 other STCW mandated trainings before s/he can board an ocean-going ship assignment for the one year apprenticeship in the sponsoring company. His sponsoring company shoulders all the expenses for his education and training of the engineering cadet.

Maritime English for Marine Engineering

In completing the degree of BS Marine Engineering, the student must take the 3-unit course of Maritime English as prescribed by the Commission in Higher Education. The course is packaged to the acquisition of the STCW competence “*use English in written and oral form to enable the officer to use engineering publications and to perform engineering duties*”. The Bridging Program should also take the course. SMCP (Standard Marine Communication Phrases); some topics on marine diesel engines, electrical system and maintenance; engine department communication; and some occupational sign language are the lessons included in the course. It is taught with lectures in the classroom and demonstrations or simulations in the Vessel Training Center (of MAAP), a fully functional bridge and engine room with main engine and auxiliary machineries. The communicative approach is used by the teacher to center the learning by the students who perform the tasks (Biggs, 2003).

Learning Outcomes, STCW competences

As outcome-based learning is the trend in higher education (Allan, 2006), designing a teaching and learning session in Maritime English has become tricky. One must view inductively from the finite activities to be done by the students towards what the goal to achieve during the assessment in the end. In the broad spectrum of the STCW, the goal is the competence that the engineering student should be able to perform and the STCW KUP (knowledge, understanding and Proficiency) in the second column of the table (A-III/1), like the sample below, are implicitly the topics. Both need careful understanding as requirements in planning the conduct of the lesson and assessment. The use of simulations in the VTC on scenarios in the engine room has created the student learning space (Kolb, et.al., 2017) more appropriate in experiencing concrete knowledge and skills on the target lesson.

COMPETENCE	STCW KUP
Use English in written and oral form	Adequate knowledge of English language to enable the officer to use engineering publications to perform engineering duties

STCW Table A-III/1 Marine Engineering at the Operational Level.

Learning outcome has emerged when the focus of educational approaches shifted from the teaching to the learning in the early 1990's in the UK and the development of outcomes-based approaches greatly earned attention in higher education (Moon, 2002). MAAP has formulated the learning outcomes in Maritime English, and three are used as samples in this study.

Methodology and Participants

The respondents are all students of Batch 7 of the MAAP Bridging Program, aged 21-23 years old, and holder of the mechanical engineer license. Half of the group had had a work experience as a mechanical engineer for less than two years before they joined the program in to become a marine engineer. All of them received the same number of 12 units of English courses in college. Apart from document analyses on the scores of every assessment the student got and the review of the course syllabus as the method of the study, a survey questionnaire composed of close and open-ended questions was used as well as an interview. There are four assessment scores for every learning outcome included in the study.

Results and Discussion

1. Direct Assessment

Results of direct assessments were encouraging and reflecting the accomplishment of the outcomes. In the first course outcome assessment, the mean score was 13.92 ± 1.084 points. Based on minimum scores, all the students surpassed the 70% mark in all the course outcome assessments, thereby indicating the attainment of all the set outcomes. The three learning outcomes in the course lead to the competence in the STCW Table A-III/1 Marine Engineering at the Operational Level.

	Min	Max	Mean	Std. Deviation
LO 1-A (15 points)	12	15	13.92	1.084
LO 1-B (10 points)	8	10	9.42	.669
LO 2 (20 points)	14	17	15.33	.888
LO 3 (30 points)	24	29	26.67	2.146

Mean Scores of the Course Outcome Assessments in Maritime English

Indirect Assessment

The students were told to assess the learning outcomes in Maritime English course, 3 out of 5 were included in this study, and the learning activities they experienced in the class. They expressed a degree of agreement. In the learning 1A, 58% strongly agreed that writing essays to express their ideas on giving solutions to miscommunication on-board is the best way to assess their learning, moreover, in learning vocabulary and parts of the main engine from the SMCP (1B), 83% strongly believed that it should be done orally or through speaking activities.

Learning Outcomes	Activity/Assessment
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1. give solution to miscommunication on-board	A. Writing essay on how maritime English help lessen communication barrier or breakdown. B. Study of words/vocabulary from the SMCP and have an oral assessment identifying parts of the M.E.
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Learning Outcome Sample 1 and the activity and assessment of the class in Maritime English.

Learning outcome 2 expects the students to be able to construct paragraphs on the topic in troubleshooting of machinery and equipment in the engine room using technical words. 58% agreed that the activity using a sheet whereby the student has to produce a written text troubleshooting machinery problems achieved the outcome.

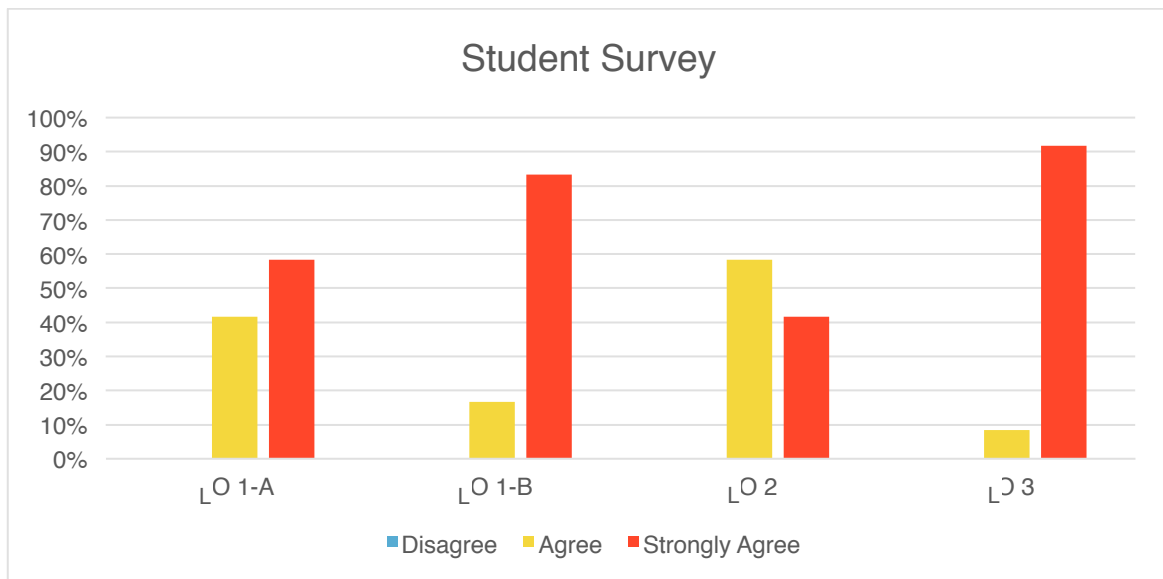
2. construct paragraphs using marine engineering terminologies in writing procedures in troubleshooting of machinery and equipment in the engine room	Exercise sheet with machinery problems, student suggest/recommend how to rectify or fix it.
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Learning Outcome Sample 2 and the activity and assessment of the class in Maritime English.

92% of the respondents strongly agreed that simulation or role play achieved the learning outcome on correct use of commands and responses in engine room scenario simulations.

3. simulate scenarios on-board with proper commands and responses, verbal and non-verbal using the SMCP	In groups, assigned with a scenario on-board, students write the script and role play it with assessors rating the simulation.
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Learning Outcome Sample 3 and the activity and assessment of the class in Maritime English.



Students' degree of agreement on the teaching-learning-assessment activity done in the learning outcome.

The indirect assessment measuring the extent to which students agreed over which learning activity or assessment met the expected outcome supports the result of the direct assessments. None of the students indicated neither disagreement nor strong disagreement on the survey. In fact, the majority of the students (at least 58%) strongly agreed that they achieved course outcomes 1-A, 1-B and 3. Course outcome 3 has the highest percentage of strong agreement (92%).

2. On the lessons in Maritime English that has helped them more in studying with other marine engineering courses, the SMCP ranked top, "*it has words used in specific situations that made us understand what it means*", as explained by one student. Other lessons on parts of the ship and marine diesel engine were also found helpful.

3. Fifty percent of the students expressed opinions that there should more time for the lessons in writing reports particularly on maintenance or equipment history record and more time in speaking practice through role play or simulations of different scenarios on-board like during emergencies.

Conclusion

The Maritime English Course for Marine Engineering (MarE) is perceived positively by the ME students in acquiring the language competence prescribed in the STCW as the results in the survey and interview consistently corroborate with the scores that they have gained during the conduct of the assessment.

The lessons conducted through simulation were found very helpful in attaining the learning outcome in oral communication (competence: oral form), however, SMCP

was not adequately helpful in the vocabulary acquisition, specifically on troubleshooting and maintenance during writing procedures (competence: written form). On the other hand, SMCP was useful for ME students in understanding the words in other engineering courses such as in Ship Routines & Construction, Marine Pollution, and other courses.

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An Interactive Multimedia Software for Teaching Maritime English

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Abstract

This project aimed to develop and validate an interactive learning package in teaching and learning Maritime English among college students. The study followed the research and development (R&D) design. Its main objective was to develop and validate an interactive learning package, composed of learning materials and interactive software to be used in teaching a Maritime English course. There were five phases involved in the methodology of the study. The first phase was the Design Phase that included: (a) needs assessment of the subject through gathering of materials to be used, background information, and utilization of accumulated experiences; and (b) revision of the existing syllabus based on the needs assessment. The second phase was the Content Development Phase that involved the following steps (a) needs analysis; (b) identifying the scope of the content of the material based on the revised syllabus that covers the designing of lesson exemplars; (c) review of the content. After developing the content, System Development Phase followed which utilized the initial phases of Rapid Application Development (RAD) namely: (a) requirements planning, where the gathering of data was done; (b) user design, that conceptualized the storyline and features to be established; (c) construction, where the actual development happened; and the fourth phase (d) field try-out which covered the following stages: (a) preparation of table of specifications; (b) construction of the pre-test and post-test instrument; (c) administration of the pre-test; (d) try-out of the material; (e) feedback gathering; (f) analysis of feedback; and (g) administration of the post-test. Lastly, the revision phase focused on the (a) modification; and (b) final revision of the material.

Keywords: *Multimedia Software; Maritime English; Research and Development*

Introduction

Filipino seafarers need to ensure that they possess the skills and qualifications necessary in order to fill the positions for the sea-based sector (DOLE, 2010) of overseas employment. Besides the technical knowledge, skills, attitude and experience required of seafarers, English language proficiency is considered important in the professional and social life of many onboard seafarers who are nonnative speakers (NNS) of English, Filipino seafarers included. It has been reported in several studies that despite knowledge of the English language, Filipino seafarers find it difficult to understand other nationals when they speak the language.

This pressing problem likewise exists among students enrolled in the Maritime Education programs of higher education institutions (HEIs) in the country. Maritime English teachers and language researchers are one in saying that students' low proficiency in English is evident in their poor spelling, mispronunciation, and wrong usage. In short, they can hardly communicate in coherent English. A majority of maritime students fail the English Placement or English Language Test usually administered before admission to the maritime education program. Many entrants are graduates of public schools where English classes are oversized and instructional materials are inadequate. Oftentimes, in far-flung areas, teachers who teach English courses do not have specialization in English; hence, the poor quality of English language teaching. These factors actually block the way for sufficient learning and have posed major problems in the communicative competence of the students and the teachers as well.

Mindful of these realities and alarmed by the deterioration of Filipino students' English language proficiency, the researchers developed an Interactive Multimedia Software (IMMS) for teaching Maritime English. The IMMS for teaching Maritime English derived insights from Computer-Assisted Language Learning (CALL) approach which maintains that the use of interactive multimedia software in language learning "allows students to express their culturally-diverse backgrounds and perspectives" (Hsinyi et al., 2006 in Vilbar, 2010, p. 36). The use of IMMS in language learning has been perceived to be effective in improving students' attitudes

towards the target language. Vilbar (2010) suggests that one essential element in using CALL is acquiring appropriate hardware and software (Acio, 2006). While there are software materials for teaching Maritime English that are produced and are available in the world markets, there is a dearth of IMMS that are actually attuned to the needs of Filipino maritime students in developing and enhancing their competence in Maritime English. The investigation addressed the need for interactive multimedia software that may be used in the teaching and learning of Maritime English.

The study aimed to develop interactive multimedia software for teaching Maritime English. Specifically, it sought to achieve the following objectives:

1. to design lesson exemplars in Maritime English using interactive multimedia software; and
2. to conduct a formative evaluation of the interactive multimedia software through;
 - a. a content review by a pool of content and IT experts;
 - b. a try-out of the interactive multimedia software with the target users to gather feedback for revision purposes; and
 - c. a revision of the field tested interactive multimedia software using the results of the evaluation.

Methodology

This is a research and development (R and D) type of research, the targeted output of which is an interactive multimedia software for teaching Maritime English. To achieve the primary goal of the study, that is, to develop an interactive multimedia software for teaching Maritime English, the development phase was divided into two parts. The first part was the collation of the data needed to create the instructional material following the process of ESP materials development by Tomlinson (1998). The second part was the actual development of the interactive software using the Rapid Application Development (RAD) in the software development by James Martin.

In the identification of the learner's needs, a needs assessment tool was used to determine the communicative and language needs of maritime students.

After getting all the results in the needs assessment, the revision of the existing syllabus was done and the scope of the content of the material based on the revised syllabus that covers the designed lesson exemplars was identified. It was then reviewed by the content experts.

In the second part, after the development of the instructional material, the output was used as an input in the development of the software. The proponents adopted and utilized the Rapid Application Development (RAD) as software development methodology that comprises four phases: requirements planning, user design, construction and testing.

In the requirements planning phase, the content of the material based on the revised syllabus that covers the designed lesson exemplars was used as the requirements in the development of the software. After identifying the requirements needed, the design workshop began under the user design and construction phase of RAD: the content development phase and system/software development phase, respectively. It is an iterative process where the proponents kept on examining if the developed system met the set user design. It was a collaboration of the users and the proponents to develop a working prototype and refine the designed modules.

In the user design phase, the conceptualization of the storyline and features were established. In the construction phase, the actual program and application development utilized different multimedia software development tools. To develop the software, Visual C#.net was used. Visual C#.net is a general-purpose programming language for building apps using Visual Studio and the .NET Framework. The testing phase was done after the software development to ensure that the software is technically working properly and meeting the design and requirements set by the proponents based on the learners' needs.

After the testing phase, field try-out of the developed software was done covering the following stages: (1) the proponents prepared the table of specifications where the construction of pre-test and post-test were based; (2) administered the pre-test; (3) try-out the material; (4) gathered feedback from the different users: Maritime English instructors/course content specialists, IT experts and maritime students; (5) analyzed the feedback; (g) administered the post-test.

Lastly, the revision phase was completed wherein the proponents focused on the modification and final revision of the software. The modifications and revisions of the software were based on the analyzed feedback.

Results and Discussion

I. Learner's Needs Analysis

Table 1
Learners' Needs in Terms of the Maritime English Topics

Maritime English Topics that Learners Would Like to Study	Frequency	Percentage	Rank
Standard marine vocabulary	90	100%	1.5
Crew roles and routines	90	100%	1.5
Safety equipment	84	93%	10
Standard wheel orders	90	100%	1.5
Organization on board	90	100%	1.5
Marine protection	75	83%	12
Standard marine communication phrases	90	100%	1.5
Types of vessel	78	87%	11
Safety and emergency situations on board	90	100%	1.5
Standard engine orders	90	100%	1.5
Safety and risks on board	90	100%	1.5
Emergency response	90	100%	1.5
Others			

The results of the needs assessment as shown in Table 1 reveal the topics that learners like to study, the functions that they need to practice, and the English communication skills that they like to improve. Specifically, the respondents in general chose the topics standard marine vocabulary, crew roles and routines, standard wheel and engine orders, organization on board, standard communication phrases, safety and emergency situations on board, safety and risks on board and emergency response, respectively, as the Maritime English topics that they want to study.

The learners have basic information that per IMO regulations English is used on the bridge as the working language for bridge-to-bridge and bridge-to-shore

safety communication as well as for communications on board between the pilot and bridge watchkeeping personnel.

Table 2
Needs of the Learners in Terms of Maritime English Communication Skills

Maritime English Communication Skills	Frequency	Percentage	Rank
Speaking			
Relaying messages using standard marine vocabulary	90	100%	1.5
Relaying messages through VHF radio	90	100%	1.5
Briefing crew and passengers	87	97%	6
Giving instructions	90	100%	1.5
Reporting emergency situations on board	90	100%	1.5
Giving orders in routine operations	90	100%	1.5
Responding to orders in routine operations	86	96%	7
Others			
Listening			
To orders in routine operations	90	100%	1
To instructions	82	91%	6
To oral presentations/reports	78	87%	7
To natural speech	83	92%	5
To native speakers of English	86	96%	2.5
To non-native speakers of English	86	96%	2.5
To people coming from non-English speaking	86	96%	2.5
Others			
Reading			
Reports	85	94%	1
Correspondence	80	89%	2
Articles, abstracts, etc.	74	82%	3
Instructions/procedures manuals	68	76%	4
Others			
Writing			
Reports	90	100%	1
Memos/messages	83	92%	2
Emails	75	83%	3
Cover letters	61	68%	5
Forms	68	76%	4
Others			

Table 2 presents the needs of the learners in terms of Maritime English communication skills. The respondents would like to improve their English speaking skills in relaying messages using standard marine vocabulary, relaying messages through VHF radio, giving instructions, reporting emergency situations on board, and

giving orders in routine operations that are basic onboard communication skills to ensure safe passage.

Moreover, they also want to improve their listening skills to facilitate the execution of orders in routine operations, to understand native speakers of English as well as other crew members coming from non-English speaking countries. In terms of reading, majority of the learners like to develop skills to facilitate comprehension and understanding of reports, as well as writing correspondence. Finally, the students want to improve their writing skills to be better in writing reports, memos/messages, and emails. Discussing effective communication skills onboard, Vangehuchten, Parys and Noble (2010) maintain that effective communication in the maritime world is pivotal in establishing a conducive working environment and safety culture.

II. Scope of the Content of the Material

After analyzing the results of the learner's needs and after reviewing what is stipulated in the STCW with regard to Maritime English, the researchers came up with the design of the instructional material. The instructional material was composed of four lessons and every lesson has different topics and assessments. Each topic focuses on the following macro skills: vocabulary focus, maritime focus, grammar focus, communication focus, and language functions. To become competent seafarers, students need to be helped to communicate in English confidently and fluently and develop their macro skills.

Table 3
Contents of the Instructional Material

Lesson 1

Topics	• Vocabulary • Idioms • Phrasal verbs • Slang • Ship design and basic terminology used onboard • Infinitives
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Lesson 2

Topics	• General Maritime English • American and British English in Maritime English
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	• Standard Maritime English • Standard Marine Communication Phrases (SMCP) • Standard Marine Communication Phrases in VTS (Vessel Traffic Services) Communication • Emergency Situations on Board • First Aid in Medical Emergencies
Lesson 3	
Topics	• Standard Marine Vocabulary: Words with Multiple Meanings • Standard Marine Communication Phrases Procedural Usage • Standard Marine Communication Phrases • Passive Voice
Lesson 4	
Topics	• SMCP for Shipboard Operations/ Emergency Situations • Bridge Routines • Anchoring • Bunkering • Piracy • Oil Spill • Man Overboard • Collision • Fire on board/ Explosion

Table 3 presents the contents of the instructional material. Lesson 1 focuses on the importance of maritime education and why learning Maritime English is important. Its main objectives are identifying the meaning of and use of standard marine vocabulary in both oral and written communication; defining nautical terms; applying the use of infinitives in expressing ideas in the context of maritime studies; understanding the basic terminology relating to types of ships and organization on board ships; writing sentences using idioms; and articulating the competencies relating to English proficiency as stated in the STCW 95 amendments. Lesson 2 provides linguistic opportunities for students to hone their skills in the basics of maritime vocabulary and in the more advanced maritime language used in navigation, meteorology, ship correspondence, SOLAS, and other topics. Lesson 2 also discusses the differences between the use of British and American English in standard marine vocabulary; defines nautical terms relating to navigation; explains the use of IMO message markers in sentences; describes various procedures in emergency situations; relays messages through VTS (vessel traffic services) communication; and formulates questions, requests, instructions, commands, warnings, and intentions acceptable in VTS communication.

Lesson 3 teaches maritime students to communicate well and helps them cope in a maritime working environment. The different linguistic skills featured in Lesson 3 are the following: defining nautical terms relating to navigation; use of active and passive voices in writing reports; and use of appropriate vocabulary in describing situations relating to navigation and SOLAS (safety of life at sea).

Lesson 4 focuses on the use of appropriate Standard Marine Communication Phrases (SMCP) specifically in performing routine operations while on board ship. The lessons include practicing VHF exchange procedures, understanding commands in emergency situations on board, VHF communications regarding bunkering, reporting incidents at sea, asking for and giving directions on board, and describing safety equipment.

The lessons are intended to sharpen the use of Standard Marine Communication Phrases (SMCP) among maritime students so that they can cope well in their future seafaring jobs. Developing the needed communication skills will help secure the safety of passengers and cargoes on the vessel.

III. Functional Requirements and Software Design of the Proposed Interactive Multimedia Software

After the development of the designed instructional material, researchers attended to the development of the functional requirements and software design of the proposed interactive multimedia software. The functional requirements and the software design were drawn from the designed instructional material.

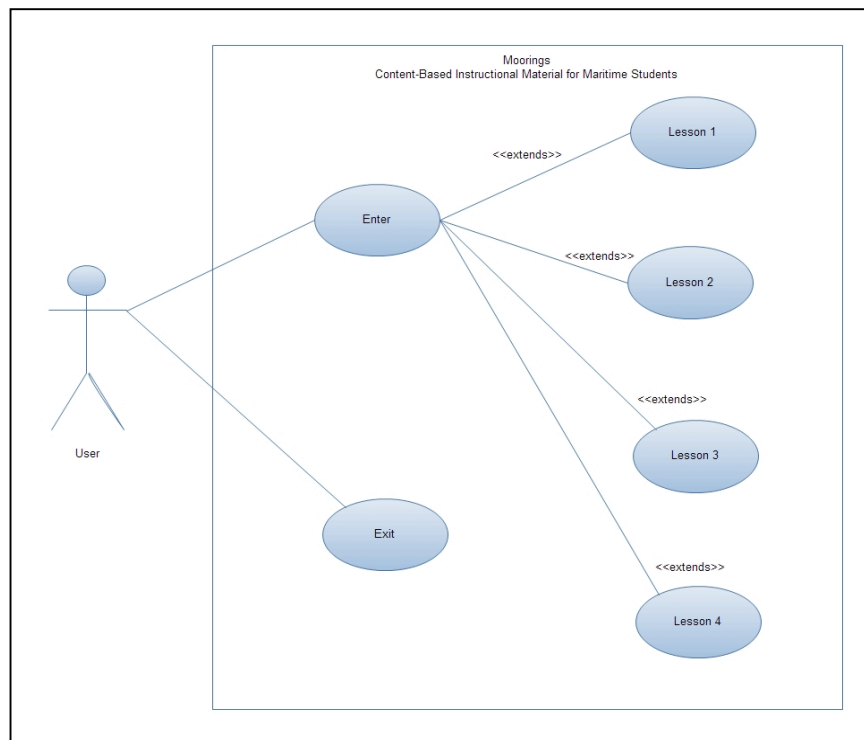


Figure 1. Illustration of the use case-based requirements diagram.

Figure 1 illustrates the use case diagram based on the requirements of the program. The use case-based requirement diagram shows the functional requirement and the design of the proposed interactive multimedia software based on the developed design of the instructional material. Figure 1 showcases the different use-cases or modules as well as the overall interaction between the software and its software features. It is composed of four modules/ lessons: (a) Lesson 1; (b) Lesson 2; (c) Lesson 3; and (d) Lesson 4.

IV. The Developed Interactive Multimedia Software

The **MOORINGS STARTUP** module serves as the startup of the software where the user can immediately start and exit the software. The user has an option to input their name prior to starting the software. The user name is displayed when the user finishes the assessment. Figure 2 below shows a sample view of the module

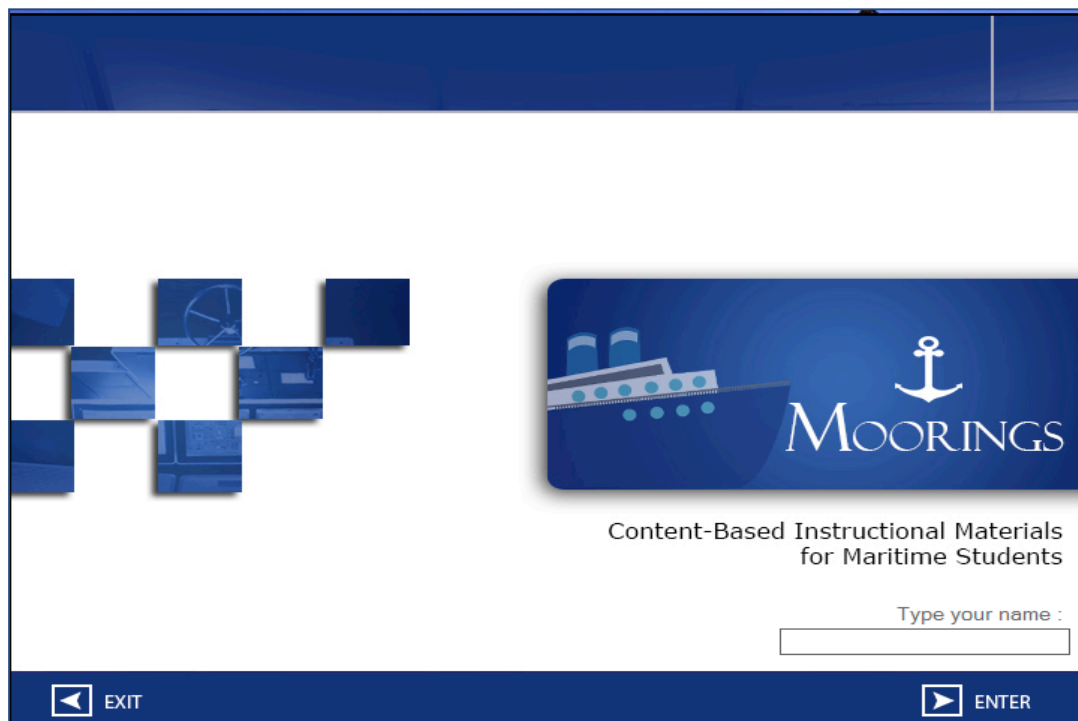


Figure 2. Moorings startup module.

The **View Lessons** module in Figure 3 is composed of four sub-modules namely: (a) Lesson 1; (b) Lesson 2; (c) Lesson 3; and (d) Lesson 4. This module covers the complete list of lessons available in the interactive software.

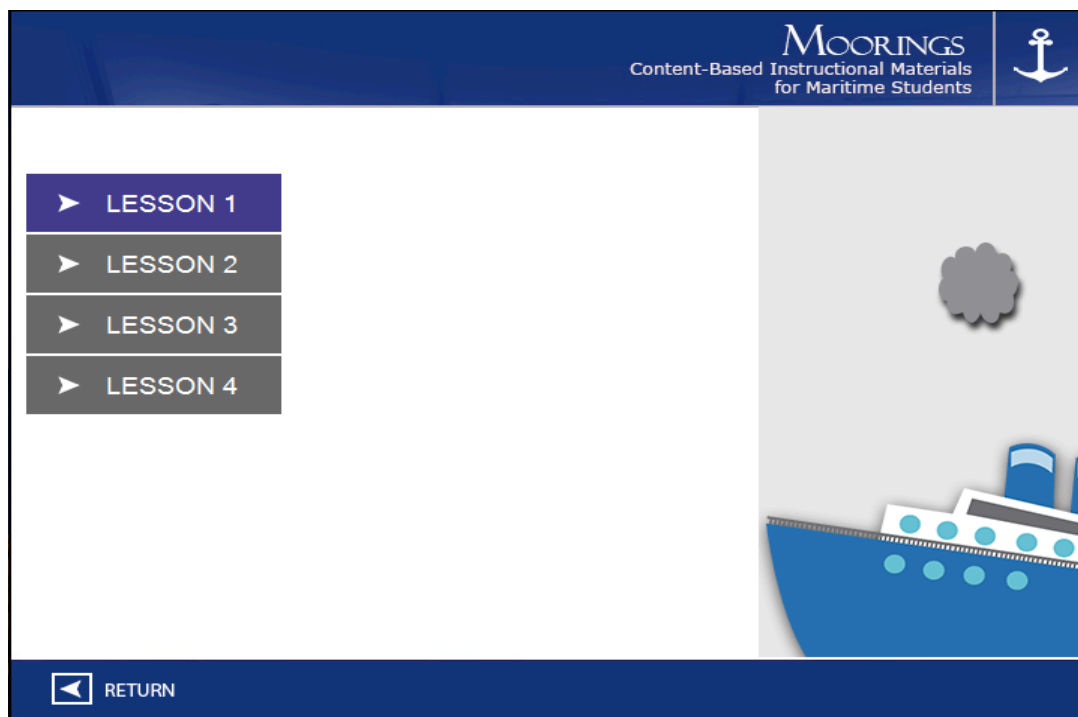


Figure 3. View Lessons module.

The sample **View List of Topics in a Lesson** module as shown in Figure 4 is composed of several sub-modules depending on the lesson. Each lesson has different topics and each topic has a corresponding assessment. This module displays the complete list of topics in every lesson that are available in the interactive software.

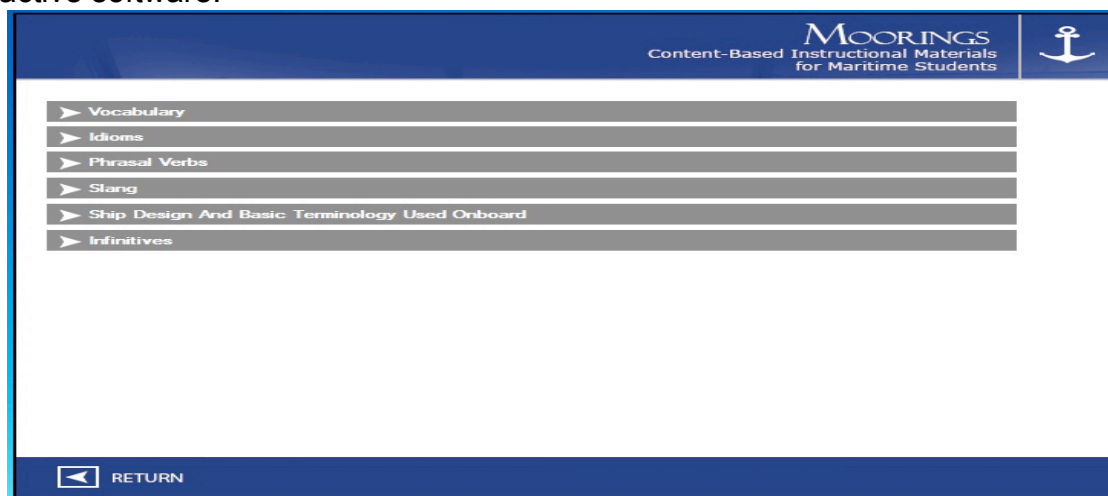


Figure 4. View List of Topics in a Lesson module.

Shown in Figure 5 is a sample **Lesson** module containing the discussion of the topic and the list of assessments or exercises. Every topic has its equivalent lesson module.

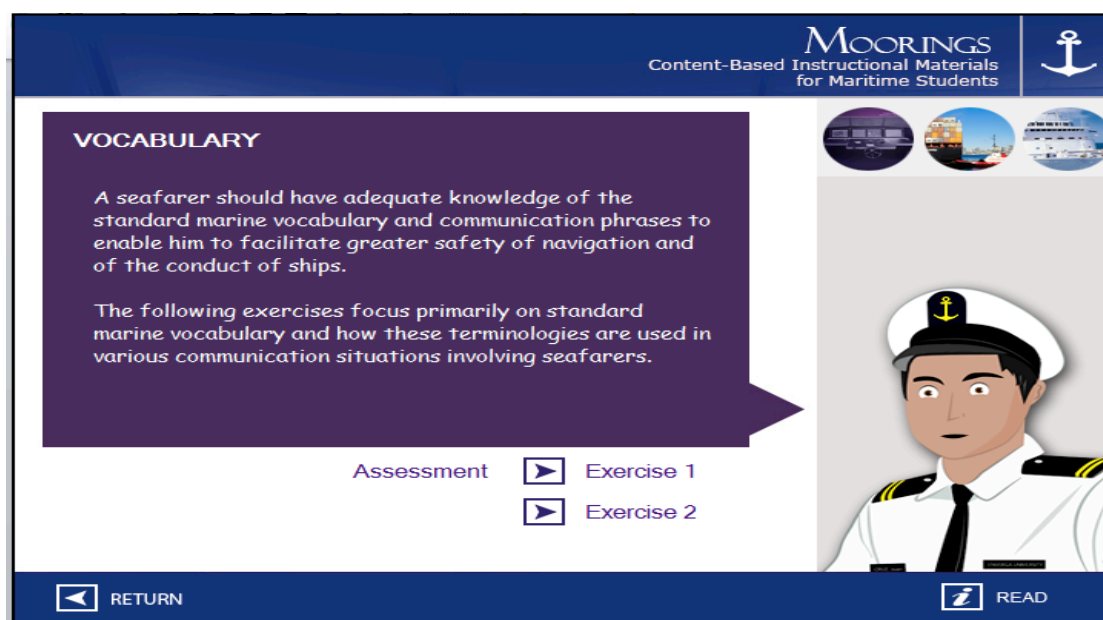


Figure 5. Lesson module.

The sample **Assessment** module in Figure 6 illustrates the sample assessment for every topic. The user can take the assessment right after reading or listening to the discussions in every lesson module. Every lesson module has a corresponding assessment.

Lesson 1 Vocabulary

Exercise 1
Match the words listed below with the correct definitions.

Assembly station	Destination	General emergency alarm
Blind sectors	Escape route	Lifeboat station
Convoy	Escort	Rescue team
Damage control team	Fire party	Roll call
Datum	Fire patrol	Windward

a) The act of checking who of the passengers and crew members are present, e.g. at assembly stations, by reading aloud a list of names

Your Answer :

← BACK Drag answer here NEXT →

◀ RETURN

Figure 6. Assessment module.

V. Results of the Formative Evaluation/Field Try-Outs

a. Results of the pre-test and post-test of the target users

A pre- and a post-test were done to measure learning of the respondents during and after the class sessions. This was done to quantify the knowledge attained in the class from a group of students. More specifically, the tests indicate how the students are learning in the course.

The paper-based pre- and post-tests had a total of 50 items drawn from the module. All the 90 participants completed the pre-test before they tried the interactive module software for Maritime English. The participants were divided into two groups. Group A comprising of forty-five Marine Transportation and Group B of the same number of Marine Engineering students.

Table 4
Students' Pre-test and Post-test Results

	Pre-test Score Average	Post-test Score Average	Difference	Change
Group A (MarT)	33.31	36.28	2.97	9%
Group B (MarE)	34.02	35.93	1.91	6%

After they have tried the interactive module, post-test was administered to the maritime students. Table 4 shows the pre-test and post-test results, where post-test score is higher than the pre-test score. This only indicates that using the interactive module helped the student's learning.

Even if the improvement on the post-test score is minimal, there is an improvement and with long usage, this can be interpreted as a plus factor in enhancing the communicative skills of maritime students.

b. Content Review by Maritime English Teachers/Content Reviewers

Validation of the system was done to find out if the Maritime English Interactive Multimedia Software has met the required system functionalities. A checklist was used to perform the validation. The developers together with the users examined every module and all functionalities of the system and they put a mark on the checklist to determine whether certain functionality was attained or not.

After validation of the system, the data and feedback gathered were tabulated and analyzed according to the requirements specification of the system. The remarks, comments and suggestions given by the content reviewers were considered to enhance the system's features.

Table 5
Feedback from the Language Experts/Maritime English Teachers

Indicators	Mean Average	Interpretation
1. How helpful are the contents and activities/tasks to the needs of the students?	5.00	Very Much
2. How realistic are the activities/task?	5.00	Very Much
3. How relevant are the activities/tasks to the needs of the students?	5.00	Very Much
4. How accurate is the use of technical/jargon words in the sentences?	5.00	Very Much
5. How useful are the materials in improving the knowledge, skills and attitudes of the learners?	5.00	Very Much
6. How specifically measurable and attainable are the objectives of the lessons?	5.00	Very Much

7. How provocative are the motive questions of the lessons?	4.90	Very Much
8. How relevant is the interactive module to the field of specialization of students?	5.00	Very Much
9. How authentic is the interactive module?	5.00	Very Much
10. How related to the needs of the learners is the interactive module?	5.00	Very Much
11. How helpful are the activities/tasks to the learners?	5.00	Very Much
12. How flexible are the activities allowing creativity of the learners?	4.90	Very Much
13. How important are the activity types and their correlation to both the short-term and long-term goals of the learners?	4.90	Very Much
14. How authentic are the materials included in the activities and tasks?	5.00	Very Much
15. How clear are the directions provided in every activity/task?	5.00	Very Much
16. How attractive or interesting is the interactive learning module material in terms of:		
a. drawing?	4.80	Very Much
b. font size?	5.00	Very Much
c. layout?	4.90	Very Much
d. color?	4.80	Very Much
e. audio?	4.90	Very Much

Legend:

- 5 = Very Much (VM)
- 4 = Much (M)
- 3 = Just Right (JR)
- 2 = A Little (AL)
- 1 = Not At All (NAA)

Table 5 presents the feedback of the language experts/Maritime English teachers. The table shows that the contents and activities of the module are very much helpful and relevant to the needs of the maritime students. This item got a mean average of 5.00 from the language experts who evaluated the lesson exemplars.

Most of the itemized indicators got a mean average of 5.00 from the language experts, such as whether the activities or tasks were realistic; the accuracy of the use of jargon/technical words in the sentences; the usefulness of the materials in improving the knowledge, skills and attitudes of the learners; the relevance of the interactive module to the field of specialization of would-be maritime professionals; the authenticity of the interactive module, and the clarity of the directions provided in every activity/task.

In terms of drawing, font size, layout, color, and audio of the interactive module, the language experts found them very much attractive and interesting.

These were some comments and suggestions given by the language experts as follows:

1. The material is very educational and interesting for would-be maritime professionals.

2. It provides very useful interactive software in teaching different Maritime English courses.
3. In dialogues (e.g. fire/explosion situation), an actual voice recording instead of text-to-speech application might be able to convey intended mood and intonation better.
4. Illustrations/pictures, if given more space, can be very motivational and provocative.
5. On the whole, the Maritime English interactive multimedia software is commendable and demonstrated the researchers' effort to meet the educational needs of the maritime students.

c. Results of Evaluation by IT Experts

Aside from the Maritime English teachers, IT experts also evaluated the interactive software. The IT Experts used the developed interactive software and were asked to accomplish the five-point scale evaluation sheet that would assess the software. They were also encouraged to indicate their comments and suggestions for the enhancement of the developed interactive software.

The following scale was used in the evaluation:

Value	Mean Range	Interpretation
5	4.21 – 5.00	Excellent
4	3.41 – 4.20	Very Satisfactory
3	2.61 – 3.40	Satisfactory
2	1.81 – 2.60	Fair
1	1.00 – 1.80	Poor

The evaluation instrument used was based on the ISO 25010 standards for software product quality, the cornerstone of a product quality evaluation system. The quality model determines which quality characteristics will be taken into account when evaluating the properties of a software product. The quality of a system is the degree to which the system satisfies the stated and implied needs of its various stakeholders, and thus provides value. Stakeholders' needs (functionality, performance, security, maintainability, etc.) are precisely represented in the quality model, which categorizes the product quality into characteristics and sub-characteristics.

Table 6

Feedback from the IT Experts

Criteria	Mean Average	Description
1. Functional sustainability of the application	4.94	Excellent
2. Performance efficiency of the application	4.69	Excellent
3. Compatibility of the application	4.88	Excellent
4. Usability of the application	4.81	Excellent
5. Reliability of the application	4.81	Excellent
6. Security of the application	4.81	Excellent
7. Maintainability of the application	4.88	Excellent
8. Portability of the application	4.69	Excellent

Legend:

- 5 = Excellent (E)
- 4 = Very Satisfactory (VS)
- 3 = Satisfactory (S)
- 2 = Fair (F)
- 1 = Poor (P)

Fifteen IT experts participated in the evaluation of the interactive software. Table 6 shows that they agreed that the entire software is *excellent* giving it an overall rating of 4.81.

Likewise, it could also be deduced that the functionality of the software was excellent based on the weighted mean of 4.94. The system performs the tasks assigned to it implying that the system is functional and fitted to the needs of the users.

Meanwhile, with regard to reliability, the system was also rated 4.81, or *excellent*. It means that the software is capable of handling errors and has recoverability. In addition, the system's usability was given a weighted mean of 4.81 or *excellent*. This indicates the system's understandability, learnability, operability, and attractiveness. It also proves that the system can be operated with minimal effort by the users.

With regard to efficiency, the respondents gave the system a weighted mean of 4.69. In terms of maintainability the experts rated the software *excellent*, with a mean of 4.88.

The system's portability and compatibility obtained a mean of 4.69 and 4.88, both rated *excellent* connoting that the system is timely and appropriate to users' needs. As it can also function even when changes are made, it complies with the standard of software quality attributes – easily modified, tested and moved to other environments

depending on the purpose. In addition, the software can share a common environment and can exchange information and use the information that has been exchanged.

In terms of security, it was also rated excellent with a weighted mean of 4.81 denoting that the software has confidentiality and integrity. In summary, it can be concluded that in terms of the technical aspects of the developed software, it will function accurately.

c. Results of the Field Try-out of the Interactive Multimedia Software with the Target Users

The software was field tested involving 90 maritime student users. In the field try-out, the students were given a questionnaire to express their views on the interactive module software. The students were required to give their opinions and suggestions about the software through actual usage.

Table 7 below shows the results of the field try-out with maritime students that tested the developed software.

Table 7

Student-Users' Feedback on the Interactive Software

Indicators	Mean	Description
1. Does the interactive module arouse your interest in the lessons?	4.51	Very Much
2. Does the interactive module relate to your past experiences?	4.27	Very Much
3. Are the activities/exercises interesting and easy to understand?	2.78*	Interesting and easy to understand
4. Does the interactive module help enhance your knowledge, skills and attitudes?	4.48	Very Much
5. Are the exercises: easy to answer? moderately difficult to answer? difficult to answer?	2.20**	Easy to answer
6. Do the exercises help you improve your understanding of the lessons presented in the interactive modules?	4.54	Very Much
7. What is your general interest in the interactive modules?	2.66***	High

Legend:

Based on a 5-Point Scale Criteria:

- 5 = Very Much/Interesting and easy to understand/Easy to answer/High
- 4 = Much/Interesting but difficult to understand/Moderately difficult to answer/Satisfactory
- 3 = Just Right/Boring/Difficult to answer/Low
- 2 = A Little
- 1 = Not At All

Based on a 3-Point Scale Criteria:

- * = (3) Interesting and easy to understand, (2) Interesting but difficult to understand, (1) Boring
- ** = (3) Easy to answer, (2) Moderately difficult to answer, (1) Difficult to answer
- *** = (3) High, (2) Satisfactory, (1) Low

Table 7 shows that the students have very much interest in the lessons presented to them in the materials. This implies that the lessons are within the interest of the learners. It also shows that the lessons included in the materials have very much relatedness to the past experiences of the learners. This implies that the lessons included in the materials gave them opportunity to apply what the learners have learned from their past experiences (Morrow, 1977). The relevance of the lessons to their past language experiences made it possible for students to comprehend the reading texts, which thus, developed their reading skills.

Table 7 also shows that the lessons in the module are interesting and easy to understand. The users also agreed very much that the level of interest in the lessons enhances their knowledge, skills and attitudes in learning Maritime English. Most of the maritime students find the exercises easy to answer since some of the lessons were related to discussions in the major subjects.

It also shows that the learners' general interest in the software module was high. This implies that the ESP materials were helpful in developing and enhancing the learners' macro skills.

Overall, the lessons are within the interest of the learners because the course content will likely help them in their maritime profession in the future.

These are some comments and suggestions given by the maritime students, as follows:

1. The interactive module is very educational and very easy to use.
2. With the software, it is more fun and exciting to learn Maritime English.
3. The module and program are satisfyingly good and well made so it deserves the high ratings.
4. The module is impressive because it can help and enhance the ability of the students who use and explore it.
5. Add a name for each user so that they can save the exercises to further improve their learning.
6. This can be an aid before boarding an actual ship.

On the whole, the IMMS for Maritime English was found very useful in enhancing the students' English proficiency and skills.

Conclusions

The results of this study revealed that:

1. The interactive multimedia software for teaching Maritime English was recognized as a valuable learning resource and was preferred by most of the maritime students, as well as, Maritime English teachers.
2. The developed interactive multimedia software for teaching Maritime English enhanced the learning experiences of students enrolled in Maritime English.
3. Maritime English teachers find the interactive multimedia software for teaching Maritime English useful and effective in their Maritime English classes.
4. Evaluators of the interactive multimedia software for teaching Maritime English find it useful and effective in enhancing learning experiences of students in Maritime English.
5. The IT experts found the learning content of the software suitable for maritime students and the software easy to access and use. More so, they were satisfied with the quality of the interactive multimedia software developed.
6. On the whole, the courseware for maritime students was found to be useful in enhancing students' communicative proficiency and skills in the English language.

Recommendations

Based on the conclusions, the following is recommended:

For the Maritime English Teachers

1. That they continue to develop ICT-based instructional materials to enhance the Maritime English proficiency of students.
2. That they use varied teaching methods and techniques for maritime students to develop and enhance their proficiency in Maritime English.
3. That English language teachers be trained to be more technologically literate so that they can access and utilize technology resources for classroom use.

For the Maritime Students

1. That interaction between students and ICT-based learning materials in Maritime English be increased to motivate the earlier to be more communicatively competent.
2. That they enhance their proficiency in using the English language in verbal exchanges through reading and constant practice and participation in classroom and/or school activities.
3. That they acquire familiarization of SMCP and other maritime vocabulary and terminologies through the use of relevant software technology.

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The Philippine Context of the Teaching and Learning of Maritime English

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Abstract

Involving teachers and students in Philippine Higher Education Institutions (HEIs) that offer maritime education and training, the study investigated the teaching and learning of Maritime English in the Philippines. Through descriptive research design, survey instrument determined pertinent data for the study. Analysis of all gathered data included percentage, mean weight, and standard deviation. Findings reveal the importance and relevance of Maritime English as an English language course. Teachers believe that the course contributes to the improvement of student's proficiency in English, which is a requirement of the Standards for Training, Certification, and Watchkeeping (STCW) 1995 Code and the 2010 Manila Amendments. Moreover, students believe that Maritime English provides them wide-ranging opportunities to practice communication in English for maritime and general purposes. Generally, they consider learning Maritime English an important goal which could help them in the future since their job would require communicating with people of different nationalities and English is a language that they mutually understand. It is recommended that Maritime English teachers continue to use information communication technology (ICT)-based instructional materials in teaching Maritime English for maritime students to achieve the desired proficiency in Maritime English for them to meet the requirements of the STCW and the maritime industry.

Keywords: English; English Language Teaching; Maritime English

Introduction

Supplying thirty percent of the world's crew and deploying around 256,000 seafarers annually, the Philippines is regarded as a major provider of professional seafarers in the global labor market (OFW, 2007; POEA, 2008, Magallon, 2010). The Department of Labor and Employment reported that "the demand for Filipino seafarers is expected to continue over the next decade given the increasing number of vessels which are becoming larger and specialized" (p.45). This being so, Filipino seafarers need to ensure that they possess the skills and qualifications necessary to fill the positions for the sea-based sector (DOLE, 2010) of overseas employment.

Besides the technical knowledge, skills, attitude, and experience required of seafarers, English language proficiency is considered important in the professional and social life of many onboard seafarers who are non-native speakers (NNS) of English, Filipino seafarers included. It has been reported in several studies that despite knowledge of the English language, Filipino seafarers find it difficult to understand other nationals when they speak English. Onboard the most common crewmates of Filipino seafarers include Europeans (58%) specifically British, Greeks, and Germans; Asians (38%) comprising the Japanese, Koreans, and Indians; and Americans, Africans, and Oceania (4%). Given this working condition, Filipino seafarers are inevitably exposed to a multicultural workplace where English is the only language of communication. In effect, problems in miscommunication due to language and cultural barriers have been identified and reported (Magallon, 2010).

Reasonably it has long been promulgated by the International Maritime Organization (IMO) in its Standards of Training, Certification and Watchkeeping for Seafarers or STCW 1978 Convention, STCW 1995/97, and recently in the 2010 STCW Manila Amendments which began to take effect in January 2012, that English is to be used as the lingua franca of the seafarers manning the international fleets. The 2010 STCW Manila Amendments reflect the "higher standard to be met in the field of Maritime Education and Training (MET) in general, and in Maritime English (ME alternately) communication competency, (and thus on Maritime English instruction and research), in particular" (Trenkner & Cole, 2010, p. 3). Relative to Maritime English, the 2010 edition of STCW specifically states that each administration shall... require every... company to ensure that at all times on board

ships there shall be effective oral communication in accordance with chapter V, regulation 14, paragraphs 3 and 4 of the Safety of Life at Sea (SOLAS) Convention (IMO, 2010). Moreover, the SOLAS regulation states that English shall be used on the bridge as the working language for bridge-to-bridge and bridge-to-shore safety communication as well as for communication on board between the pilot and bridge watchkeeping personnel (IMO, 2004).

A closer look at the abovementioned provisions in the 2010 STCW Manila Amendments suggests the significant role that Maritime English plays in ship-to-ship and ship-to-shore communications, in onboard communications and in ports. This may even reflect the possible impact of the revised STCW upon “Maritime English course design, materials development and instruction” (Trenkner & Cole, 2010, p. 3). Hence, it becomes imperative to investigate the teaching and learning of Maritime English in a country that supplies almost one-third of the manpower in the international maritime industry.

Purpose of the Research

The main purpose of the research is to investigate the teaching and learning of Maritime English in Philippine Higher Education Institutions (HEIs) that offer maritime education and training. Specifically, it sought to analyze the perceptions of teachers about the teaching and learning of Maritime English in Philippine context, assess the needs of maritime students as regards learning Maritime English, and describe their attitude towards learning Maritime English.

Among others, the study seeks to provide the necessary impetuses for maritime HEIs in the country to adapt, update, develop or enhance the curricula of Maritime English courses, the instructional materials, teaching methods, and assessment tools to sustain the production of Filipino professional seafarers who are highly communicative in Maritime English, thereby increasing their chance of employment in international maritime industry, hence, contributing to national development.

This study is also envisioned to provide baseline data which might be helpful in formulating policies to further develop Maritime English as an essential but relatively new knowledge area to satisfy the provisions of the 2010 STCW Manila Amendments and the requirements endemic to the maritime industry.

Methodology

Research Design

The study used the descriptive research design. It conducted a survey of Maritime English teachers' perceptions of the teaching of Maritime English, needs assessment of learners of Maritime English, and a survey of the learners' attitudes towards learning Maritime English.

Sampling Procedures and Participants

Study participants were Maritime English teachers and maritime students in more than 10 Philippine HEIs offering maritime education and training. The researchers identified these HEIs from the list of maritime HEIs authorized by the Commission on Higher Education (CHED) and the Maritime Industry Authority (MARINA) to offer maritime education and training. Student-participants were 3,496 randomly selected second year and third year maritime students. Lists of students in block sections were used in selecting the samples using Excel. A total of 150 Maritime English teachers from the selected HEIs were completely enumerated. They have completed a training on IMO Model Course 3.17 Maritime English.

Instruments

Survey instruments were used to map out the perceptions of Maritime English teachers, and the language attitudes of student-respondents towards learning Maritime English. The survey instrument for Maritime English teachers consists of 51 statements covering five components which include objectives and outcomes; teacher's competencies; instructional materials, procedures, and techniques; assessment and evaluation; and administrative support. The survey instrument for maritime students consists of 45 statements that describe the attitudes of maritime students towards learning Maritime English. The needs assessment tool was a self-made survey type of test which was based on relevant literatures and scholarly materials in Maritime English teaching including the PSGs from CHED and MARINA. The Maritime English topics were clearly explained in the research instrument through definitions and examples. The first part of the research instruments for ME teachers and ME students used the yes-no and multiple responses items. While, the

second part utilized the five-point Likert scale with 5 as the highest and indicated strongly agree. A pilot study was administered to 143 students and 31 teachers who are not part of the research samples to establish the reliability of the survey instruments. Reliability analysis resulted in a 0.753 Chronbach Alpha for the student research instrument and 0.818 for the teacher research instrument. A chronbach alpha above .75 is interpreted as a highly reliable instrument as there is internal consistency in the instrument. Thus, both instruments are found to be reliable.

Data Collection

The research team secured necessary permission to conduct the study from the presidents of HEIs that participated in the study. After selecting the respondents and securing their informed consent, the enumerators personally administered the survey instruments to the respondents. Maritime English teachers convened the student-respondents in the classrooms where they were given the survey instruments for them to accomplish. Retrieval of the survey instruments was done immediately after the respondents have completed answering them. All gathered data were encoded using Excel and were tallied and tabulated for analysis.

Data Analysis

Statistical analysis of data was done through frequency counts, percentage, weighted mean, and standard deviation.

Results and Discussion

This section presents the data gathered from the survey and from the needs assessment. To give credence to these data, inferences and insights were drawn; and implications of findings to practice and theories were integrated in the discussion and interpretation of the data. Relevant literatures that buttress the data were also cited.

On the Teaching of Maritime English

This paper examined the teaching of Maritime English in Philippine HEIs along the following factors: Learning objectives and outcomes, Teachers' competencies, Instructional materials, procedures, and techniques, Assessment and evaluation, and Administrative support. The perceptions of Maritime English teachers about the teaching of Maritime English are presented in Table 1.

Table 1

Maritime English Teachers' Perceptions of the Teaching of Maritime English

Factors	N	Mean	Verbal Description	Standard Deviation
1. Learning Objectives and Outcomes	150	4.2300	SA	.6879
2. Teacher's Competencies	150	4.4680	SA	.6647
3. Instructional Materials	150	4.3160	SA	.6195
4. Assessment and Evaluation	150	4.0920	A	.6480
5. Administrative Support	150	4.1300	A	.7619
Overall	150		SA	.6917

Legend: 4.21-5.00 = Strongly Agree (SA) 3.41-4.20 = Agree (A) 2.61-3.40 = Undecided (U)
1.81-2.60 = Strongly Disagree (SD) 1.00-1.80 = Disagree (D)

In terms of learning objectives and outcomes, the weighted mean of 4.23 and standard deviation of .6879 suggests that the respondents strongly agree with the learning objectives and outcomes of the teaching of Maritime English in Philippine HEIs. Technically, the standard deviation is a statistical measure of dispersion which is a factor of variability of the respondents' responses. A high value of the standard deviation means that the responses are scattered wider or many of the responses are dispersed away from the mean value. While, a lower value of the standard deviation means that the responses are concentrated near to the mean value.

This study proposes the need to consider the findings for further improvement of student's knowledge, understanding, and proficiency in Maritime English as an objective of the course for this is required by the STCW 1995 Code and the 2010 Manila Amendments. In practice, Maritime English provides students wide-ranging opportunities to perform communication tasks in English for both maritime and general purposes. As part of its course outcomes, Maritime English develops

students' ability to use English at least to intermediate language level. In fact, the linguistic content of the course integrates the three language systems (grammar, vocabulary, and pronunciation) with the practice of the four language communication skills (listening, speaking, reading and writing). Also, the course objectives and outcomes of the teaching of Maritime English in Philippine HEIs are perceived to be in harmony with the English language guidelines of STCW 1995 Code and the 2010 Manila Amendments. This finding implies that the maritime HEIs in the Philippines meet the requirements or provisions of the STCW 1995 Code and the 2010 Manila Amendments relative to the teaching of Maritime English.

In terms of the Maritime English teachers' competencies, the weighted mean of 4.46 and standard deviation of .6647 reveals that the respondents strongly agree with the Maritime English teachers' competencies such as that they have a good command of the English language and that Maritime English teachers in Philippine HEIs show evidence of preparedness for class as revealed in their mastery of the subject matter. Also, these Maritime English teachers effectively create a climate for learning and efficiently manage the class. They present their lessons in clear and logical order and give comments which encourage students to do better in class and gain confidence in speaking the English language. They provide activities that enable students to practice communicating in English for maritime purposes. They also offer alternate explanations to students who do not understand the lesson. These findings suggest that teachers of Maritime English in Philippine HEIs think of a variety of creative ways in which they can pull off their lessons and make the teaching of the course more engaging for their students. It is also obvious that Maritime English is taught in Philippine HEIs as a course in English for Specific Purposes (ESP).

In terms of the instructional materials, procedures and techniques, the weighted mean of 4.31 and standard deviation of .6195 shows that the respondents strongly agree with the provisions that describe the instructional materials, procedures, and techniques used by Maritime English teachers in Philippine HEIs. An appropriate syllabus is designed for the Maritime English course. Instructional materials seek to develop desirable attitudes towards Maritime English. Maritime English teachers in Philippine HEIs use varied teaching methods and techniques to enable maritime students in Philippine HEIs to develop and enhance their proficiency in Maritime English. Definite rules and policies for effective classroom management of Maritime

English classes are enforced. Teaching methods and strategies used by Maritime English teachers in Philippine HEIs contribute to the development of Maritime English competence of maritime students in Philippine HEIs. The syllabus is updated periodically and provides opportunities for maritime students to practice communicating in English for maritime purposes.

With regard to assessment and evaluation, the weighted mean of 4.09 and standard deviation of .6480 suggests that the respondents agree with the assessment and evaluation used by teachers in Maritime English classes in Philippine HEIs. The Maritime English teachers agree that the methods chosen to assess competence determine whether a student has the necessary competence according to the STCW Convention in addition to national requirement. The general criteria for assessment in Maritime English classes in Philippine HEIs are in reference to the STCW Convention, IMO Model Course 3.12 Assessment, Examination and Certification of Seafarers, and national regulations and framework.

As to the administrative support, the weighted mean of 4.13 and standard deviation of .7619 suggests that the respondents agree with the administrative supports extended to the teaching of Maritime English in Philippine HEIs. Specifically, there is a clearly defined and feasible system for the requisition and procurement of textbooks and other instructional materials both by the faculty and the students. Furthermore, most of them agree that their respective administrations provide encouragement and support for the Maritime English faculty in Philippine HEIs to prepare their own instructional materials like textbooks, modules, etc.; and that the administration has a clearly defined system that determines the size of Maritime English classes in Philippine HEIs.

With an overall mean of 4.2472 and standard deviation of .6917, the Maritime English teachers revealed positive perceptions of the teaching of Maritime English in Philippine Higher Education Institutions that offer maritime education and training. Generally, they strongly agree with the three factors – learning objectives and outcomes, instructional materials, procedures, and techniques, and teachers' competencies – that describe the teaching of Maritime English in Philippine HEIs. It is worthy to note that among these factors, Maritime English teachers' competencies seem to have been given utmost attention by the respondents in this study. It can be inferred from this finding that the teachers' competencies in teaching Maritime English in Philippine HEIs largely determine the success of the course. It suggests

that enhancing the teachers' competencies must be a priority of Philippine HEIs offering maritime education and training if they want their Maritime English program to succeed and realize its objectives of enhancing the Maritime English proficiency of their students. This finding is strengthened by Pritchard, Cole, and Trenkner (2013) who maintain that "there is an urgent need to systematically educate and train Maritime English instructors to develop their competence and skills" (p. 38) in teaching the course as well as in assessment and evaluation.

On Maritime English Language Learners' Needs

The data generated from the needs assessment reveal the Maritime English topics that learners need to study, and the language functions that they need to practice to improve their Maritime English communication skills.

Table 2

Needs of the Learners in Terms of the Maritime English Topics

Maritime English Topics	Frequency N= 3, 496	Percentage
Safety and emergency situations on board	3076	88.00%
Standard marine communication phrases	3042	87.00%
Safety equipment	3011	86.00%
Safety and risks on board	2928	84.00%
Emergency response	2916	83.00%
Standard marine vocabulary	2845	81.00%
Crew roles and routines	2809	80.00%
Marine protection	2726	78.00%
Organization on board	2691	77.00%
Types of vessel	2584	74.00%
Standard engine orders	2356	67.00%
Standard wheel orders	2051	59.00%

From the given data on the needs assessment of the learners, it is obvious that the common Maritime English topics focused on safety awareness and standard marine communication phrases. The maritime student-participants in this study believed that they need extensive knowledge and competence in using the standard marine communication phrases for safety and emergency situations. However, they least prioritized the topics concerning standard orders on wheels and engine department.

The result highlights the primary concerns of future seafarers which are safety and standard communication system for Maritime operations. It suggests that the curriculum on Maritime English in the Philippines should focus on the use of Maritime English in dealing with safety and emergency situations onboard as well as the Standard Marine Communication Phrases (SMCPs) to ensure safety of navigation. Astratinei (2013) supports this claim in saying that the use of IMO-SMCP enables maritime crews and officers to understand information and messages concerning ship's safety and operation.

Table 3

Needs of the Learners in Terms of the Language Functions – Basic English

Maritime English Topics	Frequency N= 3, 496	Percentage
Practicing VHF radio exchange procedures	2727	78.00%
Understanding commands in emergency situations on board	2692	77.00%
VHF radio communications regarding bunkering	2622	75.00%
Reporting incidents at sea	2552	73.00%
Asking for and giving directions on board	2482	71.00%
Describing safety equipment	2447	70.00%
Reporting events from past voyages	2345	67.00%
Asking for and giving personal data	2144	61.00%
Describing crew roles and routines	2042	58.00%
Requesting medical assistance	2133	61.00%
Describing weather conditions	1931	55.00%
Checking supplies	1891	54.00%
Discussing food on board/ordering meals	1829	52.00%

From the data shown in Table 3, the learners revealed that the primary language functions they need in Basic English are practicing VHF (Very High Frequency) radio exchange procedures, understanding commands in emergency situations on board, VHF radio communications regarding bunkering, reporting incidents at sea, and asking for and giving directions on board. The participants manifested their interest to hone their basic skills in communication particularly in the use of VHF radio system and reporting emergency and safety situations at sea. On the one hand, less serious matters like conversations on meals and supplies are at the bottom of the list.

Furthermore, the result shows that the learners of Maritime English in Philippine HEIs need to enhance their knowledge about the use of Maritime English at the basic level in relation to safety and emergency situations. The role of language

in the maritime field covers the most important safety-related fields of verbal shore-to-ship, ship-to-shore, and onboard communications. This indicates that the contents of the Basic English course of Maritime English should emphasize the communication processes onboard, significantly, in safety situations and vessel routines. The learners of Maritime English in Philippine HEIs consider the communicative functions of English as basic for survival at sea, particularly, during emergency situations onboard. In similar view, according to Borodina (2017) Maritime English courses must aim to develop the communicative competence in English to a level that will enable them to satisfy the competences relating to English language set out in the STCW Code. Furthermore, she stressed that the use of authentic materials is one of the sources of professional knowledge, the way to prepare seafarer for future activity, to develop the required skills and competence in ensuring accurate communication to maintain safety onboard at all times. Similarly, the learners revealed their needs in learning Maritime English at the intermediate level. Table 4 presents these relevant data.

Table 4

Needs of the Learners in Terms of Language Functions – Intermediate English

Language Functions—Intermediate English	Frequency N= 3, 496	Percentage
Understanding the cultural norms of different nationalities	3282	94.00%
Taking and delivering messages accurately via VHF radio	3176	91.00%
Giving instructions to passengers in the event of an emergency	3073	88.00%
Describing procedures for survival at sea	3047	87.00%
Demonstrating awareness of how cross-cultural issues can affect teamwork at sea	2968	85.00%
Reporting damage caused by bad weather at sea	2858	82.00%
Discussing aspects of safety and risks in the workplace	2557	73.00%
Describing how machinery operates	2344	67.00%
Confirming arrangements for joining ship	2242	64.00%
Describing measures for ensuring vessel security	2141	61.00%
Describing mechanical breakdown and repair	2034	58.00%

As revealed by the learners of Maritime English in Philippine HEIs, the functions that they need to learn in Intermediate English level are as follows: understanding the cultural norms of different nationalities, taking and delivering messages accurately via VHF radio, giving instructions to passengers in the event of

an emergency, describing procedures for survival at sea, and demonstrating awareness of how cross-cultural issues can affect teamwork at sea.

Among the enumerated language functions of Intermediate English, the participants took interest in understanding the cultural norms of different nationalities. They perceived it as important in surviving a workplace with multiracial crews. In addition, they are aware of how cross-cultural issues can affect team work. Thus, the maritime English learners in Philippine HEIs put much concentration on the nuances of cultural diversity in language usage. Nevertheless, the participants in this study did not consider communicative activities on mechanical repairs and ensuring vessel security.

The implication is that intercultural communication is significant in a global industry like seafaring. The learners are of the idea that conveying and understanding messages accurately are the major considerations in learning Maritime English at the intermediate level. Furthermore, the learners are concerned primarily with the importance of strengthening Maritime English proficiency and consider it necessary in addressing cross-cultural issues and managing survival at sea. Thus, Maritime English course designers in Philippine HEIs should adopt the provisions in the STCW 95 to enable the seafarers to understand meteorological information and to communicate with other ships and coast stations with a multilingual crew. Markoe in Tenieshvili (2013) states that communication at sea would be much facilitated if language and cultural barriers that exist among and between crew members of different nationalities were diminished.

Likewise, miscommunication may result from one's inability to share the features or norms of the target culture. Visan, Ungureanu and Popescu (2009) went on to say that as IMO officially adopted English as the language of the sea, the responsibility of Maritime English teachers to non-native English speaking students has increased. In fact, development of students' communicative competence reflects the teachers' endeavor to seek methods that facilitate learners to adequately master Maritime English. The use of the communicative approach to Maritime English teaching and learning was recommended and explained that the adoption of this approach attempts to meet the learners' necessary communicative needs when they are onboard a vessel.

On the Attitudes of Learners towards Learning Maritime English

Studies conducted in Asian countries reported variations in beliefs and indicated the important role of culture and context in examining learners' beliefs (Orbe, 2013). Similarly, in Table 5, the student-respondents manifest their attitudes towards learning Maritime English in the Philippines.

Table 5

Attitudes of Learners towards Learning Maritime English

Statements	N	WM	Verbal Description	Standard Deviation
Studying English is important because it will make me more educated.	3,496	4.51	SA	0.8214
Studying Maritime English helps me in getting new information in which I can link to my previous knowledge.	3,496	4.41	SA	0.8313
I think that people of the country where I might visit would like me to speak a common language that they can understand specifically English.	3,496	4.32	SA	0.8396
Knowing Maritime English is an important goal in my life since I need Maritime English in my future work.	3,496	4.32	SA	0.8264
As a future seafarer, it is a mark of respect for foreign crews and passengers to learn their language particularly English being the universal language.	3,496	4.30	SA	0.8469
Studying Maritime English helps me communicate in English effectively.	3,496	4.25	SA	1.0825
In my opinion, people who speak more than one language are very knowledgeable.	3,496	4.23	SA	1.0217
Speaking English anywhere makes me makes me feel worried.	3,496	3.78	A	1.1237
I feel embarrassed to speak English in front of other students.	3,496	3.50	A	1.1755
Frankly, I study Maritime English just to pass the exams.	3,496	3.48	A	1.1546

Legend: 4.21-5.00 = Strongly Agree (SA) 3.41-4.20 = Agree (A) 2.61-3.40 = Undecided (U)

1.81-2.60 = Strongly Disagree (SD) 1.00-1.80 = Disagree (D)

The data on the attitudes of learners towards learning Maritime English show that the maritime students in Philippine HEIs, in general, strongly believed that

learning English will make them more educated. Moreover, they strongly consider Maritime English to help them get new information that allows them to link current information to their previous knowledge. Most of them also agreed that learning Maritime English is an important goal which can help them in the future since there is a greater possibility of communicating to people of different nationalities where English is a common language they can understand. Likewise, as future seafarers, the student-respondents in this study strongly agree that it is a mark of respect to foreign crews and passengers to learn their language particularly English as a universal language.

However, some of the student-participants expressed apprehensions and hesitations on learning Maritime English because they felt embarrassed and worried to commit mistakes. Arguing that environment remains the vivid sharpener of behavioral patterns among multi-lingual seafarers on board a ship, Joe (2009) elucidated some cross-cultural communication issues on board. He said that it is the "unique cultural belief system of a speech community and the unique linguistic behavior of speakers of different languages, depicting different cultural backgrounds across the world that poses to the maritime industry, a barrier that must be broken by the cross-pollination of Maritime English" (p. 301).

Still, the student-respondents generally manifest a positive attitude towards learning Maritime English. In a similar vein, Visan, Ungureanu and Popescu (2009) posit that studying a foreign language involves not only "being knowledgeable of the grammar and vocabulary, but also submitting to the foreign culture" (p. 201). They added that communicating in a foreign language involves communicating interculturally and this may lead to certain features concerning cultural differences. Therefore, it becomes necessary for maritime students to develop and improve their communication skills and cultural awareness to communicate effectively with other crew members despite cultural differences and unique linguistic behavior. One effective way to do this is to acquire some degree of proficiency and skill in Maritime English, which is the main concern of this study.

Conclusions

The study investigated the perceptions of teachers concerning the teaching and learning of Maritime English in Philippine HEIs that offer maritime education and training. It also analyzed the needs of maritime students in Philippine HEIs on

learning Maritime English, as well as their attitude towards learning Maritime English. The study also tried to draw implications to the practice and theories related to the teaching and learning of Maritime English in the Philippines.

First, it was found that the perceptions of Maritime English teachers on the teaching of Maritime English indicate that the objectives of the course focus on the improvement of student's knowledge and proficiency in English required by the STCW 1995 and the 2010 Manila Amendments. Consequently, Philippine HEIs with maritime programs expect and provide opportunities for their Maritime English teachers to acquire or update their maritime background knowledge.

Second, the study also revealed that the maritime students are basically concerned with learning the standard marine communication phrases in connection with safety and emergency situations onboard. An analysis of the provisions on the basic and the intermediate level functions of Maritime English would justify the consistency of their answers pertaining to the Maritime English topics that they need to learn. It is important to underscore that aside from managing safety and emergency situations onboard, understanding cultural norms and differences should also be considered as part of the teaching and learning activities in the intermediate level functions of Maritime English.

Third, the Maritime English students in Philippine HEIs who participated in this study generally manifested positive attitude towards learning Maritime English. They believe that learning the nuances of the universal language will empower them to communicate effectively and professionally. Thus, it can be said that since the international maritime industry is manned by seafarers of different linguistic backgrounds and diverse cultures, the use of English as a lingua franca (ELF) should be anchored in the teaching and learning of Maritime English.

Recommendations

In the light of the conclusions of the study, it is recommended that prospective researchers may conduct a parallel study on the development of interactive Maritime English modules or instructional materials containing Standard Marine Communication Phrases focusing on safety and emergency situations on-board. Also, considering the paucity of instructional materials for teaching Maritime English, ME teachers may design and develop instructional materials that focus on the use of

IMO-SMCPs to enhance desirable attitudes of students towards Maritime English. Moreover, future studies on the assessment and evaluation of varied teaching methods and techniques for maritime students to develop and enhance their proficiency in Maritime English may be conducted to enrich the preliminary data obtained in the present study.

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**Content and Language Integrated Learning (CLIL)
as a Teaching Approach for Developing Managerial Skills
(for Masters of Navigation Curriculum)**

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Abstract. This article considers Content and Language Integrated Learning (CLIL) as a dual-focused educational approach in which Maritime English is used for the learning and teaching of both content and language. In maritime business English is applied as a lingua franca because this field requires an English-language-proficient workforce.

Our teaching experience with Masters of Navigation in National University “Odessa Maritime Academy” shows that, to achieve professional competence on management level using English as the main communicative tool, students have to be intellectually challenged in order to transform information and ideas, to solve problems based on situational awareness. Effective content learning has to take account not only of the defined knowledge and skills within the curriculum, but also how to apply these through creative thinking, problem solving and cognitive challenge.

Keywords: *situational awareness, Content, Communication, Cognition, and Culture, management level.*



Introduction

Under the STCW Code (table A-II/2) deck officers and Master must have leadership and managerial skills. The code emphasizes the necessity to know and be able to apply effective communication on board and ashore; obtain and maintain situational awareness in respect of the effective recourse management.

Special attention is paid to applying decision-making techniques such as situation and risk assessment, identifying and generating options, selecting course of action and evaluating of outcome effectiveness [1].

This article offers a conceptual framework based on 4 Cs: **C**ontent, **C**ommunication, **C**ognition, and **C**ulture.

Content in CLIL setting should be thematic, cross-curricular and have a focus on ways of preventing accidents at sea through expert analysis and investigation of every case.

In our opinion, these 4 major components will help senior nautical students to develop their managerial skills through understanding, analyzing, evaluating authentic real-life case histories from official resources such as the Marine Accident and Investigation Branch (MAIB) and the Mariners' Alerting and Reporting Scheme (MARS).

The term "Content and Language Integrated Learning" (CLIL) was adopted in 1994 within the European context to describe and further design good practice as achieved in different educational establishments where teaching and learning take place in a learner's "foreign language".

CLIL is an educational approach in which various language-supportive methodologies are used which lead to a dual-focused form of instruction where attention is given both to the language **and** the content. "Achieving this twofold aim calls for the development of a special approach to teaching in that the non-language subject is not taught **IN** a foreign language but **WITH** and **THROUGH** a foreign language" [2].

A CLIL approach offers enabling students to access subject-specific foreign language terminology, or otherwise preparing them for future studies and/or working life. Do Coyle, P. Hood, D. Marsh consider CLIL as an approach which is neither language nor subject learning, but amalgam of both and is linked to the process of convergence. Convergence involves the fusion of subjects in the curriculum. This is where CLIL breaks new ground [4, p. 4]. The ability to think in different languages, even if to a modest extent, can have a positive impact on content learning. To

achieve this, the content teacher will need to adapt subject-specific methods so as to accommodate the foreign language focus.

In maritime business English is applied as a lingua franca because this field requires highly competitive, and English-language-proficient workforce.

Successful language learning can be achieved when people are highly motivated after experiencing real-life situations in which they can acquire the language more naturalistically. CLIL offers opportunities both within and beyond the regular curriculum to initiate and enrich learning, skill acquisition and development.

In this article we would like to adapt CLIL as a teaching approach to Maritime English. After Marsh, Maljers and Hartiala [3], who summarized a variety of contextual variables under the headings of Context, Content, Language (Communication), Cognition and Culture, we will offer the main reasons for introducing CLIL in Maritime Professional English for Masters in Navigation on management level.

Table 1. Main reasons for introducing CLIL in ME

Context	• Assessing international certification
Content	• Multiple perspectives for study, e.g. modules in ME where authentic case histories from the MAIB, MARS, etc. are used. • Skills for working life, e.g. on-board training with safety meetings, completing reports etc. • Accessing subject-specific knowledge in another language.
Communication	• Improving overall target-language competence, e.g. through extended quality exposure to the CLIL language (in mixed crew). • Developing oral communication skills, e.g. through offering a wider range of authentic communication routes (with crewmembers in mixed crew, agents, supervisors, port authorities).



	• Deepening awareness of both first language and CLIL language, e.g. twin lessons of former masters and ME teachers. • Developing self-confidence as a language learner and communicator.
Cognition	• Increasing learner motivation, e.g. CLIL vocational upgrading courses for seafarers, professional role plays at simulators. • Developing individual learning strategies, e.g. acquiring and developing situational awareness of every crew member.
Culture	• Building intercultural knowledge, understanding and tolerance. • Developing intercultural communication skills, e.g. student collaboration on joint projects across nations.

In maritime business, in general, English has become the most dominant and leading means of communication, crucial device for survival at dangerous situations, a vital and sufficient tool for successful teamwork, for gaining and maintaining situational awareness of every seafarer and on-board safety culture by the shipping company, for solving problems and taking decisions.

The objective of a specific-domain vocational CLIL is to develop English competence of masters in navigation so that they are able to carry out specific task-based functions which might range from giving orders to subordinates of different nationalities to monitoring, accessing and processing information, analyzing near misses, incidents and accidents causes orally (with agents, stevedores, surveyors etc.) and in writing (in accident/incident reports, sea protests, routine correspondence, etc). Where applicable, this is carried out by content and language teachers working in tandem. It marks a shift away from existing practice such as teaching language for specific purposes (ESP) towards practice which seeks to achieve the same objectives through a closer link to content teaching and learning. In many marine institutions English language teachers are the only source for the students to acquire both content and language skills. So, it is



common that senior cadets learn through the CLIL language and the first language, so that they can carry out specific tasks in diverse contexts. Assessment is often bilingual and competence-based. To sum it up, this model takes us into the vocational and professional educational sectors. At management level for Masters, the curricula have not included language teaching at all. CLIL can act as a means by which to both introduce languages into the curriculum, and to enhance existing practice.

What are the ways of integrating content and language learning in English classes for Masters in Navigation?

The conceptual framework is based on 4Cs [4]. It contains 4 contextualised building blocks:

1. CONTENT (subject matter);
2. COMMUNICATION (language learning and using);
3. COGNITION (learning and thinking processes);
4. CULTURE (developing intercultural understanding in multinational crews).

Let's consider each of these components to form the sample of a CLIL Curriculum which covers the most vital topic for senior officers "Accident investigation".

1. Content.

At the heart of the learning lies successful content or thematic learning and the related acquisition of new knowledge, skills and understanding. Content is the subject or the CLIL theme.

Content in a CLIL setting could be thematic, cross-curricular, interdisciplinary and have a focus on the procedure of investigation of different types of accidents, their root and immediate causes, the very nature of them. Themes might include issues-led investigations into the causes of cargo-, vessel-related incidents, person-related accidents; cross-cultural studies might involve cargo-handling procedures, ship's handling, safety operations on the vessel, commercial aspects of shipping etc.; interdisciplinary work can be carried out during twin lessons.

2. Communication

Effective communication is an essential prerequisite for good teamwork. Besides its vital addition to the perception process, communication fulfils several other important functions. It not only helps the development of a shared mental model of the problems to be resolved in the course of



the task, enhancing situational awareness, but also allows problem-solving to be shared amongst other team members, enabling them to contribute effectively to the decision-making process. It is a key element in setting the tone for the management of the work performed. To make the teamwork successful they have to understand their role within the group and how this role can change depending on the changing situation and the circumstances under which decisions are being made and taken.

3. Cognition

To raise achievement levels, masters have to be intellectually challenged in order to transform information and ideas, to solve problems, to gain understanding. Effective content learning has to take into account not only of the defined knowledge and skills within the curriculum, but also how to apply these through creative thinking, problem solving and cognitive challenge.

The cognitive process at management level for masters consists of higher-order thinking, i.e. **analyzing, evaluating and creating**. For them cognitive skills are those mental processes used for gaining and maintaining situational awareness, for solving problems and taking decisions.

Unfortunately, 71% of all human error types on ships are situational awareness related problems. Situation Awareness (SA) acts as team working and effective decision-making aspect. **Situation Awareness** is the ability of an individual to possess a mental model of what is going on at any one time and also to make projections as to how the situation will develop. An often-cited definition is; “.... the perception of the elements in the environment within a volume of space and time, the comprehension of their meaning, and the projection of their status in the near future” [5]. A high degree of situational awareness can only be achieved when an individual’s perception of events approaches the reality of the situation.

4. Culture includes “self” and “other” awareness, identity, and progression towards multicultural understanding.

The discussion concerns the ways seafarers from different cultures might approach the same content topics, participate in common safety meetings, give commands to ratings of different nationalities, engage in informal routine small talks at rest hours, etc.

The 4Cs do not exist as separate elements connecting the 4Cs into an integrated whole. It is fundamental to planning a curriculum.



Exploring how cognitive elements interconnect with content will determine the type of tasks which will be planned. Relating cognition to communication will demand careful consideration of classroom activities to ensure that masters not only have access to the content language but are able to carry out the tasks and solve the professional problems on management level.

Having good strong problem-solving skills can make a huge difference to the future career of an officer. Most of all human error types on ships are caused by making ineffective solutions with sometimes painful consequences.

Under the STCW Code (A-II/2) deck officers and Master must use leadership and managerial skills. The Code emphasizes the necessity to know and be able to apply effective communication on board and ashore; obtain and maintain situational awareness in respect of effective resource management. Special attention is to be paid to applying decision-making techniques such as situation and risk assessment, identifying and generating options, selecting course of action and evaluating of outcome effectiveness [1].

Situational awareness of every crewmember on board the vessel and safety culture provided by the company and being followed and monitored by Master can guarantee the successful and safe performance of the voyage.

CLIL integrates language learning and content learning at cognitive and cultural level appropriate to Maritime English learners. It is the integration which results in new learning scenarios which are different from regular language and content lessons. CLIL demands careful planning a mind map for progression in all Cs but the main goal is to promote team decision making and collaborative planning.

The curriculum is purpose-designed with objectives that not only lead to high levels of content mastery but also linguistic proficiency.

The chapter might consist of a series of lessons (units) over a specific period of time or a theme.

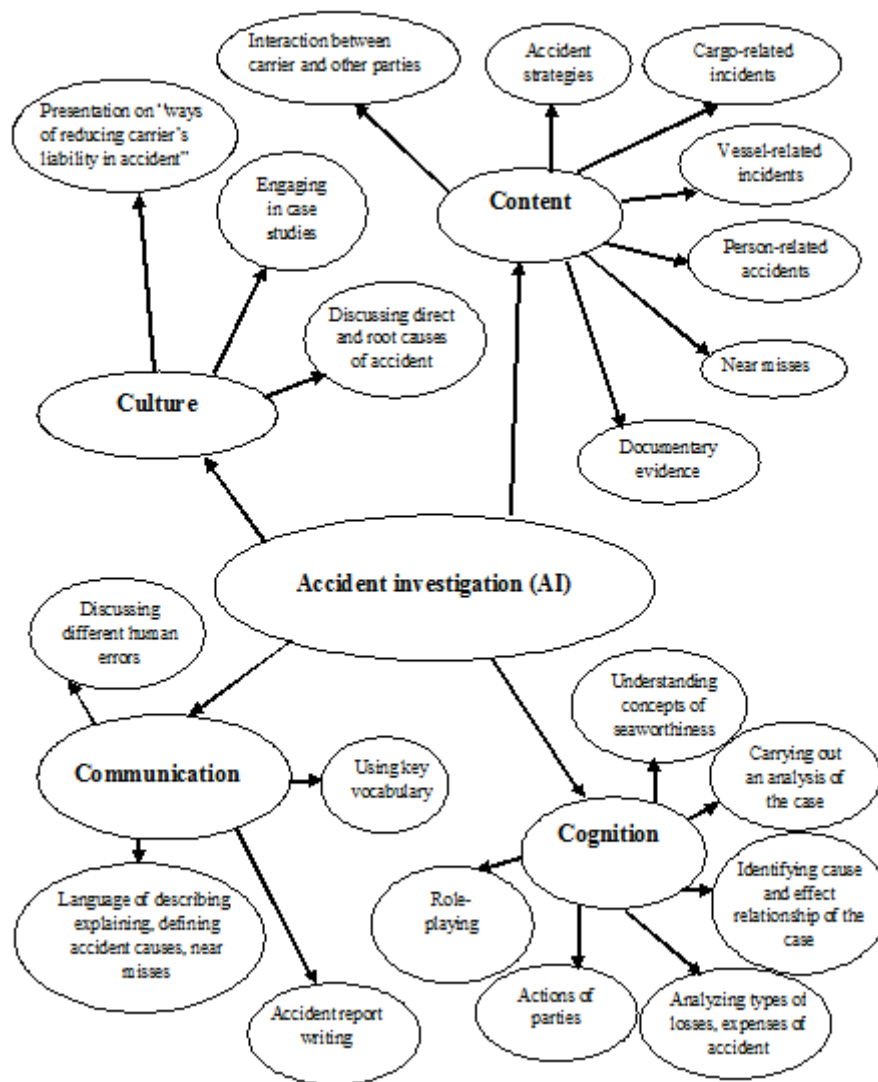
Through the 4 steps we can offer a mind map using the template to build up an overview of the chapter “Accident Investigation”.

1. Considering content —————> 2. Connecting content and cognition —————>
3. Communication (defining language learning and usage) —————> 4. Developing cultural awareness and understanding.

CLIL mind map template

Global goal: develop classroom discussion

The title: “Accident investigation” subdivided into several subtopics



What is the most effective approach in CLIL classroom?

The most effective approach in classroom activity in CLIL in teaching seafarers is “**dialogic learning**” [5]. The challenge in CLIL setting is that students will need to engage in dialogic learning using Maritime English.



The principle is that effective learning cannot take place without active involvement of ME and thinking. The CLIL classroom demands a professional level of talk, analysis, interaction between officers (based on their sea experience) under teacher's supervision.

The CLIL classroom demands a level of talk, of interaction and dialogic activity which is different to that of the traditional language or content classroom.

There is no communication without dialogue. The interaction between teacher and student and student and student motivates them to spontaneous free thinking. Teacher's questioning encourages learners to collect knowledge and skills acquired in teaching and in practice together in order to solve professional problems and to express their personal attitude to case-histories.

In CLIL environments, where cognition is integrated with learning and communication, teacher questioning, which encourages learner questioning, is fundamental to high-order thinking skills, creativity and linguistic progression. The richest tool for any CLIL teacher is asking learners the question "WHY?", since a response activates a thread of simultaneous and integrated learning demands embedded in 4Cs.

Conclusion

The need to develop a 21st century workforce in maritime business has stressed the importance of perceiving competence as an amalgamation of knowledge and skills.

In this article we have presented CLIL as a main practical tool which can be used and adapted for high-order thinking, analysis of human errors, development of situational awareness of every officer, clear assessment of team competence.

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Error Analysis on the Written Composition of Maritime Cadets

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Abstract

Writing skill is an important part of communication. Good writing skill allow ones to communicate effectively. Writing has become a difficult task to do and learn even to first language speakers of English.

Writing is necessary to make reports on board. It is also a requirement of the Standards of Training Certification and Watch Keeping (STCW) for seafarers. It is considered as an important tool to maintain safety of life and property at sea.

"It's the nature of being a student, after all, to be "wrong". (Denby, 2000). Therefore it is inevitable for the cadets to commit mistakes in writing English essay and other composition most specially that English is their second language.

According to Brown (2000), in order to master the English language, learners have to be adequately exposed to all of the four basic skills, namely listening, speaking, reading and writing.

The study aimed to analyze the error on the written composition among Maritime Cadets of University of Cebu Lapu- Lapu and Mandaue with the following objectives:

1. What are the common grammatical features of language errors found in the cadet's written composition?
2. What are the descriptions of those errors produced?
3. Based on the findings of the study, what intensive enhancement program may be proposed?

The students- respondents were the Maritime cadets of University of Cebu –Lapu- Lapu and Mandaue. The data analyzed for this study were the errors in cadet's letter of explanation. The errors in the composition were individually identified and categorized based on Hendrickson (as cited in Juozolynas, 1991), provides a basis of categorization of errors. These categories of errors are: Semantics, Morphology, Syntax, Spelling and Punctuation. The syntactical errors mark the highest number of errors in the composition of the cadets- respondents. Errors are mostly in the inability or failure of the learner to master the second language and rules in grammar.

There is really a need for an intensive study on the basic and advanced grammar with composition to Maritime Cadets.

Keywords — *error analysis, Maritime Cadets, grammatical features, cadet's composition*

I. INTRODUCTION

Writing is a process that has grammatical and technical rules. It is evident that in the process of writing there is a chance of committing errors on it. This observation might be due to the inadequacy of knowledge, due to natural or innate factors that contribute to the development of thinking and writing skills of an individual.

Writing skill is considered to be the most challenging task for all and most especially to seafarers who are second language learners. Writing has become a difficult task to do and learn even to first language speakers of English.

Writing is necessary to make reports on board. It is also a requirement of the Standards of Training Certification and Watch Keeping (STCW) for seafarers. It is considered as an important tool to maintain safety of life and property at sea.

In this worldwide trend, people compose and write blogs, text messages, e-mail, and post information to social media. Social media influence people's lives in many aspects including education and English language learning. (Kamnoetsin, 2014). Most of the students are using the social media and not to mention there are lots of grammatical errors being observed. People in academe are under pressure to pay more serious attention to the writing proficiency of the students most specially the cadets from the Maritime who will become future seafarers and will work internationally in the future.

In academe there is a forceful teaching on rules and strict correctness of grammar and mechanics and less on the grammatical and discourse competence.

"It's the nature of being a student, after all, to be "wrong". (Denby, 2000). Therefore it is inevitable for the cadets to commit mistakes in writing English essay and other composition most specially that English is their second language.

Error- making as emphasized by Robinson (1998) is a natural phenomenon in learning of all kinds. Yet, cadets continue to commit mistakes in writing despite the repeated teaching done by the teachers.

Michaelides (1990) stated that the correction of all kinds of written work (composition, translation, summary) has been the problem of foreign / second teachers, particularly the inexperienced. This is because of the alarming increase of error made by the students in writing.

In this the researcher deems it challenging to pose this study to analyze the writing styles of the Maritime Cadets of University of Cebu Lapu- Lapu and Mandaue branch. Determining the common grammatical features of language errors found in the student's composition and the descriptions of those errors being produced.

According to Brown (2000), in order to master the English language, learners have to be adequately exposed to all of the four basic skills, namely listening, speaking, reading and writing. As one of the macro skills in language learning, writing is very important in man's culture as it preserved thoughts, ideas, and speech sound (Ramelan, 1992). Ulijn and Strother(1995) state that, writing is generally considered to be one of the active or productive skills of language usage. Writing is a process of producing language that comes from our thought in a written form; as according to Finnochiaro (1974), writing is a written thinking as it involves thinking process. Writing skill is seen as language skill which is most difficult and complex because it's required widely perception and involving thinking process and need good understanding on grammar and structures which extensive. Writing has become a difficult task and skill to develop that even native English speakers are making errors. Writing has always been an essential aspect of the curriculum of English as a major, and for academic purposes. The process of writing helps develop the students' cognitive skills necessary in acquiring the learning on language (Bacha, 2002).

Errors are considered to be flaws that are to be eliminated. But S. P. Corder (1967) gave a whole new point of view as he contended that errors are "important in and of themselves" as stated in his article, "The significance of learner errors". For him, analyzing errors made by language learners will determine the areas that need reinforcement. And so, he fathered error analysis.

A lot of researchers gave definition on what error analysis is. Candling (2001) considered EA as "the monitoring and analysis of learner's language". According to James (2001, p. 62), EA refers to "the study of linguistic ignorance, the investigation of what people do not know and how they attempt to cope with their ignorance". Brown (as cited in Ridha, 2002) defined error analysis as "the process to observe, analyze, and classify the deviations of the rules of the second languages and then to reveal the systems operated by learner". "Applied error analysis, on the other hand, concerns organizing remedial courses and devising appropriate materials and teaching strategies based on the findings of theoretical error analysis" (Erdogan 2005). "EA is a type of linguistic study that focuses on the errors learners make" (Darus&Subaramaniam, 2009).

According to James (1988) errors in writing such as tenses, prepositions and weak vocabulary are the most common and frequent type of errors that are committed by learners. Corder (1973) classifies errors in terms of the difference between the learner's utterance and the reconstructed version and proposes four different categories: omissions, additions, misinformation and misordering.

- Omission is considered to be the absence of an item that should appear in a well-formed utterance.
- Addition is considered to be the presence of an item that should not appear in a well-formed utterance.
- Misinformation is considered to be the use of the wrong form of the morpheme or structure.
- Disordering is considered to be the incorrect placement of a morpheme or group of morphemes in an utterance.

Ahmad (1986) identified these errors were: word order, verbal form, wh - question word, auxiliary replacement, redundancy, repetition of the underlined words, and irrelevant question. Darus (2009) identified the following areas in which student often commit error:

- Singular and Plural Form. Some of the participants did not know that the plural form using the suffix 's' must be applied to the countable plural noun.
- Verb Tense. Wrong application of verb tense can be seen when the participants did not apply the correct tense to the verb in the sentences.
- Word Choice. Participants lack appropriate vocabulary.
- Preposition. The participants demonstrated confusion for correct usage of preposition.
- Subject-Verb Agreement. The participants still have difficulty when it comes to the rule of subject and verb agreement.
- Sentence Construction. Besides the above errors, participants also have problems in forming simple or complex sentences. A complete sentence should start with a subject and should be followed by a verb and an object or complete sentences. However, the participants demonstrate missing/wrong object, missing subject, and missing verb in their essays.

Hendrickson (as cited in Juozolynas, 1991), provides a basis of categorization of errors. These categories of errors are: Semantics, Morphology, Syntax, Spelling and Punctuation. This category contains errors of meaning, such as wrong word choice, "made-up" words, and errors in pronoun reference, which in principle cannot be recognized by a syntactic parser. Sometimes it is possible to guess the intention of the author and to substitute the correct word, but often the semantic structures of the words used in the sentence are totally incompatible with each other, and it is hardly possible to interpret the author's intention.

· Syntactic Errors

In this category are eleven types of the errors of semantic origin:

1. Preposition + Required Case

2. Verb + (Required Preposition) + Required Case
3. Word Order in Main Clause
4. Subject - Verb Agreement
5. Word Order in Dependent Clause
6. Missing Parts of Sentence/Clause (Subject, Verb, or Part of Verb, Object, etc.)
7. Relative Pronoun
8. Reflexive Verb
9. Word Order in Dependent Clause with Additional Infinitive
10. Infinitive Particle
11. Adverb or Adjective with Required Case and Preposition

- **Morphological Errors**

In this category are errors in the inflectional morphology system of the language used.

- **Punctuation Errors**

Punctuation is an element of grammar and particularly the comma is likely to be a problem for English learners.

- **Spelling Errors**

It is also one of the common errors committed among students to misspell words

especially those words which have intricate spelling and differ from its pronunciation.

Richards (1971) distinguished three sources of errors: 1. Interference errors: errors resulting from the use of elements from one language while speaking/writing another, 2. Intralingual errors: errors reflecting general characteristics of the rule learning such as faulty generalization, incomplete application of rules and failure to learn conditions under which rules apply, and 3. Developmental errors: errors occurring when learners attempt to build up hypothesis about the target language on the basis of limited experiences.

There are some previous studies on Error Analysis based on learners' written work. Such studies include Kroll and Schafer's "Error-Analysis and the Teaching of Composition", where the authors demonstrate how error analysis can be used to improve writing skills. They analyzed possible sources of error in non-native-English writers, and attempted to provide a process approach to writing where the error analysis can help achieve better writing skills. These studies, among many other researchers recognized the importance of

errors in SLA and started to examine them in order to achieve a better understanding of SLA processes, i.e. of how learners acquire an L2. Another set of researchers as cited by AbiSamra (2003) also pointed out some significant results these are: Harris (1981) who analyzed sentence fragments found in student papers according to a scheme defining different categories of fragments: broken sentences and minor sentences. He also focused on a particular kind of minor sentence: the fragmented free modifier ; thus, he further suggested strategies for dealing with these errors; on the other hand, Kim's (1988) investigation of errors in English verbs with reference to tense, mood, and voice was conducted. He made use of the 120 subjects from the 11th grade Korean EFL learners who were asked to translate 42 Korean sentences into English. His study revealed that errors in mood were most frequent (903), followed by errors in voice (885) and tense (720), among the total of 2508 errors.

Connors and Lunsford (1988) presented their analysis of 3000 marked essays in order to discover the most common patterns of student errors and which errors are marked most consistently by American instructors. He highlighted major findings which include the observation that teachers disagree on what constitutes a markable error, and tend to mark errors related to how serious or annoying the error is perceived for both student and teacher, although the difficulty in explaining the nature of the error also factors into the process.

Juozulynas (1991) pointed that in the 360 pages analyzed a total of 2199 errors in syntax, 1881 errors in inflectional morphology, 1537 errors in semantics, 1130 errors in spelling, and 954 errors in punctuation were found. Overall, excluding semantic and punctuation errors, 17.2% of the errors were global (i.e., affected the entire sentence), while 82.8% were local (i.e., affected only one word). In conclusion, Juozulynas "analysis of the Miami corpus showed that 80% of errors in the essays of the second-year students of German can in principle be recognized by a syntactic parsing program; the remaining 20% are semantic. In contrast to at least one other study (Rogers: 1984), semantic errors made up a small portion (20%) of the total. After adjusting Roger's classification (op. cit., 27) by assigning her categories "lexical errors" and "complete transfer of English expression" as well as some types of syntactic and morphological errors (e.g., pronoun reference, word formation, etc.) to the semantic category used in the classification, it becomes obvious that at least about 30% of errors in Rogers' study are of semantic origin.

RESEARCH QUESTIONS

The study aimed to analyze the error on the written composition among Maritime Cadets of University of Cebu Lapu- Lapu and Mandaue with the following objectives:

1. What are the common grammatical features of language errors found in the cadet's written composition?
2. What are the descriptions of those errors produced?
3. Based on the findings of the study, what intensive enhancement program may be proposed?

METHODS

The study utilized descriptive research design to analyze the error in the written composition among Maritime Cadets of University of Cebu Lapu- Lapu and Mandaue. The findings of which will be used as basis for proposing intensive enhancement program.

The students - respondents of the study were the 21 Maritime Cadets of University of Cebu Lapu- Lapu and Mandaue who were not able to take the Departmental Examination of 1st Semester 2017- 2018. These cadets were asked to write letter of explanation prior to allowing them to take the special examination.

The data analyzed for this study were the errors in cadet's letter of explanation. The errors in the composition were individually identified and categorized based on Hendrickson (as cited in Juozolynas, 1991), provides a basis of categorization of errors. These categories of errors are: Semantics, Morphology, Syntax, Spelling and Punctuation.

Frequency and Percentage distribution were used to the errors of the respondents in the common grammatical features of language errors found in the cadet's composition the errors of the respondents' written composition. Then sum up all the errors according to its classification and describe it.

RESULTS AND DISCUSSION

Table 1. The common grammatical features of language errors found in the cadet's composition

Common Grammatical Features of Language Errors	Frequency	Percentage
Morphological Errors	3	14.28
Syntactical Errors	16	76.19
Semantical Errors	9	42.85
Capitalization	9	42.85
Punctuation	11	52.38
Spelling	1	4.76

Table 1 shows the language errors found in the written compositions of the student-respondents. It also shows the frequency counting of errors and their corresponding percentage.

As shown in the table above, syntactical errors mark the highest number of errors in the composition of the respondents. It has a total of 16 errors or 76.19 percent. This is followed by Punctuation with a frequency of 11 or 52.38 percent. The least number of errors is seen in morphological errors and in spelling/misspelling that have 3 or 14.24 percent and 1 or 4.76 percent consequently.

It is clear from these figures where the greater linguistic problem of the respondents lays in grammar or the assembling of constituent parts of a construction into phrases, clauses and sentences. Juozulynas (1991) pointed that in the 360 pages analyzed a total of 2199 errors in syntax. Chan (2004) investigated writing errors made by 710 Hong Kong Chinese ESL learners and the results showed confirmatory evidence for syntactic transfer from Chinese to English with regard to the five syntactic patterns selected for experimentation, and the extent of syntactic transfer was particularly large for complex target structures and among

learners of a lower proficiency level. The prevalence of grammatical errors was also noted in a number of earlier studies. Yang [10] who conducted an inquiry on the writing errors made by ESL learners and found grammatical or syntactic errors the most serious among four types of errors made by the subjects. A case study done by Saadiyah Darus [12] with Malay high school students as participants identified mostly syntactic errors as the most common type seen in the essays examined, such as verb tense and word order.

Table 2. The descriptions of errors produced by the cadets – respondents in the written composition.

Original Text from the Cadets	Description
Deam <i>Maam</i> <i>I</i> deck cadet Panisan, Fritz a working scholar at HRM <i>department</i>. Asking for a chance to take the special exam of Marlaw. I apologized for not taking specified exam schedule due to time conflict, it coincide with my duty hours. Asking for your kind consideration.	There is no punctuation in the word <i>Maam</i> and <i>I</i>. The letter D in the word department is not capitalized. There is a syntactic error in the <i>I apologized for not taking specified exam schedule due to time conflict, it coincide with my duty hours</i>. The word <i>coincide</i> is wrongly used in the sentence. There is unclear subject of who is <i>asking for kind consideration</i>. There is no subject.
Goodday! I would like to ask a permission to take the departmental it is because of the traffic situation in menzi. I would like to ask again for your	There is error in spacing of the word <i>Goodday</i>. There is a syntactic error in <i>I would like to ask a permission to take the departmental it is because of the</i>

humble office. thank you and goodbye.	<i>traffic situation in menzi.</i> There is error in <i>menzi and thank you and goodbye</i> in the rules of capitalization. There is a syntactic error in <i>I would like to ask again for your humble office.</i> There is lack of word to complete the sentence of what is to be asked in the office. Is it the office or the service in the office.
SIR/ MAAM GOOD DAY! I AM VERY SORRY TO DID NOT TAKE THE DEPARTMENTAL EXAM BECAUSE IM LATE IN 20 MINS. AND WE HAVE A FAMILY PROBLEM DURING THE EXAM. HOPING FOR YOUR KIND AND CONSIDERATION.	There is a syntactical error in the first sentence; the use of infinitive is erroneous <i>TO DID</i>. There is a syntactical error in I AM VERY SORRY TO DID NOT TAKE THE DEPARTMENTAL EXAM BECAUSE IM LATE IN 20 MINS. <i>IM</i> is not the contraction of I am. There is syntactical error in <i>HOPING FOR YOUR KIND AND CONSIDERATION</i> , there is no subject in this sentence, the word hoping is not a subject here.

Original Text from the Cadets	Description
DEAR MAM/ SIR, Please Allow me to take the departmental exam, lately I was not able arrived on time at school because due to heavy traffic, next time I will not	The errors are syntactic, semantic punctuation, and capitalization. <i>Please Allow</i>, allow is not a beginning of a sentence but it is written in capital.

do this again.	Semantically the word <i>lately</i> is wrongly used in the sentence. Syntactically the rest of the sentence is wrong. Punctuation is not use correctly in the sentence.
Dear Maam/ Sir I sincerely apologized that Id not take the departmental examination because honestly I forgot the exam schedule. On that day I was helping my uncle store and I need also the fare just to commute On that day my uncle was paying the bill and I know that my reason is shallow. Hoping your consideration.	The errors are syntactic, spelling and punctuation. The <i>Id</i> here is erroneous. There is misplacing modifier in the sentence, and the lack of punctuation that makes the sentence wrong.
Dear Ma'am / Sir, Please excuse me for being late in my departmental exam, August 22, 2017, because I thought the exam was exactly 9am in the morning and I am not informed. Hoping your kind consideration.	The errors are syntactic. The use of <i>my</i> in the sentence is wrong. There is a redundancy in telling the time 9am and in the morning. There is no subject in the phrase <i>Hoping your kind consideration</i>.

Errors are mostly in the inability or failure of the learner to master the second language and rules in grammar. These data are also similar to Corder's pre-systematic errors, which are committed by the learners while he or she is trying to come to grips with a new point, or at the stage where the learner is ignorant of a particular rule and makes a random guess which goes wrong, obviously must not be considered as a possible description or cause for the errors just analyzed, since the writers are just students, and are therefore must be in the

groping stage. It is unflattering to suppose that their use of the target language depends on guesswork or random choices, rather than being the deliberate process that it should be.

The error analysis of Tan (1997) revealed a total of 323 common errors, which were examined and categorized into 13 error types. Errors related with lexical knowledge (word choice, spelling, and parts of speech) and those related with sentence structure (missing subject, missing object, missing verb and word order).

Most of the mistakes of the cadets are repeated and if these mistakes will not be stopped this will continue sprouting up. Cadets may remember the correct form of the verb, but the problem is that they simply use the wrong tense to express themselves. Students in particular often neglect to make sure the verb must agree with the subject of the sentence. There are also omissions of words in the sentence that is unnoticed. There are run- on sentences in most of the writing composition of the cadets, they wrongly put the punctuation.

CONCLUSIONS AND RECOMMENDATIONS

The writing styles of the Maritime cadets have common mistakes on syntactical structures. The common grammatical features of language errors found in the cadet's compositions are: Morphological Errors, Syntactical Error, Semantical Error, Capitalization, Punctuation, and Spelling. The syntactical errors mark the highest number of errors in the composition of the cadets- respondents.

The problem of the selected Maritime cadets can always be remediated through a proposed intensive enhancement program to address the problem.

Aside from the fact that, good command of the English language is a vital tool for communication, it is also needed for Maritime cadets to make reports on board. It is also a requirement of the Standards of Training Certification and Watch Keeping (STCW) for seafarers and is considered as an important tool to maintain safety of life and property at sea.

The reasons of the commission of these errors could be drawn back to the respondents' first language, the inadequacy of their exposure to language, and how they over-generalize grammar rules.

The researcher recommended the following:

1. There is really a need for an intensive study on the basic and advanced grammar with composition to Maritime Cadets.
2. Review and Revision of the course curriculum if it is outcomes- based oriented.
3. Practice the macro-skills of the language and the micro-skills in writing.
4. Varied teaching strategies and methodologies to enhance the abilities of the students.

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INTEGRATING SMCP COMPETENCY INTO MARITIME ENGLISH CURRICULUM

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Abstract

The ultimate goal of maritime education is to implement safer navigation worldwide in clean seas, which is concisely expressed within the motto of IMO. SMCP seems to be the determinant medium to actualise this goal. Communicational phrases were thrashed out, analysed to be compiled as a main resource entitled as SMCP to serve the purpose of safer communication for all seafarers thanks to immense elaborate study for years. Soon afterwards, it was officially recommended that every seafarer should have the SMCP competency regardless of his rank, working area and nationality. It was designed in statements of specific chapters in accordance with the needs of both for deck and engine officers. (Trenkner, 2002)

In view of the fact that there is no solidly defined SMCP lecture in curriculum for maritime faculties in Turkey, SMCP is to be integrated within Maritime English courses, and regarded as a crucial part of Maritime English. This paper aims to show the ways of teaching SMCP to cadets at different levels of English, integrating with targeted grammar issues. As a result, SMCP patterns are also consolidated via grammar topics. Suggestions are made by presenting some teaching samples ensuring the competency in grammar and vocabulary knowledge.

Key words: SMCP, competency, teaching techniques, clusters, cadets, consolidate

1

Introduction

The fact that seafaring not only includes efficient performance whilst navigation, but ensuring internal and external communication properly has revealed the must of 'building up a common terminology'. Besides significant rise in marine accidents revealed how severe the results could be due to poor communication. The remedy was in the formation of standard marine specific phrases -IMO's Standard Marine Communication Phrases (SMCP) were adopted by the 22nd Assembly in November 2001 as resolution A.918(22) IMO Standard Marine Communication Phrases.

The resolution adopts the Standard Marine Communication Phrases (SMCP) and recommends a wide circulation to all prospective users and all maritime education. Statements indicating request, prohibition, permission, warning, suggestion, ability are carefully selected, collected to be compiled as a communicative medium for all seafarers. Under the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, the ability to understand and use SMCP is required for the certification of officers in charge of a navigational watch on ships of 500 gross tonnage or above. The SMCP includes phrases which have been developed to cover the most important safety-related fields of verbal shore-to-ship (and vice-versa), ship-to-ship and on-board communications. The aim is to get round the problem of language barriers at sea and avoid misunderstandings which can cause accidents.

SMCP has been compiled to serve the purposes of:

-to assist in the greater safety of navigation and of the conduct of the ship,

-to standardise the language used in communication for navigation at sea, in port approaches, in waterways, harbours and the multilingual crews, and

- to assist maritime training institutions in meeting the objectives mentioned above

SMCP is the outcome of a thorough study lasted for years not only respond to the situations of MAYDAY, PAN-PAN, SECURITE but all on board situations i.e. getting/giving permission, advice, obligation, request, prohibition, informing about possible risks, regular drills, reporting/ alerting weather conditions.

As clearly mentioned in SMCP (p11) *'SMCP is divided into External Communication Phrases and On Board Communication Phrases Part A and Part B within the framework of STCW. SMCP should be taught and learnt selectively, according to the users' specific needs rather than completely. The respective instruction should be based on maritime practice in the maritime environment and be implemented through appropriate modern language teaching methods.'*

Communicative features can be summarised as follows;

*avoiding synonyms,

*avoiding contracted forms,

*providing fully worded answers to yes/no questions and basic alternative answers to sentence questions,

*providing one phrase for one event and,

*structuring the corresponding phrases after the principle: identical invariable plus variable (SMCP, p 11)

As highlighted in IAMU-JUAS project report in 2015 (p10) *'The Standard Marine Communication Phrases consist of numerous phrases and the vocabulary used is vast; thus it is not an easy task to master it. Research demonstrates that learning the SMCP involves the time-consuming process of memorising a considerable amount of fixed phraseology while at the same time recognising the underlying system employed by the SMCP.'*

2

Since SMCP covers and offers guidelines on various situations on board we- as ME lecturers are responsible for teaching cadets to ensure SMCP consolidation with the grammar topics in the curriculum.

Statement of the problem:

Getting competency in SMCP have been found complicated and hard for most cadets whereas mastery in SMCP is regarded to be one of the leading professional requirements of seafarers. Based on the point that cadets need to develop grammar and vocabulary knowledge, this paper includes suggestions how to make use of SMCP as a tool to consolidate grammar and vocabulary knowledge or vice versa.

Marine engineering cadets at ITUMF have insufficient ME lectures to cover highly loaded curriculum. Having limited time and having to cope with the linguistic targets toughen the situation. Clustering both linguistic knowledge and SMCP patterns not only saves time but also makes the knowledge permanent.

Aim of the practice:

Cadets need to internalise SMCP patterns let alone get informed and this is mostly found hard by the cadets. The competency in SMCP will determine their professional competency as well. In this practice, integrating SMCP patterns with grammar parts, forming a cluster is targeted. Ss attach grammar parts with the SMCP patterns so as to remember and use them effectively in the long run.

Focusing on the grammar issues which maritime English lectures should include regarding marine engineer cadets, we can highlight the items namely, preposition use, basic modals and tenses and some adverbial clause, passive voice. They are spotted functional elements of the curriculum to make effective communication.

Grammar parts	Specific parts	Functions
prepositions	In, on, at, under, through, with etc	Place, situation
modals	Must/can/may/will/ negations	Obligation, prohibition, possibility, permission, certainty
tenses	S. Present/ S. Past/Present Cont./ Be going to	Routines, tasks, past -present – future actions, planned future
clauses	Adverbial Clause	Time, reason, result, purpose
structures	Passive Voice	Actions (log book/ manuals)

All practice samples are based on the extracts from SMCP for marine engineers and they serve the purpose of cadets of different levels.

3

Activity 1

Level: Beginner

Aim: Consolidate main prepositions of ON/ IN/ AT/ UNDER -indicating locations on board

Skills: Grammar, vocabulary, listening and speaking

Sample used: Chapter 5, Fire Fighting and drills

Steps

1. After presenting the functions of basic prepositions IN/ ON/ UNDER / AT, new sentences are made up.
2. Ss are required to choose the correct preposition to complete sentences in sample 1
3. Ss watch <https://youtu.be/4DNdxNHI00s>
4. After getting cues on the scenario, Ss make role play in pairs
5. Cluster formation is achieved in terms of basic preposition

Sample Chapter 5 Fire fighting and drills

- | | | | | |
|--|----------|-------|-------|-------|
| 1. Fire..... board! | a) under | b) at | c) on | d) in |
| 2. Smoke engine room! | a) under | b) at | c) on | d) in |
| 3. Explosionno.2 hold! | a) under | b) at | c) on | d) in |
| 4. Burnt smell accommodation! | a) under | b) at | c) on | d) in |
| 5. What is fire? | a) under | b) at | c) on | d) in |
| 6. Fuel fire | a) under | b) at | c) on | d) in |
| 7. Is smoke toxic? | | | | |
| 8. Is fire control? | a) under | b) at | c) on | d) in |
| 9. Yes, fire control? | a) under | b) at | c) on | d) in |
| 10. No, fire spreading | | | | |
| 11. What is damage? | | | | |
| 12. No damage | | | | |
| 13. No power supply accommodation. | a) under | b) at | c) on | d) in |
| 14. Making water engine room. | a) under | b) at | c) on | d) in |
| 15. Pressure fire mains. | a) under | b) at | c) on | d) in |
| 16. Close all openings. | | | | |

4

Activity 2

Level: Beginner

Aim: Teach and consolidate main verbs in imperative / -ing form used for preparing diesel machinery for sea

Skills: Grammar, vocabulary, listening and speaking

Sample Used: Chapter 2. Preparing main diesel machinery for sea

- Steps**
1. Introducing main verbs, imperative use on board
 2. Ss watch <https://youtu.be/SSo0fb0JQZA>, get familiar with terminology.
 3. Ss read the statements and select one item from the table to complete the sentence.
 4. Role play consolidates patterns in the sample II, forming cluster.

Sample 2. Chapter 2 Preparing main diesel machinery for sea

1. We are going to..... preparations for sea.
2. Are you ready work?
3. Let's start up no.1 circulating pump tomain engine.
4. the warming steam valve slightly to inject steam into water system.
5. the lube oil pump for main system.
6. the lube oil pump for supercharger.
7. all parts requiring hand supply of oil or grease.

8. the engine turning gear.
9. that all indicator valves are open.
10. main engine several turns.
11. Stop turning to take turning gear.
12. starting air stop valve.
13. Give a test to reversing and control gear before the starting air.
14. bridge that we are completely ready for engine trial.
15. Air running is
16. Is there any of oil or water from indicator valves?
17. Nowthe engine on fuel.
18. Everything to be normal. Engine trial is over.

over	Give	Putting on
Tend	Make sure	Blow
Start	Warm up	Put in
Start up	Inform	Give
out	seems	for
Open	Start up	Run

Sample 3

Level: Pre intermediate

Aim: Consolidating adverbial clause and if clause

Skills: Grammar, vocabulary, listening

Sample used: Chapter 4. Watchkeeping in the engine space

Steps 1. Teaching adverbial clause and if clause,

2.Ss see the sentences with conjunctions missing,

3. Ss listen the text and complete the statements,

4. Ss watch <https://youtu.be/AUDO1hVnbwo>

5. Role play consolidates patterns, forming cluster.

Chapter 4 . Watchkeeping in the engine space

1. Sight exhausts from the funnel carefully **before** coming down to the engine space.
2. Exhaust colour is **so** satisfactory **that** reasonable combustion may be taking place in all cylinders,
I guess
3. Take indicator diagrams of all cylinders.
4. How about compression and maximum pressures?
5. Diagram of no. 4 cylinder shows an excessive pressure rise.
6. Adjustment may be required **when** the engine is secured at the next port. I don't think the situation is serious.
7. Compare exhaust temperatures to check **if** the cylinders are firing equally.
8. It may be **due to** dislodged dirty foreign matter.
9. Renew oil in the bearing completely **so that** the trouble will disappear.
10. **During** your tours of inspection, you must not only observe but listen and smell.
Even touch and taste, **if** necessary.
11. We should familiarize ourselves with regular noises made **when** engines are running trouble free.
12. **If** engine noises abnormal, immediately take adequate steps to find the cause.
13. Always pay your attention to any small abnormality **so that** minor defects don't develop into major breakdowns.

Findings and conclusion:

One can learn different ways and techniques, information can be perceived, stored and facilitated efficiently only when it is thoroughly internalized. Consolidation is a significant tool for proper learning. This practice is how to fix grammar knowledge with SMCP patterns. Here the samples presented above formed clusters in cadets' getting competency of SMCP, enabling grammar, vocabulary progress. What is more, SMCP patterns are consolidated, triggering listening, speaking skills in class setting.

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7. <https://youtu.be/SSo0fb0JQZA> (Preparing diesel machinery for sea, Accessed in September 2018)
8. <https://youtu.be/AUDO1hVnbwo> (Watchkeeping in engine room, Accessed in September 2018)

Conversion in the Linguistic Competency of Seafarers

Müjgan Özenir, Turkey *

Trisanti Agasta, Indonesia**

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Abstract

Attaining certain level of linguistic competency in English is a must for all seafarers. Being competent in L2 requires some prerequisites; mainly sustainability in L2's exposure, learner's motivation, a fine learning setting. Focusing on the seafarers, having competency in English is like a life buoy when abandoning ship. Surprisingly enough one can possess a certain level of competency but cannot guarantee for competence stability afterwards.

Most remarkable English language proficiency certificates, namely Cambridge, TOEFL, IELTS need to be renewed at certain intervals. Most graduates confirm that they are somehow losing their fluency, accuracy, in terms of grammar, speaking, but more practical while grasping the information in professional document. This study focuses on the change /conversion of linguistic competency of graduate cadets namely officers from three different countries; Turkey, Indonesia and Malaysia.

We aim to find out whether the graduates of maritime faculties think they have better/worse English competency comparing the level they have when they graduated. This study is conducted to see if they have linguistic problems on board. 'Should they experience linguistic issues; which particular aspect is our concern.

This descriptive study utilised an on-line survey made up of open ended items. The results will lead us in making suggestions for our colleagues, the curriculum designers and lecturers with a view to educating seafarers with better English competency.

Keywords

Conversion, linguistic competence in English, L2, professional experience, Turkish, Malaysian and Indonesian officers

1. Introduction

The English language has long been recognized as an important communication medium that students who do not possess English as their L1 are required to be competent in using together with their L1. This is to cater to the increasing number of multinational working environments that usually

require the use of English as a common mode of communication (Kozlowski & Bell, 2013). The maritime sector is no exception. From ports to seafarers, there is a strong need and emphasis for those serving the maritime sector to possess a strong foundation in English proficiency. According to Li, Yuan, Bazrova and Bell (2018), the stronger a person's English proficiency is within a multinational work environment, the higher the perception of competence will be since those who are more proficient tend to speak up more.

Therefore, to ensure the proficiency, students are provided with a strong English foundation, education institutions, especially maritime education providers, who are usually found including English in their curriculum either through the emphasis on four main general English skills - writing, listening, speaking or reading – or through the inclusion of curriculum that has a language objective or goal that students will need to achieve in order for them to be able to perform well in the field that they will be joining after they have attained proficiency with the institute. This is where the concept of English for Specific Purposes began to take footing in English language learning, especially in higher education and more specifically in maritime education.

Through identifying the needs of the learners, English instructors, and within this context specifically the Maritime English instructors, have been able to construct syllabus and materials that cater to the required linguistic and cross-cultural awareness skills needed by the students to ensure that they will be able to communicate effectively in the workplace such as on board vessels. This is proven to be highly relevant for seafarers as there is a high certainty that there is a need to use English to communicate with those who do not share the same language and cultural backgrounds on board.

It is only through observing and taking into consideration the needs required to enable effective communication will Maritime English instructors be able to provide a link between the workplace and the students' proficiency in the classroom. Apart from identifying the needs of the industry, Brown (2016) proposes that a needs analysis enables instructors to defend the approaches adopted in English for Specific Purposes classrooms. This proves to be even more relevant in Maritime English whereby Maritime English classrooms introduce pedagogy that are a variant of the approaches used in General English classrooms due to the need for seafarers to not only communicate with other crew members with a multinational background but also be proficient in using SMCP effectively.

Therefore, there is a belief that a learner's ability to become more proficient in communicating in English should improve when the learner is in an environment that requires him to use it. Planken, Hooft and Korzilius (2007) presume that due to the use of the target language as a communication tool used by learners while working in a multinational environment, the focus for the language courses should not only be on the language learning aspect but should also use learning materials

that are inclusive of and provide exposure to the other nationalities and cultural references. This would therefore provide the learners with more confidence to communicate in English with other seafarers as the anxiety that accompanies communicating with a person from a different background with a target language is somehow lessen.

2. Background of the Study

2.1. Turkish Context

For students in Turkey, learning English begins at the primary level and continues into their higher education. Although the medium of instruction used in Turkey is in the Turkish language, English is a compulsory subject that students will have to undertake to successfully complete their education. Some leading universities postulate that 70 -100 % of the lectures are to be taught in English. Through the explicit awareness that English is an important language to possess for commercial and social purposes, students are aware and self-motivated to strengthen their English proficiency (Durer & Sayar, 2012).

However, although anxiety is cited as one of the possible main reasons that may hold a student back when communicating in English, Turkish students who are learning English are found to be more receptive and motivated to learn English while experiencing low anxiety (Durer & Sayer, 2012, Özütürk & Hürsen, 2013). Thus, Turkish seafarers are poised to improve their proficiency in English when they are equipped with the confidence and awareness towards the importance of the English language in communicating effectively with crew members.

2.2. Malaysian Context

In the Malaysian context, although the Malay language is the national language of Malaysia, English is viewed as a second language (ESL) through the extensive use of the language in business and certain government functions (Lowenberg, 1991). However, through the integration and multiracial influences that exists in Malaysia, English is somewhat modified into Malaysian English which is also seen as a vehicle that unifies Malaysians. There is an awareness that standard English is a necessary tool that students need to possess if they are to excel further in their careers although there is a tendency to resort to Malaysian English. Malaysian English is defined as colloquial English that includes influences from the Malay language, Tamil language and several Chinese dialects which are spoken by Malaysians (Nair – Venugopal, 2013) which entails identity awareness and acknowledgement of the various races in Malaysia.

Although English as a subject is taught in schools and higher education institutions alike, English is only used predominantly at the higher education level where most, if not all, the courses taken by the students in a majority of the government and private higher education institutes are conducted in English (Grapragasem, Krishnan & Azlin, 2014). However, the influence of Malaysian English in classroom settings is inevitable as it is through the inclusion of these Malay, Tamil and Chinese influences that encourage a more harmonious learning environment among the students who are from different ethnic backgrounds while fostering trust among the speakers (Tenzer, Pudelko & Harzing, 2013).

This is a by-product of the approach that is embedded in the language learning process in Malaysian schools whereby language is used as a tool to unite the different ethnic groups that exist in Malaysia (Noor Zainab, Fauziah, Azian & Mallam, 2012). Therefore, the fundamental English language learning experience provided in primary and secondary schools in Malaysia possesses not only functional purposes but also defines a national identity (Yusnita, Paulraj, Sazali, Nor Fadzilah & Shahrman, 2013) and thus can only be successful when that sense of identity and unity is established. Thus, it can be posited that within the seafaring context, when English is viewed as a tool that unifies and improves the relationship among crew members, the tendency to improve in their proficiency is higher among Malaysian seafarers.

2.3. Indonesian Context

Similarly, Indonesia also acknowledges the need for English Language proficiency among its graduates who enter the workforce, especially the Indonesian maritime education providers that include English in their syllabus. English courses are set alongside maritime courses to assist in preparing the graduates before they embark on their seafaring duties. The dominant medium of communication in Indonesia is Bahasa Indonesia while English is used more in multinational and foreign companies (Baso, 2014). Therefore, Indonesia is vigilant in providing seafarers with sufficient English classes as it will provide the graduates with the understanding that both Bahasa Indonesia and English are of equal importance in order to have a more effective work environment while on board.

It is interesting to note that in Indonesia, the perception of learning English as a language is such that it is considered as a tool that is used to generate knowledge learning and to develop economic progress rather than to indicate development and success which is usually more nationalistic in spirit (Lauder, 2008) as English is given the position of a foreign language (EFL) in Indonesia (Lowenberg, 1991). Therefore, learning English and sustaining it at the workplace in Indonesia is indicative of how crucial it is to use the language in accomplishing tasks and giving instructions. Thus, seafarers from

Indonesia will have a stronger desire to further improve in their proficiency while they are on board as English is used as a common language among multinational crew members.

3. Aim of the Study

This study aims to unveil how English proficiency of officers is reshaped within sea experience. This conversion will be surely obvious when they find themselves communicating and working alongside crew members who are of different nationalities and culture backgrounds from them. Through the use of English as a mode of communication together with the various ways that the Turkish, Malaysian and Indonesian officers identify with the role of English in relation to the background of their specific cultures, the study poses the question of whether those differences can align in sustaining or improving their English proficiency or otherwise. The study also aims to emerge the linguistic areas in which the officers have identified as being problematic for them while seafaring.

4.Data Collection

The responses are gathered from 34 Turkish, 30 Indonesian and 38 Malaysian officers of either deck or engine department. 112 officers in total gave the feedback using on-line survey with open ended and semi controlled nine questions in total. The pre-requisite for being the participant is to have an ongoing professional life on board as an officer.

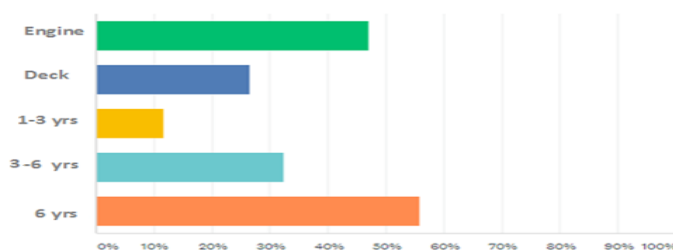
5. Data Analysis

5.1. Profile of the respondents

5.1.1 Turkish Context

Department / How long have you served as an officer?

Responses : 34

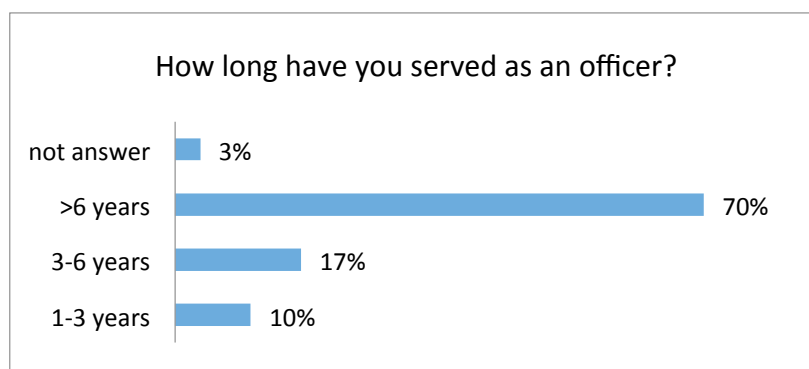


Responses	Percentage	
Engine	47,06 %	16
Deck	26,47 %	9
1-3 yrs	11,76 %	4
3-6 yrs	32,35 %	11
6 yrs	55,88 %	19
Total responses		

2/3 of the Turkish officers are made up of marine engineers, others are deck officers, 87% of the officers have more than 3 years of on board experience, which means they are the second or third officers.

5.1.2. Indonesian Context

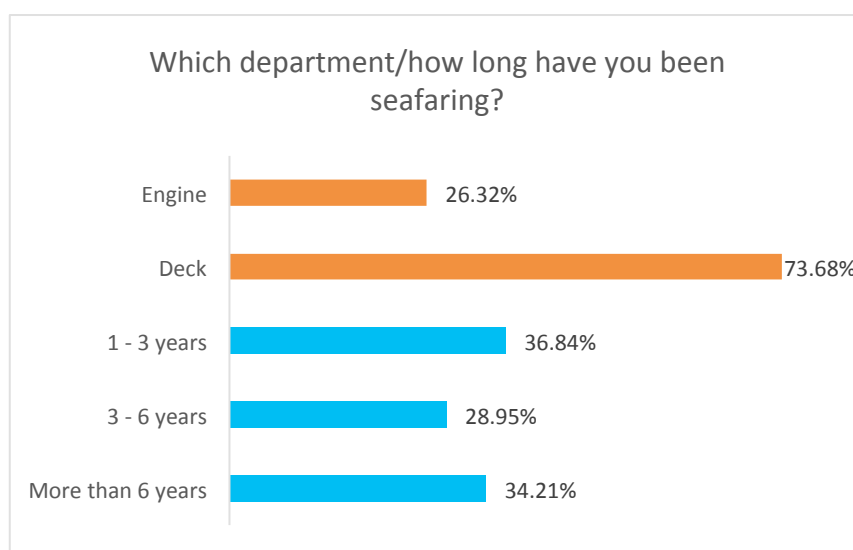
Answers of 30 research respondents are from STIP Jakarta. All respondents are deck officers, 70% are experienced seafarers with a working period of more than 6 years. 17% have 3-6 years of sea experience, 10% with the experience of 1-3 years.



Experience	Percentage	Respondents
<i>More than 6 years</i>	70%	21
<i>3 - 6 years</i>	17%	5
1 – 3 years	10%	3

5.1.3 Malaysian Context

38 Malaysian officers answered the survey, 28 of them- the majority are Deck officers, 10 are Marine Engine Officers. Experience distribution is not accumulated in one group but is balanced in each group.



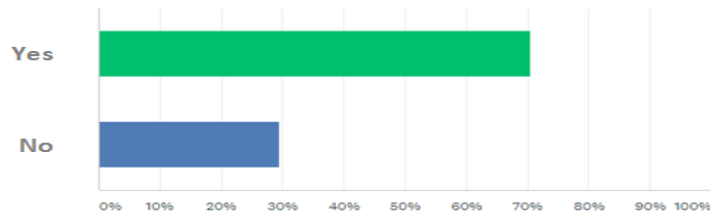
Department	Percentage	Responses
Deck	73.68%	28
Engine	26.32%	10
<i>More than 6 years</i>	34.21%	13
<i>3 - 6 years</i>	28.95%	11
1 – 3 years	36.84%	14

5.2. Having preparatory class experience at university

5.2.1. Turkish Context

Did you take preparatory class at university?

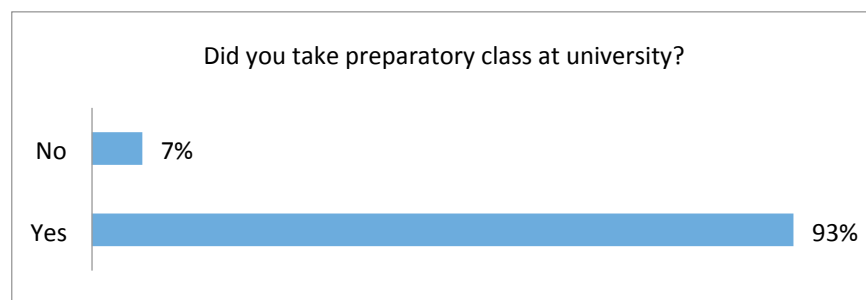
Responses : 34



Responses	Percentage	
Yes	70,59 %	24
No	29,41 %	10
Total		34

70.59 %Turkish officers had preparatory class at university, 29.41 % did not. They are supposed to be successful in the proficiency and skipped over preparatory class and started education at faculty.

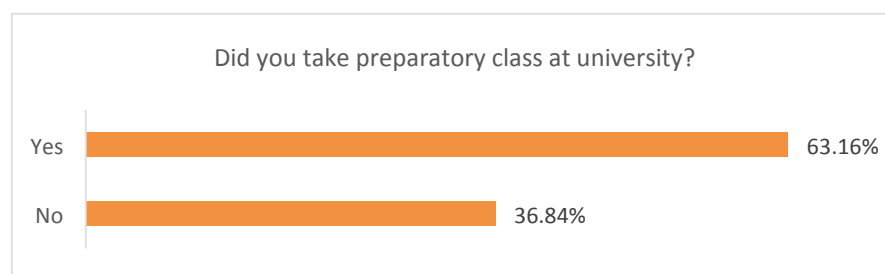
5.2.2 Indonesian Context



Preparatory classes	Percentage
Yes	93%
No	7%

Nearly each Indonesian officer, with quite high percentage of 93% had preparatory class at university.

5.2.3. Malaysian Context



not.

Preparatory classes	Percentage	Respondents
Yes	63.16%	24
No	36.84%	14

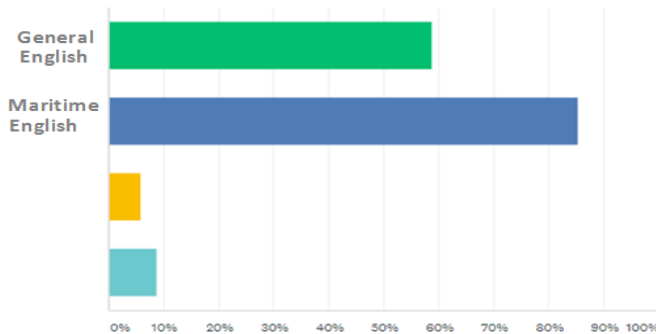
The majority -63.16 % of Malaysian officers had preparatory class whereas 38.84 % did

5.3. Types of English classes at university

We questioned which English classes officers took while they were at university to get the idea about their background

Which English class did you take at university ?

Responses:34

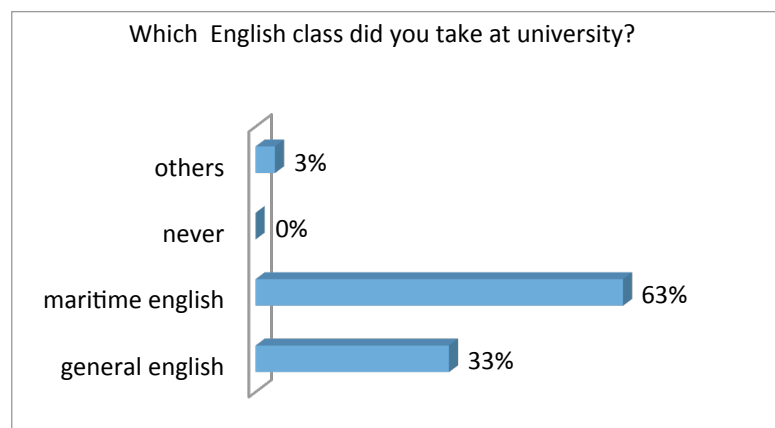


Responses	Percentage
General English	58,82 % 20
Maritime English	85,29 % 29
I took no English class	5,88 % 2
Other (than specified)	8,82 % 3
Total responses 34	

5.3.1. Turkish Context

Upon the question of which English class they have at university 58.82% of Turkish officers reported they had general English 85.29% had Maritime English, 5.88% had no English class, 8.82 had something other than this. This means they had Maritime English following General English at preparatory year

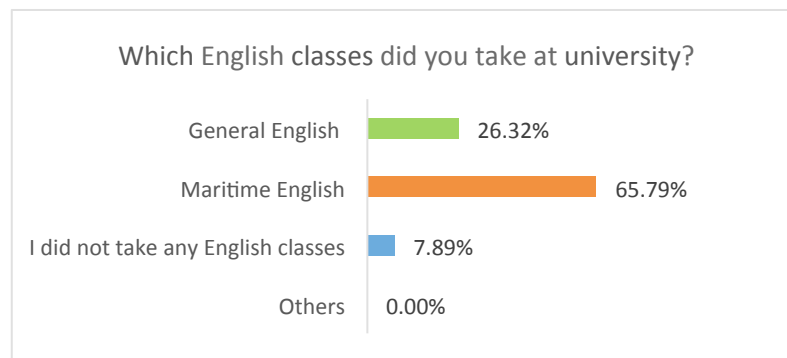
5.3.2. Indonesian Context



Every Indonesian officer had English at university; 33% of the Indonesian cadets had General English, 63% reported to have taken Maritime English afterwards. English exposure is highly effective.

English Classes Taken At University	Percentage
Never	0%
Maritime English	63%
General English	33%
Others	3%

5.3.3. Malaysian Context



65.79 % of Malaysian officers had Maritime English class, 26.32% had general English class, for those with the percentage of 7.89% there was no English class at university.

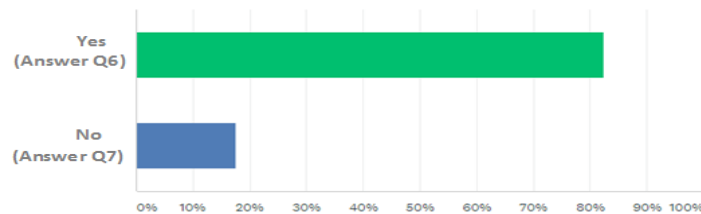
English Classes Taken At University	Percentage
I did not take any English classes	7.89%
Maritime English	65.79%
General English	26.32%
Others	0%

5.4. Usefulness of English lesson while at sea

5.4.1. Turkish Context

If you did so, was English at university useful while you are at sea?

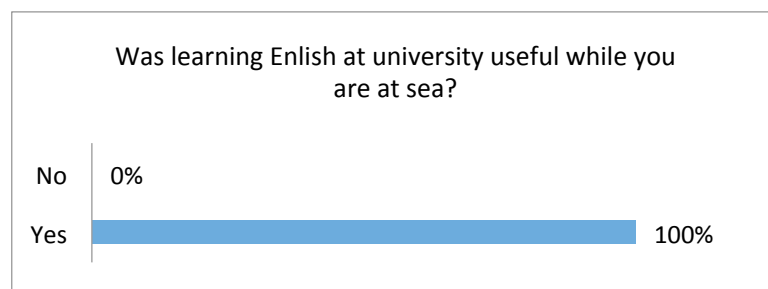
Responses:34



Responses	Percentage	
Yes (Answer Q6)	82,35 %	28
No (Answer Q7)	17,65 %	6
Total		34

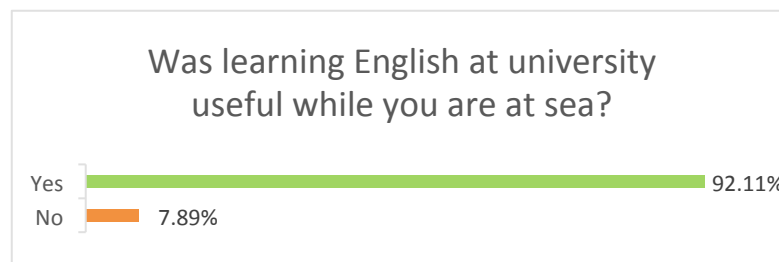
83% of the respondents find having English class at university helped them on board, 17% do not agree that it is useful for them.

5.4.2. Indonesian Context



It is pleasing to see that 100 % of respondents have the positive view of English at university in terms of usefulness in their professional life.

5.4.3. Malaysian Context



Nearly all Malaysian officers (92.11%) believe learning English is useful when they are officers, only 7.89% think the opposite.

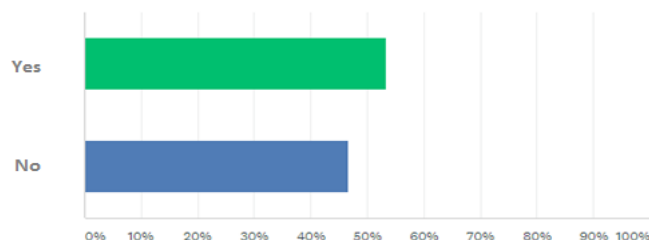
Was learning English useful at sea?	Percentage	Respondents
Yes	92.11 %	35
No	7.89%	3

5.5. Frequency of Maritime English classes at university

5.5.1. Turkish Context

Did you take Maritime English each semester, was it sufficient for you?

Responses:30

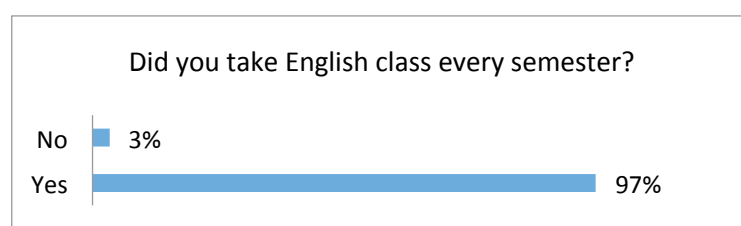


Responses	Percentage	
Yes	53,33 %	16
No	46,67 %	14
Total		30

55% of Turkish officers had Maritime English, 47% did not have it every semester. Most of them are the graduates from the same school, the figure shows declining Maritime English classes in the curriculum within the recent years. 46% of Turkish officers agree that Maritime English class was not sufficient for their

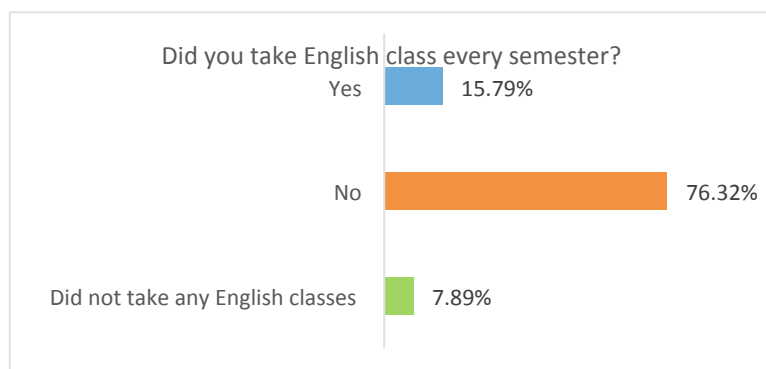
profession.

5.5.2. Indonesian Context



97% of the Indonesian officers fortunately had English at university, only 3% did not have Maritime English class every semester.

5.5.3 Malaysian Context



The data shows that significant majority of Malaysian officers with the percentage of 76.32% did not have English class, 15.79% had English every semester. 7.89% expressed they did not have English class at all.

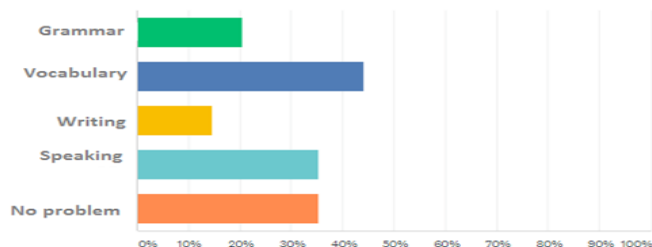
5.6. Experiencing language based problems on board

We aim to see whether they had problems related to lack of language knowledge and find out which part of language constitutes trouble.

5.6.1. Turkish Context

Do you experience language based problems at sea, if you do which part of language is problematic for you?

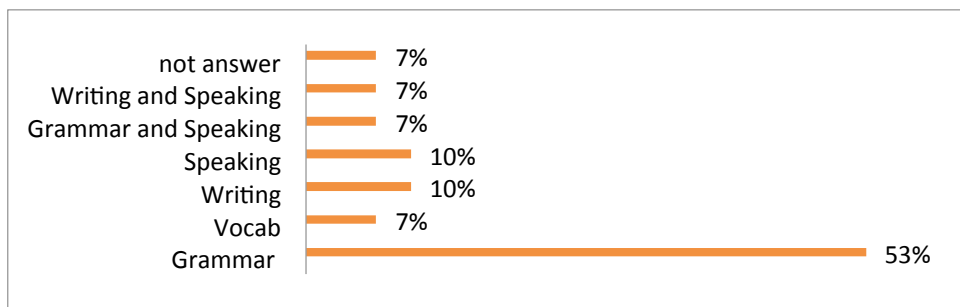
Responses: 34



Responses	Percentage
Grammar	20,59 % 7
Vocabulary	44,12 % 15
Writing	14,71 % 5
Speaking	35,29 % 12
No problem	35,29 % 12
Total responses 34	

Turkish officers have some problematic areas in English at sea. Among the ones having problems, most problematic areas are vocabulary and speaking skill, others are grammar knowledge and writing. 35% reported did not experience language related problem at all.

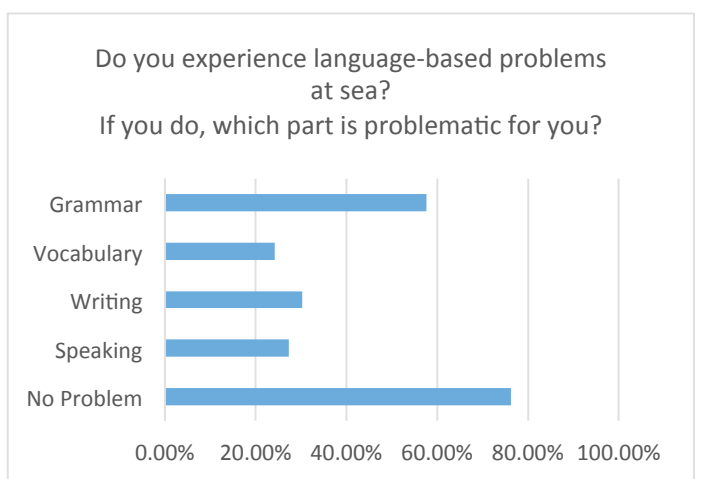
5.6.2. Indonesian Context



Problematic Area	Percentage
Grammar	53%
Vocabulary	7%
Writing	10%
Speaking	10%
Grammar and Speaking	7%
Writing and Speaking	7%
No answer	7 %

According to the Indonesian officers, most problematic area in L2 is grammar (53%). Speaking and writing also constitute a problem for 10 % of seafarers respectively. They experience problems in combined skills of grammar +speaking and writing +speaking . Both combined skills are found to be problematic for 7 % of the respondents.

5.6.3. Malaysian Context



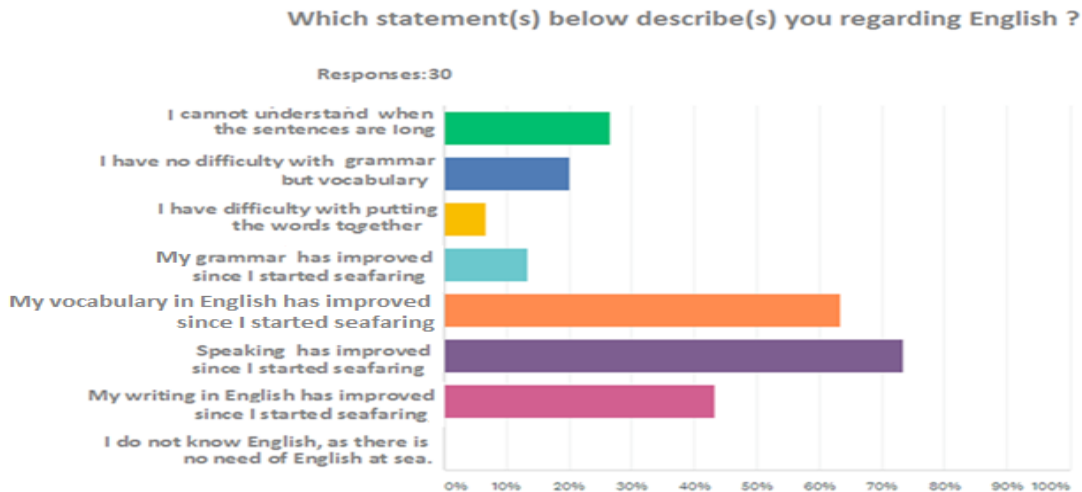
76.32 of the Malaysian officers expressed they did not have difficulty, among the ones having trouble, grammar seems to be the most problematic area (57.58%) as well. Other areas are writing for 30.30%, speaking 27.27% and vocabulary for 24.24% of the respondents.

Problematic area	Percentage
Grammar	57.58%
Vocabulary	24.24%
Writing	30.30%
Speaking	27.27%
No problem	76.32%

5.7. Self description in ME competency

The list below exhibits the problematic areas and whether there is any improvement regarding the skills of vocabulary, writing, grammar and speaking.

5.7.1. Turkish Context

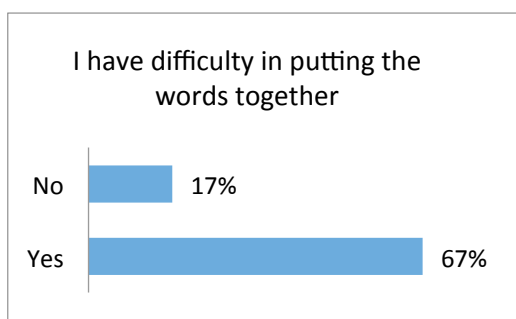
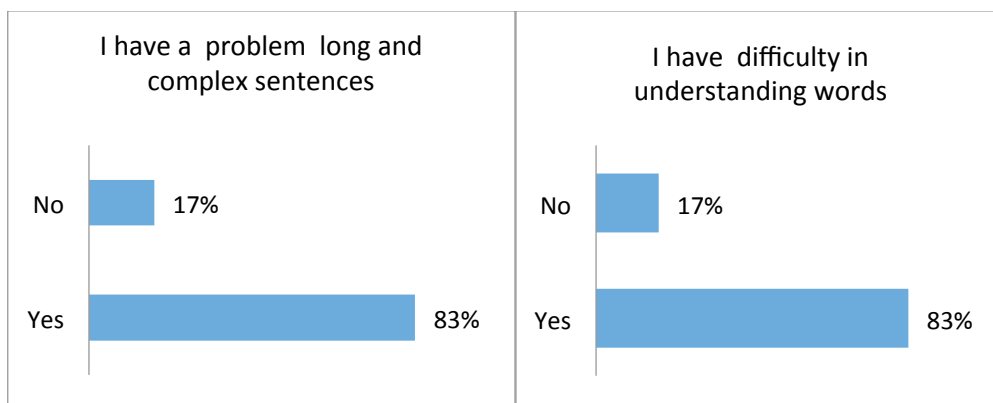


Responses	Percentage	
I cannot understand when the sentences are long	26,67 %	8
I have no difficulty with grammar but vocabulary	20,00 %	6
I have difficulty with putting the words together	6,67 %	2
My grammar has improved since I started seafaring	13,33 %	4
My vocabulary in English has improved since I started seafaring	63,33 %	19
Speaking has improved since I started seafaring	73,33 %	22
My writing in English has improved since I started seafaring	43,33 %	13
I do not know English, as there is no need of English at sea.	0,00 %	0
Total Responses:30		

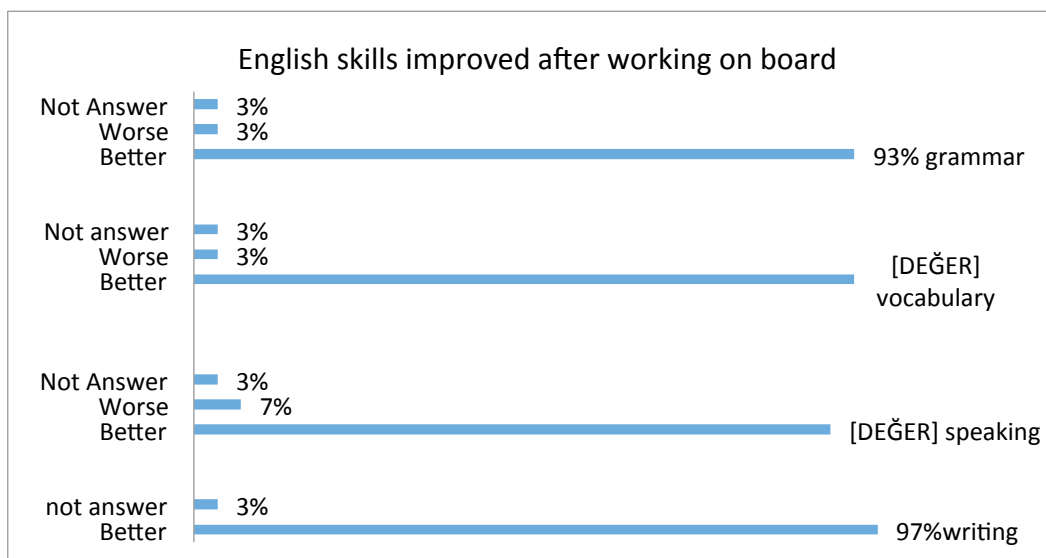
Data collected from Turkish officers reflected the problems of vocabulary, grammar and speaking. 20% of the respondents do not have grammar problem, 20% have a vocabulary problem, 26.67% cannot understand long statements, 20 % think they do not have a grammar problem but vocabulary. For 6.67.% it is problematic to put the words together.

Sea experience contributed to 13.33 % with better grammar, 63.33% with better vocabulary knowledge, 73.33 % with better speaking, 43.33 % with better writing skills since they started to work on board.

5.7.2. Indonesian Context

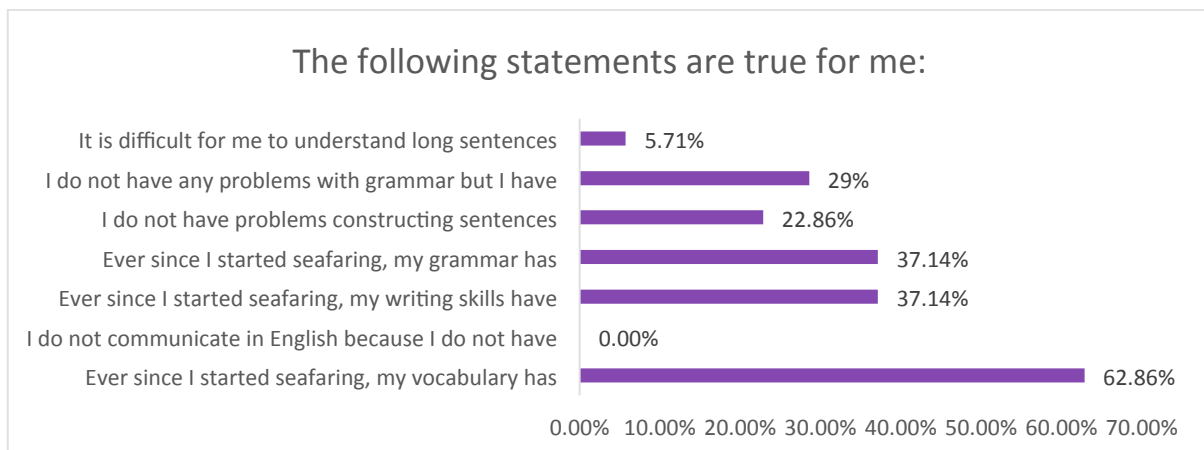


Respondents experienced problems in understanding complex long sentences (83%), and difficulty understanding words (83%), and placing words together (67%).



Indonesian officers who responded to the question reported their improvement in the skills of speaking (90%), grammar (93%), vocabulary (93%), writing (97%).

5.7.3. Malaysian Context



For Malaysian officers, the most problematic area is vocabulary 29% but it also seems to be the most improved skill (62.86%), having problems with constructing sentences is the problem of 22.86% of the respondents. For 37.14% of officers writing and grammar skills have improved since they started seafaring.

CONCLUSION

The survey we facilitated is for the officers from three different nationalities, and backgrounds. We aim to see whether they have language based problem at sea and to what extent professional life has improved their linguistic competency.

Conducting the profession makes the holders self-esteem and self-confident. The values highlight that the officers somehow have some linguistic problems, but they are also quite aware of their weak and strong points. The professional experience seems to be a positive impact on linguistic competence, no matter how long they are excluded from systematic education exposure regardless their nationality and rank. Their improved linguistic skills namely; speaking, writing, vocabulary but they do not have improvement in terms of grammar.

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Assessment of Code-Switching: Its Function on the Teaching-Learning Process in Selected Maritime Professional Courses

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Abstract

The study is descriptive which is mainly focused on the code-switching activity of selected maritime students and professional. The paper aimed to assess the function of code switching during classroom. Simple random sampling was used to gather responses on from 4th year students on the purpose on code switching. Likewise, purposive sampling was used for the population of maritime instructors who are all teaching maritime subjects for the 4th class cadets.

Data for the present paper were collected from the respondents through classroom observation, interview, and survey questionnaire. Findings showed that apart from the purpose of code switching, the occurrence of the activity was also highlighted in which the subject of the students was taken as an important factor on engaging code-switching. It is noted that code switching may be used as a useful strategy during classroom interactions if the aim is for better understanding and/or for knowledge transfer. Indeed, the overall usage of code-switching in a classroom interaction is still considerable in a sense that it was usually used by the cadets for better understanding while maritime instructors are using it only for self-expression.

The pedagogical implications of the study depicts that, with the awareness on the purpose used by the maritime instructors and cadets in engaging themselves in code-switching, continuous support and encouragement may be given to the students during classroom interaction. Allowing them to code switch will somehow bridge the gap –focused on an intended purpose–among the speakers who are considered bilingual. It is to commend both instructors and fourth class cadets in strictly following the EOP rules; continuous monitoring in the occurrences of cadets' code-switching must be done during classroom interaction.

Keywords: Bilingualism, Code-switching, Communicative Competence, EOP, Multilingualism

Introduction

Code-switching is a widely observed phenomenon particularly in a multilingual and multicultural community (Sert 2006). People who have learned two or more languages demonstrate code-switching by mixing words or phrases from two languages together during the course of speech. This is a manifestation that a speaker is competent in two or more languages or dialects to express ideas, emotions, feelings, intentions or communicative purposes.

Classroom instructions are the most valuable experience for learners on learning second language –the English language. Learners who are multilingual and multicultural individuals share standard classroom instructions. The learners' limited exposure to English language due to insufficient input from the natural environment leads the learners or the teachers to apply the intervention of code switching. This intervention plays a vital role in and has a significant effect on the language-learning process.

MAAP is one of the educational institutions which is embodied by faculty members and cadets (midshipmen and midshipwomen) around the Philippine archipelago. The academy is also known for its English language promotion. The Department of Academics has implemented one of the Academy's regulations of EOP (English Only Policy). This aims and promotes the use of English language in communicating with anyone within the Academy. With this endeavour, considering that faculty members and cadets are multilingual and multicultural, the process of EOP may have possible interferences. Faculty members and cadets in some instances use code switching (specifically in teaching and instructions) on some basic functions during a conversation which may be regarded beneficial in language learning environments.

This study proposes to assess the Function of Code Switching During Classroom Instruction of Instructors and Freshmen Midshipman and review the present status of English language proficiency of both instructors and cadets in the academy. Further, the study does not promote the use of code switching nor defeat the implementation of EOP set by the academy. This solely focuses on investigating the influence of code switching activity and the speakers' purposes on using EOP during classroom instructions. The results and findings of the study will be beneficial

on providing a basis for language proficiency that may aid a better way of learning and using code switching as needed.

The present study aims to assess the functions of code switching during classroom instruction of selected MAAP maritime professionals and freshmen midshipman for AY 2016-2017 which will serve as a basis for language enhancement. Further, it seeks to answer the following questions: What are the maritime subjects which have the most occurrences of code switching during classroom interaction? How often do teachers codes switch for the purpose of: self-expression; interpersonal relationship; better understanding; and knowledge transfer? How often do cadets codes switch for the purpose of: defense mechanism; filling the gaps; better understanding; and self-control? What is the most and least dominant purpose of maritime instructors in code switching? What is the most and least dominant purpose of cadets in code switching?

As cited in the study of Jingxia (2010) Wardhaugh pointed out that the term code is a neutral term rather than terms such as dialect, language, style, and pidgin which may arouse emotions. Code can be used to refer to “any kind of system that two or more people employ for communication” (p.86). In a study by Sert (2006) about the possible applications of code switching in educational contexts in the bilingual community, he finds its function is to bring an authenticity to a conversation and to help the reader better deduce the ideas being communicated. In this study further factors that determine code-switching among students include: equivalence, floor holding, reiteration, and conflict control.

Throughout the study, the activity of code switching in a typical classroom interaction is presented in terms of its purpose. Following the usage of students' and teachers' code-switching, weak and strong sides are discussed to clarify the phenomenon with the different perspective.

A study conducted by Kim (2016) on reasons and motivations for code-mixing and code-switching presents why bilinguals mix two languages and switch back and forth between two languages and what triggers them to mix and switch their languages when they speak. These bilingual phenomena are called 'code-mixing' and 'code-switching' and these are ordinary phenomena in the area of bilingualism. This is supported as cited in the study of Shay (2015) that states that during the last twenty years, there has been a sharp rise of scientific interest in phenomena of

bilingual speech, and especially in code-switching (Auer, 2013). Same as defined by Wei, 2013 that bilingualism and multilingualism are very similarly. They claim that both phenomena refer to the coexistence, contact and interaction of different languages in society or in an individual. Jagero & Odongo (2011) upheld that code switching is a normal bilingual behavior. Yusuf (2012) disputed that code switching is a conscious practice that usually appears in the course of the conversation between bilinguals.

With respect to all points of view mentioned above, it may be suggested that code switching in a classroom scenario is not always a blockage or deficiency in an institution implementing English Only Policy, but may be considered as a useful strategy in classroom interaction, if the aim is to make meaning clear and to transfer the knowledge to students in an efficient way. Yet, it should be kept in mind that in the long term, when the students experience interaction with the native speakers of the target language; code- switching may be a barrier which prevents mutual intelligibility. Accordingly, the teacher has a vital role in preventing its long-term damages on the foreign language learning process.

As quoted in the study on the Factors of Code Switching among Bilingual English Students in the University Classroom Bista (2010), Ayeomoni (2006), the factors of code switching are: intra-group identity, poetic creativity and the expression of modernization. Reyes (2004) writes that children switch codes when they do not know the word in the acquired or target language. Other research findings have indicated that one of the major factors of code switching is that elements of the other language convey the meaning of the intended idea more accurately (Gumperz, 2004). In a study conducted by Bista (2010) she enumerated factors on using code switching: to maintain privacy; to make it easier to speak in their own language than to speak in English; to avoid misunderstanding and being unfamiliar with similar words in English.

Thus, different purposes are deemed to be significant in engaging one in code switching. As stated in above-mentioned literature and studies, the present study also provides different purposes on the involvement of code-switching activity.

Methodology

Participants

The study is mainly focused on the code-switching activity of 17 selected Deck and Engine Maritime Instructors. Likewise, 251 Freshmen Cadets from 7 Deck sections and 8 Engine sections were included in the sampling.

Research Instrument

The tool for gathering data was utilized. Survey questionnaires for both maritime instructors and cadets were validated before it was distributed. This was supported by an actual classroom observations for each section and an informal interview (conducted in a group per class), which is mainly focused on the Occurrences of Code Switching during classroom interaction on their maritime professional subjects. Survey questionnaire on identifying the purpose of cadets and instructor in code switching used a Likert Scale of 1-Always 2-Sometimes 3-Seldom 4-Never. On the other hand, classroom interview was conducted with the cadets to rate the occurrences of their involvement on code-switching, having a Scale of 1-3 for BSMT (Seam1, Nav.1 and Mar.En.) and Scale of 1-4 for BSMarE (Mar.En, Drawing, EMATS, Nav.Arch).

Data Collection and Analysis

Simple random sampling was used to 4th class cadets in gathering their responses in presenting the purpose on code switching. Likewise, purposive sampling was used for the population of maritime instructors who are all teaching maritime subjects for the 4th class cadets. The answers were tabulated using descriptive statistics i.e. frequencies, percentage, means and standard deviation and cross tabulation which assessed and analyzed how many responded from respective scale 1-4. Significant levels were set as $p < 0.05$.

Results

Table 1

Occurrences of Code-Switching on Four Maritime Subjects Taken by Fourth Class Cadets

Table 1.1

Occurrences of Code-Switching on BSMT Subjects Taken by Fourth Class Cadets

DECK			
Sections	SEAM 1	NAV. 1	MAR.EN
1.Hadar	1	3	2
2. Bellatrix	1	3	2
3.Aalborg	3	1	2
4. Heihachiro	1	3	2
5. Koga	1	3	2
6.Copenhagen	1	2	3
7.Alphard	1	2	3

Scale:

0.99 – 1.99 1– Most of the time

2.00 – 2.99 2 – Occasionally

3.00 – 3.99 3 – Almost Never

It is noted in Table 1.1 that among the 3 BSMT subjects taken by the 4th class cadets from the Deck section, it is the subject of Seamanship 1 where cadets are allowed to code switch most of the time, while in Marine Environment being engaged in code-switching occasionally and in Navigation 1 it is almost never.

Table 1.2

Occurrences of Code Switching on BSMarE Subjects Taken by Fourth Class Cadets

ENGINE				
Sections	MAR.EN	DRAW.	EMATS	NAV. ARCH
1.Neptunium	2	3	4	1
2.Skagen	2	4	3	1
3.Americium	2	3	4	1
4.Dane	2	1	4	3
5.Shokaku	2	1	3	4
6.Ryujo	1	2	4	3
7.Akagi	3	2	4	1
8.Hiryu	2	3	4	1

Scale:

1 – Most of the time

2 – Occasionally

3 – Rarely

4 – Almost Never

Table 1.2 presents the occurrences of code-switching among 8 sections of Marine Engineering. It is highlighted that in the subject of Naval Architecture, 4th class cadets are allowed to code- switch most of the time. It is followed by Marine Environment wherein code-switch is used occasionally, while code-switching in the subject Drawing is rarely done. Lastly, it is evident that cadets are almost never allowed to code-switch in Engineering Materials.

Note: Factors that contributed for the students to code switch are considered to be subject-related.

Table 2
Number of Maritime Instructors using Code-Switching on Different Purpose
Based on Survey Questionnaire and Classroom Observation

Purpose on Code Switching	Number of Maritime Instructors	Description
1. Self-Expression	9 out of 17	Sometimes
2. Interpersonal Relationship	6 out of 17	Seldom
3. Better Understanding	8 out of 17	Sometimes
4. Knowledge Transfer	8 out of 17	Sometimes

Scale:

1 - Always

2 - Sometimes (70% of the chances when I could)

3 - Seldom (50% of the chances when I could)

4 - Never

It can be seen from the data from Table 2 that most of the maritime Instructors code-switching for self-expression; only few engage themselves in code-switching due to better understanding and knowledge transfer. Likewise, they code switch the least for interpersonal relationship. (This is supported by the results in Question #4.)

Table 3
Summary on Cadets' Involvement on Code-Switching out of Four Purposes
Based on Survey Questionnaire and Classroom Observation

Sections	Results from Survey Questionnaire	Results from Classroom Observation
ENGINE		
1. Akagi	Filling the Gaps	Better Understanding
2. Hiryu	Better Understanding and Filling the Gaps	Better Understanding
3. Ryujo	Better Understanding and Self-control	Better Understanding
4. Shokaku	Better Understanding and Self-control	Self-Expression
5. Dane	Better Understanding	Better Understanding
6. Americium	Filling the Gaps	Better Understanding
7. Skagen	Filling the Gaps	Better Understanding
8. Neptunium	Filling the Gaps	Self-Expression
DECK		
9. Hadar	Better Understanding	Better Understanding
10. Bellatrix	Filling the Gaps	Better Understanding and Self Expression
11. Aalborg	Better Understanding and Filling the Gaps	Self-Expression
12. Alphard	Filling the Gaps	Better Understanding
13. Heihachiro	Filling the Gaps	Better Understanding
14. Koga	Filling the Gaps	Better Understanding
15. Copenhagen	Better Understanding and Self-control	Better Understanding

It is evident from Table 3 that out of 15 sections from both Deck and Engine, 11 sections were code-switching solely for the purpose of having a Better Understanding of the lesson. Only 4 sections used code switching for Self-Expression and Better Understanding.

Table 4
Occurrence of Instructors' Code-Switching on Different Purposes

Instructor	TABLE 4.1 SELF-EXPRESSION				Total
	1 Always	2 Sometimes	3 Seldom	4 Never	
A	0	1	0	0	1
B	0	0	1	1	1
C	0	1	0	0	1
D	1	0	0	0	1
F	1	0	0	0	1
G	0	1	0	0	1
H	0	1	0	0	1
I	1	0	0	0	1
J	1	0	0	0	1
K	1	0	0	0	1
L	1	0	0	0	1
M	0	1	0	0	1
N	0	1	0	0	1
O	0	0	1	1	1
P	0	1	0	0	1
Q	0	1	0	0	1
R	0	1	0	0	1
Total	6	9	2	2	17

As reflected in Table 4.1, 9 out of 17 maritime instructors code switch for the purpose of expressing themselves, "Self-Expression." It is indicated that they engaged in code-switching just "Sometimes."

Instructor	TABLE 4.2 INTERPERSONAL RELATIONSHIP				Total
	1 Always	2 Sometimes	3 Seldom	4 Never	
A	0	0	1	0	1
B	0	0	0	1	1
C	0	0	1	0	1
D	0	1	0	0	1
F	1	0	0	0	1
G	0	1	0	0	1
H	0	0	1	0	1
I	0	1	0	0	1
J	1	0	0	0	1
K	0	1	0	0	1
L	1	0	0	0	1
M	0	1	0	0	1
N	1	0	0	0	1
O	0	0	1	0	1
P	0	0	1	0	1
Q	0	0	0	1	1
R	0	0	1	0	1
Total	4	5	6	2	17

It can be gleaned from Table 4.2, that out of 17 maritime instructors, 6 of them were involved in code-switching activity for the purpose of interpersonal relationship-talking in privacy.

Instructor	TABLE 4.3 BETTER UNDERSTANDING				Total
	1 Always	2 Sometimes	3 Seldom	4 Never	
A	0	1	0	0	1
B	0	0	0	1	1
C	0	1	0	0	1
D	0	1	0	0	1
F	0	1	0	0	1
G	0	1	0	0	1
H	0	0	1	0	1
I	1	0	0	0	1
J	0	1	0	0	1
K	1	0	0	0	1
L	1	0	0	0	1
M	0	0	1	0	1
N	1	0	0	0	1
O	0	1	0	0	1
P	1	0	0	0	1
Q	0	1	0	0	1
R	1	0	0	0	1
Total	6	8	2	1	17

Table 4.3 provides data on using code-switching for the purpose of Better Understanding. Out of 17 maritime instructors, 8 of them code switch only sometimes in order to make the lesson better understood.

Instructor	TABLE 4.4 KNOWLEDGE TRANSFER				Total
	1 Always	2 Sometimes	3 Seldom	4 Never	
A	0	1	0	0	1
B	0	0	0	1	1
C	0	1	0	0	1
D	0	1	0	0	1
F	1	0	0	0	1
G	0	1	0	0	1
H	0	0	1	0	1
I	1	0	0	0	1
J	0	1	0	0	1
K	1	0	0	0	1
L	1	0	0	0	1
M	0	0	1	0	1
N	0	1	0	0	1
O	0	1	0	0	1
P	1	0	0	0	1
Q	0	1	0	0	1
R	1	0	0	0	1
Total	6	8	2	1	17

As shown in Table 4.4, out of 17 maritime instructors, 8 of them engaged on code-switching only “sometimes” for the purpose “Knowledge Transfer.”

Table 5
Occurrence of Cadets’ Code Switching on Different Purposes

Table 5.1 Defense Mechanism						
Sections		1 Always	2 Sometimes	3 Seldom	4 Never	Total
Section	AKAGI	4	8	3	1	16
	HIRYU	2	7	8	0	17
	RYUJO	2	7	8	0	17
	SHOKAKU	2	8	7	0	17
	SKAGEN	4	6	4	0	14
	AMERICIUM	2	9	6	0	17
	NEPTUNIUM	5	6	5	1	17
	BELLATRIX	3	11	3	1	18
	KOGA	1	11	6	0	18
	HADAR	2	9	6	0	17
	AALBORG	1	8	6	0	15
	HEIHACHIRO	2	9	5	1	17
	COPENHAGEN	0	7	9	2	18
	ALPHARD	0	8	6	3	17
	DANE	0	12	4	0	16
Total		30	126	86	9	251

Table 5.1 presents the occurrences of cadets on engaging themselves on code-switching. It is evident that out of 251 fourth class cadets, 126 used code-switching “sometimes” for the purpose of “Defense Mechanism.” Section Neptunium has dominantly (always) used code switch for the said purpose, while 3 from Alphard has it to be the least considered purpose.

Table 5.2 Filling the Gaps						
Sections		1 Always	2 Sometimes	3 Seldom	4 Never	Total
Section	AKAGI	6	10	0	0	16
	HIRYU	3	8	6	0	17
	RYUJO	1	9	7	0	17
	SHOKAKU	2	11	4	0	17
	SKAGEN	4	7	3	0	14
	AMERICIUM	1	14	2	0	17
	NEPTUNIUM	9	7	1	0	17
	BELLATRIX	4	8	6	0	18
	KOGA	4	12	2	0	18
	HADAR	5	10	2	0	17
	AALBORG	7	2	6	0	15
	HEIHACHIRO	3	9	5	0	17
	COPENHAGEN	2	8	7	1	18
	ALPHARD	1	11	3	2	17
	DANE	3	10	3	0	16
Total		55	136	57	3	251

As shown in Table 5.2, out of 251 fourth class cadets, 136 has tended to code switch “sometimes” for the purpose of filling the Gaps. Section Neptunium has dominantly (always) used code-switching for the said purpose, while 3 cadets from 2 sections (Copenhagen and Alphard) select this as the least considered purpose.

Table 5.4 Self-Control						
Sections		1 Always	2 Sometimes	3 Seldom	4 Never	Total
Section	AKAGI	6	8	2	0	16
	HIRYU	4	10	3	0	17
	RYUJO	4	4	9	0	17
	SHOKAKU	4	8	5	0	17
	SKAGEN	3	6	5	0	14
	AMERICIUM	4	12	0	1	17
	NEPTUNIUM	10	6	1	0	17
	BELLATRIX	5	10	3	0	18
	KOGA	2	10	6	0	18
	HADAR	3	11	3	0	17
	AALBORG	6	5	4	0	15
	HEIHACHIRO	4	9	3	1	17
	COPENHAGEN	3	8	5	2	18
	ALPHARD	5	8	4	0	17
	DANE	2	12	2	0	16
Total		65	127	55	4	251

Table 5.4 provides the use of code switching from 251 fourth class cadets, 127 has used it “sometimes” for the purpose of “Self Control.” Section Neptunium has dominantly (always) used code switch for self-control, while 3 cadets from 2 sections (Americium and Copenhagen) have it to be the least considered purpose.

Conclusion

Pedagogical Implications

With the awareness of the purpose used by the maritime instructors and cadets in engaging themselves in code-switching, continuous support and encouragement may be given to the students during classroom interaction. Allowing them to code switch may somehow bridge the gap –focused on an intended purpose–among the speakers who are considered bilingual. It is to commend both instructors and fourth class cadets in strictly following the EOP rules; continuous monitoring in the occurrences of cadets' code-switching must be done during classroom interaction.

Recommendations

The Department of Academics in cooperation with the English instructors should initiate the “rebirth” of the EOP. The implementation must be strictly followed by the cadets, instructors and even the tactical officers and staff. Faculty members may enhance the communicative competence of the cadets through various experiential activities during classroom interaction; exposing them with this activities may offer cadets the chance to involve themselves in speaking. Thus, continuous monitoring on code switching must be done. Future researchers may work on the same research having a wider scope with actual classroom observations and interview; this is to further attest the activities on code switching and the findings of the present study.

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**LEARNING STYLES AND ACADEMIC PERFORMANCE OF MARITIME
STUDENTS: IMPLICATION FOR LANGUAGE**

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Abstract

Reports on the success of learning styles-based instruction are very encouraging. Learning styles are an individual student's preferred ways of perceiving and processing information which is a dominant factor affecting the achievement of the goals of the teaching-learning process.

This study aimed to identify and analyze the learning styles of the 196 Third class midshipmen who are taking Bachelor of Science in Marine Transportation (BSMT) and Bachelor of Science in Marine Engineering (BSMarE) at the Maritime Academy of Asia and the Pacific, determine their performances in English 1 when grouped according to their learning styles and present the implication of the findings of the study on the teaching-learning process. The study utilized the Felder-Silverman Index of Learning Styles. The data were analyzed using descriptive and percentage analysis as well as the means, standard deviation and Chi-Square Test and Cramer's V. Coefficient. The analysis of the data showed that the primary and secondary learning styles of the midshipmen were Visual, Sensing and Active respectively. There was no significant relationship between the academic performance of the midshipmen in English 1 Course and their learning styles so that the null hypothesis was accepted. It was recommended that the learning styles of students be used as a major guide in the preparation of instructional strategies and that students and teachers should be made very well aware of the advantages of recognizing and acknowledging students' learning styles.



Introduction

The study of learning styles has been the subject of significant attention among educators in recent years (Laguador et. al 2015). There were professional educational journals that reported dramatic successes in learning style-based instruction (Dunn 1972). These reports aroused the interests of teachers who wished to ensure that their students experience positive learning outcome. They wanted to be able to teach in such a way that lessons would be well understood, attractive and appreciated by learners for them to benefit from the knowledge. If understanding and identifying the learning style of the students would greatly help teachers to obtain their teaching objectives, they deem it fruitful to embark on the study of learning.

It is a well-accepted axiom throughout higher education that students have different learning styles (Goebel 2014). They learn in a variety of ways. Some learners for example learn best when they see the text in their reading than when they listen to a tape recording. Some adopt their learning styles according to tasks (Pask, 1976). In the past, teachers cover materials through teaching by telling, but research has shown that students are changing. What worked in the previous decades may not be as effective in the modern period. In the present era, one of the most important issues in the learner-centered pedagogical setting is the learning approach of the students which includes the varied learning style preferences of the learners.

Understanding and addressing learning styles can be a significant help in carrying out the purpose of education. Students learn readily when processing information in their own natural and preferred ways. Reid (in Mei Tai 2013) also stated that learning styles have been used as a focus for assisting students in higher education to realize their full learning potential.

Barnes, et. al. (2008) identified differences in the learning styles of the students and established that students had preferences in certain teaching delivery



methods over others. Tomlinson (2002) emphasized the need for instructor to be aware of and adjust to the students learning styles. Thus an analysis of students' learning styles can enhance learning and expand the knowledge base of both ground-based and on-line teaching.

Hence, the present investigation attempts to inventory, identify and analyze the learning styles of the third class midshipmen of the Maritime Academy of Asia and the Pacific (MAAP) and to discover their implications for the teaching-learning process.

Theoretical/Conceptual Framework

The study draws theoretical support from the Felder-Silverman Learning Style Model (FSLSM), which states that there are four dimensions of learning styles. The first dimension distinguishes between an active and a reflective way of processing information. The second dimension covers sensing versus intuitive learning. The third, visual-verbal dimension differentiates learners who remember best and therefore prefer to learn from what they have seen in pictures, images, and diagrams and learners who get more out of textual representation whether verbal or written. Lastly, the fourth dimension distinguishes between the sequential and global learners.

The FSLSM is an appropriate model (Carver et al. 1999 in Graf 2007). It describes learning styles in greater detail, distinguishing between preferences on the four dimensions previously stated.

Understanding and addressing learning styles can be a significant help in carrying out the purpose of education. Findings of researchers show that people learned more when they are aware of their learning styles (O'Connor 1997 in Gheadi and Jam 2014).



Conceptual Framework

The learning styles of the third class midshipmen were identified through the use of the Felder-Silverman Learning Styles Model Questionnaire. It is hypothesized that the learning styles of the students have a significant relationship with their academic performance in their subject English 1. After establishing the learning styles of the midshipmen and the level of their performance in English 1, the implications of the learning styles for the teaching-learning process were also determined.

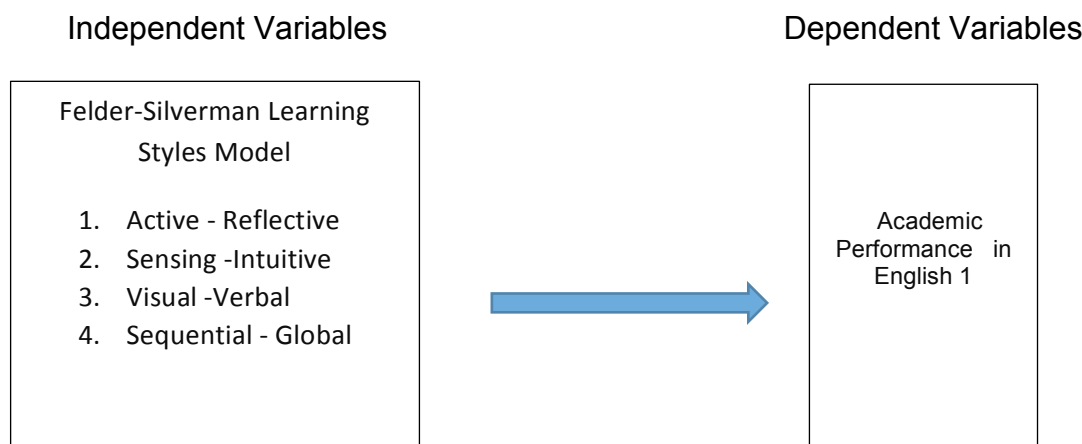


Figure 1: Conceptual Model of the Study

The sequential flow of this study is to present the Independent Variables and the Dependent Variables in Figure 1. The Independent Variables are used to ascertain the students different learning styles of the Students.

Statement of the Problem:

The general problem of the study is: What are the learning styles of the third class midshipmen at the Maritime Academy of Asia and the Pacific and how do they relate to their academic performance in English?

Specifically, the study sought to answer the following questions:



1. How may the learning styles of the third class midshipmen be described in terms of the Felder-Silverman Learning Styles Model?
 - 1.1 Active - Reflective
 - 1.2 Sensing - Intuitive
 - 1.3 Visual - Verbal
 - 1.4 Sequential - Global
2. What is the level of academic performance of the midshipmen in English 1 course?
3. Do the learning styles of the third class midshipmen relate significantly with their academic performance in English 1?
4. What pedagogical implications may be drawn from the findings of this study?

Null Hypothesis:

There is no significant relationship between the academic performance of the midshipmen in English 1 course and their learning styles.

Scope and Delimitation

The study was limited to the four dimensions of the learning styles of Felder-Silverman Model by using the Index of Learning Styles Questionnaire and the students' performance grades achieved in English 1.

The respondents of this study were the third class Bachelor of Science in Marine Transportation (BSMT) and Bachelor of Science in Marine Engineering (BSMarE) of the Maritime Academy of Asia and the Pacific who were enrolled in English 1. The respondents of the study were eight (8) sections of BSMarE and seven (7) sections BSMT. Fifteen midshipmen were randomly selected from each section. Put together, the total number of the subject respondents was 196.



Part 2. The Level of the Academic Performance of the Third Class Midshipmen in English 1 Course

Table 3. Frequency, Remarks and Percentage Distribution of the Achievement Grades of the Respondents in English 1

Range of Grades	Remarks	Frequency	Percent (%)
2.00 (73 - 77%)	Meets minimum competence requirements with above average score	4	2.0
1.75 (78 - 82%)	Meets minimum competence requirements with outstanding score	36	18.4
1.50 (83 - 88%)	Meets minimum competence requirements with highly outstanding score	99	50.5
1.25 (89 - 94%)	Meets minimum competence requirements with excellent score	57	29.1
Total		196	100.0

As shown in Table 4, mostly or 50.5% of the students have a grade of 1.50 which is equivalent to 83% to 88% thus indicating that they meet the minimum competence requirements with highly outstanding score. Also, 29.1% of the students have grade of 1.25 (89% to 94%) suggesting an excellent score, This is the highest grade that the students obtained. Eighteen point four percent (18.4%) of the students obtained a grade of 1.75 (78% - 82%) which meets minimum competence



requirement with outstanding score while 2% of them have a grade of 2.00 (73% to 77%) meets minimum competence requirement with above average score.

Table 4. English 1 Performance Grades of Midshipmen when Grouped According to Their Learning Styles

Learning Styles	N	Std. Deviation	Mean	Remarks
Active	141	3.79	86.48	Meets minimum competence requirements with highly outstanding score
Reflective	55	3.74	86.05	Meets minimum competence requirements with highly outstanding score
Sensing	141	3.75	86.05	Meets minimum competence requirements with highly outstanding score
Intuitive	55	3.76	87.15	Meets minimum competence requirements with highly outstanding score
Visual	175	3.85	86.30	Meets minimum competence requirements with highly outstanding score
Verbal	21	3.10	86.86	Meets minimum competence requirements with highly outstanding score
Sequential	127	3.66	86.23	Meets minimum competence requirements with highly outstanding score

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Global	69	4.00	86.60	Meets minimum competence requirements with highly outstanding score
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As shown in Table 4, the average performance of the students when grouped according to learning styles ranges from 86.05 to 87.15 which indicates meeting minimum competence requirements with highly outstanding score.

With respect to the Active and Reflective Learning Styles, students who prefer Active Learning obtained an English mean grade of 86.48 with a standard deviation of 3.79 indicating that the center of distribution of their mean performance ranges from 82.27 to 90.27. For those who prefer Reflective Learning with a mean of 86.05 and standard deviation of 3.74, the center of distribution ranges from 82.31 to 89.79.

On the Sensing-Intuitive continuum, students who prefer Sensing obtain a mean grade of 86.05 with a standard deviation of 3.75 while those who prefer Intuitive have 87.15 with a standard deviation of 3.76. This implies that the center of distribution of English grades of Sensing Learners ranges from 82.30 to 89.80 while that of the Intuitive Learners ranges from 83.39 to 90.91. The lowest grade of the students who prefer Sensing Learning Style is 76.51 while those who prefer Intuitive Learning Style is 75.00. For the highest grade, both are exceptional ratings – 92.83 for Sensing and 93.13 for Intuitive group of learners.

In terms of Visual-Verbal Learning Styles, the average English grades of Visual Learners is 86.3 with a standard deviation of 3.85 while those Verbal Learners is 86.86 with a standard deviation of 3.10. This suggests that the center of distribution of grades of Visual Learners ranges from 82.45 to 90.15 while that of the Verbal Learners ranges from 83.76 to 89.96. When the data are plotted in a continuum, these values overlap indicating similarities in performance of students, in general.

With respect to Sequential-Global Learning Styles, the mean English grade of Sequential Learners is 86.23 with a standard deviation of 3.66 indicating that the center of distribution of grades ranges from 82.57 to 89.89. For the Global Learners,



the mean is 86.60 and the standard deviation is 4.00; hence, the center of distribution of grades ranges from 82.60 to 90.60.

The results analyzed from the table clearly shows that the students' performance in all the learning styles met the minimum grade that is expected or required. It also indicates that they perform and learn equally well using all the styles included in the study. The other reason is the admission tests given by the institution which include written tests, interviews, medical examinations and Indoctrination Orientation Period (IOP) for two months. The selection process attracts between eight thousand (8,000) to twelve thousand (12,000) applicants but the academy will only accept five hundred (500) candidates to become fourth class midshipmen of MAAP. These are composed of two hundred fifty for the East Campus and two hundred fifty (250) for the West Campus.

For the instructor, the findings suggest that regardless of method or approach they use, the students learned and performed well. The instructor served as the springboard from which all topics and discussions begin. However, the greatest burden still rest with the students because they are the ones learning. After all the initial role of the instructor, they were then given the opportunity to present their own concepts based on the springboard provided by the instructor in the initial stage of the discussion. Skinner (1998) in his theory known as "operant conditioning" posited that students learn by "doing" or operating rather than by mere observation or listening. But still it is imperative for the instructor to start the "ball rolling" so to speak and then allow the students to discover the dynamics of the lessons which is in fact the essence of operant conditioning.

Part 3. Relationship of the Learning Style and the Academic Performance of the Midshipmen

The researcher posited that the academic performance of the midshipmen is independent of their learning style. To test the hypothesis, the data was analyzed using Cramer's V coefficient shown in Table 5.



Table 5. Relationship of Learning Styles and the Academic Performance of Midshipmen

Learning Style	Cramer's V Coefficient	Approx. Sig.	Remarks
Active-Reflective	.11	.54	Not Significant
Sensing-Intuitive	.11	.54	Not Significant
Visual-Verbal	.07	.84	Not Significant
Sequential-Global	.16	.16	Not Significant

The academic performance of the students are tested for relationship with each of the four (4) learning style scales. For the active-reflective learning preference, computed Cramer's V coefficient of 0.11 is not significant at 0.05 as the probability value (Approx. Sig.) is 0.54 which is greater than 0.05. Similarly, the computed Cramer's V coefficient of 0.11 for the sensing-intuitive learning preference is not significant at 0.05 as the probability value (Approx. Sig.) is 0.54 which is greater than 0.05. Also, the computed Cramer's V coefficients for the visual-verbal and sequential-global learning preferences which are 0.07 and 0.16, respectively, are not significant at 0.05 as reflected in Table 5.

These findings give no reason to reject the null hypothesis. It may be safely stated that the academic performance of the midshipmen is independent of the learning styles of the students. This is with respect to the active-reflective, sensing-intuitive, visual-verbal, and sequential-global scales. It may be gleaned from the



findings that academic performance is more a function of other factors other than learning styles.

Part4. Pedagogical Implications from the Findings of the Study

The findings revealed that a big majority, 89.3% of the students were Visual learners, 71.9% were Active Learners and another 71.9% were Sensing Learners. These findings convey a message to the pedagogues or teachers.

The teachers will be alerted to which teaching strategies to use if they are aware that their students are learner whose preferences are primarily Visual, Active and Sensing of their strategies inspire, encourage and motivate the learners.

It will be good for the teachers to recognize and realize that their students are active learners. Teachers of the active learners they can employ teaching strategies using experimentation, role playing, dramatizations, enactment that make learning enjoyable and beneficial to them. Active learners want to try things out. The teachers may assign students to carryout trials and hands-on tasks. The active learners will put their hearts into the task.

The sensing learners, the teacher should realize, are interested in facts and details. These learners love solving problems using establish methods and have clear expectations from their lesson.

Conclusion

Based on the results of the study, the following conclusions were obtained:

1. That the students prefer visual, sensing and active learning styles in the Felder-Silverman Learning Styles Model. Visual ranked first .
2. That students' performance met the minimum grade meeting their minimum



competence requirements with outstanding score which is expected or required. It is also indicated that the students' performances are equally as good using all the different learning styles.

3. That there are no significant relationship that exist between the midshipmen's performance in English 1 and their learning styles. In view of this the null hyphothesis of the study is accepted.
4. The implication of the learning styles to the teaching-learning process are as follows:

For the Students

The findings will become useful information for the students in realizing their strengths and weaknesses. This awareness will motivate them to use their strengths in achieving educational goals and find ways and means to address their weaknesses. In so doing, the students could develop learning strategies which will enhance their performance.

For the Teachers

The findings will help the teacher to know more about their students. The teacher will be guided in the preparation in his/her lessons and in the preparation of the instructional tools and divices. The teacher will be psychologically and emotionally prepared to face and deal with their students thus creating an atmosphere condusive to teaching and learning.

For the Administration

The administration will be well informed about student learning which will help them make decisions about the implementation of school policy concerning strategic and effective teaching and learning. The administration can also support program for the betterment of the teaching and learning procedures.



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Proposal of Future Actions of IALA for the Enhancement of VTSOs' Language Proficiencies

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Abstract Strengthening traffic service operators' language proficiency has been one of the key issues in aviation and maritime industries for ensuring safety of navigational operations. For this purpose, the International Civil Aviation Organization (ICAO) and IALA (International Association of Marine Aids to Navigation and Lighthouse Authorities) have paid great attention to this issue by developing a series of guidelines and model courses. In terms of Vessel Traffic Service Operators (VTSOs), however, some challenges still exist for IALA in the cultivation of a more harmonised and effective VTS communication environment worldwide through a systematic VTS English education, training and certification. In this paper, therefore, with the aim of suggesting the future direction of VTS communication within IALA, the language recommendations, guidelines and model courses provided for two representative traffic management industries, VTSOs and ATCs (Air Traffic Controllers), will first be illustrated in detail. Then, the following communication factors between the three will be closely analysed and compared: training curriculum and courses, trainers' qualifications, and testing systems. Based on the findings, IALA's future actions for creating a better VTS communication system for the future will be suggested.

Keywords: *VTSOs' language proficiency, harmonised and effective VTS communication, training curriculum, trainers' qualifications, testing systems*

1. Introduction

Clear and effective communication in the intercultural maritime business have intertwined and accentuated greatly with the advancement of global trade. The importance of traffic service operator language proficiencies specifically in aviation and maritime domains have been given considerable attention over the years.

These critical issues have been assiduously and actively discussed in ICAO and IALA, respectively for Air Traffic Controllers and Vessel Traffic Service Operators by establishing a comprehensive set of communication guidelines, model courses, training curriculums, and certification. For this purpose, IALA has fostered tremendous efforts since its commencement of establishing the Recommendation on VTS Communications [1] and VTS VHF Voice Communication [2], which was published in December 2017.



With the successful commencement and strengthened groundwork of VTS communication, the next steps for implementation of this highly systematic and linear manner need to be established at the moment. Hence, this paper will address and seek to propose future steps of the enhancement of IALA communication capabilities within the VTSOs' career life cycle in terms of training, accreditation, and revalidation. For this purpose, the following factors will be discussed and analysed: language training and curriculum and courses, language trainers for traffic service communication, and VTS language testing. Based on the analysis, IALA's future efforts for creating a safer and more effective VTS communication environment will be proposed.

2. Comparison between IALA and ICAO Communication Guidelines

2.1. Language Training and Curriculum and Courses

The language training for strengthening traffic service operators' proficiency is one of the key issues in the model courses and guidelines of IALA and ICAO. Through a series of model courses for VTS operator and supervisor and on-the-job training, IALA has endeavoured to increase the level of VTSOs' language proficiencies sufficiently to ensure a clear and effective exchange of VTS-related information. Through the establishment of the Manual on the Implementation of ICAO Language in 2010 [3], ICAO has also provided Contracting States with a comprehensive set of practical information, specifically on what and how to offer language training and testing. In this section, the language training issues within IALA and ICAO will be closely analysed from two different angles: 'general language training for improved communication service' at the macro level and 'specialised language training for professional traffic service' at the micro level.

2.1.1. General Language Training for Improved Communication Service

General language proficiency is a fundamental prerequisite for initial entry into both industries, as the specific language testing criteria, which will be exemplified in the Table 1 in Section 2.2.1. With the entry level of band 5 in the International English Language Testing System (IELTS), IALA (p.77) [4] requires candidates to attain the level of 'modest users'. According to the definition of 'modest user' provided by IELTS, users at this level have 'a partial command of the language', are 'likely to make many mistakes', and are 'unable to use complex language'. With candidates at this level, IALA Model Course V103/1 recommends 166 hours of language training (30.34% of 547 hours in the total curriculum), which accounts for the largest proportion of the whole course: 91 hours for presentation/lectures and 75 hours for exercises/simulation. The four subcategories of this language portion are language structure, specific message construction, standard phrases, and information collection, which are all VTS-specialised language training elements.

In contrast, ICAO has six levels: level 1 (pre-elementary), 2 (elementary), 3 (pre-operational), 4 (operational), 5 (extended) and 6 (expert). At each level, six different language skills areas are measured: comprehension, structure, vocabulary, pronunciation, fluency, and interaction. The focus of Operational Level 4, which is the safest minimum requirement to be a qualified ATC, is largely on communicative competencies, or fluency and interactions, based on the other four language skills [3]. A person at this level should 'produce stretches of language at an appropriate



tempo', 'maintain exchanges even when dealing with an unexpected turn of events', mostly provide 'immediate, appropriate, and informative responses', and 'deal adequately with apparent misunderstandings by checking, confirming or clarifying' (ibid, pp.4-12). When compared to the general language proficiencies required for traffic service operators in each industry, there are several issues to be closely considered in designing the future direction of VTSOs' language curriculum for improved communication services.

First, the required entry level for candidates seems to be re-established. Considering that a VTSO needs to communicate with crews from different countries with English as the sole mode of communication, speakers at the current modest level could experience a high level of restriction in fulfilling their duties in English. Of course, they can conduct stereotypical and general VTS procedures in English, such as when receiving reports upon entering or leaving a VTS sector and providing information for anchorage and pilot boarding. In managing emergency situations and/or unusual incidents at sea, however, VTSOs should be able to communicate in a spontaneous, accurate and intelligible manner, even in fairly unfamiliar and unexpected situations. Consequently, the current language requirement could be considerably lower than that of their language needs in the actual working environment, even under the assumption that 166 hours of VTS-specific language training are fully given during the course of V103/1.

To that end, the update of the model course that includes the detailed curriculum covering general to specialised VTS communication needs to be re-established. For this, the detailed language teaching elements such as structure, pronunciation, vocabulary, and interaction should be more systematically organised in the contexts of VTS communicative situations. In terms of language training, somewhat general and vague topics are currently suggested in each section of the model course V103/1 without any explicit pedagogical instructions on how to teach them, as exemplified below (Section 4, p.21) [4].

Collecting information

- Describe information collection and questioning techniques.
- Direct questioning using message markers
- Linguistic problems in using voice tone to pose a question
- Rejection of abstract questions and double questions
- Sarcasm in questioning

In the above, some of the teaching elements regarding the techniques for collecting information and questioning are listed. However, the specific elements of language that can be taught under the given sub-topics (e.g. drills for making an interrogative sentence in terms of language structure, practicing correct intonation in questioning), and how those can be effectively trained through a wide range of language teaching methodologies (e.g. task-based learning, a communicative approach, and audio-lingual drills) are not currently defined. Considering that VTS English training requires a high level of specialised knowledge both in language teaching and VTS operation but specialised expertise in both fields is not easily attainable at a practically



sufficient level [3], the establishment of a comprehensive and complete set of VTS language model courses for trainers as well as trainees should be first considered within IALA. The development of a VTS English language model course and instructor manual are expected to be the very basis of enhancing communication capabilities within the VTSOs' career life cycle in terms of training, accreditation, and revalidation.

2.1.2. Specialised Language Training for professional traffic service

From the general language training based on the model course discussed in the 2.1.1, a specialised course for a more enhanced professional traffic service can be a part of major considerations. This is specifically important when traffic service operators' lifelong learning for professional development is considered. As discussed earlier, ICAO ensures the maintenance of ATCs' language proficiency through their own aviation English testing system, Aviation English Language Test Service (AELTS), at a regular interval of three years, and further through ICAO accredited specialised language training courses [3]:

- **Radiotelephony communication for airside safety operators** provides airside safety operators with the necessary knowledge, skills and attitude required to effectively apply standard radio communication procedures/phraseology and adhere to markings/signage in accordance with national and international standards.
- **Prevention of miscommunication in ATC Radio telephony** provides Air Traffic Controllers with the knowledge, skills, and attitude necessary to prevent miscommunication in radio telephony, per standard practices in ICAO Annex 10, Procedures for Air Navigation Services (Air Traffic Management), Manual of Radiotelephony.

Through VTS supervisor (V103/2) [5] and on-the-job training (103/3) [6] model courses, IALA also provides further training for VTS communication, for example, six modules on advanced VTS management knowledge and techniques for a duration of 105 hours (53 hours of presentations/lecturers and 52 hours of exercises/simulation): *Advanced Traffic Management* (32 hours), *VTS Equipment* (6 hours), *Additional Personal Attributes* (10 hours), *Responding to Emergency Situations* (30 hours), *Administrative Functions* (18 hours), and *Legal Knowledge* (9 hours). In the module of *Additional Personal Attributes*, three subcategories and follow-up topics requiring 10 hours are suggested as shown below (pp. 26–27) [5].

Leadership

- Team management
- Job performance and professional development

Communication Skills

- Effective communication
- Media and general public
- Operational communications



Stress Management

Recognizing stress/stressful situations and fatigue

Responding to stress/fatigue

The topic that deals with language directly is *operational communication*, which is the second part of communication skills. The other parts of communication skills are more oriented toward management or communication with junior staff and/or public relations rather than VTS English language proficiency. This means the training hours that can be allocated to operational communication would probably be 1–2 hours, considering that a balance with other subjects has to be achieved. Consequently, the number of hours allotted for language training is considerably insufficient to update their knowledge of VHF communication, answer their inquiries accumulated at work over the last several years, and have them undergo a target language training for familiarisation.

Furthermore, in the case of V103/3 on VTS On-the-Job Training (OJT) [6], out of the six modules (i.e. *Traffic Management*, *Local Knowledge*, *Communication Coordination/Language*, *Equipment*, *Personal Attributes*, and *Emergency Situations*), *Communication Coordination/Language* gives a certain focus on VTS language competency. The detailed teaching elements in this module are as follows (p.11) [6]:

- Communication procedures
- Reporting arrangements
- Routine and non-routine broadcasts
- Use of SMCP
- Dealing with non-English speakers
- Dealing with enquiries from members of the public/stakeholders
- Dealing with enquiries from the media or the press

Among the seven teaching focuses listed above, *routine and non-routine broadcasts*, *use of SMCP*, and *dealing with non-English speakers* are related to VTS English language competencies. Considering that most of the education has been provided in previous VTS courses, such as V-103/1 and V-103/2, subjects such as *use of SMCP* can be covered on the spot. For non-native speakers, however, routine and non-routine broadcasts and dealing with non-English speakers and relevant theories should be taught in advance. Of course, this could be a part of SMCP as well as basic English and clear communication, which are included in V-103/1. Without an explicit and clear guideline, however, on-the-job training instructors might not have a clear understanding of how to approach this in a practical teaching environment because they are not language specialists themselves, but these areas are a part of the highly technical field of applied linguistics, which requires a high level of specialisation in linguistic analysis and language training.

Since the courses above are not designed exclusively for the enhancement of VTS English competencies, the development of specialised English training curriculums for meeting VTSOs' specific communicative needs (e.g. a course for effective and clear VTS communication skills, for



emergency VTS communication, and for the application of SMCP and plain language) has to be considered, and therefore, separate specialised training courses need to be organised and regularly provided as a part of re-training. In order to challenge the current obstacles in VTS-specific language training, a detailed guideline for train-the-trainer should be also considered.

2.2. Language Trainers for Traffic Service Communication

As a part of a highly specialised domain, or English for Specific Purposes (ESP), teaching professional English in a certain industrial domain requires a high level of competency both for language training and a target context [7]. Therefore, several key factors for English trainers such as qualifications, training, experience, treatment and systematic supports in the traffic service communication fields [3] need to be carefully considered in the future. Since a specific guideline for VTS English trainer has not yet been defined within IALA, however, a guideline from IMO Maritime English Model Course and ICAO Aviation English Training Programmes will be compared in terms of qualifications and train-the-trainer courses.

2.2.1. Qualification

The recommended qualifications of maritime English instructors specified in IMO Maritime English Model Course 3.17 are as follows [8]:

Trainer's experience

The instructor should be a qualified teacher of English language who has been trained in the Communicative Approach, content-based instruction and task-based learning etc. to English language teaching and has a broad understanding of maritime subjects.

For qualified English language instructors able to apply content-based communicative ESP pedagogies, the model course recommends possessing a broad range of maritime background knowledge. Even though a certain level of specialty in two areas is required, a clear measurement of the level of 'broad understanding in maritime subjects' does not seem to be quite possible.

In contrast, the ICAO clearly specified the levels of qualification from *minimum* to *best*, requiring knowledge and skills in the following areas (p.D-1) [3]:

Table 1 – Qualifications for Aviation Instructors

Qualifications			
	Best	Very Good	Minimum
Language training academic qualifications	- Master's in Language Teaching - Teaching English as a Second Language (TESL, TESOL) - Applied Linguistics - Foreign Language Education or related field	- Bachelor's degree in foreign language training or - Graduate diploma in TESL, etc., or - University degree + Extensive L2 or foreign language with clear evidence of commitment to field	- Certificate in TESL, or - University degree (initial training should be done under close supervision of experienced trainer)
Language training experience	- Aviation language programme - 3+ years	- Aviation language programme - Language for specific purpose training - Language training in an accredited university or language school	- Language training experience, or - No previous training experience acceptable when training is under close supervision of experienced trainer
Aviation communications	- Pilot or controller experience	- Radiotelephony familiarity (through aviation language apprenticeship or experience)	- Ability to work well with SME
Language learning materials development	- Aviation language materials development with communicative or interactive approach		- Language learning materials development with communicative or interactive approach
Language training administrative experience	- Aviation language programme administration	- Language training programme administration	- Aviation or language training programme involvement

These examples clearly demonstrate that the language training in this type of specific industrial field requires a trainer with a significantly high level of expertise and strong dedication to continuous learning and updating of knowledge in two specialised domains [3]: English training and VTS operation. In other words, the systematic supporting system from entry to skills development should be established as a part of the IALA VTS communication enhancement project in the future.

2.2.2. Train-the-Trainer Courses

Considering the complex nature of VTS communication training, qualification of the trainers is one of the key elements in the design and operation of the highly structured and results-oriented effective curriculum. Recognising the great importance of the well-qualified instructor in language learning/teaching, IMO has provided the Maritime English Instructor Training Course



(MEITC) as a part of technical cooperation programmes. It has been evaluated as a meaningful and valuable training and development opportunity for English instructors, but the needs for more practical training opportunities through communication-related simulators and onboard ship have been continuously raised [9]. In addition, the limitation of this training, which opens its door only to a limited number of participants each time on an irregular basis, have been continuously pointed out as something to be improved (*ibid.*).

On the contrary, ICAO has recognised the importance of train-the-trainer courses, given the ‘highly technical and specialized’ nature of aviation language training, by emphasising that ‘a somewhat lengthy apprenticeship’ can be required for ATCs’ enhanced familiarity with technical and operational requirements of phraseology. In this regard, the comprehensive official guideline on the ‘Aviation English Trainer Training’ is published with specific details, for example, from ‘exposure to an aviation environment’ to ‘student monitoring’ [3]. The full list of the titles of the chapter (*ibid.* p. v) is as follows:

Exposure to an aviation environment

- Flight crew environment
- Controller environment
- Instructional environment

Theoretical training curriculum

- Flight operations, airlines and staff
- Airspace and types of ATC
- Aircraft systems and flight
- Airport environment and ground operations
- Meteorology and environmental hazards
- Navigation and charts
- Safety, Human Factors and Crew Resource Management (CRM)
- In-flight incidents and emergency situations
- Aviation language continuum, phraseology and plain language
- Regulatory environment : ICAO and civil aviation authorities
- International bodies
- Resources

Practical trainer training activities

- Listening practice in ATC lab
- Practice using ICAO Rated Speech Samples Training Aid and rating samples
- Developing and delivering communicative language lessons from raw data
- Group management in communicative language teaching
- Adapting lesson plans and content to meet specific needs
- Observing and working in tandem with experienced trainers
- General practical trainer training exercises and qualification/certification



Specific linguistic awareness

- Analysing language functions in aviation
- Identifying language objectives and proficiency criteria in aviation English
- Criteria for content based language training in aviation English
- Safety-critical nature of language in aviation
- Social and personal impacts of aviation English training

Blended learning and student monitoring

- Types of training delivery with respect to various ICAO Rating Scale skills
- Potential and limits of computer-assisted language learning
- Blended learning curriculum design
- Means of student monitoring and Learning Management System (LMS)
- Benchmark, entry, progress, exit and proficiency testing

As clearly illustrated in the example from ICAO, the establishment of a systematic training system for VTS language instructors should be actively sought; specifically, the steadily increasing number of VTSOs from non-native English-speaking countries is considered. Accordingly, the methods of providing a quality language trainer should be discussed through the establishment of language trainers' qualification criteria and IALA-led step-by-step capacity-building programs, along with the development of the VTS English model course. In addition, a supportive system that enables language instructors to develop themselves to better organise and deliver a VTS English course based on IALA guidelines and relevant model courses should be provided in the future through multiple possible channels (e.g. online and/or offline) for increased accessibility.

2.3. Language Testing

As discussed in 2.5.1, IALA and ICAO have adopted different language testing criteria by utilising the internationally recognised language testing system, IELTS, and by developing their own system to measure English capabilities with a specific focus on radiotelephony communication, respectively. The purposes of the language testing systems in the two organisations are not identical in that IALA uses IELTS as candidates' entry requirement for V103/1, while ICAO uses the Aviation English Language Test Service (AELTS) for the requirement of being a fully qualified and actionable ATC. This could imply that there is a considerable potential need for IALA to develop a specialised language testing system for VTS communication based on relevant IMO and IALA international guidelines. This is also clearly stated by ICAO [3] with a strong stipulation that general language testing systems for academic and business purposes could have a serious limitation in applying test-takers' overall communication skills to the highly specialised domains of the transportation service industry [3], as clearly pointed out in the previous sections. With the critical importance of specialised VTS



language testing systems in mind, the testing evaluation criteria and its practical implementation issues derived from ICAO will be closely examined in the following sections.

2.3.1. Testing Evaluation Criteria

ICAO language proficiency requirements focus on evaluating levels of task-related speaking and listening proficiencies in future real-life situations, and the contents primarily deal with plain language and standardised phraseology. The details of the proficiency rating scale in the areas of *pronunciation*, *structure*, *vocabulary*, *fluency*, *comprehension*, and *interaction* ranging from Operational 4, Extended 5, to Expert 6. The details of rating scale for Operational 4 are as follows:

Table 2 – ICAO Language Evaluation Criteria: Operational 4

Pronunciation	- Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation but only sometimes interfere with ease of understanding
Structure	- Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. - Errors may occur, particularly in unusual or unexpected circumstances, but rarely interfere with meaning.
Vocabulary	- Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, work-related topics. - Can often paraphrase successfully when lacking vocabulary in unusual or unexpected circumstances.
Fluency	- Produces stretches of language at an appropriate tempo. - There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does not prevent effective communication. - Can make limited use of discourse markers or connectors. - Fillers are not distracting.
Comprehension	- Comprehension is mostly accurate on common, concrete, and work-related topics when the accent or variety intelligible for an international community of users. - When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.
Interactions	- Responses are usually immediate, appropriate, and informative. - Initiates and maintains exchanges even when dealing with an unexpected turn of events. - Deals adequately with apparent misunderstandings by checking, confirming, or clarifying.



The Operational Level (4) is the minimum requirement for radiotelephony communication; therefore, the candidates at the levels below are not regarded as officially qualified. In this sense, each rating scale can serve as a benchmark for trainers to organise a course and provide relevant input throughout the class in order to facilitate the successful achievement of proficiency settled by each rating scale. As a concrete language goal to be pursued both by trainees and trainers, the establishment of a rating scale could have much greater influence on VTS language training than is generally expected, in that the starting point of organising the VTS English training is to have an explicit communicative goal to be produced as a final output in actual VTS operations. Therefore, a mutual discussion on the necessity of developing a VTS-specific language testing system with explicit language testing evaluation criteria seems to be quite necessary in the future to harmonise VTS operations across the world through standardised language and communication approaches.

2.3.2. Implementation

There are several critical issues to be considered in advance of the actual implementation of the testing system; therefore, several mitigating actions should be prepared in advance. For this purpose, ICAO requested that each of the Contracting States post their language proficiency implementation plans through an information exchange website with the following details (p. 5-1)

A State's language proficiency implementation plan should consist of the following components:

- a regulatory framework to support the implementation of the requirements;
- an estimate of the national level of implementation;
- language proficiency training programmes;
- a language proficiency assessment plan for licensing purposes; and
- interim measures to mitigate risks.

In addition to this, the following factors should also be included in the checklist for the development of a language testing system (pp. 6:8-26).

- Test design and construct
- Test validity and reliability
- Rating
- Test administration and security
- Record-keeping
- Organizational information and infrastructure
- Testing-team qualifications

The action items requested could be a list of possible future actions for IALA to consider when the development of VTS English testing is discussed.



3. VTS Communication for the Future

With a close examination of two major transportation service industries (i.e. VTS and ATC) and , the following suggestions can be made for more enhanced and harmonised VTS communication worldwide.

3.1.Revision and Development of VTS Language Model Courses for Operators and Trainers

The detailed guideline on how to train VTS communication in a more globalised maritime industry should be established in terms of both language competencies (e.g. effective and clear English structure, vocabulary, speaking, listening, and delivery) and VTS operations, not only for operators but also for trainers with specific focuses on:

- the revision of model courses in a more comprehensive and wider consideration of general and VTS-specific language proficiencies in combination with explicit language teaching/learning elements within a number of VTS operational situations;
- suggestions for the most appropriate language-teaching methodologies (e.g. content-based, communicative, and/or audio-lingual) with detailed step-by-step guidelines on how to effectively manage VTS English classes;
- an establishment of guideline on the improvement of VTS language trainers' standard, and the maintenance of its qualifications through a systematic life-long learning supporting system for a continual career development in the provision of training in this specialised ESP field.

3.2.Organisation and Provision of Specialised VTS Language Courses

In order to encourage a more enhanced professional VTS language service, a well-structured and highly technical VTS language training courses to fulfill VTSOs' ongoing communicative needs should be developed to:

- supplement existing model courses which seem to provide considerably insufficient training hours for VTSOs to update their knowledge of VHF communication, to resolve the inquiries accumulated at work after the very last periodical training, and to ensure maximum familiarity in the areas where VTSOs fill the operational gap;
- increase language preparedness for non-routine and high-risk navigational situations in which VTSOs immediate verbal interventions and problem-solving capabilities should be demonstrated through communication;
- enhance VTS English competencies in a more specialised sector of communication, such as effective and clear VTS communication, between native and non-native speakers and apply SMCP and plain language in simulator-based VTS operations.



3.3. Development of VTS Language Testing

For the training, accreditation, and revalidation of VTSOs' qualifications, an objective and validated IALA-recognised language testing system should be developed in consideration of:

- the explicit testing criteria which is able to gauge overall aspects of VTS English competencies in terms of language elements (e.g. structure, delivery, and choice of lexical items), standardised communication (e.g. SMCP), and the use of plain language;
- the establishment of required qualifications according to the VTSOs' career development from entry to management level in order to ensure the best standardisation of communicative output in practical VTS operations;
- possible mitigating actions to promote actual implementation of the testing system for its soft landing in individual local contexts.
-

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VTs Language Development in IALA for Creating Enhanced VTs Communication Worldwide

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Abstract As the importance of clear and effective communication in the cross-cultural shipping industry becomes more apparent, IALA has paid great attention to this by developing the Guideline on VTs Radiotelephony Communication from 2015. A wide range of discussions have been made, focusing on compiling, delivering and interpreting a message based on the ground rules which make VTs communication more intelligible among interlocutors from different cultural and linguistic backgrounds. As the establishment of the guideline is now all completed, IALA’s future actions for creating a better VTs communication environment through education, training and certification are now being actively discussed among various stakeholders. In this paper, therefore, IALA’s efforts to create a safer and more effective VTs communication environment are introduced based on the guidelines for VTs radiotelephony communication. Then, the guidelines, manuals and recommendations from other, similar transportation industries are reviewed and compared to those of IALA, with specific focus on the scenario-based schematic structure, standardised phraseology and plain language for clear, concise and effective communication. Based on the findings, future considerations for IALA’s development of further practical and user-friendly language tools for creating enhanced VTs communication worldwide are suggested.

Keywords: *clear and effective communication at sea, scenario-based schematic structures, VTs standardised phraseology, plain language*

1. Introduction

The purpose of IALA (2018) is to ensure that “seafarers are provided with effective and harmonised marine Aids to Navigation services worldwide to assist in safe navigation of shipping and protection of the environment”. In order to successfully achieve this goal, the promotion of effective and harmonised communication between VTs operators and seafarers has been greatly emphasised in the IALA VTs committee in recent years. Its importance is expected to be significantly more accentuated, since the influx of seafarers with different linguistic and cultural backgrounds will continue to rise [1], and this suggests that possible dangers caused by miscommunication between ships and VTs centres will likely also continue. From the perspective of making ongoing efforts, and mutual cooperation among all relevant stakeholders has been maintained for the enhancement of VTs communication. In this paper, IALA’s endeavours undertaken thus far to enhance VTs voice communication are shared in detail. Subsequently, to



more actively facilitate standardised VTS communication worldwide via benchmarking, a close comparison to a similar traffic service industry, the air traffic control domain, is made in terms of the language structure and linguistic resources used. Finally, further actions for IALA in VTS communication, specifically in the development of scenario-based schematic structures, standardised phraseology, and plain language, are suggested for clearer and more effective VTS communication and their practical application in future education and training for VTSOs.

2. IALA's Endeavours on Enhancing VTS Voice Communication

IALA has recognised the critical importance of effective VTS communication, which has a direct relevance to navigational safety and efficiency. At the 2012 IALA VTS Symposium in Istanbul, the necessity of producing IALA documents for VTS communication was suggested with an aim to facilitate clear and unambiguous communication. This was once again emphasised by the 13th VTS Symposium in Malaysia, 2016, by highlighting 'the development of enhanced and harmonised guidance on communications and phraseology' as one of the eleven conclusions. With this ongoing dedication toward standardised and harmonised VTS communication, IALA endorsed and published Recommendations for VTS Communication and Guidelines on VTS VHF Communication in December 2017. In this section, the efforts of VTS committees in the past will be briefly introduced, including the IALA Workshop on Common Phraseology and Procedure for VTS Communication held in Bali, 2017, along with its major outcomes.

2.1. Recommendation on VTS Communication/Guideline on VTS VHF Voice Communication

With the recognition of 'the safe, economic and efficient movement of vessels through improvement and harmonisation of aids to navigation', Recommendations for VTS Communication clearly states the necessity of further cooperation among competent authorities and VTS authorities as follows [2]:

RECOMMENDS that Competent Authorities and VTS Authorities contribute to precise and unambiguous communications with the traffic by implementing harmonized and standardized procedures and technology.

INVITES Members and Competent Authorities for Vessel Traffic Services to implement the provisions of the Recommendation and its associated guidelines on VTS communications.

REQUESTS the Vessel Traffic Services Committee or such other committee as the Council may direct to keep this Recommendation under review and to propose amendments as necessary.

IMEC – PAPER TEMPLATE



As the first supportive measure, Guideline on VTS VHF Voice Communication was created with a clear intention to ‘engage and support all VTSOs, new and experienced, in promoting best practices in effective VTS radio voice procedures’ (p.4) [3]. The development of this guideline will greatly contribute to assisting competent authorities and training organisations worldwide with developing standardised operating procedures on communication. The core contents of the guideline are as summarised below (pp.4-10) [3]:

Table 1 – Summary of Guideline on VTS VHF Voice Communication

N.	Title	Subtitle	Key contents
1	General Communication Rules	Standardised Communication	• The importance of standardised communication • Skills-based, rule-based, and knowledge-based approaches
		Cultural Differences	• Different cultural experiences and backgrounds affecting misunderstanding • Information delivery techniques to decrease misunderstanding
		Using VHF	• Proper use of VHF equipment
2	Compiling Message	Message Markers	• Active use of message markers to keep communication short, to the point and clear for all users
		Message Structure	• Utilisation of stereotypical message structures which improves communication through consistent message formulation and conveys a professional image
		General Rules for Phrase Content	• General rules for creating more intelligible and easy-to-understand phrase construction and content
		Abbreviations	• Use of common abbreviations to deliver messages faster and avoid confusion
3	Delivering Message	Preparation	• Mental and physical preparedness before starting transmission
		Tone and Volume	• Adequate levels of tones and volumes for promoting mutual understanding
		Emphasis on Keywords	• Emphasis on keywords with louder, longer and higher tones and volumes



	Speech Rate	The importance of maintaining an appropriate speech rate in both typical and emergency situations to increase comprehension and prevent language anxiety
	Word Grouping and Pausing	The effect of word grouping and pausing for clear communication
	Repetition	Re-transmission of phrases, words or groups
	Effective Listening Skills	Techniques to promote understanding of information in terms of hearing, clarity and interpretation
	Read Back	The importance of utilising feedback
	Influence of Internal and External Factors	Other key factors influencing quality of communication such as mental and emotional states, health and distraction

In order to support the compelling need to develop the stand-alone VTS communication procedure, this workshop was held in Denpasar, Bali, Indonesia from 20 to 24 February 2017, generously hosted by the Indonesian Ministry of Transportation, and covered three major topics (p.12) [4]:

Table 2 Items in IALA Workshop on Common Phraseology and Procedure for VTS Communication

1	Language and Phraseology	- Explore VTS message construction and the development of common phraseology to facilitate the clear and unambiguous gathering and transfer of information. - Identify and explore how common phraseology and procedures for VTS communications can best be incorporated in IALA documentation.
2	Effective Communication	- Identify and explore factors on how best common phraseology can be integrated with the developing stand-alone communication procedures to facilitate clear and unambiguous transfer of information. - Explore and document key issues faced by VTS authorities in communicating effectively and ensuring standards and consistency in VTS communications. - Review existing IMO, IALA, and other similar communication guidance from other relevant bodies and subsequently identify strategies and best practices.
3	Human Factors	Consider how culture plays a role in communication and

	and Technology	phraseology. • Identify and explore how common phraseology and procedures for VTS communications can best be incorporated in IALA VTS training related documents. • Consider how communication breakdowns and errors occur and identify a path to resilience in communications. • Explore the interaction between nontechnical skills (e.g., situational awareness, decision-making) and communication, and identify training related implications on this and other topics within the working group. • Address the role that VTS Centre design plays in creating physical spaces that facilitate effective communication. • Explore the implications of future technology for VTS Communications and associated human performance.
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A list of future actions to be taken has been created in each working group with nine major outcomes (p.3) [4].

There is a diversity of understanding with regard to how to provide effective and harmonised VTS communication, including phraseology, and further research is required to develop international VTS Communication Guidance:

- i. VTS Communication Guidance and VTS training need to include but are not limited to cultural awareness and its implications for effective communication; and effective communication techniques.
- ii. SMCP does not fully reflect current VTS operations, and there is an ongoing need to align ship and shore communication in order to enhance mutual understanding and global harmonisation.
- iii. Minimally, VTS Communication Guidance should take into account the availability of enhanced digital communication capabilities (e.g. VDES, broadband) and use of communications support technologies within the VTS environment to complement voice communication; the advancement in technology such as use of the Ship Reporting System (SRS) by digital communication.
- iv. In order to standardise and improve the consistency of VTS communication and thereby improve comprehension, keywords to stress the intention (e.g. Report, Read back and Proceed) can be included in the message.
- v. Using a Human-Centred Design process, there are tangible actions that can be taken in the physical design of a VTS Centre and the design of associated tools (hardware and software) to facilitate clear and unambiguous communication.
- vi. A shared understanding between VTS, pilots, master, tugs, etc. is essential for situational awareness and supports efficient and effective communication, and vice versa.
- vii. It is recognised that humans sometimes make errors when communicating. In VTS operations there is a need to manage and minimise the consequences of these errors.



- viii. After completion of the VTS communication guidance, related IALA documents should be reviewed and updated as appropriate.

One of the key issues discussed in terms of VTS VHF communication is to establish an updated set of phraseology for the facilitation of effective and harmonised communication, to develop a communication guideline, which encompasses cultural factors and effective communication techniques in exchanging information for a shared understanding, and to apply the developed VTS communication guidance to the related IALA documents. This clearly indicates that future cooperation within IALA should be more actively promoted and the plans for the follow-up activities need to be established in a linear and systematic manner as a part of the future VTS committee Work Plan.

3. Communication in International Traffic Service Industry

VTSOs and ATCs, which are governed by IALA and ICAO (International Civil Aviation Organization) respectively, have a number of commonalities [5] in the conduct of their duties. Of course, the structures and methods of operations in these two industries cannot be fully identical, and therefore, the direct comparison might have a certain limitation, considering the apparent differences between the two in terms of their service recipients (e.g. required qualifications and competencies including language for deck officers and pilots), controlling environment (i.e. vessels at sea vs. crafts in the air), and the dimensions (i.e. two dimensions for vessels, and three dimensions for aircraft). When the purpose of traffic service is considered, however, these two have the common purpose of providing traffic information largely through voice communication for the recipients' safe and efficient navigation, specifically within a port or airport area, where the recipients' high level of immediate attention and actions are required. In this section, therefore, the policies of two industries on traffic service communication will be compared in terms of two criteria: schematic message structure and general linguistic features.

3.1. Schematic Message Structure

The schematic message structure refers to a stereotypical sequence of conversational exchange in specific communication contexts, which is generally known as a script and/or message pattern [2]. It has been reported that familiarity in schematic message structure is critical for traffic service operators to lead the conversational exchanges in a more foreseeable and efficient manner by expecting and thereby planning the flow of communication ahead of time [6], [7], [8]).

Recognising its importance, IALA also commenced the discussion on creating a considerable number of examples of VTS message patterns (20 in total: e.g. traffic clearance, meteorological information, and broadcasting) through the IALA Workshop on Common Phraseology and Procedures for VTS Communications (WG 2) [4].



Table 3 VTS Message Pattern: Traffic Clearance

N.	Message	Procedures	Note
1	Initiate conversation/ Establish contact	1.1 State addressee (receiving station)/ Vessel	
		1.2 (name) + VTS	
2	Body of message	2.1 (pro word) Traffic + clearance	• New keywords, to ensure that the vessel receive a clear message related to the permission on particular thing
		2.2 Name of vessel we are referring	
		2.3 Provide relevant information/data	
		2.4 ADVICE (marker)	• Additional measures
		2.5 Provide relevant advice	
		2.6 (Pro-word) Traffic information (marker)	• Additional measures
		2.7 Provide relevant information/ data	
3	End of conversation	OVER/OUT	

Through the Manual on the Implementation of Language Proficiency Requirements [5], ICAO has also emphasised the importance of schematic structure, both for ATCs' fluent and accurate language production in an actual operation and for their training, by designing the course in a way that increases the comprehension of language in the target dialogue situations. For this purpose, a number of communicative functions are provided according to dominant exchange structures as exemplified below (p. B-1) [5]:

Table 4 Message Exchange Structure for Orders

Orders	
- Give an order (C) - Give an amended order (C) - Give a negative order (C) - Give alternative orders (C) - Cancel an order (C)	- Announce compliance with an order (P) - Announce non-compliance with an order (P)

Based on this structure, language tasks of ATCs are clearly defined. For example, on the topic of resolving aircraft conflict situations, the following actions in language can be taken: receive notice of potential or actual conflict; issue traffic advisory or safety alert in regard to aircraft conflict/aircraft proximity; and inform pilot when clear of traffic or non-controlled object. From this, detailed possible word choices for each situation, which require ATCs to ensure a high level of familiarity, are suggested as shown below:



Collision

Airframe; structural damage (glass, metal, etc.); response to controls; debris; airport installations; ground services; relief/high ground; weather conditions; aerodynamic behaviour (p. B-7) [6]:

In this regard, the starting point of the language-related guideline in a specialised communicative domain like VTS should first be to analyse dominant communicative situations through the conduct of international co-research, and then to establish schematic message structures that can cover a wide range of frequently occurring VTS situations. On that basis, detailed action items in each situation are clearly defined, and further, relevant possible lexical choices can be more explicitly suggested. This linear and systematic approach from structure to lexical items to VTS communication should be more actively considered. Therefore, the IALA's first attempts to define and formalise VTS message structures as demonstrated in Table 3 for a more effective and well-organised delivery is highly meaningful; therefore, a further official discussion on this should be actively considered within IALA in the future.

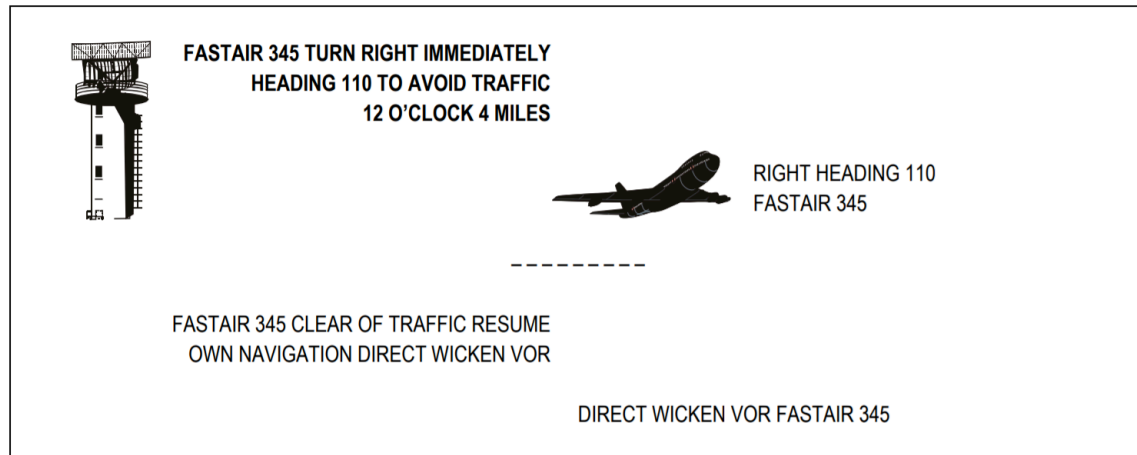
3.2. General Features of Traffic Service Language and Communication

3.2.1. Standard Phraseology

Standard phraseology is a set of clear, concise and globally recognised messages for safe navigation, assisting interlocutors with exchanging communication in a mutually agreed upon and intelligible way [6].

ICAO has established the standard phraseology for this purpose by maximising clarity, brevity and unambiguity in communication to cover most routine air traffic situations [9]. Not only is this a useful tool to avoid any possible confusion among interlocutors with different cultural and linguistic backgrounds in the international aviation context, but also to prevent any linguistic variations derived from locally adopted phraseologies even within a single nation. In this perspective, the use of internationally agreed upon phraseologies is advised whenever they are applicable [6]. Through the Manual of Radiotelephony [10] and other related publications (e.g. the Manual of Radiotelephony, Standards and Recommended Practices, and Procedures for Air Navigation Services), ICAO provides an ample list of the phraseologies in a series of specific scenario-based situations, which periodically evolve over time (ibid.). The following example illustrates how the phraseologies are applied when an immediate risk of collision is expected (pp. 6-8).

Image 1 ICAO Phraseology for Risk of Collision



In the maritime field, IMO Standard Maritime Communication Phrases (SMCP) [11] was established in 2001 and applied to 4S communication, including ship-to-shore and ship-to-ship. The importance of a harmonised and standardised communication at sea cannot be a matter of negotiation in any way; however, there has been a strong argument that SMCP needs to be updated and supplemented to reflect the current communication requirements of VTSO, up-to-date technology (N.B. no revision has been made since its initial development in 2001), and contemporary language uses in order to enhance mutual understanding by different parties involved in VHF communication at sea, as the outcomes of the discussion in the IALA workshop [4] clearly pointed out. Thus, a complete review of the SMCP should be considered to identify the current lacks and a revised version with the updated list of phrases should be established in accordance with the scenario-based schematic message structures suggested earlier.

3.2.2. Plain Language

The use of non-standard plain language is applied when a set of standardised phraseologies does not exist, and/or cannot fully cover circumstances that may occur in varied navigational situations [6]. ICAO has strongly emphasised the mandatory use of phraseology wherever applicable, and an optional use of plain language is allowed in exceptional situations.

“ICAO standardized phraseology shall be used in all situations for which it has been specified. Only when standardized phraseology cannot serve an intended transmission, plain language shall be used.” (ibid. p. A-3)

Considering that plain languages are generally used in unusually encountered situations during a course of navigation (e.g. to report passengers’ health problems or the nature of a technical failure, where the seafarers’ and pilots’ mental capabilities of problem-solving could be highly restricted, the use of clear and concise plain language can be critical. Its importance can be highlighted more specifically when English language competencies, cultural understanding and situational awareness between interlocutors are at different levels.



For this reason, this should be considered one of the key areas of language training for both native and non-native speakers. IALA has given its special attention by providing a guideline for how to produce ‘clear and unambiguous gathering and transfer of information’ using plain language in VTS VHF Communication Guideline (p.4) [3]. The IALA’s achievement was illustrated in detail in this section, but recognising its critical importance, further specific guideline and/or model course with an explicit training instruction on plain language should be established in consideration of language education and training on a VTS scenario basis.

4. VTS Communication for the Future

With a close examination of two major transportation service industries (i.e. VTS and ATC) and previous discussions and achievements in IALA, the following suggestions on VTS language can be made for more enhanced and harmonised VTS communication worldwide by accommodating current communication requirements in ways to:

- avoid any possible confusion due to diversity of seafarers’ linguistic and cultural backgrounds;
- design phraseologies based on the scenario-based schematic message structures by elaborating VTS message patterns initially developed in IALA Workshop on Common Phraseology and Procedures for VTS Communications [4] to maximise training effectiveness and outcomes;
- suggest readily available additional linguistics resources such as possible word choices in each formalised VTS message structure and easy-to-understand plain language structures for maximised clarity in VTS communication, specifically when standardised phraseologies cannot be applied.

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**Improving teacher's professional development:
An observational-based analysis of documents and teaching-learning process
of ECDIS route planning by charts class in PIP Semarang**

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Abstract - Analyzing teaching and learning process along with its documents (curriculum, syllabus, lesson plan) is one of the main tasks of the instructors to make some improvements in their teaching-learning process, particularly when dealing with various instructions subject. The subject of this observation was the implementation of Electronic Chart Display and Information System (ECDIS), especially on Route Planning by Chart subject area of ECDIS Route Planning and Monitoring class as one of the advance courses in Politeknik Ilmu Pelayaran (PIP) Semarang, Indonesia. This research is aimed to evaluate the documents and the process of teaching and learning in the institution. Furthermore, this research may contribute to make a better teaching and learning process for ECDIS instructors, and also in making upgrading program. In this paper, the writers give a brief discussion about the problem of the documents, teaching-learning process, and also the improvement of teaching ECDIS class using English. This research was undertaken through four steps, namely data collection, observation, data analysis and recommendation. The study found that the documents are different from that is shown in IMO 1.27 in the existing, and the process of teaching and learning ran relax or smooth and its plans were in line with those in the curriculum and syllabus. Instructor was good enough, and the students were quite active. However, some evaluations were made towards the lesson plan, teaching aids and facilities, time of the course, and also the instructor's speaking skills, particularly grammar, pronunciation, and vocabulary. It is suggested to arrange a better planning, and also refer to either General or Nautical Dictionaries during the teaching-learning process.

Keywords: *Electronic Chart Display and Information System (ECDIS), syllabus, lesson plan, indicator, document, teaching-learning process.*

1. Introduction

English proficiency of seafarers, particularly non-native English speakers, has been a great concern to the maritime community worldwide. Yishan [8] stated that teachers of Maritime English and other parties in maritime field have never ceased seeking ways to improve the English proficiency of non-native English seafarers. Example that can be found is the maritime-knowledge class (non-Maritime English class) is held in English. It is a challenge both for the teachers/instructors and the students, especially those of the non-native speakers. It is an effort of learning the maritime knowledge, while as the same time improving the English proficiency.

Considering the importance of English for the seafarers and in order to motivate and improve English proficiency of the students, a number of non-Maritime English-teachers in Politeknik Ilmu Pelayaran (PIP) Semarang also make use of English as their language of instruction during the teaching-learning process. Although some were well prepared, the evaluation in making better quality of teaching should be done regularly.

Focus of this study is the observation and evaluation the teaching-learning process, along with its documents, of a non-Maritime English Class – in this case an Electronic Chart Display and Information System (ECDIS) class. It is obligated that ECDIS is a must for most of all types of Ship start 1st July 2018. The Subject area is Route Planning by Chart of ECDIS Planning and Monitoring [5]. The Class is delivered in English, in order to see its effectiveness as well as to improve the teacher's professional development ahead.

This study will also contribute in a way to improve the documents; syllabus and lesson plan arrangements for the effective teaching and learning process, based on IMO Model Course 1.27 Operational Use of Electronic Chart Display and Information Systems (ECDIS) 2012 edition. It is believed that evaluating lesson plans will help teachers to improve their practice, develop strong reflective habits, and meet the needs of the learners.

The research questions of this study are formulated as follow: How do the documents of ECDIS Route Planning by Charts class using English?, and How do the process of teaching and learning of ECDIS Route Planning by Charts class using English?

2. Literature Review

Bidabadi, Isfahani, and Khalili [2] suggested that “teaching is one of the main components in educational planning which is a key factor in conducting educational plans”. Choi [3] stated that teachers play an important role in planning and controlling the educational process for students in order to achieve a comprehensive learning. In line with that, Bidabadi, Isfahani, and Khalili [2] also suggested several functional requirements for a successful teaching in higher education, namely (1) having a course plan, using appropriate educational strategies, (2) metacognition training and self-assessment of student during teaching, (3) using conceptual map and pre organizing plan in training, (4) encouraging creativity during teaching the lessons, (5) explaining and developing knowledge on how to resolve the issues in future career through class discussion, and (6) documenting experiences.

Therefore, prior to the teaching-learning process, it is important for a teacher/instructor to refer to the course curriculum in order to find the expected competency standard and its basic competency. These competencies are then being broken down into numbers of indicators. These indicators should meet the required cognitive domain as stated in the curriculum. Aderson, Orin, and Kranthwohl [1] mentioned that the cognitive process dimensions as stated in Bloom’s Taxonomy are consisted of C1 (Remember), C2 (Understand), C3 (Apply), C4 (Analyze), C5 (Evaluate), C6 (Create), but then it is revised into the following C1 (Recalling), C2 (Understanding), C3 (Applying), C4 (Analyzing), C5 (Synthesizing), C6 (Evaluate), and C7 (Creativity). Classifying each indicator according to the cognitive domain will simplify the teacher/instructor to arrange both the ideal syllabus and lesson plan.

Jabbarifar [6] stated that the main concern in education is to make sure whether students attain the objectives of the course or curriculum scope. This can be acquired by conducting an evaluation towards the teaching-learning process. Additionally, Jabbarifar [6] stated that evaluation and assessment can focus on different aspects of teaching and learning, respectively textbooks and instructional materials, student achievement, and whole programs of instruction.

3. Methodology

Research Design

This study employed a mix-method design by using observation and interview to investigate the effectiveness of the teaching-learning process as well as improvement the teacher's professional development. The setting of the study was an Electronic Chart Display and Information System (ECDIS) class, especially ECDIS Planning and Monitoring subject area, the third day course of time schedule. The topic is Route Planning by Chart, is one hour of 40-hour-course. It was attended by six students and delivered in English. The teaching-learning process as well as its documents, i.e. IMO Model Course 1.27 Operational Use of Electronic Chart Display and Information Systems (ECDIS) 2012 edition [5], and that is made by Transas, Curriculum, Syllabus, and lesson plan, also Scenarios were the subjects of this study.

Procedures

Firstly, data collection was taken from documents consisting of the curriculum, syllabus, teaching plan, and scenario. Secondly, class observation was conducted to collect the data regarding the teaching-learning process. A recorded video was taken during the course. The video was then transcribed and analyzed to see the effectiveness of English as the language of instruction during the teaching-learning process. Documents related with the course were also being observed to see whether the teaching-learning process has met the objectives stated in the guidance documents. Moreover, interview to the students and the instructor was also held after the course was finished. Interview was used as additional instrument to generate deeper information about the feedbacks regarding the teaching-learning process. Thirdly, the analysis and recommendations are finally summarized.

4. Findings and Discussions

The availability of the implementation on IMO 1.27 Operational Use of Electronic Chart Display and Information Systems (ECDIS) 2012 edition are Properly Qualified Instructor; Support Staff, Rooms and Other Spaces; Equipments; Textbooks; Technical

Papers. All the mentioned data of ECDIS course are available in PIP Semarang. This study is focused on the document and teaching-learning process, with the discussions as follows:

The Documents

Problem found that the time table shown in IMO 1.27 is not in line with the curriculum, and the course for Route Planning by Chart is only conducted for one hour as taken from the timetable. According to Model Course 1.27, the five general subject areas are Elements of ECDIS; Watchkeeping with ECDIS; **ECDIS Route Planning and Monitoring**; ECDIS Targets, Charts and System; and ECDIS Responsibility and Assessment, which are organized 37 topics. Meanwhile, the subject area for ECDIS Route Planning and Monitoring are Vessel Maneuvering and Characteristics; Route Planning by Table; **Route Planning by Chart**; Track Limits; Checking Plan for Safety; Simulator Exercise-Coastal and Restricted Waters (Navigation Alarms and Route Scheduling); Additional Navigational Information; Route Schedule; and User Charts in Route Planning. The total hours of the course are allocated in 29 hours for practice and lecture, 8 hours for independent ECDIS navigation, and 3 hours for evaluation.

The 17-chapters-handout taken from Transas that is used by PIP Semarang i.e. Legal Aspect and Requirements; Principle Types of Electronic Charts; ECDIS Data; Presentation of ECDIS Data; Sensors; Basic Navigational Functions; Route Planning; Route Monitoring; Updating; Display and Function of Other Navigational Info; Errors of Data; Errors of Interpretation; Status Indicators and Alarm; Documentation; Integrity Monitoring; Back-up Arrangements; and Risk of Over Reliance.

Curriculum of ECDIS

Provide the knowledge, skill and understanding of ECDIS and electronic charts to the thorough extent needed to safely navigate vessel whose primary means of navigation is ECDIS. It is designed to meet STCW requirements in the use of ECDIS, as revised by the 2010 Manila Amendments, specifically as these apply to Tables A-II/1, A-II/2 and A-II/3, and also to revised guidelines pertaining to training and assessment in the operational use of ECDIS in Table B-I (Paragraph 36 through 66), assessment in navigational watchkeeping, and evaluation of competence, both in Table B-II [5].

Objective of ECDIS course is the students should be able to demonstrate sufficient knowledge, skill, and understanding of ECDIS navigation and electronic charts to undertake the duties of a navigational watch officer defined by STCW Code, as amended [5].

The Route Planning by Chart Syllabus

1. Lecturing Objectives: at the end of the course, students can: operates all specific functions and obtains all relevant information for route planning graphically by charts.
2. General Objectives: at the end of the course, students can:

Table 4.1 The Syllabus

No	Knowledge, Understanding and Proficiency	Teaching Aid	References
1	Select the sea areas and the required waters for planning the whole passage	1. Instructor Manual Part D.	1. ECDIS and Positioning Chapter 7.2 and 7.3
2	Construct a route by inputting waypoints directly on the ECDIS display	2. Audiovisual Aids	2. The Electronic Chart, Fundamentals, Function, Data, and other Essentials
3	Adjust the route by graphically editing waypoints	3. Simulator Providing own ship Functionality in an underway navigational context	3. Chapter 7.4
4	Obtain track courses and distances from the charts	4. ECDIS workstation including ENC data, deriving inputs from simulation or life sensors	4. User's manual accompanying the ECDIS Software utilized during the training course
5	Obtain relevant route planning information	5. ENC data, Various, including permits, and update files	
		6. Raster Navigational Charts (RNC) including permits and updates	

The Lesson Plan

1. Basic Competence: At the end of the course students able to make planning route/passage plan.
2. Indicator : At the end of the course, students should:
 - a. be able to determine standard time from the ship's positions.
 - b. be able to determine safety line/parallel index for each courses.
 - c. determine the safe speed

- d. determine ETA
- e. make sure safety route
- f. choose a specific area.
- g. calculate time and distance from last port to the next port
- h. be able monitor a route; the courses and ship's direction
- i. be able to monitor safety alarm, traffic separation scheme, anchorage area

The Scenario

There are 4 scenarios settings, namely Marina Port to Horsberg Port, Tanjung Pelepas Port to Marina Port, Changi Port to Marina Port, and Marina Port to Tanjung Pelepas Port. The procedures are:

1. Select the sea areas and the required waters for planning the whole passage.
2. Construct a route by inputting waypoints directly on the ECDIS Display.
 - a. It is advisable to rough in the route legs at first (using rhumb line and great circle).
 - b. Fine-tune the waypoint positions, track zones, and turn radii using practical navigations considerations, such as for Radar and Visual Navigation, traffic patterns, and ENC data quality indicators (Zone of Confidence)
3. Adjust the route by graphically editing waypoints.
4. Obtain track courses and distances from the chart:
 - a. Cursor position.
 - b. Selection of route segment
5. Obtain relevant Route planning information, such as:
 - a. Ocean wind, wave, and surface current information.
 - b. Tidal heights and currents.
 - c. Sailing directions (port information).
 - d. For special situations (anchoring, chart data quality, special areas, pilotage, quarantine, etc.)

Classroom Teaching-Learning Process

In order to portrait the teaching-learning process in the ECDIS course, a classroom observation was conducted. It can be seen that the teaching-learning process ran smoothly, in which:

1. There was no technical disturbances (all the supporting equipment ran well).

At the beginning of the course, there was an electricity shut down (for about half an hour), but the equipment was able to run by the help of UPS, so that all of the students were able to use the equipment by their own to plan the vessel route according to the provided scenario.

2. The instructor carried out the course in accordance with the lesson plan.

The instructor opened the course by asking the students about the topic discussion of their meeting (i.e. vessel maneuvering characteristics). Here are the examples of the interaction during the course:

Instructor : "Good afternoon, our good cadets. We have the second time about the ECDIS. Just for the reminder, I want to ask you about maneuvering characteristic. This is for the first time our material last day. Can the somebody to told me about the maneuvering characteristic?"

Student D : "Maneuvering characteristic is a...character from a ship, so from this characteristic we can...we can...a...we can know to handle our ship. Somebody is to completely about the characteristic."

Instructor : "Yeah, for our navigator is important for maneuvering characteristic because when I know about the maneuvering characteristic we will know how to do about safety of navigation on the ship. We will start about the learning about ECDIS second time. Yeah, the second time about the ECDIS. First, I would explain about how to make a passage plan in ECDIS."

..... (the students practice the scenario with the guidance of step-by-step instructions from the instructor).....

Instructor : "Ok, you're now finish. And please if you have finish, you must calculate about the ETA."

..... (the students continue to make the route according to the scenario).....

Instructor : "Click and check the route plan."

The instructor continued to explain the topic of that meeting, i.e. making the route planning and checking the plan for safety. However, the instructor seemed a bit nervous due to the present of video recording in her class, so that she made some misrepresentation of the meeting sequence as 'the second meeting', in fact that it

was the third meeting of the course. Generally, the instructor conducted the meeting by following the lesson plan of the 3rd meeting sequentially, from planning the route, completing detailed information on the passage plan, and monitoring the route for the safety and cost-effective.

3. The class was active, with some interactions between the instructor and the students during the course.

At the beginning of the course when the instructor started with the question of maneuvering characteristics, a student was able to answer the question. Moreover, the students would directly ask for a deeper instruction when they got any difficulty during the practice in making the passage plan. . Here are examples of the interaction during the course:

Instructor : “You can continue to the Marina...Marina Harbor with position latitude longitude. You’re going to latitude longitude. (to Student A) You go here...yeah...just following the arrow. Yeah, you go to the Marina. (to all students) For the position of Marina you have latitude, please you can see the Task no.1. Position of the Marina latitude longitude. This is your position to Marina Port.”

Student A : “Is it okay to cross here? (pointing on the chart).”

Instructor : “Yeah, just follow the TSS. The one direction. “

Student A : “Ok, the TSS”

Instructor : “Yes, TSS. The one direction.”

4. The instructor gave a clear step-by-step instruction during the course.

The instructions gave by the instructor were clear enough for the students, as all of the students were able to finish their scenarios. Even though there were some grammatical, pronunciation, and vocabulary errors on the instructions, overall the students managed to understand them. . Here are examples of the interaction during the course:

Instructor : “Click the task list, and choose the route editor. You can try by yourself.”

Student C : “Okay mom.”

Instructor : “and then new....click new.”

Student C : “Okay.”

Instructor : “For the next step....next step, you click on the ship symbol. This one is a ship symbol. Click ship symbol. This is a...our position, first position. And then click WPT, this is...WPT editor.”

Student C : “WPT editor.”

Instructor : “Yeah, WPT editor. Click to the our position.”

5. The instructor encouraged the students’ creativity during the course.

As the objectives of the course that day is ECDIS route planning and monitoring, the students had to do the task according to the provided scenario, from planning until monitoring, to make sure that the passage plan is safe. When the students encountered problem during their planning, the instructor simply gave the instruction to solve the problem by taking another way point, by taking account into safety and cost-effective as the main factors in route planning. Thus, the students should be able to plan the best routewith those considerations. . Here are examples of the interaction during the course:

(Student A is having a problem with his passage plan)

Instructor : “You need to...look more here (pointing on the chart). It’s a short map. It’s you will have more way points. This is the not effective.

Student A : “Too much way points.”

Instructor : “Yeah, too much way points. So you make sure that your passage plan is the very easy for the another people because some people, some officer will the use your passage plan. Make sure that your passage plan is very simple and very effective for another officer.”

Student A : “Okay“

Instructor : “You can re-think it”

(The student continue to fix his passage plan)

6. The instructor explained and developed the students’ knowledge on how to resolve the issues in future career through class discussion.

At the end of the course, the instructor gave the students to give their comments regarding the topic they had just learned. Also the students are allowed to ask questions regarding the topic. The students then asked several questions about the topic and the instructor gave the solutions for them. . Here are examples of the interaction during the course:

Instructor : “Remember ECDIS is only to give information. You need to compare with the manual, how to make the passage plan.”

Student A : “A paper chart”

Instructor : “Yeah, the paper chart. Not only by ECDIS, because sometimes ECDIS will have a problem, for example today, we have problem with light.”

Student C : “Okay, mom. (nodding)”

Instructor : “Still remember for the passage plan is not only by ECDIS, because ECDIS is only for give information. Manual is very important. Okay?”

Student D : “If in vessel there are two... ECDIS and paper chart, what is the first time we make for the passage plan?”

Instructor : “With the chart first.”

Student D : “Chart first?”

Instructor : “So you make the estimate where the Master ask you ‘how many times we can arrive next port?’ So you have the port and the distance, you know about the environment of how going to the second place. When finish of the chart, you can do the ECDIS, because the people, the vessel maybe...maybe another vessel have ECDIS...maybe on my ship have no ECDIS. So the important first is the chart first.”

Furthermore, the short interview, with the instructor and the students just after the class finished, revealed that both the instructor and the students have the same opinion that the class were good and interactive. Here are the examples of the interview excerpts:

“The class is good, the cadets listen and follow my instructions so that they are able to finish their scenario.” – Instructor

“I like how the instructor present the course material.” – Student A

“Most important thing I like is that I can directly make my own passage plan without feeling guilty if there anything goes wrong.” – Student B

“The class has good environment for learning process, and the instructor is great.” – Student C

“What I like about the course is that I can ask a lot of questions to the expert of ECDIS and she answer it very clearly.” – Student D

“I think this course can increase my knowledge on ECDIS, because the vessel where I had my sea project does not have ECDIS.” – Student E

“Because ECDIS is one of the primary navigation, we must learn more and more again, so we know how to use it. If we get any problem, we can repair it.” – Student F

From those points of view, the study showed that both the instructor and the students enjoyed the course, and the students in particular were able to get a valuable knowledge on ECDIS for their future career. As for the instructor, the class seemed to be fun and

interactive, in which the students were able to follow her instructions during the course and were able to convey the topic of discussion.

Recommendation/Correction

Based on the study findings, some recommendations and corrections are made in order to improve the effectiveness of the teaching-learning process as well as the professional development of the instructor of the ECDIS class. The recommendations and corrections are made both on the documents and the classroom teaching-learning process, as follow:

The Document

Table 4.2.Document's Recommendations

No			Existing	Recommendation
		IMO 1.27	Transas	Be flexible
1	Curriculum	35 number of Topics	35 number of Topics	Be flexible to 1.27
2	Syllabus	Cognitive field Durations 2 hours	is in line with the curriculum (c3) Route Planning by Charts 1 hour	in line with the curriculum 1.27
3	Lesson Plan	Indicators	There is no evaluation No Indicator	Put the evaluation and the Indicator;
		Time allocation 2 hours	1 hour	1 hour
4	Scenario	English	Indonesian	English translations should be made
5	The Course Delivery		Good, some pronunciation, grammar, and vocab errors	Various from Instructor Manual

The Teaching-Learning Process

The teaching-learning process of the ECDIS course ran effectively, in a way that the students perceived that they had a new knowledge from the course, i.e. in this time is how to make a safe and efficient passage plan. Additionally, the study found some errors in the instructions given by the instructor during the course, namely:

1. Grammatical errors

Most of the time, the instructor use the words '*the*' in her instruction, and she also often use incorrect tenses in her instructions. However, the students, as they were still able to convey the real meaning of her instructions.

Table 4.3. Examples of Grammatical Errors during the Course

Grammatical Errors	
Expression	Correction
"We have the second time about the ECDIS."	"It's our second time to learn about ECDIS."
"Just for the reminder, I want to ask you about maneuvering characteristic. This is for the first time our material last day."	"Just for the reminder, I want to ask you about maneuvering characteristic. This was our material yesterday."
"Can the somebody to told me about the maneuvering characteristic?"	"Can anyone explain about the maneuvering characteristic?"
"Somebody is to completely about the characteristic"	"Is there anyone else able to complete the characteristic?"
"Yeah, for our navigator is important for maneuvering characteristic because when I know about the maneuvering characteristic we will know how to do about safety of navigation on the ship."	"Yeah, maneuvering characteristic is important for navigator like us, because we will know how to navigate a ship safely."
"We will start about the learning about ECDIS second time."	"We will start to learn ECDIS in this second meeting."
"I would explain about how make a passage plan"	"I will explain how to make a passage plan."
"You can the show about the scenario"	"You can look at the scenario."
"The scenario is the from position Tanjung Pelepas"	"The scenario starts from Tanjung Pelepas."
"Click to the our position"	"Click on our position."
"We will the sailing on TSS"	"We will sail on TSS."
"For the obvious you can the zoom in"	"For more obvious, you can zoom it in."
"If you make the this passage plan is not safety so you need to the edit in line to the TSS"	"If the passage you made is not safe, then you will need to edit it to be in line with TSS."
"If you are now finish you must the calculate the ETA"	"After you finish, you must calculate the ETA."
"Remember for zone time, you need the zone time, make sure you need is the have same place with the our position"	"Remember for time zone, it should be the same with our position."
"For example Indonesia is have three zone time"	"For example, Indonesia has three time zones."
"And now the our position in Singapore"	"And now, our position is in Singapore."
"Singapore have the eight"	"Singapore has eight time zones"
"So from zone time you give the information that zone time is eight"	"So, for time zone, you should give the information that the time zone is eight. "

Grammatical Errors	
Expression	Correction
“We have the second time about the ECDIS.”	“It’s our second time to learn about ECDIS.”
“Just for the reminder, I want to ask you about maneuvering characteristic. This is for the first time our material last day.”	“Just for the reminder, I want to ask you about maneuvering characteristic. This was our material yesterday.”
“Can the somebody to told me about the maneuvering characteristic?”	“Can anyone explain about the maneuvering characteristic?”
“You will have more the way points. This is not the effective”	“You will have more way points. This is not effective.”
“Some people some officer will the use your passage plan”	“Some officer will use your passage plan.”
“ECDIS is only to give information but you need to compare the manual how to make the passage plan”	“ECDIS only gives information, so you need to compare it with the manual method of making the passage plan.”
“So you have the estimate where the master ask you how many time we can arrive at the next port”	“So, you have the estimation if the Master ask you how long we will arrive at the next port. “
“So you have the know of the distance, about the environment of how to going to the second place”	“So, you have to know the distance and the situation to the second destination.”
“When you finish the chart you can put the ECDIS”	“When you finish the chart, you can continue with ECDIS”
“It is impossible if the vessel have no chart. Every vessel have”	“It is impossible if the vessel has no chart. Every vessel has it.”

2. Pronunciation errors

The instructor was still strongly influenced by her native language accent, so that she pronounced the words incorrectly. However, it still did not confused the students, as they were able to convey the real meaning of her instructions.

Table 4.4. Examples of Pronunciation Errors during the Course

Pronunciation Errors		
Word	Pronunciation	Correction
navigator	/ˈn ʌ v ɪ g ʌ t ɒ/	/ˈn æ v ɪ g eɪ t ə/
know	/ˈn ɒ /	/ˈn ə ʊ/
choose	/ˈtʃɒ k/	/ˈtʃuː z/
step	/ˈs t ɪ p/	/ˈs t e p/
important	/ɪ m ˈp ɔː t ʌ n t/	/ɪ m ˈp ɔː t(ə) n t/
departure	/d e ˈp ɑː tʃʊ/	/d ɪ ˈp ɑː tʃə/
method	/ˈm e θ ɒ d/	/ˈm e θ ə d/
distance	/d ɪ s t ʌ n/	/d ɪ s t (ə) n s /

3. Vocabulary errors

The instructor sometimes used incorrect words in her instruction, however, this errors were still tolerable as the instructor is non-native, and the essence of her instructions were still understandable for the students.

Table 4.5. Examples of Vocabulary Errors during the Course

Vocabulary Errors	
Expression	Correction
"Somebody is <u>to</u> completely about the characteristic."	"Is there anyone else able to <u>complete</u> the characteristic?"
"You can the <u>show</u> about the scenario."	"You can <u>look at</u> the scenario."
"For the <u>obvisious</u> you can the zoom in."	"For more <u>obvious</u> , you can zoom it in."
"If you make the this passage plan is not <u>safety</u> so you need to the edit in line to the TSS."	"If the passage you made is not <u>safe</u> , then you will need to edit it to be in line with TSS."
"So you have the <u>estimate</u> where the master ask you <u>how many time</u> we can arrive at the next port."	"So, you have the <u>estimation</u> if the Master ask you <u>how long</u> we will arrive at the next port. "
"So you have the know of the distance, about the <u>environment</u> of how to going to the <u>second place</u> ."	"So, you have to know the distance and the <u>situation</u> to the second <u>destination</u> ."
"When you finish the chart you can <u>put</u> the ECDIS"	"When you finish the chart, you can <u>continue</u> with ECDIS"

These errors, however, did not influence the continuity of the teaching-learning process during the course. The students somehow managed to understand the given instructions despite the errors, so that the 2-ways-conversation between the instructor and the students ran well. The students were able to understand what the instructor told them to do. On the other hand, the instructor was able to apprehend the problem of her students during the course, and was able to give the solution for the problem.

Table 4.6.Recommendations

No			Existing	Recommendation
1	Teaching Facilities	IMO 1.27	Transas	Be flexible
		ECDIS Classroom/Lab, Teaching Aids	ECDIS Lab, Teaching Aids	-Pointer should be hold by all instructor -Better Genset for Black Out -Batteries for speakers
2	Requirements Staff	Model course 1.27	Grammar, Vocab, Pronunciation errors	Upgrading using Nautical and English Dictionaries

5. Conclusion

The study has shown that generally the documents and the teaching-learning process of ECDIS Route Planning by Charts class using English are quite good, in which that both the instructor and the students enjoyed the course. The instructor were able to deliver the course clearly and the students managed to finish the task and get a new knowledge from the course, i.e. how to make a safe and efficient passage plan.

Moreover, based on the findings and recommendation as mentioned above, some improvements are needed for the evaluation efforts of the instructors and to make an upgrading program ahead. The instructor should improve the documents by taking into account the IMO Model Course 1.27 in particular for the curriculum and syllabus. An addition of evaluation and indicators will also be a valuable input in the lesson plan. It is also important to have the scenario in English. Last but not least, it is also necessary for the instructor to improve her English by minimizing the grammatical, pronunciation, and vocabulary errors in her instructions during the course.

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On Maritime English Education and Learning in Marine Technical College in Japan

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Abstract Japan's English language education system was changed to improve the communication levels among the international society, especially in Asian countries, based on CEFR (Common European Framework of Reference for Languages). While maritime institutes in Japan have been partly following the curricula of the above system, the country's maritime English education still falls short in fulfilling the basic level of CEFR B1 stated in the *IMO Model Course 3.17: Maritime English 2009 edition*. Marine Technical College (MTC), a leading institution for maritime Education and Training for Seafarers, has been striving to improve the quality of teaching practice of maritime English education to Japanese students. This includes coaching provided to and received from international participants from some Asian countries to support MTC trainees, so they could meet the level appropriate to the model course and expected communicative methods. In this article, the author introduces the methods and practices for maritime English lessons in MTC and details active procedures to compress the lesson time to enable non-native English learners to contribute to the maritime English education objectively.

Keywords: *Common European Framework of Reference for Languages (CEFR); international participants; teaching practices; communicative methods*

Introduction

Since 2014, Japan has been improving its English education system to improve its peoples' communication with the international society, especially in Asian countries, based on Common European Framework of Reference for Languages (CEFR) [1]. The Report on the Future Improvement and Enhancement of English Education, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) announced that:

...to promote the establishment of an educational environment which corresponds to globalization from the elementary to lower/upper secondary education stage, MEXT is working to enhance English education substantially throughout elementary to lower/secondary school upon strengthening English education in elementary school in addition to further

advancing English education in lower/upper secondary school. Timed with the 2020 Tokyo Olympics, in order for the full-scale development of new English education in Japan, MEXT will incrementally promote educational reform from FY (Fiscal Year) 2014 including constructing the necessary frameworks based on this plan. [2]

As of April 2018, however, these levels have not reached their targeted goals on all four factors of English communication: reading, listening, writing, and speaking. More than 50 percent of the students graduated from junior high schools and senior high schools have not reached the levels of A2 or B1 of CEFR when they graduated [3].

According to the global report on Education First's (EF) English Proficiency Index 2017, Japan ranked 37th of 80 countries [4]. This ranking puts Japan in the middle of a promising global business field. I introduce Marine Technical College (MTC) next and explain how it can play an active role in this emerging global business field.

Maritime English Education in MTC

Apart from land-based educational and business data, maritime institutes in Japan, especially those under the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), have been partly following CEFR curricula in striving for the most effective way to educate students aiming to be seafarers, or promoted to higher ranks onboard ships as officers. This education is carried out in accordance to the international treaty of Standards of Training, Certification and Watchkeeping for Sea (STCW). The total number of hours of English education in maritime institutes in the secondary school level in Japan is about 80 hours. Though many 15- to 18-year-old students are learning maritime studies in their secondary school, maritime English education still lacks sufficient study hours to meet the requirements of the basic level of CEFR B1. The *IMO Model Course 3.17: Maritime English 2009* [5] stated that “[t]he aims and objectives of Core section 1 of the *IMO Maritime English Model Course* are to: ...develop trainees’ abilities to use English to lower intermediate language level (equivalent to the Council of Europe Common European Framework for Languages level B1)”.

It takes around 200 hours for language learners to qualify for a higher rank [6]. Maritime institutes under MEXT tended to focus on the general and academic areas of maritime

studies. However, as part of Japan's Maritime Education and Training for Seafarers (JMETS) under MLIT, MTC focuses on practical maritime education as a training institution including the use of training ship and simulators. The maritime English education for speaking, listening, reading, and writing in classrooms support MTC's various types of trainings. MTC's curricula consists of international courses such as the teaching of practical maritime English education to Japanese students, including participation of international participants from some Asian countries in providing and receiving coaching. This coaching is in accordance to the model of courses published by IMO.

In the MTC curricula, all the course names and hours of education in fiscal year 2017 are as follows [7]:

Table 1. Course Genres and Titles and their Hours of Lessons for English Education

Course Genres and Titles	# of Hours
1. Newcomer Education (1 st and 2 nd years)	
Marine Technique Course (Advanced Navigation Class /Advanced Engineering Class)	214/237
Marine Technique Course (Navigation Class / Engineering Class)	276/271
Marine Technique Course (Specialized Navigation Class/Specialized Engineering Class)	376/309
Ocean-Going key Officer Course (Navigation/Engineering)	124/102
2. Pilot Training Course	
Pilot Training Course (1st to 3rd Grade)	90
3. Practical Education for officers of shipping companies	
Maritime English	288
4. Qualification Education	
Maritime Officer Course (3rd to 5th Grade; navigation/engineering)	77/62
Maritime Education Correspondence Course (1st to 3rd Grades, Basic Class)	90/80
Qualification Acquisition Training	479
5. International Cooperation	
Maritime Instructor Training	37
Training for Philippine Coast Guard	13

Note: All hours for language education are cumulative, and they do not include hours for students.

Examples of Maritime English Education in MTC

I provide two detailed examples of this kind of education. The first is teaching practice for the international course and the second is communicative English training for the navigational pilot course. In our team of English instructors, I have been responsible for coaching education for the international participants. I have been a class teacher in the navigation department for five years and have given opportunities for the international participants to support them in their practice teaching with Japanese students.

The implementation of the course follows a specific order. Firstly, all the staff members welcome the international participants. The usual participant-staff ratio is 3:3, this includes instructors of navigation and marine engineering. During the course orientation of international participants, the class teachers informed them that the last stage of coaching involves practice teaching with Japanese students. While staying on campus, international participants are responsible in reviewing their own basic knowledge and proficiency as experts on maritime education. This includes training themselves through rope works or welding jobs and boarding the training ship *Kaigi-maru* to be familiar with its facilities. At the end of the international course, they conduct practice teaching and give presentations about their achievements with comments on the course and about their plans for when they return to work.

Most of the international participants indicated to me their interest in networking with the Japanese students. To support them, I allowed them to observe and participate in Japanese students' maritime classes. Class teachers provided opportunities for them to teach the Japanese students.

This teaching practice has several merits. Firstly, the international participants are provided opportunities to teach MTC's younger Japanese cadets. This opportunity enables them to try out various teaching methodologies. Mutually, Japanese students are given opportunities to learn maritime subjects in the English language. This cooperation builds the ideal relationship between teachers and learners realizing mutual benefits from both parties. This

teaching also maximizes the time spent by international participants' during their stay on campus and provides Japanese students' diverse ways of learning.

Here is a sample of the assignment from the present author. Figure 1 below shows a sample of the requirements for international participants' teaching practice. Figure 2 shows slides from a sample lesson. The slides including personal information have been omitted.

Figure 1. Instruction for the international participants for teaching Japanese students at MTC

Teaching Practice Presentation		MIT-Std_2016_Tanaka
Your name:		
ASSIGNMENT		
Make your teaching plan by picking up one case from the MAIB Safety Digest 2016-1 or 2016-2 that you are interested in and prepare for practice teaching in the next session (Sep. 25).		
Audience: Japanese young students (cadets) and a few MTC instructors as observers.		
Example subject: The Case Study of Navigational Accidents		
Example length of your session: 30 minutes during two-year course of navigation		
Example number of students: 30		
Example location: your own teaching institute		
The case title and the case number of the reference: MAIB (#)		
Title:		
Instructor:		
Date: September 25		
Place: 303		
Plan:		

Figure 2. Sample Instructional Slides



Scope of Presentation



- **What is Maritime English**
- **Exercise 1(grammar)**
- **exercise 2 (reading in English)**
- **exercise 3 (seamanship examiner on fog situations & actions)**

a. Maritime English

- The Language used to communicate in all maritime specific situation . Example . On board . Ship to ship . Ship to shore

言語はすべて海事特定の状況での通信に使用されます。例。機内で。船は出荷します。海岸に船

Gengo wa subete kajii tokutei no jōkyō de no tsūshin ni shiyō sa remasu. Rei. Kinai de. Fune wa shukka shimasu. Kaigan ni fune

- English which has been simplified for use seafarers of all nationalities .

あらゆる国籍の利用船員のために簡略化された英語

Arayuru kokuseki no riyō sen'in no tame ni kanryaku-ka sa reta eigo

Continuation



- Maritime English has been codified by International Maritime Organization (IMO) as standard maritime communication phrases

海事英語は標準海事通信フレーズとして国際海事機関（IMO）により成文化されています

Kajii eigo wa hyōjun kajii tsūshin furēzu to shite kokusai kajii kikan (IMO) ni yori seibun-ka sa rete imasu

- General English language skill need to be good enough to combine with standard maritime communication phrases SMCP to achieve consistent and clear communication at sea.

一般的な英語のスキルが海で一貫して明確なコミュニケーションを実現するためにSMCP標準海事通信と結合するのに十分な良いフレーズにする必要があります。

Ippantekina eigo no sukiru ga umi de ikkanshite meikakuna kōmyunikēshon o jitsugen suru tame ni SMCP hyōjun kajii tsūshin to ketsugō suru no ni jōbun'na yoi furēzu ni suru hitsuyō ga arimasu

1. Grammar exercise



Choose the correct verb

1. Go upstairs.
2. Brush your teeth regularly.
3. Do not Play soccer in the classroom.
4. Switch off your mobile.
5. Follow the instructions.
6. Drive slowly.
7. Do not be silly.
8. Have a cup of tea.
9. Help yourself.
10. Clean your room.

- ✗ Brush
- ✗ Go
- ✗ Do not be
- ✗ Follow
- ✗ Have
- ✗ Help
- ✗ Switch off
- ✗ Drive
- ✗ Clean
- ✗ Do not play

2. Reading exercise



- Chapter II
- Call & response
- Exchange Message 1,2 & 3

- ✗ Do you have experience in Radio Communication conversation in English

あなたは英語で無線通信の会話の中で経験を持っていますか

Anata wa eigo de musen tsūshin no kaiwa no naka de keiken o motte imasu ka

exercise 3 (seamanship examiner on fog situations and actions)

- Situation a target is on the starboard side (10 deg forward of the beam at 10.8 miles range. What action would you take? Our speed 11kts.

- a. A/C to port
- b. A/C to starboard
- c. Operate astern propulsion
- d. Carry out a systematic plot
- e. Call the master
- f. Stop. Take all way off
- g. establish VHF contact
- H. wait until target reaches 6 miles

Target: Range: 10.5NM bearing 119 T

Critic on maritime English

- Do you understand while reading in English?
- Do you adapt ?
- Or need more practice to improved



END

At MTC, maritime English education for the navigational pilots focuses on communication. The trainees for navigational pilots are expected to pass an entrance examination before joining the course. One of these acceptance requirements is a score of 500 or above in listening and reading from the Test of English for International

Communication (TOEIC). The instructors of general maritime English (GME) in MTC relates their communication lessons with training exercises in the piloting simulator conducted by the instructors who are retired pilots. At the end of the GME lessons, trainees undergo an interview test. The test consists of four types of questions on daily matters such as weather or commuting to the interview room, personal questions about hometown, questions about their careers at sea before joining the course, and questions on their plans as a future professional pilot. The interview expects clear communication and correct pronunciation from the trainees including evidences of fluent communicating with the interviewers, and whether each one has confidence to meet the responsibilities of a seafarer and navigational pilot. In my recent interview test with thirty-two trainees, I asked each of them to assess the CEFR level and explain to me their evaluation methods and results. Most of them tended to underestimate their own proficiencies.

Regarding our trainees' English language skills development, I compared their TOEIC scores prior to beginning their training at MTC with their scores from interview test in the middle of the course four months after they started (See Figure 1). The TOEIC test was expected to measure their major English language abilities in reading and listening aside from speaking and writing [8]. These abilities in language use and MTC's assessment are essential especially for our training of future pilots, non-native English speakers who welcome aboard captains onto large vessels from all over the world. As pilots, our trainees will need to explain how to manoeuvre the ship and boost crew morale in English. Thus, it is necessary to measure their English proficiency from a global viewpoint by using the Common European Framework of Reference for Languages: Learning, Teaching, Assessment [1]. Figure 1 below shows a comparison of TOEIC listening and reading scores with MTC trainees' interview scores after the pilot course.



Fig. 3 A Comparison of pilot trainees' interview test (top line) and their earlier TOEIC scores (bottom line)

The two lines show that trainees' TOEIC listening and reading scores certainly reflects their English proficiency, but not necessarily does it identify their individual proficiency for speaking English. In the interview test, some trainees were inadequate at communicating with the interviewer despite having a TOEIC score over 800. High listening and reading scores do not necessarily equate to good speaking and writing skills [8]. More research needs to be carried out.

Conclusion

We have verified the methods and practices for maritime English lessons in MTC and details active procedures to compress the lesson time to enable non-native English learners to contribute to the maritime English education objectively. And it is still necessary to consider the relations further by detailed examples. In higher education, solving these educational difficulties are always based on the continuous theoretical and practical attempts.

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Language Features of Maritime Institutional Law Texts

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Abstract The main aim of this paper is to provide a brief overview of some of the most significant language features of maritime institutional law texts. For this purpose an analysis has been carried out of two maritime institutional law texts; *Maritime Labour Convention (MLC)* and *United Nations Convention on the Law of the Sea (UNLOS)*.

Apart from identifying some general language features, the paper mainly focuses on the syntactic and discourse level by adopting a genre-based approach to text analysis in order to describe the most important aspects of generic integrity of maritime institutional law texts by analysing examples of intertextual and interdiscursive patterning within the discourse in order to show how it is used to serve the general function of text cohering and generic and disciplinary functions of making maritime institutional law texts clear, precise, unambiguous and all-inclusive. This consideration of generic characteristics of maritime institutional law texts may serve to enhance understanding and interpretation of such texts and thus improve effectiveness in communication among professionals (non-legal experts) in the maritime industry who come in contact with such texts and it can also help elucidate some of the issues translators and Maritime English teachers may face in dealing with this particular type of discourse form.

Keywords: *maritime institutional law texts, syntactic features of maritime institutional law texts, discourse features of maritime institutional law texts, prepositional phrases, syntactic discontinuity, nominalization, binominal and multinominal expressions, intertextuality*

1. Introduction

The content of the following paper is a result of research done within the project entitled “Sustainable development of submarine optical cable infrastructure: technical and legal aspects” funded by the

Faculty of Maritime Studies, University of Rijeka. One segment of the project, which is going to be presented in this paper, deals with the linguistic analysis of legal frameworks, i.e. relevant maritime law texts associated with cable laying in order to enhance understanding, interpretation, communication among experts and correct translation of these and similar maritime institutional law texts in English. The genre-based approach adopted in language analysis and description mainly focuses on the syntactic and discourse level of the maritime institutional law texts.

2. English for maritime law as a branch of Maritime English

By its nature, the shipping industry is a global endeavour that takes place within a global economic and political framework involving many different countries, languages and cultures. Such circumstances have led to Maritime English gaining global acceptance as the international language of shipping trade employing internationally oriented individuals who must be fluent in English in order to communicate efficiently both on board and ashore. Maritime English is a somewhat broad term that refers to English language used by seafarers both at sea and in port but also by individuals working in the shipping and shipbuilding industry. As a result, “Maritime English terminology and phraseology can sometimes be challenging due to their specialization and unfamiliarity” (Bocanegra-Valle: 2013). According to the Encyclopaedia of Applied Linguistics: “Maritime English subsumes five different sub-varieties according to the specific purpose they serve within the maritime context: English for navigation and maritime communications, English for maritime commerce, English for maritime law, English for marine engineering, and English for shipbuilding“. This paper deals specifically with English for maritime law as a special variety or genre of Maritime English.

3. General remarks on the linguistic features of Maritime Institutional Law Texts

According to Pritchard (2001) “Maritime institutional law text is a written legal document that grants certain rights or stipulates and regulates contractual relationships in the maritime industry” (authors’ own translation). The concept of maritime institutional law text refers to a very specific set of legal instruments and documents that have legislative force in national law and legally binding force in international maritime law. Maritime legal texts of an institutional nature, such as international conventions, regulations, codes, national legal acts, treaties, contracts, directives, etc. are strictly organized written texts with legally, or in some other way, binding force. Their principal traits are formulaic and predictable textual and discursive patterns, extremely complex syntax and specialized terminology. The grammar of such texts displays, apart from complex syntactic forms, a limited use of tenses. For instance in maritime institutional texts in English used in this analysis, only three tenses have been identified: present tense, (simple) future tense and present perfect tense. There is also a frequent use of affixal negation (ex. *unnecessary*, *inefficient*, *none*, etc.), special use of modal verbs

(for instance the use of *shall* to express legal obligation), complex prepositional phrases, etc. Although, legal texts of this type abound with special features at almost all language levels, available research is mainly focused on the lexical level, i.e. specialized legal terminology, such as in the works of Šarčević (2000) and Bhatia (1993; 1998) or Tetley (2004) and Pritchard (1995; 2011), whose works are concerned more specifically with maritime law terminology. Since this paper mainly deals with syntactic and discourse level, its theoretical framework is based on the research done by Bhatia (1993; 1998) and Pritchard (1995; 2011), who both, apart from being interested in the legal terminology, also investigate syntactic and discourse features of (maritime) legal texts.

“Legislative writing has long been criticized for its obscure expression and circumlocutions, long-winded involved constructions and tortuous syntax, apparently meaningless repetitions and archaisms” (Bhatia 1993: 101-102). In order to understand the complexity of legislative statements, we need to have a better idea of the communicative purpose these statements are meant to serve and the constraints that are imposed on the drafting of such texts.

The general function of legislative writing is to impose obligations and to confer rights. “As legal draftsmen are well aware of the age-old human capacity to wriggle out of obligations and to stretch rights to unexpected limits, they attempt to guard against such eventualities by defining their model world of obligations and rights, prohibitions and permissions as precisely, clearly and unambiguously as linguistic resources permit. A further complication is the fact that they deal with a universe of human behaviour which is unrestricted, in the sense that it is impossible to predict exactly what may happen within it. Nevertheless, they attempt to refer to every conceivable contingency within their model world and this gives their writing its second key characteristic of being all-inclusive” (Bhatia 1993: 102). Thus, it is seemingly this impossible task of achieving the dual characteristics of clarity, precision and unambiguity on the one hand, and all-inclusiveness on the other, that makes legislative provisions what they are.

4. Syntactic features of maritime institutional law texts

Some of the typical syntactic features that have been found in the institutional maritime law texts are unusually long and complex sentences, nominal expressions, complex prepositional phrases, binominal and multinominal expressions, conditionals with long hypothetical formulations, use of passive structures and qualificational insertions.

When we speak of legislative texts, it is impossible to avoid unusually long sentences in terms of the sheer number of words and the syntactic complexity of multiple subordination and postponement of the main verb until very late in the sentence (Varo & Hughes 2002: 19, Mackinley n.

d.. As a result, certain sections can be syntactically complex and contained in a single long sentence, as shown below. The sentence contains 313 words.

- [1] *The Sea-Bed Disputes Chamber shall have jurisdiction under this Part and the Annexes relating thereto in disputes with respect to activities in the Area falling within the following categories: (a) disputes between States Parties concerning the interpretation or application of this Part and the Annexes relating thereto; (b) disputes between a State Party and the Authority concerning: (i) acts or omissions of the Authority or of a State Party alleged to be in violation of this Part or the Annexes relating thereto or of rules, regulations and procedures of the Authority adopted in accordance therewith; or (ii) acts of the Authority alleged to be in excess of jurisdiction or a misuse of power; (c) disputes between parties to a contract, being States Parties, the Authority or the Enterprise, state enterprises and natural or juridical persons referred to in article 153, paragraph 2 (b), concerning: (i) the interpretation or application of a relevant contract or a plan of work; or (ii) acts or omissions of a party to the contract relating to activities in the Area and directed to the other party or directly affecting its legitimate interests; (d) disputes between the Authority and a prospective contractor who has been sponsored by a State as provided in article 153, paragraph 2 (b), and has duly fulfilled the conditions referred to in Annex III, article 4, paragraph 6, and article 13, paragraph 2, concerning the refusal of a contract or a legal issue arising in the negotiation of the contract; (e) disputes between the Authority and a State Party, a state enterprise or a natural or juridical person sponsored by a State Party as provided for in article 153, paragraph 2(b), where it is alleged that the Authority has incurred liability as provided in Annex III, article 22; (f) any other disputes for which the jurisdiction of the Chamber is specifically provided in this Convention. (UNCLOS, Article 187)*

According to Bhatia (1993), opponents to the so-called *one sentence rule* consider such long sentences an obstacle to the transparency of legislative provision, while its proponents hold that they make legal provisions all-inclusive.

Another notable syntactic feature identified in legal provisions is nominalization. Thus, legislative sentences are highly nominal in character, i.e. nominal structures are preferred to their more typical verbal versions, such as in example [2]

- [2] *A ship to which this Convention applies may, in any port or offshore terminal of another Party, **be subject to inspection** by officers duly authorized by that Party for the purpose of determining whether the ship is in compliance with this Convention (be subject to inspection = be inspected) (UNCLOS, Article 9)*

Binominal and multinominal expressions have also been typically associated with legislative texts and can also frequently be found in the maritime institutional legal texts in our analysis. Bhatia (1993: 108) defines them as “a sequence of two or more words or phrases belonging to the same

grammatical category having some semantic relationship and joined by some syntactic device such as ‘and’ or ‘or’”. Again, these are very effective linguistic devices to make the legal document precise as well as all-inclusive.

- [3] *If a ship is detected to have violated this Convention, **the Party whose flag the ship is entitled to fly, and/or the Party in whose port or offshore terminal the ship is operating**, may, in addition to any sanctions described in Article 8 or any action described in Article 9, take steps to warn, detain, or exclude the ship. The Party in whose port or offshore terminal the ship is operating, however, may grant such a ship permission to leave **the port or offshore terminal** for the purpose of **discharging Ballast Water or proceeding** to the nearest appropriate **repair yard or reception facility** available, provided doing so does not present a threat of harm to the **environment, human health, property or resources**. (UNCLOS, Article 10)*

Complex prepositional phrases are also linguistic structures that can be found frequently in legislative writing. The most commonly recurring examples in the maritime law texts analysed in this paper are: *for the purpose of* and *in accordance with*. Other prepositional expressions that can generally be found in legislative writing are: *subject to*, *having regard to*, *relating to*, *pursuant to*, *in order to*, etc. (Varo & Hughes 2002: 19).

- [4] *Each Member shall ensure, within the limits of its jurisdiction, that the seafarers’ employment and social rights set out in the preceding paragraphs of this Article are fully implemented **in accordance with** the requirements of this Convention. (MLC, Regulation 8, 2.2.)*

Legislative statements typically begin with fairly long initial case descriptions, i.e. terms and conditions that have to be fulfilled in order for the norm to be operative. Legal provisions are most frequently hypothetical, which means that the relationship between the subject and the predicate is conditioned. Thus, hypothetical formulations consist of hypothesis and disposition. Normative content, i.e. the consequences are prescribed in the disposition and the conditions that must be met for the norm to be operative are determined by hypothesis. Such hypothetical formulations are typically expressed in the form of adverbial clauses beginning with ‘where’, ‘if’ or sometimes ‘when’. Varó and Hughes (2002: 20) call these types of adverbial expressions *syntactic indicators of condition and hypothesis*. These indicators may be positive (*if, when, where, whenever, wherever, provided that, in the event of, assuming that, so long as, should*) or negative (*unless, failing, should...not..., except as/where/if, but for, etc.*). At the same time such complex conditionals “may include double or triple hypotheses and mix positive with negative possibilities” (Ibid: 20), which makes them sometimes difficult to interpret and/or translate. Again, their purpose is to make legal texts all-inclusive.

- [5] *Where it is proposed to fit tunnels piercing main transverse watertight bulkheads, these shall receive the special consideration of the Administration. (UNCLOS, Regulation 8, 2.2.)*

Another important syntactic feature of legal texts is the abundant use of the passive voice. According to Varó and Hughes (2002: 19-20) the “effect of the passive mood is to suppress the identity of the agent responsible for the performance of the act [...] or when the implied subject is too obvious to need stating”.

- [6] *Such **determination shall be made** by the Administration only after careful consideration of the impact on ship operations and survivability.*

The final syntactic feature of legislative texts that must be mentioned are *qualification insertions* (Bhatia 1993: 111-3). Qualification insertions are actually structures that determine precisely the area of application of a certain legal provision. Although the primary function of qualification insertions is to make legal provisions precise and clear, they may often lead to ambiguity. This may occur in sentences with too many qualification insertions and when qualifications are not inserted in the right place. That is the reason why legal draftsmen try to insert qualifications right next to the words they refer to. Qualifications are inserted in various places in the sentence, thus creating syntactic discontinuities, as in example (qualification insertions are shown in bold) [7].

- [7] *When a ship changes flag as referred to in Standard A5.1.3, paragraph 14(c), and where both States concerned have ratified this Convention, the Member whose flag the ship was formerly entitled to fly should, **as soon as possible**, transmit to the competent authority of the other Member copies of the maritime labour certificate and the declaration of maritime labour compliance carried by the ship before the change of flag and, **if applicable**, copies of the relevant inspection reports **if the competent authority so requests** within three months after the change of flag has taken place.*

5. Discourse features of maritime institutional law texts

The following chapter investigates some of the most significant discourse features of Maritime institutional law texts. According to Bhatia and Swales (1983) syntactic and discourse features of legislative writing are in many different ways interconnected, in the sense that, for instance, apparent legal requirement of expressing something by means of nominal expressions with a variety of qualifications would bring in syntactic discontinuities, thus making the discourse structure of the sentence not only complex but compound as well. Therefore, it was necessary to look at some of the typical syntactic features of the maritime institutional law texts in the previous chapter before analysing the discourse features of this genre.

5.1 Intertextuality

Intertextuality refers to the “interdependent ways in which texts stand in relation to one another (as well as to the culture at large) to produce meaning. They can influence each other, be derivative of, parody, reference, quote, contrast with, build on, draw from, or even inspire each other. Knowledge does not exist in a vacuum, and neither does literature” (Nordquist 2018).

Based on the Bhatia’s work on intertextuality in legislative discourse (Bhatia 1998), four major kinds of intertextual devices have been identified in the maritime institutional law texts in this analysis and they serve the following functions: (1) signalling textual authority; (2) providing terminological explanation; (3) facilitating textual mapping; and (4) defining legal scope.

5.1.1 Signalling textual authority

Textual authority is marked by a typical use of complex prepositional phrases, which may appear to be almost formulaic to a large extent. A very typical example found in the texts used in our analysis can be seen in [8a].

[8a] *The outer limit lines of the continental shelf and the lines of delimitation drawn **in accordance with article 83** shall be shown on charts of a scale or scales adequate for ascertaining their position.* (UNCLOS, Article 84 (1))

[8b] *The delimitation of the continental shelf between States with opposite or adjacent coasts **shall be effected** by agreement on the basis of international law, as referred to in 38 of the Statute of the International Court of Justice, in order to achieve an equitable solution.* (UNCLOS, Article 83)

In Article 84 of the *United Nations Convention on the Law of the Sea* (UNCLOS) the complex prepositional phrase *in accordance with* signals a link to the text of the previous article and it shows that we may expect some obligations for parties affected by UNCLOS in the indicated section, and it also indicates the nature of the legal relationship that can be expected to be found there. Our expectation is then met by the use of the legally binding word *shall* in Article 83.

On the other hand, in example [9a] below taken from the *Maritime Labour Convention*, the use of *pursuant to paragraph 2.4* raises an expectation of rights depending on the individual’s choice. This is then confirmed in section 2.4, shown in [9b] in the use of *may*, which is often used to express rights, rather than obligation.

[9a] *Denial of entry into port, **pursuant to paragraph 2.4** shall only be imposed where the officers duly authorized by the Contracting Government have clear grounds to believe that the ship poses an*

immediate threat to the security or safety of persons, or of ships or other property and there are no other appropriate means for removing that threat. (MLC, Paragraph 3.3)

- [9b] *If such officers have clear grounds otherwise for believing that the ship is in non-compliance with the requirements of this chapter or part A of the ISPS Code, such officers **may** take steps in relation to that ship as provided in paragraph 2.5.* (MLC, Paragraph 2.4)

Some of the other expressions used to mark textual authority are the following: under, in pursuance of, by virtue of, etc.

5.1.2 Providing terminological explanation

Terminological explanation is central to legal writing so that even the most common and ordinary expressions can take on special values in the context of law (Bhatia 1998). Many words may require specialist interpretation because they may have different meanings in legal texts. So one of the main functions of legal writing is to provide terminological explanation. Thus, in the context of a particular legislative statement such meanings are often explicitly codified, rather than assumed to be known.

- [10] ***Able seafarer** means any seafarer who is deemed competent to perform any duty which may be required of a rating serving in the deck department, other than the duties of a supervisory or specialist rating, or who is defined as such by national laws, regulations or practice, or by collective agreement.* (MLC, Guideline B2.2.1 – Specific definitions (a))
- [11] ***Basic pay or wages** means the pay, however composed, for normal hours of work; it does not include payments for overtime worked, bonuses, allowances, paid leave or any other additional remuneration;* (MLC, Guideline B2.2.1 – Specific definitions (a))

5.1.3. Facilitating Textual Mapping

The third important function of intertextuality in legal discourse is to signal textual coherence to the reader, thus pointing to the fact that the text must be interpreted in the context of something expressed somewhere else, either in the same text or in a separate one. This is often marked by the use of ed-participle clauses:

- [12] *Surfaces **referred to** in regulations II-2/34.3, 34.7, 49.1 and 49.2 are those of bulkheads, decks, floor coverings, wall linings and ceilings as appropriate.* (UNCLOS, Regulations II-2/34 and 49 – Restricted use of combustibles)
- [13] *At security level 3, further specific protective measures, **specified in** the ship security plan, shall be implemented for each activity detailed in section 7.2, taking into account the guidance given in part B of this Code.* (MLC, Ship Security 7.4)

These devices make legislative texts all-inclusive, precise and clear. They also enable legal draftsmen to avoid constant repetition of larger units of texts. Thus, textual mapping contributes to cohesion and unloads the already complex syntax of legislative texts.

According to Bhatia (1998) typical realisations of this function include expressions such as *falling within the meaning of*, which clarifies texts, *referred to in subsection*, which is used for text-cohering, *specified in section*, *set out in subsection*, *described in section* and *mentioned in subsection*.

5.1.4 Defining Legal Scope

According to Bhatia (1998), the final category of intertextual links often used in legislative texts and found also in maritime law texts is the one defining legal scope of a legislative provision. Since every single legislative statement within a particular legal system is seen as part of larger body of legislative texts, whereby one of them is likely to be of universal application, it is often necessary to define the scope of each of these legislative expressions. This is especially necessary when a provision may conflict with what has already been legislated. As a result, intertextual devices are used to mark and resolve such conflicts or tensions.

- [14] ***Subject to provisions of paragraphs (4), (5), (6) and (7) of regulation 15 of Annex I of MARPOL 73/78, every oil tanker of 150 gross tonnage and above shall be fitted with an oil discharge monitoring and control system approved by the Administration.*** (UNCLOS, Annex 2)

In the case of provision in the example [14] taken from the UNCLOS, the writer simply signals the restricted scope of the provision in the context of paragraphs (4), (5), (6) and (7) of regulation 15 of Annex I of MARPOL 73/78.

In the example [15] of the same Convention, an anticipated conflict has not only been marked but also resolved by ensuring that the regulation will have legislative effect in spite of the conflicting requirements stated in the paragraph 1.2 of the same chapter within the Convention

- [15] ***Notwithstanding the provisions of paragraph 1.2, Contracting Governments shall decide the extent of application of this chapter and of the relevant sections of part A of the ISPS Code to those port facilities within their territory which, although used primarily by ships not engaged on international voyages, are required, occasionally, to serve ships arriving or departing on an international voyage.*** (UNCLOS, Chapter XI-2: Special measures to enhance maritime security, Regulation 2)

Legal provisions can exhibit either conflict avoiding textual links or conflict resolving textual links depending on whether the conflict is potential or real.

According to Bhatia (1998), some of the most commonly used devices to signal conflicting cases are as follows: listing of conditions which must be fulfilled for a provision to operate, listing of exceptions under which the provision ceases to operate, explaining/defining circumstances under which a provision operates, extending the scope of the provision, restricting the scope of the provision, specifying consequences of non-compliance of the provision. Most often these legal conflicts are signalled by the prepositional phrase *subject to*, often further specified by the modification of the noun phrase, such as the following: ... *subject to the conditions stated in sub-section ... below*.

In case a real conflict exists between provisions, two standard devices to signal a resolution of such conflicts can be used. “In the case of the new provision taking priority over the other one, the common device used is ... *notwithstanding the provisions of section ...*, which clearly signals that the new provision will operate in spite of the conflicting requirements of some older provision. In order to signal the opposite effect, that is, the new provision has no effect on the one previously legislated, one may often find the use of ... *without prejudice to the generality of section ...* Sometimes, we also find somewhat more general expressions to this effect, such as the following: ... *in addition to the powers under section ...* or ... *instead of complying with the provisions of section ...*

6. Conclusion

The aim of the paper was to use a genre-based approach to investigate one sub-variety of Maritime English, namely that used in maritime institutional law texts and outline some of the most common syntactic and discourse features and their functions in preserving the integrity of the genre. Some of the overall communicative aims that maritime institutional law texts and legal texts in general try to achieve are all-inclusiveness, unambiguity, clarity and precision of expression. Since syntactic and discourse features of legislative writing are interconnected, the paper first identifies long complex and very often discontinued compound sentences and then goes further to investigate various causes behind such complex syntactic patterns and the functions they perform within the genre, such as the use of binominal and multinominal expressions, nominalization, passive voice and insertion of numerous qualifications. These syntactic characteristics also perform certain intertextual functions on the discourse level, such as signalling textual authority, providing terminological explanation, facilitating textual mapping and defining legal scope. Ultimately, outlining the aforementioned generic characteristics of maritime institutional law texts aims to provide a small contribution to understanding the interpretation and translation of such texts within the maritime industry by non-legal experts.

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WORKSHOP *Detecting cultural bias*

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WORKSHOP ABSTRACT

While ethnocentrism refers to considering your own culture as the ‘normal/normative’ one and judging other cultures not up to standard, cultural bias is “the interpretation of any phenomena based on one’s own cultural standards”ⁱ or making assumptions about them from one’s own cultural perspective. While the former can be demonstrated to be rationally unjustified and possibly eradicated, cultural bias is inherent to humans being shaped by the cultural frame in which they are raised, and therefore impossible to eliminate. Considered to be natural and logical behaviour within the culture we belong to, cultural bias is a process we are usually unaware of. Its effects though are similar to the ones caused by ethnocentrism: standards of one culture or group prevail on those of others, generating dominance and exclusion.

As cultural bias operates on all levels and types of interaction with other cultures, it also affects education. That is why this workshop aims at raising awareness about cultural bias in maritime education. The purpose is to detect possible harmful effects and reflect on eventual needs for remedial. We will mainly focus on the teaching of Maritime English and analyse its curriculum, teaching materials and activities since “(i)nstructional materials play the role of cultural mediators as they transmit overt and covert societal values, assumptions and images”.ⁱⁱ We will be looking at the choice of topics, especially those addressed by general English as opposed to technical, maritime English. Identity construction in teaching materials also appears to be culturally biased, as very often captains tend to be depicted as western and ratings as eastern. Furthermore, we will also scrutinize the formats of activities, exercises and tests on impact of cultural bias.

WORKSHOP ACTIVITY

Purpose

As mentioned above, the primary goal is to raise awareness about the unconscious cultural framing to which we are generally subjected. Secondly, we aim to investigate where and how cultural bias concretely operates within the field of Maritime English education. Finally, an assessment will be made regarding the need to develop further insight into cultural bias and the educational strategies to deal with it.

Organisation

After a general introduction on the topic of cultural bias, participants will form groups of four or more, depending on the number of participants. The composition of each group should be as culturally diverse and geographically spread as possible.

Activity 1

Each group member will do a quick survey of her/his proper teaching materials, preferably the ones used in first year of maritime English, and confront their findings with the other members. They will focus on the following elements:

- Names and nationalities used or referred to in texts and exercises
- Narrative perspective in texts: are there indications the story/script has been developed from a specific cultural point of view? Are the 'roles' culturally predetermined (e.g. a western Captain and eastern ratings)?
- Choice and approach of topics in general English: are the topics judged equally relevant by all cultures or predominantly related to one culture? Could the approach of or the content delivered on certain topics be experienced as culturally sensitive?

Activity 2

The different groups will discuss the learning activities developed in the Maritime English classroom. They will reflect on the following items:

- Is the type of exercise in the Maritime English class familiar to the students? More specifically, are the formats of these exercises the same as the ones used in primary and secondary education?
- Are the instructions clearly formulated in an accessible language? Are the symbols or icons which appear in learning activities and assessment unambiguous and culturally shared?
- Is it difficult to carry out some activities/exercises with your students group because of the context in which you teach (number of students, availability of ICT, space or time constraints, ...)?

Discussion

Each group will be asked to gather their findings and report for the whole group on the occurrence of cultural bias and its role in identity construction. Furthermore, they will also assess the impact of cultural bias on didactics and pedagogical strategies in the teaching of Maritime English. Finally, they will report on the relevance of cultural bias in maritime education and share their views on the need and the way to address it by formulating recommendations.

ⁱ SPIELBERGER, C. D. *Encyclopedia of Applied Psychology*. Elsevier Academic Press, 2004. "Understanding the Phenomena of Cultural Bias With Examples." *PsycholoGenie*, PsycholoGenie, <https://psychologenie.com/understanding-cultural-bias-with-examples> consulted 14 June 2018

ⁱⁱ Ndura, E. (2004). ESL and cultural bias: An analysis of elementary through high school textbooks in the Western United States of America.

Achieving quality in Maritime English productive skills testing

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Abstract

Maritime English teachers are described by Cole, Trenkner and Pritchard [1] as, variously, English language and literature graduates, former seafarers, and/or native English-speaking persons. In other words, it is generally agreed that Maritime English teachers may possess excellent qualifications, but they may not come equipped with the range of maritime skills and knowledge required to do the job justice.

The literature contains a great deal on the process of “marinisation” of the Maritime English instructor [ibid. p.2] [2], but other significant demands made on ESP (English for Specific Purposes) teachers are equally important. One of these demands is language assessment.

Assessment comprises an obligatory aspect of the competence-oriented language training concept applied in the International Maritime Organization (IMO) *International Convention for Standards of Training, Certification and Watchkeeping 1978, as amended* (STCW 78, as amended) [3], “which a ME instructor should be capable of” [4]. Developing, creating and running tests, as a form of assessment, are often the responsibility of the Maritime English teacher. Tests have a number of qualities, of which validity is seen as “the most important single characteristic” [5] while reliability is “one of the most important characteristics” [ibid.]. Reliability refers to “consistency of measurement” [6]. In other words, the score received by a test taker should be the same irrespective of the rater and other variables (e.g. when the test is rated and under what conditions). Rater reliability, that is, the extent to which raters agree (or not), informs us about a test’s reliability. For productive skills tests, this can be measured using a number of statistical measures.

In this paper we will outline two measures of rater reliability and the steps that can be taken to increase rater reliability. We will then outline the validation procedures carried out to ensure rater reliability in the recent MariLANG project, with a view to offering succinct guidelines for Maritime English teachers.

Keywords: *Maritime English teachers, language assessment, rater reliability, productive skills testing, MariLANG project*

Introduction

MET institutions have come to recognise Maritime English teachers as necessary and valuable assets in their shared objective to provide the best training for the seafarer of the 21st century. According to the *International Convention on Standards of Training, Certification and Watchkeeping 1978, as amended* [3], officers in the Merchant Marine must demonstrate competency in (Maritime) English – both written and oral – as well as the ability to use and understand the *IMO Standard Marine Communication Phrases* [7], thereby facilitating and enhancing current communication needs at sea and ensuring safety on board ship [8 p.33]. The Maritime English instructor is thus tasked with imparting sufficient knowledge of the language to enable the officer to communicate effectively in a professional context on board. Winbow [9], formerly Assistant Secretary-General of the IMO (2010-2016), notes that this responsibility should not be underestimated.

Cole, Trenkner and Pritchard [1], writing in 2013, still prove relevant when they note that the majority of Maritime English teachers come into the job unprepared, tending to be (young) “English language and literature graduates often employed to teach general English, [...] former seafarers who are thought or claim to have a good command of the English language but who seldom have teaching qualifications, and [...] native English-speaking persons who are often not qualified teachers let alone experienced in maritime matters” [ibid. p.153]. This ‘motley crew’ – albeit in possession of valid qualifications at tertiary level (Bachelor / Masters / PhD) – might just happen to be in the right place at the right time and by some fortuitous event, said crew finds itself ‘catapulted’ into the Maritime English classroom! If the choice of terms sounds disparaging, it is not intended to detract from the impressive careers that said ‘crew’ often goes on to make for itself in the Maritime English discipline; many initially inexperienced lecturers become valued and sought-after experts in the subject. Nevertheless, the graduate without nautical experience, the seafarer in need of language-teaching skills or the native speaker lacking both face many challenges. Moreover, the duty to deliver communicatively competent seafarers can weigh heavy.

The profile of the Maritime English instructor is, however, undergoing change, with many MET institutions recognising that teaching English for Specific Purposes (ESP) without access to or experience of the contextual background, namely the seafaring profession, can engender a lack of confidence and/or credibility. Maritime academies thus ensure that novice Maritime English instructors are given the opportunity to be ‘marinised’ [1 p.159], for example, by joining a training ship, observing exercises in the simulator or by taking part in some form of cross-curricular course integration [10] - so-called ‘twinning’. ‘Marinisation’ plays a vital role in meeting the requirement for authenticity which is central to both (semi)vocational education, including maritime training, and to ESP. The ensuing improvement in the Maritime English

lecturer's seafaring knowledge, understanding and (perhaps) proficiency (KUP) should lead to a concomitant improvement in teaching skills.

Teaching is, however, only one of the aforementioned challenges contributing to the steep learning curve for Maritime English teachers. Assessment is another. The competent evaluation of cadets' communicative ability during their training and, more importantly, as they take the step from MET institution to career at sea, is central to the MET mission. Assessment comprises an obligatory aspect of the competence-oriented language training concept applied in the International Maritime Organization (IMO) *International Convention for Standards of Training, Certification and Watchkeeping 1978, as amended* (STCW 78, as amended) [3], "which a ME instructor should be capable of implementing" [4]. If, however, one were to ask Maritime English teachers (aka 'motley crew') whether they had received specific training in assessment literacy, the authors would venture that for the majority – including many with a teaching qualification – the answer would be 'no'. Indeed, a number of researchers have highlighted the fact that, due to a lack of assessment literacy training as part of their initial teacher training, many teachers lack the confidence and knowledge to assess their students [11] [12]. Given the inextricable link between teaching and assessment, this is something of an issue. Popham [13 p. 82] argues that, while students' test results are 'a key indicator of education quality', many educators 'reside in blissful ignorance' regarding assessment literacy. He argues that, due to the vitally important role that assessment plays in education, everyone involved in assessment 'needs a dose of assessment literacy' [14 p.84] yet this only needs to be an understanding of a few 'commonsense measurement fundamentals' (ibid, p. 84). Herrera and Macias [15 p.9] point to Stiggins who, in 2007, referred to the estimation that teachers spend up to one-third of their time on assessment-related activities. Consequently, Popham [16] argues that '[a]ssessment literacy is seen ... as a sine qua non for today's competent educator' and must be 'a pivotal content area for current and future staff development educators'.

Models of test validation

Assessing future seafarers' language competencies following the stipulations outlined by the IMO is no trivial undertaking. In a very specific ESP setting such as the maritime domain, formative and summative assessment aims to infer learners' language skills from relatively small samples which should ideally reflect the professional environment to which they are exposed in real life. According to Bachman and Palmer [6], six qualities need to be considered to achieve such inference in a realistic manner: construct validity, reliability, impact, practicality, authenticity, interactiveness and practicality¹. Invariably, there have to be

¹ See Westbrook & John [16] for an application of Bachman & Palmer's model to the maritime domain.

compromises to get the best balance between the various qualities according to the resources and time available. Nonetheless, the test designer should endeavour to strike the best balance possible for the given test within the resources available.

While construct validity and reliability are important qualities for all tests, in the case of Maritime English, authenticity is a particularly relevant aspect that Maritime English teachers need to take into consideration when developing formative or summative assessments. The IMO Model Course 3.17 *Maritime English 2015 edition* [18] proves highly useful in terms of categorising the different communicative settings on board ship in relation to the different ranks and functions of seafarers. These communicative settings may, in turn, be adapted to achieve authentic assessment methods. Maritime English teachers should thus familiarise themselves with the variety of sub-genres and registers [19] their cadets will encounter once they initiate their career at sea. The application of the categories outlined in the IMO *Model Course 3.17 Maritime English 2015 edition* assist language teachers in avoiding “construct under-representation” and “construct-irrelevant variance” [20]. Construct under-representation occurs when an insufficient number of applicable sub-genres and registers are tested and assessed (e.g. no testing of radio communication for navigational officers) while construct-irrelevant variance is introduced when skills are tested which are not linked to the cadets’ *language* capabilities (e.g. their ability to type fast or poor lighting / heating conditions in the test room).

The development of authentic language assessment which considers construct-relevant aspects of cadets’ life on board not only adopts the communicative approach advocated by *Model Course 3.17 Maritime English 2015 edition*, but is also in line with Weir’s Socio-Cognitive Framework for Test Validation [21]. Weir [ibid.] argues that test validation should be carried out within a socio-cognitive framework. This socio-cognitive framework contemplates language assessment as a social function and not a mere linguistic performance. Test takers’ socio-cognitive performance depends to a high degree on the authenticity of the test tasks which the language teacher has designed on the basis of *a priori* validation evidence, which takes into account the context in which the test taker finds himself/herself and the cognitive processes that the test taker will need to employ in order to perform the tasks in real life. According to Weir [ibid.], student performance on the test then provides for *a posteriori* validation which should be taken into account by the test developer. One aspect of this is what Weir [ibid.] describes as ‘scoring validity’, that is, evidence to demonstrate that the score obtained in the test represents the test taker’s ability to perform the tasks in real life. This then feeds into ‘consequential validity’ and ‘concurrent validity’. The former is based on validity evidence related to the consequences of the test. For example, if the test taker finds a good job on the basis of their test result, the test score must reflect the person’s language ability to do the job rather than over- or under-estimating it. Concurrent validity, on the other hand, refers to the comparison of the test score to an-

other external evaluation of the test taker's ability [ibid], e.g. their performance on another similar test, on another version of the same test or on some other evaluation such as a teacher's evaluation of their ability. The loop established by *a priori* and *a posteriori* validation evidence should lead to improved test development and to better construct validity.

Collecting scoring validity evidence in practice

As mentioned above, it is necessary to collect both *a priori* and *a posteriori* validation evidence for any test [21]. Taking the test takers' context and language needs into account when planning and designing the test can contribute to *a priori* evidence while 'scoring validity'[ibid], or 'reliability' [6], contributes to *a posteriori* evidence.

There are two approaches to collecting evidence of reliability in tests: Classical Test Theory and Modern Test Theory. For Classical Test Theory, a spreadsheet software (e.g. Excel) can be used to estimate reliability quickly and easily, while the latter uses a somewhat more complex model called *Rasch Analysis*, which is 'becoming more the norm for establishing the quality of the measurement tools used in the social sciences' [22], including the language testing field.

In terms of the validity evidence that needs to be collected, tests are divided into receptive and productive skills.

In this paper, we will focus on collecting validation evidence for productive skills (speaking and writing) only, with particular reference to the MariLANG test.

There are several types of evidence that can contribute to the scoring validity of a test. These include measuring rater reliability and rater severity. In addition, establishing the rating scale, its development and how well the criteria work are also important aspects of the evidence. Given that productive skills tests require some form of scale on which to rate the test taker's performance, we will start with the rating scale.

First of all, the test developer needs to decide whether to use a holistic rating scale or an analytical one. Weigle [23] provides an in-depth analysis of the advantages and disadvantages of these two types of rating scales. One advantage of a holistic rating scale - whereby a single score is awarded on the basis of the overall impression of the performance - is that it is much faster to use as there is only one decision to be made whereas, with an analytical rating scale - which includes a number of different criteria such as cohesion and coherence, grammatical range, grammatical accuracy, task achievement - the rater has to make a decision for each criterion. On the other hand, analytical rating scales provide much more diagnostic information about the test taker, which is particularly useful for L2 writers [ibid p. 120] and speakers.

When designing a rating scale, it is considered good practice to develop the descriptors as a team. This allows group discussion of the descriptors, their meaning and how to interpret them so that any misunderstandings can be ironed out at the design stage [24].

The number of criteria to use is also a consideration. The more levels there are, the more difficult it is to distinguish between the different levels. When designing an analytical rating scale, the Council of Europe in establishing the *Common European Framework of References for languages (CEFR)* [25 p. 193] recommends that 4-6 criteria is enough as 4-5 criteria already put a strain on the rater while 7 criteria is 'psychologically the upper limit'. Remember, of course, that the more criteria there are, the longer it will take to mark a given script as there will be more decisions to be made for each script.

In addition, descriptors should be clear and concise [26]. The longer they are, the more difficult it is for the rater to understand them and apply them correctly. It is also important to make raters aware of how to deal with multiple descriptors for each level. If there are three descriptors in each level but the test taker does not achieve all of these, or they have two in one level and one in another, how should the performance be rated?

Another aspect to consider is that the rating criteria must be independent of each other [ibid]. That is, a rating on one criterion must not affect or influence a rating on another criterion. Similarly, the descriptors must be independent of each other in terms of level so they should not compare performances against another level; instead, they should clearly specify what is required at a given level such that the descriptor could be used on its own without the other level descriptors. On the other hand, there should be continuity across the different levels. For example, if one level describes a performance which has many grammatical mistakes, logically the next level cannot describe a performance with no mistakes. In such a case, raters would not be clear which level to choose if they are rating a performance which has only a small number of mistakes. This would then lead to issues with reliability due to a lack of understanding of how to apply the descriptors.

Once the rating scale has been designed, it must be trialled to investigate the ease with which it can be used.

Intuition among professionals may provide a good starting point for developing scales, but this will need to be supported empirically either by qualitative analysis of performances and or quantitative analysis of features occurring at different levels of performance to help further refine and concretize these [21 p.196-7].

However, before the rating scale is used, the raters must be trained, especially if they were not involved in the design of the scale. One way of doing this is to familiarise the raters with the scale by cutting the scale up into its component parts and asking raters to put the scale back together in the correct order. Raters should then justify their reasons and any discrepancies can be discussed to uncover the source of the misunderstanding and to remedy this. This process may also highlight errors in the rating scale which the design team may have overlooked. In this way it provides useful information for new iterations of the scale. Once the raters are familiar with the scale and their understanding of the descriptors, they are asked to rate –

individually - a sample of performances for benchmarking purposes. The benchmark sample should include performances at the different levels of the scale as well as problematic samples, for example, papers which are off-task, memorised, incomplete or which do not meet the criteria for some other reason [22]. Raters then compare their ratings, providing justification for their rating decisions.

Research into rater training suggests that using an analytic scale can be a 'useful tool' in the training process, particularly with inexperienced raters [27]. Rater reliability has also found to be improved after training [28] [29]. Shohamy also found that rater training was a more significant variable than experience [28].

Using spoken protocols in the marking, whereby raters give a running commentary on their thoughts as they rate, can also provide useful insights into what the raters see as important criterial features of the performance [30]. This enables the test developer / rater trainer to understand not only why a rater gave the grade they did, but also to see what a given rater focuses on. Sometimes, more experienced raters form a judgement based on their personal opinion (which is not always reflected in the criteria) and this can be a source of rater disagreement. In this case, the rater trainer can 'guide' the rater back on to the right track.

As raters use a new rating scale – even if they were involved in the design of it – they inevitably find aspects which are unclear or note that there is no descriptor for a certain aspect of a performance. If raters are unclear as to which criterion to select in this case, this will be a source of variance between raters and will be revealed when the test developer carries out analyses to see how the rating criteria are working. This will be discussed further below. If the test developer finds that there are indeed issues with the rating scale, it will need to be amended and re-trialled as necessary.

The next step in collecting validity evidence to support the scoring of a test is to analyse statistically the extent to which a given rater awards the same score to a paper they mark on more than one occasion (*intra-rater reliability*) and the extent to which different raters agree on the scores allocated to test performances (*inter-rater reliability*). For any high-stakes test, it is good practice for the performances on productive skills tests to be marked by at least two raters as '[s]ingle marking is normally considered to be bad practice, to be avoided wherever possible.' [31 p. 122]. While we do not expect raters to be exact clones of one another, we hope that there is a high degree of consistency between them after training. To investigate this, we can use a spreadsheet software to calculate the correlation between two raters using the CORREL function. Alternatively, if there are three or more raters (or fewer raters marking the papers twice to assess intra-rater reliability), we can calculate the variance between them using the VAR function. Both calculations provide a value between -1.0 and +1.0. The closer to +1.0 the value, the stronger the correlation between the raters. In a high-stakes test, we would be looking for at least 0.8 and ideally more like 0.9. When calculating the correlation co-efficient,

however, we must note that a high correlation coefficient is possible even if the raters disagree on all ratings but are consistently equally different to each other. The data in Fig. 1 below will reveal a correlation co-efficient of 1.0 but, as can clearly be seen, the scores are different in each case. This can therefore be misleading when evaluating the test.

Rater 1	Rater 2
10	0
20	10
30	20
40	30
50	40
60	50
70	60
80	70
90	80
100	90
Correl =	1

Fig. 1: Inter-rater correlation

Another disadvantage of calculating the correlation coefficient on this basis is that we would not learn about the severity or leniency of the individual raters. While it is clear from the above example which rater is harsher and which one is more lenient due to the fact that the raters are very consistent, more ratings and a less perfect correlation would make it somewhat more difficult to gain an overview.

Therefore, we need investigate which raters are more severe / lenient and by how much. This would enable us to amend the ratings accordingly to bring them all into line. This is particularly important with a large cohort of test takers whose papers are being marked by a large number of raters.

To find out such information, the test developer can use a programme called FACETS (or the free version, MiniFAC) to carry out a Rasch analysis of the data. This will provide the test developer with far more information about the scoring validity of the test. Working across the columns from left to right, Fig. 2 shows the test takers, the severity / leniency of the various raters, the difficulty of the criteria on a logit scale and where the scale scores are allocated (the

numbers down the left-hand side). This tells us that test taker 107 is the strongest student while test taker 106 is the weakest. We also see that ‘Alex’ is the most severe rater, while ‘Kevin’ and ‘Yvonne’ are closer together but ‘Yvonne’ is the most lenient rater. It is hardest to get a high score on criterion number 5 whereas it is easiest to get a high score on criterion number 3 but the difficulty values for the criteria are relatively close together. The scale on the right-hand side shows the grades that can be awarded on this particular task.

Measure	+Candidate	-Rater	-Criterion	Scale
3	+	+	+	(5)
2	+	+	+	
1	+	+	+	4
0	+	+	+	3
-1	+	+	+	2
-2	+	+	+	(1)
107				
108			5	
103			1	
102			6	
109				
101				
104			2	
110				
105				
106				
Alex				
Kevin				
Yvonne				

Fig. 2: Rasch analysis example

To examine how the rating scale is functioning, FACETS and MiniFAC can produce a graph with probability curves. The lines on the graph in Fig. 3 represent the different grades which can be awarded. The peak of each ‘hill’ should not be covered by the peak of another hill. If this is the case, this tells us that the score band is not being used sufficiently. In the example

below, we can see the score bands 1, 3 and 5 are easy for raters to allocate scores to but bands 2 and 4 are causing some problems. In such a case, the test developer would need to investigate why this is. There could be a number of reasons, for example, raters may not understand the criteria well enough and therefore may not feel comfortable awarding those grades or the descriptors may be unsatisfactory. If the former, then more rater training needs to be carried out; if the latter, then the rating scale needs to be revised.

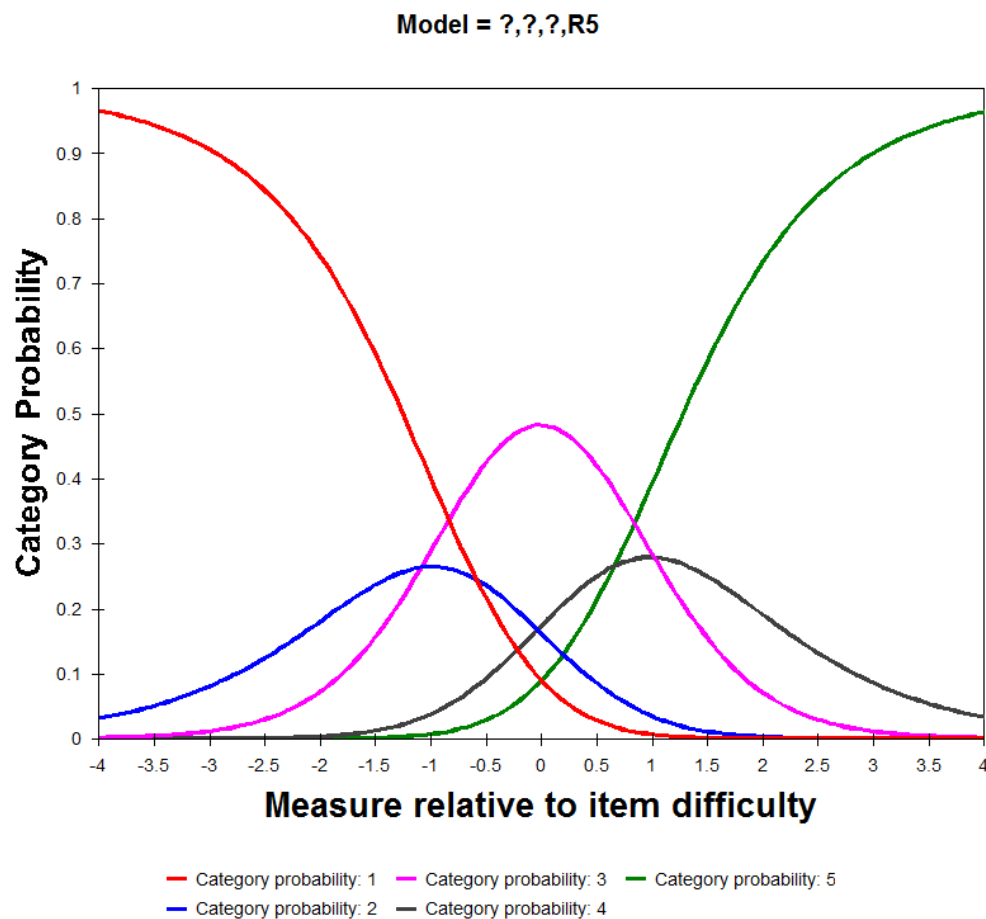


Fig. 3: FACETS probability curve

These are just a few highlights of what Rasch analysis can tell us to give a quick overview of its usefulness. For a detailed tutorial on FACETS, see [32].

What is important in assessing intra-rater reliability using both spreadsheet software and Rasch is that the raters have good intra-rater reliability. Rasch enables the test developer to amend raters' scores to bring them in line with the average rater, as long as each rater is individually consistent. If this is not the case, then again, more rater training must be carried out.

This section has discussed two different approaches to collecting evidence of scoring validity that are available to test developers. The next section will discuss how scoring validity evidence is being collected by the MariLANG project team.

Methodology

The transnational MariLANG project [33], 2015-2018, set out to develop and validate a universal proficiency test of Maritime English. The partner consortium aimed to provide a holistic, formal approach to the learning, testing and evaluation of Maritime English by creating a databank of test items relevant to the profession, laying the foundations for a viable assessment framework and by providing an online training platform in the form of corresponding learning materials. The inclusion in the consortium of an expert partner in the domain of language testing allowed for a unique opportunity: four training courses, each lasting five days, on the subject of assessment. The majority of the MariLANG partners were Maritime English teachers, who welcomed the training sessions as a means of acquiring valuable instruction, previously not afforded to them, in the discipline of testing. The use of simple statistical analysis to assess the validity of test items was, for example, a revelation to many. This only proved the point set out at the start of this paper that quality in both maritime teaching and, in this case, testing can only be achieved if teachers/testers are sufficiently instructed.

The four training courses included aspects of testing such as assessment literacy, developing test specifications, creating test items, statistically analysing test results, rater training and standard setting. Within the framework of the rater training, the last two training courses concentrated on the assessment of productive language skills in a maritime context, both writing and speaking. The methodology described below was employed during the courses and demonstrates how to achieve quality in productive skills testing.

Bearing in mind Hamp-Lyons and Kroll's [34] definition of writing as "an act that takes place within a context, that accomplishes a particular purpose, and that is appropriately shaped for its intended audience" [ibid p. 8], the participating MariLANG partners analysed rating scales for the assessment of writing and speaking for maritime purposes. In this domain the challenge lies in accommodating existing guidelines and criteria for the assessment of English, notably the established Common European Framework of Reference for languages (CEFR) [25] and in adapting these, if appropriate, to the maritime context. Cole and Trenkner's [35] 'Yardstick', although not officially recognised, is internationally accepted amongst the Maritime English community as providing benchmark criteria for Maritime English assessment in line with IMO STCW'78, as amended [2]. The Yardstick therefore proves an invaluable tool when used in conjunction with General English rating scales, such as the CEFR. Using similar techniques to those set out and demonstrated by Noble, Westbrook and John [36] during their workshop at IMEC29 in Busan, South Korea, MariLANG partners attempted to organise CEFR descriptors to assess writing into the correct order and, subsequently, compare these to Yardstick

descriptors. Following this, partners individually rated examples on CEFTrain [37]², before moving on to group discussions to debate and consolidate rating decisions. Having completed familiarisation with CEFR and Yardstick scales, the participants were able to create their own descriptors within the framework of the MariLANG project. These descriptors were then placed into categories which would become the rating criteria and overlapping descriptors were amended as necessary to fit into one of the criteria. The resulting descriptors were then sorted into performance level order from lowest to highest, and where there were several similar descriptors, these were combined into one single descriptor. Partners then used these descriptors to rate, individually, several maritime-related papers by way of piloting. As before, group discussion leading to changes in the descriptors then followed.

Although, when described, the methodology employed so far appears straightforward, it is relevant to mention at this stage that this iterative process of amendments is hugely time-consuming. Detailed and passionate debate about the definitive version of only one descriptor requires patience and time, once again highlighting the amount of input needed to achieve quality in testing.

Rasch analysis was also used to investigate rater severity and leniency, a crucial factor in producing valid (fair) test results, and to enhance the descriptors. Teachers employed in MET institutions in Maritime English departments will perhaps have encountered differences of opinion amongst colleagues when rating students' work. Some colleagues prove 'harsher' than others. Without instruction in assessment literacy, teachers may find themselves without the theoretical and practical tools to rectify such a situation. The establishment of proven descriptors (criteria), scales and the ability to account for differences in rater severity, as demonstrated by the MariLANG project, serve to enhance testing procedures, leading to best practices in assessment.

A wider pilot exercise will take place in late 2018. Raters will again be familiarised with the rating scale devised within the MariLANG project using exemplar papers from the earlier trial. Following rating, a Rasch analysis will again be carried out to investigate rater reliability, allowing the descriptors to be fine-tuned. This wider piloting exercise will provide information about the usefulness of the various criteria and will highlight which criteria are performing well and which ones need to be amended. Again, it is important to emphasise that the design of a rating scale is an iterative process so it should not be assumed that, merely by following best practice and creating rating criteria as a team to develop mutual understanding, the rating scale will be perfect the first time around. Moreover, it should not be assumed that a rating scale designed for one type of test task will be useful for a different type of test task. It may be necessary to design new scales for each different type of task. It is im-

² CEFTrain is a project designed to facilitate familiarisation with CEFR and to allow users to train in the use of the CEFR scales to rate language samples of listening, speaking, reading and writing.

perative to trial the rating criteria on real performances to identify any missing descriptors which would contribute to evaluating a given performance more fairly.

Conclusions and recommendations

This paper has outlined a number of ways in which teachers – even those who are assessment ‘illiterate’ – and testers can collect valuable validation evidence for productive skills testing. Rating criteria and descriptors should be designed as a team to ensure mutual understanding and the resulting rating scale should be trialled, analysed and amended then re-trialled as necessary. Rater reliability and/or rater severity / leniency should also be investigated to measure the extent to which raters agree on their judgement of performances related to productive skills tasks. As a very minimum, performances on productive skills tests, which are being used for high-stakes decisions, should be double blind marked. There may be a necessity to employ a third or even a fourth rater should the first two ratings be different. Using a spreadsheet software to calculate the correlation between raters and to measure the variance between raters is a quick and simple way to monitor rater reliability as a way of achieving quality in productive skills testing. The danger with calculating a correlation is that this may yield a high correlation when, in fact, the raters do not agree at all on the ratings, but they are systematically different to each other as outlined above. However, if a Rasch analysis can be carried out, for example, using FACETS or MinFAC, this will provide far more information regarding the severity or lenience of different raters, which enables grades to be adjusted as appropriate to bring them in line with other raters, as well as providing information regarding the usefulness or otherwise of the criteria. This latter aspect is particularly important in the early days of trialling a new rating scale as it is imperative to know to what extent the criteria need to be amended. Unfortunately, this is something that cannot be gleaned from the use of spreadsheet software alone.

Collecting scoring validity, or reliability, evidence is one of the essential tasks of the test developer. While no test will ever be perfect and while there will always need to be some compromises in order to achieve the best balance between Bachman and Palmer’s [5] ‘Qualities of Test Usefulness’, it is our duty as testers to do our utmost to make our tests valid for the given purpose for which they are being used. We must demonstrate, by means of empirical evidence, that our tests ‘do what they say on the tin’ so that our test takers and other stakeholders can have faith in their results. From our individual perspective as teachers (and testers), we can therefore take pride in our work and sleep peacefully at night, knowing that we have done the very best we can for our test takers and, the main stakeholder, namely the shipping industry, that will, ultimately, experience the outcome of our tests.

A valid and thus fair test procedure is essential for a profession in which multicultural and multi-ethnic crews work and live in a highly complex socio-technical environment. No-one

being involved in the maritime domain needs to be told about the existing risks of miscommunication. For this reason, efforts should be made to establish the most reliable and valid test methodology possible. The MariLANG project may only be considered a further step towards achieving this ultimate goal.

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Implementation of an International Maritime English Educational program at Maritime Technology departments in five NIT in Japan.

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Abstract *The English study + international internship programs were performed at YK-TDG Maritime Academy (NTMA) in the Philippines for 11 days from 2015 as “NYK mirai project” and “2nd phase of Maritime Human Resources Development project”. Buddy system which makes a pair between NIT and NTMA student was employed to take care students. This system works very well to have a lot of English conversation and understand between students. NIT students participated in specialized maritime and also basic subject at regular classes taught in English. Special English seminar for NIT students are provided at every evening. A non native English speaker NIT instructor performed lectures of maritime technical subject, auxiliary machinery engineering in English at regular class. Also NIT instructor performed a presentation of Japanese culture and geography in English for all NTMA students. It is very important for instructor who is non native English speaker and non English teacher to have many chance to teach in English.*

NTMA 3rd grade students and instructors visited to Hiroshima in 2015 and Yuge in 2016 and 2017 for 4 days including visit to NYK head office in Tokyo. NTMA performed presentation of self-introduction, ship boarding history (only for instructors), Philippines culture and geography for student. Students participated in specialized maritime and also basic subject regular classes, Ship maneuver simulator training, lifeboat practical training, English and so on. Students joined



on board ship training. It is very good chance to take real training ship experience to NTMA students who just practice with ship simulator up to 3rd grade and go to training ship at 4th grade. Questionnaire survey for NIT students for the program at NTMA was performed to evaluate enhancement of student motivation to study English and be seaman. All sector show cremarkable motivation enhancement. Pre and post test were performed for NIT students. The results show the score gain.

Keywords: International Maritime English Educational program, NTMA in Philippines, Five NIT in Japan, Common curriculum

1 Introduction

The maritime technology departments in the 5 NIT colleges in Japan have challenges to improve from the classical maritime English education which focus on reading and writing typical in Japan to modern [1. 2. 3. 4] to enhance motivation and ability of students to be ship officer and manager at oversea as shown in Table 1. [5 - 16]

06	07	08	09	10	11	12	13	14	15	16	17	18	19
All maritime college study method Improvement project, Japanese government[5]						Maritime human resources developing Project Japanese government[6. 7. 8]							
						MAAP[9, 10, 11] Professional Maritime English Seminar, Textbook publishing[12]					Next Generation Maritime human Resources developing project[17, 18]		
						Mirai Project NTMA[13, 14, 15,16]							

Table 1. History of English education developing project in the 5 NIT colleges

Various international internships and English seminars are developed and carried out among the 5 NIT colleges as shown in Table 2[17, 18]. Same of them are suit for other department like information science. Program at NTMA have a best cost performance among these programs. MAAP and NKMUT English seminars give a chance to many students to study English without any extra personal cost. In this paper we faucus on “The English study + international internship programs in MAAP” and “NIT hosting NTMA visit to Japan”

	Place	Period	Price	Program	Number of Participant				
					14	15	16	17	18
NTMA	Philippines	11	700	Special English seminar Attend regular classes, Field Trip		4	9	10	23
Kauai Community College	Hawaii	21	5000	English seminar Canoeing, Camp activity	10	16	12		
Singapore Maritime Academy	Singapore	14	3000	English Seminar On board ship training	16	13	8		
AMA Computer University	Philippines	14	1200	English Seminar	8				
MAAP	Japan	14	0	Professional Maritime English Seminar On board ship training	840	630			

Table 2 List of International internships and English seminars carry out in the 5 NIT colleges.

2 Class and evaluation

The English study + international internship programs were performed at NYK-TDG Maritime Academy (NTMA) in the Philippines as “NYK mirai project”.

Year		15	16	17	18
Student	Hiroshima	3	3	6	7
	Yuge	1	3	4	7
	Oshima	0	3	0	7
	Toyama	0	0	0	2
	Toba	0	0	0	0
Instructors	Hiroshima	1	1	1	1
	Yuge	0	1	1	1
	Oshima	0	1	0	1
	Toyama	0	1	0	1
	Toba	0	0	1	0

Date	Activity
1	Arrivel
2	Attend classes, Welcome party
3	Attend regular classes Special English seminar
4	Trip to Manila Old Down town
5	Trip to Coconatu Prantation
6-9	Attend regular classes Special English seminar
10	Attend classes, Farewell party
11	Departure

0500H	Reveille (follow Cadet's Daily Routine)
0800H	Attend classes of 3 rd Year Cadets
1200H	Lunch with NTMA Cadets At Cafetorium
1300H	Attend classes of 3 rd year cadets
1700H	Attend English Oral Communication Activities
2100H	Administrative Time
2200H	TAPS (sleeping time)

Table 3 Number of participant of students and schools for the program

Table 4 Day schedule of the program in NTMA

Table 5 Time schedule of the program in NTMA

A official agreement between NIT and NYK for this program enter into force in November 2017. Number of participant of students and schools for this program are remarkably increased in 2018.

Buddy system which makes a pair between NIT and NTMA student was employed to take care NIT students. They set together at classroom, eat together at canteen, slept together at quadruple room at dormitory, and join together morning exercise. They did exactly same thing with the buddy.

NIT students performed introduction presentation of themselves, school, training ship, club activities, town in English for all NTMA students. They participated in specialized maritime and also basic subject regular classes, ship maneuver simulator and engine trouble simulator training and so on taught in English with their buddy.

Special English seminar for NIT students are provided at every evening after dinner. Seminar was carry out by active leraing style incled games, pair work, and group work with their buddy. The seminar cover self- introduction, Phonetic alphabet, and Maritime vocabulary.

A non native English speaker instructor from NIT performed lectures of maritime technical subject, accessory machine in English at regular class in NTMA. A non native English speaker instructor from NIT performed a presentation of Japanese culture and geography in English for all NTMA students.

One day trip to Manila Old down town and Coconut plantation on Saturday and Sunday in 2017 were provided. Students had very good communication in English. NIT students could understand Philippines culture and geography very well.



Photo 1 Morning exercise of NIT students with NTMA student buddy at NTMA dormitory in 2017



Photo 2 One day trip to Coconut plantation in 2017



Photo 3 Lecture of technical subject at NTMA in 2017



Photo 4 English seminar for NITC students at NTMA in 2017

Questionnaire survey for NIT students for “English seminar & internship” in NTAM in 2017 was performed to evaluate enhancement of student motivation to study English and be seaman as shown at Table 6.

Just choose one number from listed below for each question.

1: Very false 2: False 3: Neither true and false 4: True 5: Very True

Q. 1 Do you understand teacher's instruction in English?

Q. 2 Do you like the teaching style (presentation, roll play, work shop and etc.)?

Q. 3 Can you join the program proactively?

Q. 4 Can you enhance your motivation to communicate with foreigner through the program?

Q. 5 Can you enhance your motivation to study maritime English?

Q. 6 Can you understand what kind of maritime English is needed as seaman?

Q. 7 Is the program useful for passing seaman license examination?

Q. 8 Can you enhance your motivation to be international ship officer and ship manager at oversea?

Table 6 Questionnaire for NIT students for English seminar & internship in NTAM in 2017

Pre and post test were conducted before and after the program to evaluate the educational effect of the program. Pre and post tests are composed with same question set. They differ with engineering and navigation depending the content of program.

NTMA 3rd grade students and instructors visited to NIT for 4 days including visit to NYK head office in Tokyo as “NYK mirai project”.

The buddy system is employ to take care NTMA students in Yuge. NTMA performed

Year	College
2015	Hiroshima
2016	Yuge
2017	Yuge
2018	Toyama

Table 7 List of host college of NTMA visit to NIT

Date	Activity
1	Arrivel
2	Day trip to Kure
3	Attend classes
4	On bord ship traing
5	Vist to NYK H.O.
6	Departure

Table 8 Day schedule of the program



Photo 5 Rope work of NTMA students with Yuge students in 2017



Photo 6 On board ship life of NTMA students with Yuge students buddy in 2017.

presentation of self-introduction, ship boarding history (only for instructors), Philippines culture and geography for student in NIT.

NTMA students participated in specialized maritime and also basic subject regular classes, Ship maneuver simulator training, Kater (Japanese style lifeboat) practical training, English and so on. Unfortunately, some of classes taught in English but most of them in Japanese. In this point future



Photo 7 Departing port procedure of NTMA students on board ship training on Yuge maru in 2017



Photo 8 Starting main diesel engine of NTMA students on board ship training on Yuge maru in 2017

improvement for teaching in English is needed.

NTMA students joined on board ship training to Takamatu with 3rd grade navigation course Yuge students for 3 days on Yuge Maru. Role playing of “starting main diesel engine”, “starting diesel electric generator”, “departing port procedure”, “arriving port procedure”, etc. were done in this on board ship training.

Questionnaire survey for Yuge students, ship officer and NTMA students for on board ship training with NTMA students in 2017 were performed as shown at Table 9-1 – 9-4 respectively. Questionnaire survey for Yuge 1st and 2nd grade students for presentation by NTMA in 2017 were performed as shown at Table 11. Questionnaire survey for NTMA students for visit to Yuge performed as shown at Table 12.

- Q. 1 Is on board ship training with NTMA students good?
- Q. 2 Can you communicate with NTMA students in English?
- Q. 3 Can you perform training in harmony with NTMA students?
- Q. 4 Can you enhance your motivation to communicate with foreigner?
- Q. 5 Can you enhance your understanding for Philippines?
- Q. 6 Can you enhance your motivation to study maritime English?
- Q. 7 Can you enhance your motivation to study for passing seaman license examination?
- Q. 8 Can you enhance your motivation to be international ship officer and manager?

Table 9-1 Questionnaire for 3rd grade Yuge students for on board ship training with NTMA students in

2017



Q. 1 Can you communicate with your NTMA student buddy in English ?

Q. 2 Can you perform training in harmony with your buddy?

Q. 3 Can you support for on board life for your buddy?

Q. 4 Can you support for training for your buddy?

Table 9-2 Questionnaire for 3ed grade Yuge student buddys for on board ship training with NTMA students in 2017

Educational effect for Yuge students

Q. 1.1 Is on board ship training with NTMA students good?

Q. 1.2 Do you think Yuge students can communicate with NTMA students in English?

Q. 1.3 Do you think Yuge students can perform training in harmony with NTMA students?

Q. 1.4 Do you think Yuge students can enhance motivation to communicate with foreigner?

Q. 1.5 Do you think Yuge students can enhance understanding for Philippines culture?

Q. 1.6 Do you think Yuge students can enhance motivation to study maritime English?

Q. 1.7 Do you think Yuge students can enhance motivation to passing seaman license examination?

Q. 1.8 Do you think Yuge students can enhance motivation to be international ship officer and manager?

About buddy

Q. 2.1 Do you think Yuge student buddy can communicate with NTMA student buddy in English?

Q. 2.2 Do you think Yuge student buddy can perform training in harmony with NTMA students buddy?

Q. 2.3 Do you think Yuge student buddy can support for on board life for NTMA students buddy?

Q. 2.4 Do you think Yuge student buddy can support for training for NTMA students buddy?

About yourself

Q. 3.1 Is on board ship training with NTMA students good?

Q. 3.2 Can you communicate with NTMA students in English?

Q. 3.3 Can you perform training in harmony with NTMA students?

Q. 3.4 Can you enhance motivation to communicate with foreigner?

Q. 3.5 Can you enhance understanding for Philippines culture?

Table 9-3 Questionnaire for ship officer for on board ship training with NTMA students in 2017

Q. 1 Is on board ship training good?

Q. 2 Can you communicate with Yuge students in English?

Q. 3 Can you perform training in harmony with Yuge students?

Q. 4 Can you get support for on board life from your Yuge student buddy?

Q. 5 Can you get support for training from your buddy?

Table 9-4 Questionnaire for NTMA students for on board ship training in 2017

Q. 1 Can you listen to your buddy's English?

Q. 2 Can you understand your buddy's English?



- Q. 3 Can you ask a question in English?
 - Q. 4 Can you explain in English?
 - Q. 5 Can you enhance your understanding for NTMA students (personally)?
 - Q. 6 Can you enhance your understanding for Filipino?
 - Q. 7 Can you support for school life for your buddy?
 - Q. 8 Can you understand necessity of communication with foreigner?
 - Q. 9 Can you enhance your motivation to communicate with foreigner?
 - Q. 10 Can you enhance your motivation to study maritime English?
 - Q. 11 Can you enhance your motivation to join toabroad study at NTMA?
 - Q. 12 Can you enhance your motivation to passing seaman license examination?
 - Q. 13 Can you enhance your motivation to be international ship officer and manager?
- Table 10 Questionnaire for Yuge student buddies for NTAM students in 2017

- Q. 1 Can you listen the presentation in English?
 - Q. 2 Can you understand the presentation?
 - Q. 3 Can you ask a question in English for the presentation?
 - Q. 4 Can you enhance your understanding for NTMA students (**personally**) through the presentation?
 - Q. 5 Can you enhance your understanding for Filipino?
 - Q. 6 Can you enhance your understanding for Philippines culture?
 - Q. 7 Can you enhance your understanding for NTMA(school)?
 - Q. 8 Can you enhance your understanding for Philippines seaman?
 - Q. 9 Can you understand necessity of communication with foreigner?
 - Q. 10 Can you enhance your motivation to communicate with foreigner?
 - Q. 11 Can you enhance your motivation to study maritime English?
 - Q. 12 Can you enhance your motivation to join toabroad study at NTMA?
 - Q.13 Can you enhance your motivation to passing seaman license examination?
 - Q.14 Can you enhance your motivation to be international ship officer and manager?
- Table 11 Questionnaire for Yuge students for presentation by NTMA at Yuge in 2017

- Q. 1 Can you communicate with Yuge students in English?
- Q. 2 Can you enhance your motivation to communicate with Japanese?
- Q. 3 Can you enhance your understanding about Japanese?
- Q. 4 Can you enhance your motivation to be international ship officer and manager?

Table 12 Questionnaire for NTMA students for visit to Yuge in 2017

3 Result and discussion

Fig. 1-1 shows statistical results in percentage of the questionnaire survey for NIT students for the program at NTMA in 2017. All sector show remarkable motivation enhancement. They already have high motivation to join the program with some cost. They are already 4th and 3rd grade who are close to period of job hunting.

Table 13 shows statistics result of score gain between pre and post test for NIT students for the program at NTMA in 2017. The program is too short in time, 11 days. The program need a longer time span such as a month or a semester.

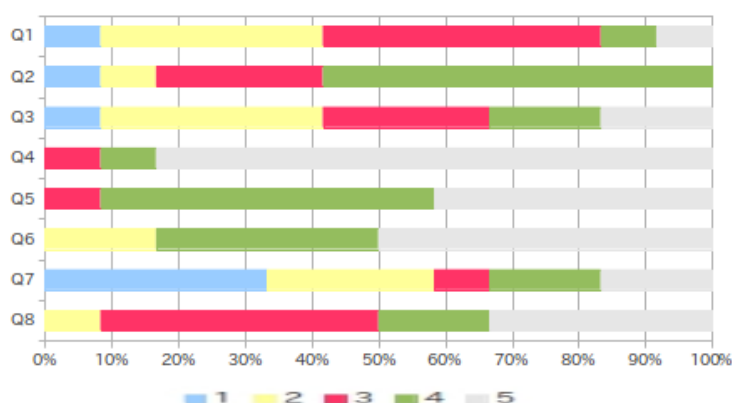


Fig. 1-1 Statistical results of the questionnaire survey for NIT for English seminar & internship in NTAM in 2017

Corse	Year Level	School	Student No	Pre Test					Post Test					Gain
				Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	
N	4	Hiroshima	1	73	0	0	75	148	100	75	75	100	350	202
	4	Oshima	2	65	50	0	0	115	54	25	75	75	229	114
	4	Hiroshima	3	15	0	75	75	165	50	75	100	100	325	160
	4	Hiroshima	4	58	0	25	75	158	71	100	75	100	346	188
	4	Hiroshima	5	92	0	25	25	142	100	50	25	100	275	133
	4	Yuge	6	58	25	75	25	183	68	75	0	75	218	35
	4	Yuge	7	92	100	100	75	367	96	100	100	100	396	29
	4	Yuge	8	62	25	0	25	112	79	50	0		129	17
E	4	Hiroshim	9	73	0		75	148	92	50		100	242	94
	3	Yug	10	69	75		25	169						0
Total Gain														972

Table 13 Statistics result of score gain between pre and post test for navigation and engineering course NIT students for the program at NTMA in 2016.

The buddy system works very well to have a lot of English conversation and understanding between NIT and NTMA students. It is very important not to Japanese student stick each other in this program. Otherwise they do not learn English and speak in Japanese. It is very important for instructor who is non native English speaker and non English teacher to have many chance to practice to teach maritime technical subject in English. Even presentation in English was ok, question and answer was very difficult for instructor.

All sector show motivation enhancement for 3ed grade Yuge students for on board ship training with NTMA students in 2017 as shown in Fig. 2-1. Same Yuge students who have low English score can communicate with NTMA buddy very well. English skill and communication skill not equal. Non verbal communication like gesture, eye contact are very important on board life. For them this kind program give a chance to get study English.

All sector show motivation enhancement for NTMA students for on board ship training in 2017 as shown in Fig. 2-4. It is very good chance to take real training ship experience. NTMA students

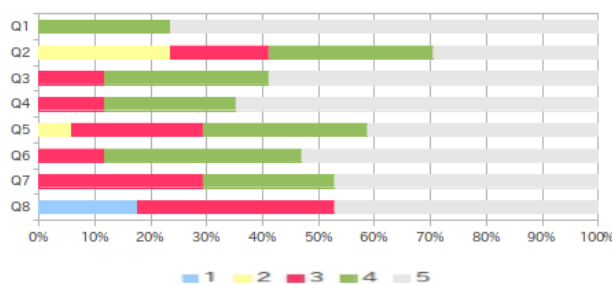


Fig. 2-1 Statistical results of the questionnaire survey for Yuge 3rd grade for on board ship training with NTMA in 2017

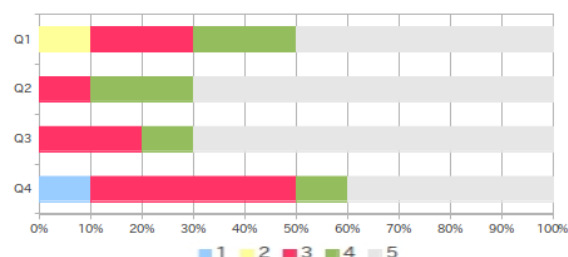


Fig. 2-2 Statistical results of the questionnaire survey for Yuge 3rd grade buddy for on board ship training with NTMA in 2017

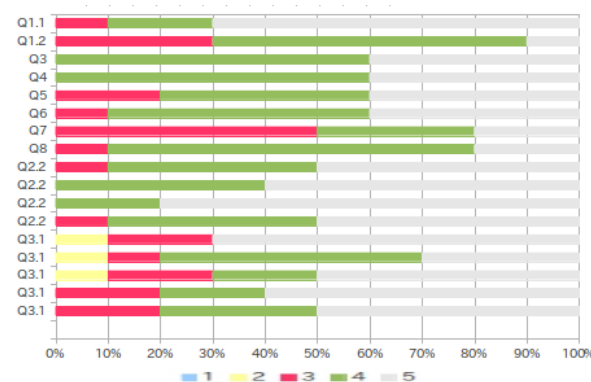


Fig. 2-3 Statistical results of the questionnaire survey for ship officer for on board ship training in 2017

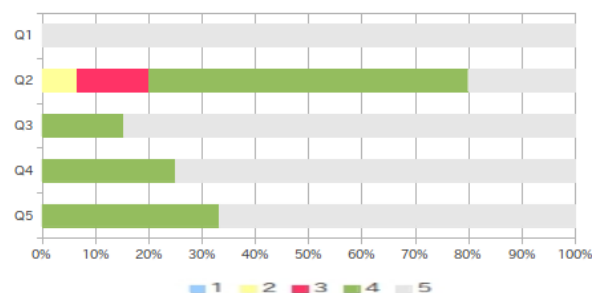


Fig. 2-4 Statistical results of the questionnaire survey for NTMA for on board ship training in 2017

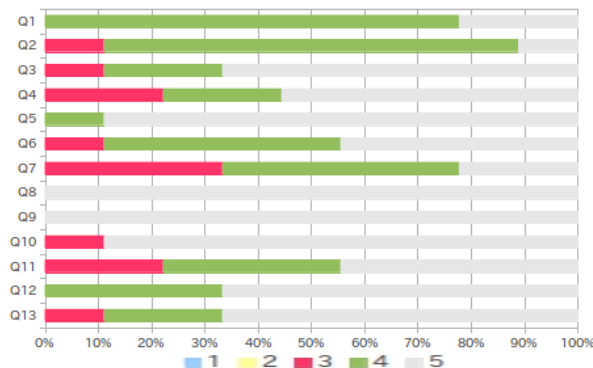


Fig. 3 Statistical results of the questionnaire survey for Yuge student buddies for NTAM students in 2017

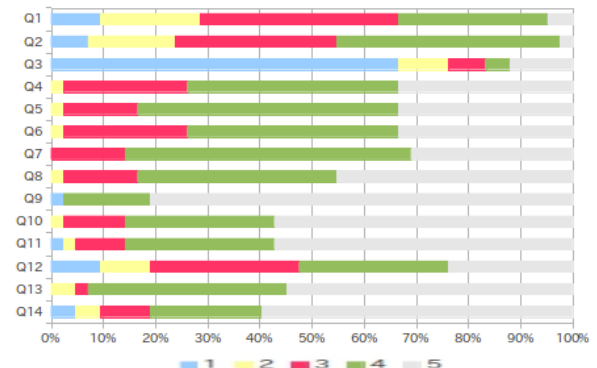


Fig. 4-1 Statistical results of the questionnaire survey for Yuge 1st grade students for presentation by NTAM in 2017

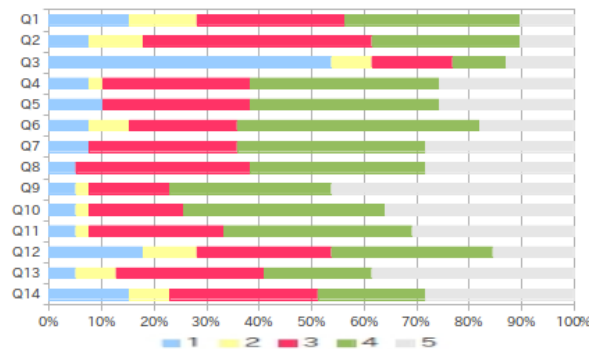


Fig. 4-2 Statistical results of the questionnaire survey for Yuge 2nd grade for presentation by NTAM in 2017

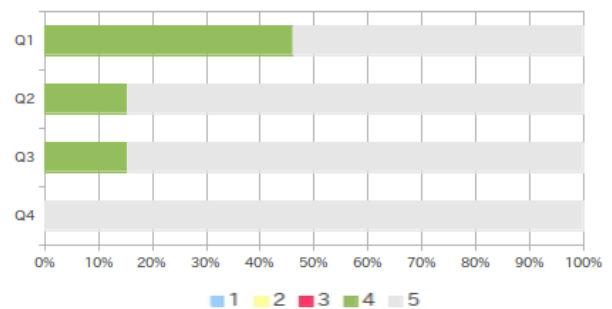


Fig. 5 Statistical results of the questionnaire survey for NTMA for visit to Yuge in 2017

just practice with ship simulator up to 3rd grade and go to training ship at 4th grade.

All sector show remarkable motivation enhancements for 1st and 2nd grade Yuge students with presentation by NTMA in 2017 as shown in Fig. 4-1 and 4-2. The understanding of English increase with increasing grade. Hosting NTMA give a chance to many NIT students to study English without any extra personal cost.

4 Summary

English study + internship program in the Philippines which is affordable for all students was developed. Hosting NTMA give a chance to many NIT students to study English without any extra personal cost. It is very important to learn maritime English and also to understand inter-cultural background to be able to communicate with international colleagues in future work on ships. Maritime English classes on board the training ships were very effective. We conclude this program is successful to enhance student's motivation to be seaman.



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