



## Research article

## Academic and real-life task-based language needs of marine engineering students: interface between students' and subject teachers' perspectives

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## ABSTRACT

English for Specific Purposes (ESP) and Needs Analysis (NA) have been studied to a great extent, since a couple of decades ago. The review of the related studies also shows that needs analysis has been of much concern to the researchers interested in the ESP field. However, ESP for the students of marine engineering has not been investigated in terms of the task-based language needs. The researchers used a quantitative survey. To collect the data, a researcher developed questionnaire consisting of two components (academic & real-life) was employed. The data were analyzed through descriptive and inferential statistics (independent samples-t-tests). Both ME students and subject specialists believed that the academic and real-life task-based language needs are important to ME students. Results also showed that the differences between mean scores of the students and subject specialists were statistically significant. It can be concluded that maritime engineering students, to accomplish their study, need mastery in both receptive and productive language skills. Findings are both theoretically and pedagogically important to ESP educators, administrators of the universities as well the policymakers and administrators of marine engineering.

## 1. Introduction

Needs Analysis (NA) is an important element in the field of English for Specific Purpose (ESP) (Dudley-Evans and St John, 1998). The term NA has been interpreted in different ways by different researchers (Atai and Asadi, 2013; Belcher, 2006; Brindley, 1989; Dudley-Evans and St John, 1998; Hyland, 2006; Jackson, 2005) and therefore various meanings are implied. Needs analysis was also described as “the means by which an evaluator determines whether there is a need for a program, and if so, what program services are most appropriate to that end” (Rossi et al., 2004, p.3).

It has also been argued that planning the ESP curriculum needs to be coupled assessing language needs (Atai and Asadi, 2013; Belcher, 2006; Dudley-Evans and St John, 1998; Hyland, 2006). Without appropriate needs analysis, the content of the designed curriculum for classroom practice might be biased because of the curriculum designers' personal beliefs, misunderstandings, and lack of familiarity with the learners' real academic needs. Atai (2002) argues that all components of the educational curriculum including teachers, learners, and the other stakeholders should have an agreement on the content of a curriculum and syllabus to be covered during a course.

There is a large number of studies on ESP for various disciplines such as railway engineering (Atai and Asadi, 2013), Medical sciences (Nezaratgoo and Alibakhshi, 2014), business faculty (Jackson, 2005); however, this has not been the case for English for Maritime Engineering students. Several researchers interested in the field (e.g., Blakey, 1987; Pritchard, 2002, 2003) have tried to improve the level of English needed by those involved in the Maritime industry.

## 1.1. English for Maritime Engineering (ME)

ME as one of the ESP branches is different from the other ESP branches such as English for Journalism (EJ), English for Tourism, (ET), or English for Business (Dirgeyasa, 2018). As Normaizura (2018, cited in Dirgeyasa, 2018, p.1) believes “Maritime English is as a navigational and safety communications from ship to shore and vice versa, ship to ship, and onboard ships must be precise, simple and unambiguous, so as to avoid confusion and error, there is a need to standardize the language used”. In the same vein, Sia and Hafizi Said (2018) have argued that in the maritime industry, English is known as the main instrument for communication at ports and seas.

Blakey (1987) and Pritchard (2002) showed interest in improving the level of Maritime English for the people working in shipping industry.

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They also argued that English is the only and main language which needs to be used in almost all types of maritime communication. The English language has also been viewed as the lingua franca of the maritime and shipping industry. Similarly, [Logie \(2001\)](#) and [Dirgeyasa \(2014,2015\)](#) argued that English language proficiency is very important for anyone working in maritime engineering and the companies employing non-native English employees need to ensure that members of the crew are able to demonstrate adequate knowledge of English for professional and safety purposes at ports, sea, and shore areas. Therefore, the situations in the maritime industry demand crew members proficient in language skills and sub-skills. Despite the significance of the English language for the maritime industry, the number of related studies is scanty.

### 1.2. Task-based language needs

The review of the related studies on needs analysis shows that different types of needs including present-situation analysis, target-situation analysis, and learning situation analysis have been reported as the main landmarks in NA studies. Following the trends and changes in language teaching, [Lambert \(2010\)](#) introduced Task-Based Language Needs (TBLN). [Long \(1996\)](#) has stated that tasks provide the purposes which unify other possible units of analysis (e.g. structures, vocabulary, functions, etc.) because these aspects of performance are ultimately evaluated and understood based on the criterion of effectiveness in completing the tasks which are performed. [Lambert \(2010\)](#) has also argued that tasks may provide a valid unit of analysis as well and “people generally understand their L2 use in terms of the tasks that they perform rather than the vocabulary or grammar that they employ” (p. 100). In the same direction, [Long \(2005\)](#) has stated that tasks might make it possible for language learners and future employers to comprehend and take a decisive role in what might happen in the classroom. Tasks as [Long \(2005\)](#) and [Nezakatgoo and Alibakhshi \(2014\)](#) believe, might make it possible to collect the necessary data directly from subject specialists of the field rather than non-subject specialists such as English teachers who might understand the language codes but probably have no experience with the actual communicative demands which learners face in the workplace.

With regard to how language tasks can be used as units of analysis in second/foreign course design, [Long \(2000\)](#) made a distinction between three types of task analysis. The first is real life or target situation tasks that people do in everyday life (e.g. reserving a hotel). The second type in [Long's](#) framework is to categorize the target tasks into more abstract or superordinate categories “to provide a basis for designing courses to meet the needs of heterogeneous groups of learners without having to cover each target task separately” ([Lambert, 2010, p.2](#)). Finally, the third type of task is pedagogic tasks or the activities, which language learners actually do in the classroom, (e.g., filling out a form while listening to a sample telephone call). In this study, only pedagogic (academic) and real-life (target) tasks will be investigated.

### 1.3. Statement of the problem

Detailed analysis of the related studies indicates that there are a number of studies on NA. However, these studies laid emphasis on vocational courses rather than academic language courses. In addition, the number of studies on TBLN in general and the language needs of the students of the Maritime industry, in particular, is scanty. To be more specific, only a few studies addressed the language competence, skills, sub-skills, and tasks that Maritime University students need to acquire so that they can successfully deal with their academic studies as well as do their duties, tasks, and jobs in the real working situations ( [Dirgeyasa, 2014, 2015, 2018](#)). Moreover, although subject specialists are better in identifying the task based language needs, due to their experiences of both studying and working in the maritime industry, their perceptions and preferences of TBLNs were to some extent ignored by the researchers

of the field. Due to the scarcity of studies on academic and real-life TBLNs of the students of Maritime engineering from the perspectives of both the students and subject-specialists, this study is to investigate the academic and real-life task-based Language needs of Marine engineering students. More specifically, two research questions were raised:

- 1 Do students and ESP subject specialists of marine engineering have the same perspectives about academic task-based language needs?
- 2 Do students and subject specialists of marine engineering have the same perceptions about real-life task-based language needs?

### 1.4. Related Studies on Needs Analysis (NA)

In this study, at first, the main studies on the definition of NA, some experimental surveys on NA, and the relevant studies on Marine English are reviewed.

#### 1.4.1. Experimental surveys on NA

Language needs of different fields of the study have been both quantitatively and qualitatively studied and assessed since a couple of decades ago ([Basturkmen, 2010, 2013](#); [Chia et al., 1999](#); [Jiajing, 2007](#); [Kourieos, 2015](#); [Malicka et al., 2019](#); [Marjanovikj-Apostolovski, 2019](#); [Nezakatgoo and Alibakhshi, 2014](#)). For instance, [Pholsward \(1993\)](#) assessed the workplace language needs of computer engineers in Thailand. In doing so, an interview checklist and a questionnaire were used. The findings of the study indicated that the professionals ranked conversational skills as the most important and urgent skills and reading and writing skills as the least important language skills. In addition, [Bosher and Smalkoski \(2002\)](#), while trying to design a course for immigrant students based on a needs analysis project, used observations and interviews to assess the learners' needs.

[Ferris \(1998\)](#) collected and analyzed the views of a group of international university students of biological, physical, business, engineering and computer sciences about their teachers' requirements regarding different language skills as well as their views about the significance of different skills or tasks through using the triangulation method. In line with these studies, [Long \(2005\)](#) suggests a comprehensive list for collecting data procedures required for NA and recommends researchers and scholars to make use of different methods and procedures for collecting the required data. In so doing, triangulation approach embracing different methods, procedures and sources of data through observing and interviewing with non-experts, experts, language learners, language teachers, subject/content teachers, materials developers, decision-makers, and the other stakeholders was called for as the most appropriate data collection procedure for NA projects. The rationale and assumption underlying triangulation, as [Robinson \(1991, p. 7\)](#) argues, is that “needs do not have of themselves an objective reality. What is finally established as a need is a matter for agreement and judgment, not discovery.”

Furthermore, [Atai and Shoja \(2011\)](#) conducted another study in Iran. They analyzed the computer engineering students' language needs. The findings of their study showed that students ranked general English as more important than EAP. In the same Iranian academic context, [Atai and Asadi \(2013\)](#) assessed the English language needs of students of railway engineering as well as the language of graduate engineers at the workplace. In so doing, they adopted a triangular data collection procedure involving interviews, questionnaires, observations, and textbook analysis. Different groups of participants including railway engineering language teachers, students of railway engineering, authorities, and engineers at the workplace were recruited. The results showed that the ESP programs designed for railway engineering do not meet the required present situation language needs of railway engineering students' and engineers' real-life needs.

Also, [Buriro and Soomro \(2013\)](#) assessed the language needs of undergraduate civil engineering students from civil engineering students' and English teachers' perspectives. Results of their study revealed that from the students' perspectives productive skills, speaking and writing,

were reported to be more important than receptive skills, listening and reading, while from teachers' perspectives all language skills were found to be equally important.

In the same vein, [Nezakatgoo and Alibakhshi \(2014\)](#) assessed the pedagogical language needs of the students of medical sciences and the real-life task-based language needs of stakeholders involved in ESP programs designed for students of medical sciences. They used a triangulation procedure involving content analysis, classroom observation and interviews with students of medical sciences and physicians. The findings of their study revealed that ESP programs designed for students at universities of medical sciences in Iran do not meet the real-life tasks of graduate students of medical sciences. More importantly, they found that there was no correspondence between pedagogical language tasks and real-life language tasks.

In a Turkish academic context, [Kazar and Mede \(2015\)](#) assessed the target needs of the students in an ESP program at the Faculty of Fine Arts at a university in Turkey. They selected 84 students. A questionnaire and a semi-structured interview checklist were used for dealing with the language learners' perceptions about target language needs. The findings showed that in the ESP program a great emphasis should be laid on the effective use of certain language strategies in a set of language tasks like writing email messages, reading academic texts, and improving skills for presentations.

[Clement and Murugavel \(2015\)](#), at one of the engineering colleges in India, found that there was a mismatch between the aims of English language courses in engineering departments and the professional and real-life needs of the students of engineering. However, a detailed analysis of the reviewed studies shows that the main focus of these studies was on the present and target situation needs of the students; whereas task-based language needs have not been appropriately investigated.

### 1.5. Studies on Maritime English

There are only a few studies on English for Maritime engineering students. For example, [Sian and Hafizi Said \(2018\)](#) studied the Maritime English language proficiency level. They believed that ME is the main subject for Nautical Science and Maritime Management Program but not for other marine-related undergraduate programs such as Maritime Informatics Technology, Marine Biology, Maritime Technology, Science Marine and Science Fisheries at University of Malaysia Terengganu (UMT). They believed that it is important for students to have sufficient proficiency in Maritime English because it is useful for them to use the accurate Maritime English terminology for journal and thesis writing and to practice correct communication and pronunciation of Maritime English. They obtained data by conducting a series of interviews with 90 students from Marine Science, Maritime Technology and Maritime Informatics Technology programs. They analyzed the data through thematic content analysis during the interview session. They found that 46.1 % of Maritime Technology students were at an appropriate level of proficiency in using maritime English terminologies.

In the Indonesian context, [Dirgeyasa \(2018\)](#) investigated the English language materials needed by the students of Maritime Academy in Indonesia. The participants were the port authorities, the seafarers, the English lecturers, as well as the cadets of Maritime Academy. The findings revealed that the students of Maritime Academy need different topics including ship handling, vessel traffic service, standard helm order, parts of vessel, types of rope, reading, applied terminologies, writing, specific grammatical patterns, etc.

[Pritchard \(2003\)](#) has introduced some insights into the nature and features of maritime English. He highlighted two approaches to the syllabus a: (a) the minimalist approach oriented to meet the minimum requirements of Maritime English syllabus, and (b) the extended approach within which Maritime English becomes a comprehensive educational subject within the overall Maritime Education and Training (MET)

curriculum and ensures the future holder of a maritime academic degree efficient competence in English for conducting both sea and shore-based duties. He also emphasized the growing role and importance of General English within the Maritime English syllabus.

The review of the related studies that a few researchers (e.g, [Logie, 2001](#)) have emphasized that an acceptable standard of English is very essential and important in nowadays industry especially on the maritime industry. In the same vein, [Popescu \(2011\)](#) has argued that the lecturers from Maritime Universities all over the world should be better in explaining the importance of competence and fluency in Maritime English To the students. It is also necessary to note that the students of Maritime engineering really do need to build a solid foundation of knowledge. Detailed analysis of the related studies shows that there is not enough evidence to show that the English language curriculum for ME is well-thought out.

## 2. Method

To answer the raised research questions, a mixed method research design (a qualitative-quantitative) was used. In mixed method research designs, at least one qualitative and one quantitative research component are combined ([Schoonenboom and Johnson, 2007](#)). [Johnson et al. \(2007, p. 123\)](#) defined mixed method research design as:

*Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e. g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration.*

In the qualitative phase of the study, the academic and real-life tasks of Maritime engineering students were explored through interviews with 20 stakeholders. In the quantitative phase, we validated the TBLN scale and compared the subject specialists and students' perceptions about the TBLNs.

### 2.1. Phase 1: qualitative phase

In this phase of the study, at the first 20 ME students and subject specialists were selected through convenience sampling from marine engineering students at Sharif industrial university (n = 5), Chabahar University of marine sciences (n = 6), Amirkabir University of Tehran (n = 4), and Khoramshahr University of marine sciences (n = 5). The subject specialists were faculty members of marine engineering who were either Ph.D. holders or candidates of Ph.D. The criteria for selecting faculty members were teaching experience to graduate students of marine engineering.

In the second step, the researchers developed and carefully worded a semi-structured interview. Two applied linguists whose fields of interests are qualitative research method and ESP verified the checklist in terms of relevance and clarity. The interview checklist included open-ended questions which elicited the participants' views about the real life and academic TBLNs. While interviewing, the researchers asked follow-up questions to clarify their responses and encourage them to elaborate on the TBLNs in details. In the third step, the participants were interviewed privately. All interviews were audiotaped for accuracy. When no further new TBLNs for the Maritime engineering students was obtained, the researchers terminated interviewing process. Each interview lasted approximately 35–40 min.

In the fourth step, the interviews were transcribed. Moustakas's inductive data analysis was used for analyzing the data. That is, the data analyst (the corresponding author) read the transcripts twice and audio-recorded the memos to immerse in the data. After initial immersion in the data analysis process, open coding and axial coding were used to analyze

the content of the interviews (Strauss and Corbin, 1998). Finally, through peer debriefing sessions with an ESP instructor at one of the above mentioned universities. The two coders agreed on all extracted TBLNs, and the researchers were assured that there was a high rate of internal consistency between the two coders. The extracted TBLNs were sent back to the interviewees to see whether they were compatible with what they stated in the interviews. Each extract theme was exemplified by one direct quotation from one of the interviewees. As the focus of the study was to make a comparison between ME students' and subject specialists' perspectives about TBLNs, only the validated questionnaire was used and the participants' quotations and the other data were excluded this study.

## 2.2. Phase 2 (quantitative survey)

The quantitative phase consists of two steps. In the first step, the extracted TBLNs carefully worded and administered to 240 participants. The validity of the questionnaire was estimated through running exploratory factor analysis. The participants were asked to rate the importance of each task using a differential semantic scale (the least important = 1, 2, 3,.....9 = the most important). The reliability and validity of the instrument were calculated by running Cronbach's alpha and exploratory factor analysis. The developed instrument enjoyed acceptable internal consistency and construct validity. The items with low loading factors were deleted and the remaining items were carefully worded and used in the second step.

In the second step, the researchers used a quantitative survey. The validated scale was sent to 91 participants (60 students and 31 subject specialists) who were selected through convenience sampling. The participants were selected among the participants of the first step. The subject specialists were faculty members of marine engineering who were either Ph.D. holders or candidates of Ph.D. The criteria for selecting faculty members were: teaching to graduate students of marine engineering and familiarity with situations at which ME graduates might work after graduation. All subject specialists and students were born in Iran and spoke Persian as their native language. They were all informed about the purpose of the study and were assured that the collection would be kept confidential. In this phase, the TBLN scale which was developed in the phase of this study was used for collecting the data. This questionnaire consisted of two components: academic task-based language needs (17 items) and real-life task-based language needs (22 items). Each item was measured on a 1 to 9 differential semantics scale (the least important = 1 ...9 = the most important). The participants' mean scores on all tasks were calculated and the items were ranked based on the magnitude of their mean scores, from both students and subject specialists' perspectives, and to check the differences between the two groups' mean scores, the data were submitted to inferential statistics (independent sample-t-tests).

**Table 1.** KMO and Bartlett's test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.893
Bartlett's Test of Sphericity	Approx. Chi-Square	7.398E3
	Df	820
	Sig.	.000

**Table 2.** Total variance explained.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	21.259	51.852	51.852	21.259	51.852	51.852
2	10.775	26.282	78.133	10.775	26.282	78.133
3	2.291	5.588	83.721	2.291	5.588	83.721
4	.003	.008	100.000			

## 2.3. Ethical considerations

All participants of the study were informed about the purpose of the study and they signed the informed consent form. In addition, the ethics board of Allameh Tabataba'i University approved that this study does not have side effects on the participants of the study.

## 3. Results

The results including validation results, findings for question 1, and findings for question 2 are presented in the following sections.

### 3.1. Validation results

The 41 items of TBLNs on a 9-point Likert scale were subjected to exploratory factor analysis, namely principal axis factoring (PAF) with direct *Oblimin Rotation*. The suitability of data for factor analysis was investigated prior to performing PAF. First, the normality was checked by considering the skewness and kurtosis measures of the items. It was found that all items' statistics ranged between -2 and +2 satisfying the assumption of normality (Tabachnick and Fidell, 2013). Second, The Kaiser-Meyer-Olkin measure was used to estimate the sampling adequacy for the analysis. Results are presented as follows.

As can be seen in Table 1, KMO was 0.89, exceeding the recommended minimum value of 0.6 (Pallant, 2016; Tabachnick and Fidell, 2013). Finally, as shown in Table 1, Bartlett's test of sphericity reached statistical significance, which indicated that correlations between items were sufficiently large for PAF.

Having run PAF, an initial 3-factor solution emerged with eigenvalues exceeding 1, explaining 51.85%, 26.28%, and 5.5% of the variance respectively. The 3-factor solution explained a total of 83.71% of the variance (Table 2). To aid in the interpretation of these four factors, Oblimin rotation was performed. Also, only variables with loadings of .4 and above are interpreted. As it is shown in the pattern matrix below (Table 3), item 31 was omitted from the assessment knowledge scale due to cross-loadings (see Table 4).

The items that clustered on the same components (bolded items) in pattern matrix (Table 3 above) suggested that factor 1 (with the loading items of 1, 2, 3, 4... 17) represented academic needs and factor 2 (with the loading items of 18–41, except for 31) represented real-life task-based language needs of ME students.

## 4. ME students and subject specialists perceptions about academic needs

The two groups' mean scores on the academic needs were submitted to independent samples-t-tests. The results are presented in the following table.

As it is shown in the above table, the mean scores of the students on the asterisked tasks in the above table: Understanding and sending emails, interacting with classmates, understanding crew roles and routines, understanding standard marine communication, understanding standard marine vocabulary, and searching the net is 4.2, which falls below the cutoff point (4.5). Cutoff point is the midpoint of the scale, with all scores above 4.5 are interpreted as "more important" and all

**Table 3.** Pattern matrix of the three factors.

	Component		
	1	2	3
1. Understanding the main ideas of articles/passages	.90		
2. Comprehending written course materials	.88		
3. Comprehending authentic material related to maritime engineering	.82		
4. Understanding and sending emails	.87		
5. Understanding subject-specific jargon	.80		
6. Interacting with teachers and lecturers	.64		
7. Preparing and delivering an oral presentation	.72		
8. Understanding oral interactions (lectures)	.76		
9. Interacting with classmates	.73		
10. Writing and updating CV	.75		
11. Summarizing and Paraphrasing	.70		
12. Taking notes	.69		
13. Writing reports	.68		
14. Understanding Crew roles and routines	.60		
15. Understanding Standard marine communication phrases	.58		
16. Understanding standard marine vocabulary	.62		
17. Searching the net for finding needed related materials	.70		
18. Giving and asking for personal information	.85		
19. Describing different parts of different vessels	.83		
20. Understanding wheel orders	.80		
21. Giving and asking for directions on board	.73		
22. Understanding orders in emergency situations on board	.74		
23. Describing weather conditions	.65		
24. Reporting incidents on boards/at sea	.63		
25. Understanding Marine Radio VHF communications	.82		
26. Discussing and negotiating future events and plans	.75		
27. Describing crew roles and routines	.78		
28. Describing safety equipment	.73		
29. Understanding engine orders	.69		
30. Discussing food onboard/ordering meals	.88		
31. Confirming arrangements for joining the ship			.624
32. Comprehending the cultural issues different nationalities	.84		
33. Discussing the workplace safety and risks	.80		
34. Reporting damages caused bad weather	.72		
35. Reporting events from past voyages	.72		
36. Requesting medical assistance	.85		
37. Practicing VHF exchange procedures	.90		
38. Describing how machinery operates	.92		
39. Describing mechanical breakdown and repair	.89		
40. Delivering accurate messages via VHF radio	.74		
41. Warning passengers in emergency situations	.72		

scores below the midpoint are interpreted as “less or of lesser importance”. Therefore, it could be inferred that these tasks are not important to students of marine engineering. However, the results show the mean scores of the students on the other academic tasks exceeded the cutoff point (4.5), indicating that they are important to the students. Results also show that the mean scores of the subject specialists on all tasks exceeded the cutoff point (4.5) indicating that they are all important tasks.

Moreover, it can be seen that the mean scores of the SSs (subject specialists) on all academic TBLNs exceeded those of the students of ME. To see whether the mean scores of the two groups were statistically different or not, the scores were submitted to independent sample- t-tests. Results of Levene's showed that the variances of all the items submitted to t-tests were equal ( $p > 0.05$ ); therefore, variances of the two groups' scores on all items were equal and the researchers were on safer ground to compare the means though independent samples-t-tests. Results of the t-test also showed that the mean scores of subject specialists and students

of ME were statistically significant ( $p > 0.05$ ). That is, there was a significant difference between the perspectives of the students and subject specialists regarding the importance of the academic TBLNs. As the mean scores of the subject specialists on almost all items exceed those of the students, it can be argued that subject specialists rated the academic TBLNs more important than did the students of ME.

### 5. ME students and subject specialists perceptions about real-life needs

The two groups' mean scores on real-life needs were submitted to independent samples-t-tests. The results are presented in the following table.

can be seen that the mean scores of the subject specialists and the students exceeded the cutoff point (4.5), indicating that all extracted real-life TBLNs are important to both groups. It is also seen that the mean scores of the subject specialists on all items exceeded the mean scores of the students of ME. To see whether the differences are statistically significant, the two groups' mean scores were submitted to independent samples-t-tests. Results of Levene's showed that the variances of all items submitted to t-tests were equal ( $p > 0.05$ ). Therefore the researcher was on the safer ground to assume that the principle of the equality of variances was not violated. Results also show that the mean scores of subject specialists and students of ME were statistically significant ( $p < 0.05$ ). That is, there was a significant difference between the perspectives of the students and subject specialists regarding all real-life tasks. It could, therefore, be argued that subject specialists evaluated the real-life tasks more important than did the students.

### 6. Discussion

This study aimed at comparing the ME subject specialists' and students' perspectives about the importance of academic TBLNs. In so doing, both groups were asked to rate the importance of each task using a 1–9 rating scale. Results showed that some of the tasks (Understanding and sending emails, interacting with classmates, understanding crew roles and routines, understanding standard marine communication, understanding standard marine vocabulary, and searching the net) are the least important to the students. Therefore, it could be argued that as all the students are studying in a non-English context and they all know Persian as their mother tongue, they do not need to interact with each other in Persian. Moreover, they do not need to send emails to others in English. It could be justified that the students of Marine engineering are not well aware of the nature of the field yet. That is why; understanding crew roles and routines, understanding standard marine communication, and understanding standard marine vocabulary are not important to them.

Results also showed that all real-life TBLNs are important to both subject specialists and the students. Therefore, it could be argued that Maritime engineering students need to learn Maritime English to do the real-life tasks such as giving and asking for personal information, describing different parts of different vessels, understanding wheel orders, and giving and asking for directions on board, etc (See Table 5). The real-life tasks can be classified into areas such as the description of the ship and its components, description of the weather conditions, emergencies happening at the shore and the deck, interactions among the crews, and interacting with the crews on the international ports and borders. The findings are also in line with the findings of [Nezakatgoo and Alibakhshi \(2014\)](#) who reported that students of medical sciences make use of the English language in different ways for doing different tasks. They argued that the discourse community members need to be proficient in both general language skills as well as technical language skills.

Regarding the differences between ME students and subject specialists, results showed that the mean scores of the SSs (subject specialists) on all academic and real-life TBLNs exceeded those of the students of ME. Results of the t-test also show that the mean scores of subject specialists

**Table 4.** T-tests for comparing the groups' views about the importance of academic TBLNs.

	Mean s		Levene's Test		T-test		p
	SS	ME	F	Sig.	t	Df	
Understanding the main ideas of articles/passages	6.43	4.9	1.67	.199	6.6	89	.001
Comprehending written course materials	6.4	4.9	1.67	.199	6.6	89	.001
Comprehending authentic material related ME	5.6	4.5	.265	.608	5.9	89	.001
Understanding and sending emails	5.5	4.4	1.5	.18	6.1	89	.001
Understanding subject-specific jargon	5.7	5.5	.002	.967	6.2	89	.001
Interacting with teachers and lecturers	5.5	4.5	.028	.868	5.4	89	.001
Preparing and delivering an oral presentation	6.6	4.9	8.04	.006	8.0	89	.001
Understanding oral interactions (lectures)	5.7	4.8	1.16	.282	4	89	.001
Interacting with classmates	5.5	4.4	1.4	.12	7.2	89	.001
Writing and updating CV	5.7	4.6	.242	.624	9	89	.001
Summarizing and paraphrasing	5.7	4.6	.012	.912	6.4	89	.001
Taking notes	5.7	4.5	.585	.446	4.3	89	.001
Writing reports	5.8	4.8	2.22	.139	6.9	89	.001
Understanding Crew roles and routines	5.5	4.2	3.2	.09	8.7	89	.001
Understanding Standard marine communication.	5.6	4.2	.472	.494	7.1	89	.001
Understanding standard marine vocabulary	5.7	4.2	.189	.665	7.2	89	.001
Searching the net	5.6	4.2	3.27	.074	7.5	89	.001

(SS = subject specialists, ME = Maritime engineering students).

**Table 5.** T-tests for comparing the groups' views about the importance of real-life TBLNs.

	Mean		Levene's Test		T test		p
	SS	ME	F	Sig.	t	Df	
Giving and asking for personal information	6.3	4.8	.911	.342	8.794	89	.001
Describing different parts of different vessels	6.2	4.8	2.037	.157	7.533	89	.001
Understanding wheel orders	5.1	4.8	3.1	.038	7.984	89	.001
Giving and asking for directions on board	6.43	4.6	1.341	.250	6.241	89	.001
Understanding orders in emergency situations on board	6.1	4.8	1.627	.27	5.437	89	.001
Describing weather conditions	6.2	4.8	3.1	.31	4.940	89	.001
Reporting incidents on boards/at sea	6.43	4.9	2.052	.116	4.55	89	.001
Understanding Marine Radio VHF	6.4	4.9	.021	.984	6.42	89	.001
Discussing and negotiating future events and plans	5.6	4.5	.184	.669	4.50	89	.001
Describing crew roles and routines	6.43	4.9	.021	.970	4.04	89	.001
Describing safety equipment	6.4	4.9	.014	.906	3.85	89	.001
Understanding engine orders	5.6	4.5	.288	.593	3.23	89	.001
Discussing food on board	5.6	4.5	1.865	.175	6.07	89	.001
Confirming arrangements for joining a ship	6.4	4.9	.143	.706	4.51	89	.001
Understanding the cultural issues of different countries	6.3	4.7	6.2	.014	5.22	89	.001
Discussing the workplace safety and risks	5.6	4.5	10.58	.002	4.50	89	.001
Reporting damage caused ...	5.9	5	1.25	.44	5.22	89	.001
Reporting events from past voyages	5.8	4.9	2.95	.089	5.51	89	.001
Requesting medical assistance	5.9	5.1	2.04	.34	5.23	89	.001
Practicing VHF exchange procedures	5.9	5.1	.24	.62	5.23	89	.001
Describing how machinery operates	5.9	5.1	1.2	.29	5.23	89	.001
Describing mechanical breakdown and repair	5.8	5	2.1	.09	5.23	89	.001
Delivering accurate messages via VHF radio	5.8	5	2.9	.43	5.23	89	.001
Warning passengers in emergency situations	5.8	5	7.046	.009	5.23	89	.001

(SS = subject specialists, ME = Maritime engineering students).

and students of ME were statistically significant ( $p > 0.05$ ). That is, there was a significant difference between the perspectives of the students and subject specialists regarding the importance of the present situation task-based language needs. It could be strongly argued that subject specialists and students of ME do not have the same perceptions about each of the present situation tasks. This finding is echoing the findings of [Eslami \(2010\)](#), [Ferries \(1998\)](#), and [Robinson \(1991\)](#) that have shown

discrepancies among students' and instructors' perceptions about the needs of ESP students.

The ME subject specialists' levied greater emphasis on the significance of each of the academic and real-life TBLNs. The reason is that subject specialists have the experience of both studying at university and working at workplaces. That is why they are more aware of both academic and real-life TBLNs. The second reason as mentioned by

Alibakhshi (2008) is that subject specialists can pinpoint the students' weakness in receptive and productive skills and find it necessary to help students develop these skills so that they can deal with their academic studies more successfully.

Detailed analysis of the data also shows that majority of the participants believe that the students of maritime engineering need to understand the main ideas of articles/passages which they have to study at university. It was also found that ME students in present situation need English language for: comprehending authentic material related to maritime engineering, understanding/Analyzing written course materials, and understanding and sending emails. That is, ME students at college need to develop their reading skills so that they can comprehend the texts they need to read. The same finding was reported by some researchers (e.g., Jackson, 2005; Nezakatgoo and Alibakhshi, 2014; Kourieos, 2015). Similar results were reported by Prankevicicote and Zajankauskaite (2012) who explored the perceptions of undergraduate students about their language needs in an ESP course. In addition to the related tasks, it was explored that ME students need to develop their listening and speaking skills so that they can prepare and deliver an oral presentation, interact with teachers and lecturers, understand oral interactions (lectures), and interact with classmates. More specifically, subject specialist and students of ME believed that ME students need to prepare topics and deliver orally in the classrooms or conferences.

It can also be inferred that undergraduate and postgraduate students need to develop writing skill so that they can write and update their CV, summarize and paraphrase the materials, take notes, and write reports. It was also found that students should learn about crew roles and routines, understand marine communication phrases, understand standard marine vocabulary, and search the net for finding the related materials. The same findings were also published by several related studies (Atai and Nazari, 2011; Belcher, 2006; Dudley-Evans and St John, 1998; Hyland, 2006; Nezakatgoo and Alibakhshi, 2014). Therefore, in line with the findings of these studies and what the subject specialists argued, it could be said that marine industry is international and there are some internationally accepted words, phrases, idioms and proverbs which need to be learned by those involved in this industry.

With regard to target situation TBLNs, it can be seen that ME students in the target situations need language for giving and asking for personal information, describing different parts of different vessels, and understanding wheel orders. It was also ME graduates need to give and ask for directions on board, understand orders in emergency situations on board, and describe weather conditions, report incidents on boards/at sea, understand Marine Radio VHF communications, discuss crew roles and routines, describe safety equipment, understand engine orders, and discuss food on board/ordering meals. It was also found out that ME graduates while being at workplace need English language for describing mechanical breakdown and repair, taking and delivering messages accurately via VHF radio, and giving instructions to passengers in the event of an emergency. The same findings were also reported by (Kourieos, 2015). Through detailed analysis of the tasks it can be inferred that to do these tasks at workplace well ME graduates need to be competent in oral interactions. This interpretation was also made by a several researchers (e.g., Chia et al., 1999; Jackson, 2005; Jiajing, 2007; Kassim and Ali, 2010; Kaur & Baksh, 2010; Trinder, 2013).

## 7. Conclusions

In line with findings, it could be concluded that subject specialists and the students do not have the same perceptions about the importance of both academic and real-life tasks. Therefore, while developing a syllabus for Maritime English both teachers and subject specialists need to be consulted. It is also concluded that all academic and real-life TBLNs can be labeled as the subcategories of three main categories: a) content areas, b) language skills and c) language sub-skills. Therefore, in order to help the students of ME do the mastery of the academic task, reading, speaking, listening, and writing, vocabulary, and pronunciation are

required. In addition, some tasks as interacting with teachers/crews, reporting, giving and receiving information, taking notes while reading and listening are in essence integrative. Therefore, integrative approaches to material development and teaching ESP rather than traditional approaches in which each skill is presented individually should be employed by ESP teachers and material developers.

As there is a difference between the students and the subject specialists' perceptions about the importance of each task-based language needs, it is concluded that students' awareness about the tasks which they need to perform when they are employed in the maritime industry should be raised. Moreover, it is very important to raise the ESP students' awareness of cross-cultural and intercultural communication strategies and styles. Accordingly, ME students need to be aware of the intercultural differences between people from the other countries so that they can easily communicate with them through WIF radio.

The findings can be employed by ESP teachers' help students develop receptive and productive skills to get prepared for their academic and professional life. Results also indicate that ESP courses should view workplace scenarios as the heart of teaching activities. Pedagogically speaking, for researchers, ESP teachers, and course designers, the current study can be used a framework for collecting information about the academic and real-life TBLNs and offers suggestions to ESP educators, course developers, and the other stakeholders to make teaching/learning process of ESP/EAP beneficial and effective for the ME students.

This study explored the academic and real-life TBLNs of the students of ME. Due to the limitations of the study, the researcher only selected the participants from a limited number of the universities in Iran. The students' major, college level, and educational background as well as the subject specialists' working and teaching experience as well as their cooperation with Maritime industry were ignored, due to the feasibility issues. The subject specialists were all selected among full-time professors. As the neglected variables might affect the findings, the other researchers are suggested to replicate the study by considering the above-mentioned variables to see whether the same results are obtained. In addition, it is necessary to replicate the study to see how the students and teachers prioritize the extracted academic and real-life tasks.

## Declarations

### Author contribution statement

G. Alibakhshi: Conceived and designed the experiments; Analyzed and interpreted the data; Wrote the paper.

A. Labbafi: Contributed reagents, materials, analysis tools or data; Wrote the paper.

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### Data availability statement

Data will be made available on request.

### Declaration of interests statement

The authors declare no conflict of interest.

### Additional information

No additional information is available for this paper.

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