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Can Contextual Teaching and Learning (CTL) Revolutionize Cadets' Speaking Skills in Maritime English?

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Abstract

Effective English communication is vital in the global maritime industry. Maritime English, a branch of English for Specific Purposes (ESP), addresses the needs of maritime professionals. Contextual Teaching and Learning (CTL) uses real-life scenarios, making it ideal for vocational training. This means practicing real shipboard situations for maritime cadets, leading to effective learning. This study investigates the effectiveness of Contextual Teaching and Learning (CTL) on cadets' speaking skills when learning English for Specific Purposes (ESP) instructional materials. The study applied a quasi-experimental method with a nonequivalent group design, involving 48 cadets from the deck study program at the Merchant Marine Polytechnic of Makassar, Indonesia. The results indicate a significant improvement in the pretest-posttest scores, analyzed using a statistical test with the prerequisite data being normally distributed. The hypothesis test results, with a significance value of 0.000, confirm that there were differences in the speaking skills of the cadets at the Merchant Marine Polytechnic of Makassar after applying the CTL model in English for Specific Purposes (ESP) instructional materials. The findings highlight that the CTL model positively impacts and optimally influences the teaching and learning process in speaking skills when cadets learn ESP materials. This approach increases cadets' confidence and encourages them to be active learners based on their real experiences.

Keywords: Maritime English, contextual teaching and learning, communication efficiency, ESP.

INTRODUCTION

English, the most widely spoken global language, has been accepted as the official language for seafarers to minimize communication issues identified by the International Maritime Organization (IMO) and to address problems arising from the lack of a common communication channel at sea (Dirgayasa, 2014; Mönnigmann & Čulić-Viskota, 2017). This acceptance has led to the development of Maritime English, a specialized form of English designed to facilitate clear communication among crew members by using a set of common terms and expressions (Apostol-Mates & Barbu, 2015). This shared linguistic framework is

crucial for ensuring safety and efficiency in maritime operations (James et al., 2018). Given the international nature of maritime operations, seafarers often work alongside colleagues from various countries. Maritime English serves as the primary medium for communication on board ships, between ships and shore, and among crew members, creating a specialized linguistic community that includes multiple languages, nationalities, and cultures.

As a subset of English for Specific Purposes (ESP), maritime English education is based on certain international legal procedures for research and instruction. It emphasizes the common communication situations that seafarers face in the course of their work (Pašalić & Plančić, 2018). General Maritime English (GME) and Specialized Maritime English (SME) are the two primary courses that make up Maritime English, according to Zhang and Cole (2018). ME focuses on the general communication skills and foundational language abilities needed in the maritime sector. It addresses language-related topics like phonology, grammar, and vocabulary as well as the four language skills of speaking, writing, listening, and reading. Meanwhile, Specialized Maritime English (SME) addresses the specific linguistic needs related to various maritime professions and tasks. SME also emphasizes the importance of understanding and adhering to international maritime regulations and protocols, ensuring that cadets are well-prepared for their professional responsibilities.

Effective oral communication is paramount in the maritime industry, where clear and precise interactions directly impact safety and operational efficiency. However, EFL cadets face several challenges specifically related to speaking skills within this field. Pronunciation is a common obstacle for EFL students (Chand, 2021; Jahara & Abdelrady, 2021). They often struggle with the correct articulation of English words, which can lead to misunderstandings, especially in critical situations where clear communication is essential. Mispronunciations can cause confusion and errors in tasks, compromising safety and operational efficiency. Moreover, EFL cadets often experience significant anxiety when speaking English, particularly in formal or high-stakes maritime settings. This anxiety can stem from fear of making mistakes, being judged by peers, or not being understood (Aichhorn & Puck, 2017). Such anxiety often results in hesitation, reduced participation, and avoidance of speaking opportunities. A lack of confidence in their speaking abilities can hinder EFL cadets from actively engaging in communication, asking necessary questions, or clarifying doubts, which are crucial for their training and professional performance (Savaşçı, 2014; Sartini, 2020). Fluency is another critical issue for EFL students. They may struggle to speak smoothly and continuously due to limited practice or fear of making errors.

To address these challenges, teachers can use various instructional media and models to support students' English-language learning. One effective student-centered approach is the Contextual Teaching and Learning (CTL) model. CTL builds links between information and its applicability to everyday situations, such as those in social groups, workplaces, and specifically the maritime field (Merawan et al., 2021; Zulirfan et al., 2018). CTL helps students connect the knowledge they gain in a subject to real-world situations where this knowledge can be applied (Chen et al., 2019). By mastering material grounded in real-life contexts, students can understand the subject matter more quickly and effectively. Cadets, in particular, have specific needs and objectives for learning English, making it a challenging language to teach (Maulidar et al., 2019). Therefore, pedagogical and instructional methods must be tailored precisely and effectively to these unique conditions. This necessity is also

true for teaching English for Specific Purposes (ESP), such as Maritime English. As English has become a universal language, fluency in English is essential for navigating the global maritime industry.

Maritime English (ME) instruction and learning for cadets has been the subject of numerous research. For instance, Dirgayasa (2014) examined five main indicators to evaluate the operations in three private MET (Maritime Education and Training) schools in Indonesia: learning materials, instructional techniques, assessments, student and lecturer profiles. Data from 55 students and 11 lecturers indicated that current practices in these METs do not meet the STCW'2010 curriculum standards, particularly regarding learning materials, teaching methods, and evaluations. There is a significant gap between the students' low entry-level English proficiency and the high competency standards required by the STCW'2010 codes, and lecturers' English proficiency needs regular improvement. Additionally, James et al. (2018) discussed the importance of English as the lingua franca in the International Maritime Industry (IMI), where effective communication is essential for safety at sea. The study emphasized that Maritime English (ME) has developed unique terms and phrases specific to the maritime context and highlighted the need for specialized teaching practices to address the challenges faced by non-native English speakers in acquiring ME. The paper argued that investing time and resources in developing authentic and effective teaching practices is crucial for improving safety at sea, as better communication skills directly contribute to safer maritime operations. Furthermore, Navarro et al. (2015) aimed to determine the English proficiency of maritime students and assess the instructional materials used at the Lyceum International Maritime Academy (LIMA) as a basis for enhancement. Involving 586 respondents, including first, second, and third-year maritime students and seven English teachers, the study found significant weaknesses in students' vocabulary, grammar, and reading comprehension. The instructional materials were not realistic, clearly organized, or adequately supplemented with graphics and pictures. Consequently, the study proposed enhancements to the English Maritime Text Manual and program to improve the English proficiency of maritime students, recommending that the General Education Department implement these enhancements to address the identified deficiencies.

These studies collectively underscore the importance of tailored and effective Maritime English education for cadets, highlighting the need for continuous improvement in teaching methods and resource allocation to meet international standards and enhance safety and operational efficiency in the maritime industry.

Despite the critical importance of effective communication in the maritime industry, there is a significant gap in research addressing cadets' proficiency in English speaking skills. The novelty of this research lies in its targeted approach to enhancing English speaking skills among maritime cadets through the Contextual Teaching and Learning (CTL) model. While CTL is known for linking academic content to real-world applications, its specific impact on Maritime English speaking skills remains underexplored. Therefore, this study aims to fill this gap by evaluating the effectiveness of CTL on cadets' speaking proficiency. This research aims to investigate the effectiveness of CTL on cadets' speaking skills in English for Specific Purposes (ESP) instructional materials. A key focus is to assess how the CTL model, as applied by lecturers, enhances cadets' speaking abilities, providing practical and relevant

learning experiences. This study seeks to offer insights into teaching strategies that can better prepare cadets for the communication demands of the maritime industry.

METHOD

This research used a quantitative methodology, more especially, a quasi-experimental design using nonequivalent groups. An experimental group and a control group were chosen as the sample from Makassar Merchant Marine Polytechnic in Indonesia. The main goal was to find out how the Contextual Teaching and Learning (CTL) approach affected the speaking abilities of cadets using English for Specific Purposes (ESP) course materials. 48 cadets who were randomly picked and grouped participated in the research conducted in the Nautical department. Prior to the intervention, a pretest was administered to both groups to determine baseline conditions. While the control group persisted in using conventional teaching techniques, the experimental group underwent the CTL treatment. Both groups received a posttest following the study to evaluate the results.

The data collected from the pretest and posttest were evaluated and compared to determine the effectiveness of the CTL model on the cadets' speaking skills. This methodology allowed the researchers to compare the results and determine whether the CTL model had a significant impact on improving the cadets' speaking skills in ESP materials (Stratton, 2019). The instrument used in this research was a speaking test that evaluated fluency, comprehension, and accuracy in ESP materials (Maritime English). Furthermore, in the data analysis, the effectiveness of the Contextual Teaching and Learning (CTL) model in improving the speaking skills of cadets at Makassar Merchant Marine Polytechnic was analyzed using a parametric test was with the prerequisite that the data must be normally distributed (Mishra et al., 2019) , to determine the level of effectiveness of the CTL approach.

FINDING AND DISCUSSION

The researchers conducted a pre-test by administering a speaking test to the cadets in the experimental group to assess their speaking skills before providing any treatment. Subsequently, the researchers implemented the CTL model as the treatment. The cadets participated in activities designed to improve their speaking proficiency, conducted over six meetings. During the final meeting, the researchers administered a post-test to evaluate the extent to which the cadets' speaking skills had improved through the use of the CTL model. In contrast, the control group did not receive any treatment. Instead, they were taught using traditional teaching methods, specifically lecturing.

Table 1. Descriptive statistics test

	N	Mean	Std. Deviation
Pre-test of Control	24	59.17	10.495
Post-test of Control	24	60.83	10.072
Pre-test of Experiment	24	60.62	9.591
Post-test of Experiment	24	71.46	9.722
Valid N (listwise)	24		

For both the control and experimental groups in the study, Table 1 presents descriptive statistics for the pre- and post-test scores. The mean score for the pre-test was 59.17 with a standard deviation of 10.495 for the control group, which comprised 24 cadets.

With a standard deviation of 10.072, the post-test mean score climbed marginally to 60.83 using the conventional teaching approach. A pre-test mean score of 60.62 with a standard deviation of 9.591 was obtained by the experimental group, which likewise comprised 24 cadets. Following the implementation of the CTL model, the post-test mean score significantly rose to 71.46 with a standard deviation of 9.722. This substantial increase in the experimental group's mean score suggests that the CTL model effectively enhanced the cadets' speaking skills. All 24 cadets in each group were consistently accounted for in both the pre-test and post-test data. Overall, the data indicates that the CTL approach had a more pronounced impact on improving speaking proficiency in English for Specific Purposes (ESP) instructional materials compared to the traditional teaching method used with the control group.

Table 2. Normality test

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-test of Control	.157	24	.132	.966	24	.575
Post-tes of Control	.135	24	.200*	.962	24	.479
Pre-test of Experimental	.157	24	.128	.967	24	.591
Post-test of Experimental	.170	24	.071	.941	24	.169

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Using the Kolmogorov-Smirnov and Shapiro-Wilk tests, Table 2 displays the findings of the normality tests for the pre- and post-test scores of the experimental and control groups. The pre-test results for the control group showed a normal distribution with a Shapiro-Wilk statistic of 0.966 and a significance value of 0.575, and a Kolmogorov-Smirnov statistic of 0.157 with a significance value of 0.132. The control group's post-test results showed a normal distribution with a Kolmogorov-Smirnov statistic of 0.135 and a significance value of 0.200, as well as a Shapiro-Wilk statistic of 0.962 and a significance value of 0.479. Similarly, the experimental group's pre-test scores had a Kolmogorov-Smirnov statistic of 0.157 with a significance value of 0.128 and a Shapiro-Wilk statistic of 0.967 with a significance value of 0.591, indicating normal distribution. The post-test scores of the experimental group had a Kolmogorov-Smirnov statistic of 0.170 with a significance value of 0.071 and a Shapiro-Wilk statistic of 0.941 with a significance value of 0.169, also indicating normal distribution.

Table 3. Test of homogeneity of variances

		Levene Statistic	df1	df2	Sig.
Cadets	Based on Mean	.140	1	46	.710
	Based on Median	.120	1	46	.730
	Based on Median and with adjusted df	.120	1	45.849	.730
	Based on trimmed mean	.100	1	46	.753

Table 3 displays the findings of Levene's test for homogeneity of variances, which determines whether the experimental and control groups' pre- and post-test score variances are equal. The tests based on mean, median, median with adjusted degrees of freedom, and trimmed mean have significant values (0.710, 0.730, 0.730, and 0.753, respectively) that are

all above 0.05. The assumption of homogeneity of variances is satisfied since this shows that there is no discernible variation in the variances between the groups. This attests to the validity of using parametric tests in subsequent data analysis.

Table 4. Independent samples test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Cadets Achievement	Equal variances assumed	0.140	0.710	-3.718	46	0.001	-10.625	2.858	-16.377	-4.873
	Equal variances not assumed			-3.718	45.943	0.001	-10.625	2.858	-16.377	-4.873

The Levene's Test (Sig. = 0.710) verifies the equality of variances between the control and experimental groups. The results of the t-test for equality of means reveal that there is a significant difference in the cadets' achievements between the two groups, with a t-value of -3.718 and a significance value of 0.001 (2-tailed). The experimental group, which employed the CTL model, performed noticeably better than the control group, according to the mean difference of -10.625. The 95% confidence interval, which falls between -16.377 and -4.873, confirms the statistical significance of the mean difference.

Furthermore, the performance of the control and experimental groups is contrasted across three speaking skill dimensions—accuracy, fluency, and comprehension—in the bar chart named "Cadet's Speaking Skill." Red bars stand in for the experimental group, and blue bars for the control group. Regarding accuracy, the experimental group obtained a slightly higher mean score of 5.6, whereas the control group's score was 5.41. There was a slight improvement in the experimental group's fluency as measured by their scores of 4.99 against 4.88 for the control group. The experimental group scored marginally higher at 5.88 in comprehensibility than the control group, which had a mean score of 5.79.

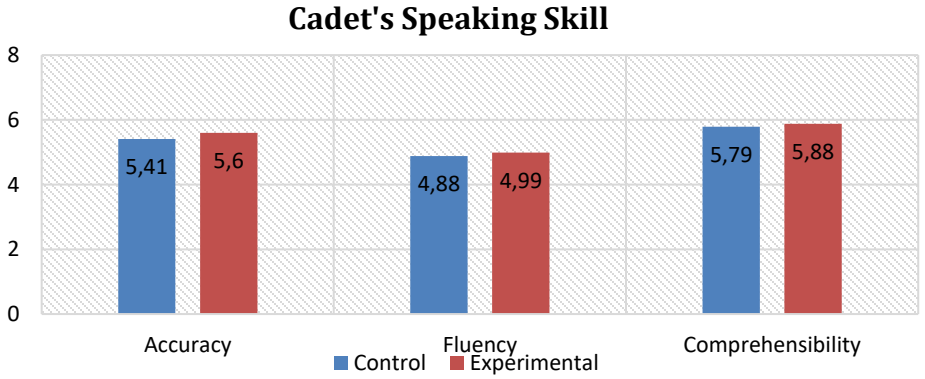

Figure 1. Comparasion between Control and Experimental Groups

The experimental group, which received the CTL model therapy, consistently outperformed the control group across all three measures, despite the small increases in speaking skills. This implies that, despite the relatively moderate gains, the CTL model has a favorable effect on cadets' speaking abilities. When added together, these minor enhancements can have a big impact and lead to improved communication abilities in a nautical setting. The results demonstrate the efficacy of the CTL model in enhancing cadets' speaking abilities in English for Specific Purposes (ESP) teaching materials by showing that even small improvements in instructional methods can result in greater language proficiency outcomes for cadets.

The Contextual Teaching and Learning (CTL) philosophy emphasizes that learning is significantly enhanced when educational materials are connected to students' personal experiences and interests (Darmuki et al., 2018). This approach positions the learner as an active participant in the learning process, rather than a passive recipient. By engaging with content that is relevant to their own lives, students are more likely to find the material meaningful and engaging, which can lead to a deeper understanding and retention of knowledge. CTL encourages learners to take responsibility for their own learning, fostering independent learning habits that are crucial for lifelong learning (Lan, 2015). When students are actively involved in their learning process, they develop critical thinking and problem-solving skills, as they must connect new information to their existing knowledge and experiences. Proficiency in multiple languages has been shown to significantly enhance the development of speaking skills (Yenkimaleki & Van Heuven, 2019). In the CTL framework, language learning is not just about acquiring linguistic skills but also about developing the ability to communicate effectively in various contexts. Effective communication requires understanding the appropriate context, the purpose of the communication, and the specific issues and situations involved (Herbein et al. 2018).

Thus, utilizing speaking material based on contextual teaching-learning (CTL) can significantly impact students' critical thinking, as demonstrated by Muliani and Sumarsono (2019). Another study by Asrizal et al. (2018) found that implementing an adaptive contextual learning approach in integrated science, incorporating digital age literacy, effectively advances knowledge, attitudes, and literacy skills. This approach aligns with findings by Yusyac et al., (2021), who conveyed that students' speaking abilities can be greatly enhanced using CTL in speaking instruction and learning. Shantia and Lufri (2021) support this, arguing that CTL models significantly enhance students' 21st-century capabilities, including critical thinking, communication, teamwork, and creativity. Additionally, English teachers must focus on developing communication skills in cadets learning English as a foreign language, ensuring the teaching is both communicative and practical (Sulistyo & Lutviana, 2023).

Proficiency in English is essential for cadets to work both in Indonesia and abroad, highlighting the importance of effective English language instruction. Proficiency in English allows cadets to effectively navigate and respond to complex maritime scenarios, such as emergency situations and routine operations, where clear and accurate communication is paramount (Ismail et al., 2020). The ability to articulate instructions, understand technical maritime terminology, and engage in meaningful dialogue with multinational crews and port authorities is indispensable in the maritime industry (Valle, 2011). The study demonstrates

that the CTL model significantly improves cadets' speaking skills, providing them with practical language skills that are directly applicable in real-world maritime contexts. This educational approach not only enhances cadets' language proficiency but also prepares them for the diverse and multicultural environment of the maritime industry, where English serves as the lingua franca (Zhang & Cole, 2018)

CONCLUSION

This study investigated the effectiveness of the Contextual Teaching and Learning (CTL) model on improving cadets' speaking skills in English for Specific Purposes (ESP), particularly focusing on Maritime English. The findings indicated that while the CTL model positively impacts cadets' speaking accuracy, fluency, and comprehensibility, the improvements were minimal. Despite the small gains, these incremental improvements are crucial for effective communication in the maritime industry, which demands clear and precise interactions to ensure safety and operational efficiency. Integrating CTL into Maritime English curricula can bridge the gap between academic learning and practical application, providing cadets with relevant educational experiences that prepare them for real-world maritime scenarios, thereby enhancing their overall competence and employability. However, the study had limitations, including a small sample size of 48 cadets from a single institution, a short intervention period of six meetings, and reliance on pre-tests and post-tests to measure speaking skills. Future research should address these limitations by involving larger, more diverse samples from multiple institutions, conducting longitudinal studies to understand the long-term impact of CTL, and employing a variety of assessment tools, including qualitative methods. Comparative studies should also be conducted to identify the most effective approaches for improving Maritime English skills, and exploring the integration of digital tools within the CTL framework could further enhance learning experiences and outcomes in modern maritime education.

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