The effect of Android-Based Maritime English Application at Nautical Study Program of SMKN 1 Bukit Batu

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Abstract. The study goal of this research is to determine Vocational-students' English for maritime proficiency and determine whether using Android-based Maritime English has a fundamental impact on students' performance in the Nautical Program. Pre-test and post-test designs are provided in the study of the research, which is an experimental study. Students in the SMKN 1 Bukit Batu Nautical Study Program serve as the study's sample population. They each have 40 students, making up the class of experimental and the class of controll. Eight sessions in two months used the data gathered utilizing an Android-based Maritime English media. Students at SMKN 1 Bukit Batu demonstrated the effectiveness of Android-Based Maritime English as an alternate medium for improving students' English for Maritime. Especially in the Nautical Program. This research was approved using this application based on a t-test.

Keywords: Android- Based Maritime English , Application, Nautical

1 Introduction

To ensure productive and safe maritime operations, effective communication is crucial. The official language of the oceans is English. Poor communication is the main cause of accidents in the shipping industry. The maritime business has grown during the previous 20 years. The competency of mariners is affected. There is no exemption for language proficiency when it comes to their need for good talents. Need analysis should be carried out as well in order to achieve the aim. This case has become a research topic. Therefore, some studies have been done, including one by Zi-hua (2015) and Lumban Batu (2018) about the needs analysis of maritime English teachers, and studies by Dirgeyasa (2018) and friends. At various universities in Indonesia, Rahman and Ismail (2018) conducted need analyses in order building English curriculum for students' needs.. [4] In this occasion it occurred as the result of the crews did not use a common language in communication, which had an impact on the effectiveness of communication. Therefore, seafarers have to be able to acknowledge even be a master in ommunicating the language both written and spoken form, according to Winbow's study of Verbek in Ahmmed [2].

Nearly half of the people who live on the island of Bengkalis Regency work at sea. A number of little islands are connected by the water. Owing to this circumstance, the majority of people were forced to work as sailors and fisherman. During this time, current and historical Mariners dominated. Due to their communication problems, sailors still make up a very tiny population. Their English language skills are lacking, particularly in the area of maritime English. Because

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of this, the majority of seafarers in Bengkalis still exclusively work there. Due to their lack of experience, they hardly ever work overseas. For parents who wish to see their children work at sea, Politeknik Negeri Bengkalis has a section that designs a curriculum corresponding to a nautical subject. This program helps them write a new chapter in their future. They will participate in a range of maritime programs for instruction and training. They can also become more proficient communicators in English. They have to communicate well with each other. English comes in two flavors: general English and specialty English. One kind of English for specific uses is English for maritime use (ESP). As per Dirgeyasa [7], Indonesian seamen continue to demonstrate inadequate competency in speaking and writing Maritime English. The focus of ESP is on the learner's understanding of the communication and language requirements specific to a given professional field. Meeting seafarers' needs is the aim of marine English. The lingua franca at sea is known as Standard Marine Communication Phrases, and it is crucial for a variety of reasons, including the safety of the crew, the efficiency of daily tasks and the integrity of the ship. [11] An effective and efficient strategy is required to improve their English proficiency, particularly for Maritime programs. One of the mediums uses Maritime English on Android. It might serve as a gauge for Maritime English. Users will find it simple to comprehend the language and terminologies related to maritime with Android-Based Maritime English. A high level proficiency in Maritime English is required to be a professional seafarer. One approach is to use Android-Based Maritime English as a gauge for the progress in studying maritime English.

An educational media based on Android is one type of media that might be created. It can be included into a variety of educational strategies. Cooperative learning is one type of education that can be used in conjunction with this android-based learning material. The creation of the cooperative learning model has long been aimed at improving student academic learning, allowing kids to make a diverse group of friends, and fostering social skills.[8] In terms of content and media, the produced android-based instructional media falls into a very good category. [10] Aprizawati and friends [5] also explained about content of Android Application about English for Maritime. Students can download it from playstore.

According to preliminary observations, both vacational high school students and college students from the maritime region still have relatively limited English communication skills. Their performance in Maritime English and the Seafarers Certification Pre-Exam were evaluated, and it is clear from that. For Maritime, they continuously fell short in English. To increase their English proficiency, according on the situation, an effective and efficient plan is needed, especially for Maritime programs. One of the mediums uses Maritime English on Android. It might serve as a gauge for Maritime English. Users will find it simple to comprehend the language and terminologies related to maritime with Android-Based Maritime English

Fig 1. Android Based Application (Maritime English)

The application contents are consists of:

a. The E-Mar application's home page opened with Maritime English spelling letters. Choose from a list of spelling options

Fig 2. The E-Mar application's home page

b. The ship organization menu is shown in the following image. It is used to determine how the ship's organizational structure is. You can press the button according to the listed department. For example, to see what parts are contained in the deck department, you can view it by pressing the Deck Department button.

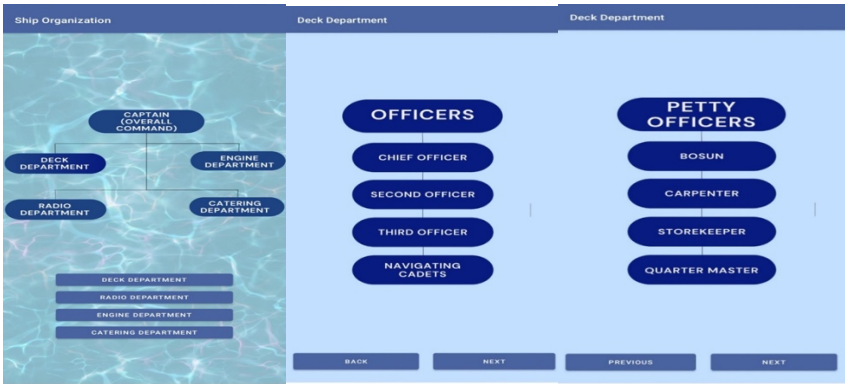

Fig 3. The E-Mar application's menu (Ship organization menu)

c. This menu is for ship types ,you can see many ship types in this menu. You can select the menu to return to the main page, you can hear the pronunciation by pressing the speaker button, previous to see the previous type of ship and next to see other ship types.

Fig 4. The E-Mar application's menu (Ship types menu

d. This menu is for the main part of the ship, you can see many parts of the ship in this menu. You can select the menu to return to the main page, previous to view the previous ship type and next to view other ship types.

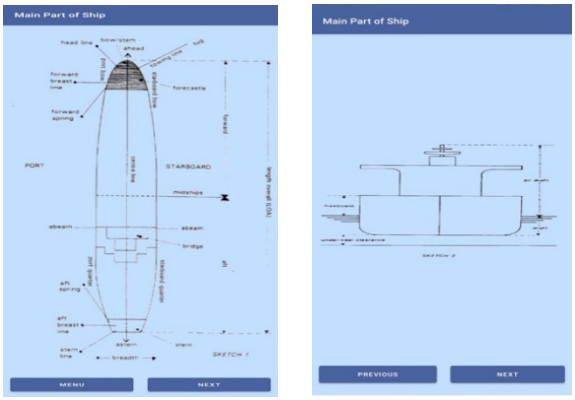

Fig 5. The E-Mar application's menu (The main part of the ship)

e. In this quiz menu there will be a quiz dashboard as follows. You can choose a quiz with a multiple choice type or with an essay

Adonis Radjab [1] defined marine English as English that is frequently used in contexts relating to the nautical industry. Since this language is meant to help in communication when at sea, it differs from standard English. According to Gotti (2005), maritime English is a special purpose

variation of English that can be used for ship-to-ship, ship-to-shore, and aboard communication in addition to a variety of academic and professional contexts. It was described as "the sum total of all English language means which, utilized as a tool for communication within the worldwide marine community, contribute to the safe navigation and facilitation of seaborne trade" by Tenkner (2000, p. 7), according to Daniele (2014) [9]. Most Maritime English research to date has concentrated on different pedagogical issues.

2 Research Methods

A quasi-experimental research design is used. It seeks to determine whether a practice (or hypothesis) had any impact on the outcome or dependent variable. [4]

A quantitative approach that offers the greatest amount of control over the research operations is an experiment. This study will use a quasi-experimental technique with a nonequivalent group in control to ascertain the substantial influence of using Android-Based Maritime English in studying English for Maritime for Maritime students. Here is a description of the research design**:**

Table 1. The Research Design

Group	**Pre-Test**	**Treatment**	**Post-Test**
Group of experiment	Test 1	X	Test 2
Group of Control	Test 1		Test 2

The methods used to gather information for the experimental group

a. The pre-test.
   Before beginning the teaching and learning process using Android-Based Maritime English, the student takes a pre-test. It will be used to gauge the pupils' proficiency in Maritime English.
b. Intervention or Treatment
   In the intervention, pupils will be taught maritime English utilizing an Android-based platform. Using an Android-based Maritime English app, teachers may teach and explain the language.
c. The post-test
   A post-test is administered to the experimental group's students after they use the Android-Based Maritime English application. The influence of the program on the students' ability to speak marine English was evaluated by comparing the results of the pre-test and post-test after 8 sessions of Android-Based marine English.

The methods used to gather information for the control group

a. Pre-test.

Before adopting a normal teaching technique, the students in the group of control took a pre-test. The pre-test administered to the control group's students was comparable to that provided to the experimental group.

b. Teaching by using non Android- Based Maritime English
The same subjects and resources that were delivered to the experimental group will be covered in Maritime English classes for the students utilizing the traditional method.

c. Post-test

The student in the control group is given a post-test after receiving instruction over the course of eight meetings using the traditional method. To compare their proficiency in Maritime English, the post-test result was compared to the pre-test result.

The pre- and post-test results for the experimental and control groups were used by the researcher to examine the information. This outcome is based on statistical research. both inferential and descriptive statistics. This study also makes use of the following formulas:

T-test for Independent samples using the Independent Sample t-test, it is possible to determine whether there is a significant difference or not between two or more variables. [3]

Gay noted that the t-test for independent sample is used to determine whether there is likely to be a significant difference between the means of two independent samples. The independent sample t-test was used to ascertain the results of the first and second hypotheses.

3 Result and Discussion

There are 40 Maritime Department nautical students participated in this study. Purposive sampling was used to obtain the sample. Based on how many classes there were, the classes were chosen. The sample consisted of two classes: II A, an experimental class with 20 students, and II B, a control class with the same number of students. While the control class received traditional instruction, the experimental class utilized an Android-based Maritime English application. Both samples received an English exam after the treatment.

The posttest results were used to determine English proficiency. For the Control and Experimental classes, there were distinct treatments applied. The control class received traditional instruction, whereas the experimental class received instruction using an Android-Based Maritime English Application. An Android software was being used to teach twenty children maritime English. The findings of the experimental class's pre- and post-tests showed that the lowest pre-test score was 10 and the highest was 40. Furthermore, the best post-test score was 80, while the lowest was 64. The average pre-test score was 23,25, and the average post-test score was 71,75. 48,5 was the average score obtained following the administration of the pre- and post-tests. Hence, it can be concluded that learners who utilized the Android-Based

Maritime English Application for instruction achieved greater scores on the post-test compared to the pre-test.

The control class's pre-test score ranged from 55 to 75, with the lowest score being obtained during post-testing. Furthermore, the best post-test score was 83, while the lowest was 60. The mean score before the test was 63.45, and the mean score after the test was 70.05. After the pre- and post-tests were given, the average score obtained was 7.6. Both student learning outcomes clearly increase, but the experimental class's increase is substantially more than the control class'.

Normality testing was analyzed using the Lilliefors test [12] at the significance level of 0.05 to see if there is a significant difference between the experimental class utilizing an Android-Based Maritime English Application and the control class using conventional technique.

Table 2. The Normality Testing Summary

Class	N	$L_{observed}$	L_{table}	Note
Experimental	20	0.083	0.190	$L_0 < L_t$ *Normal*
Control	20	0.134	0.190	$L_0 < L_t$ *Normal*

Because both experimental and control classes are typically distributed in the above table, so that it found that $L_{observed}$ is lower than L_{table}.

This study's homogeneity test determined whether or not each group's variance was similar. This experiment made use of a variance formula. The findings of the homogeneity test are summarized as follows:

Table 3. The Homogeneity Testing Summary

No	Variable	$F_{observed}$	F_{table}	Conclusion
1	English for Maritime Ability among Students	1.62	5.99	Homogenous

In summary, the F observed for students' English for Maritime ability was lower than the F table ratio, as shown in the above table. It indicates that those groups' deviations were uniform. The one-tailed t-test was used to examine the hypothesis based on the results of the homogeneity and normality tests mentioned above.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s\sqrt{\frac{1}{n_1}+\frac{1}{n_2}}} \quad \text{and} \quad s^2 = \frac{(n_1-1){s_1}^2+(n_2-1){s_2}^2}{n_1+n_2-2}$$

$S_1{}^2 = \frac{n\sum x^2 - (\sum x)^2}{n(n-1)}$ Experimental class

$= \frac{(20)(103521) - (1435)^2}{(20)(19)}$

$= 29.4$

$S_2{}^2 = \frac{n\sum x^2 - (\sum x)^2}{n(n-1)}$ Control Class

$= \frac{(20)(101455) - (1421)^2}{(20)(19)}$

$= 25.9$

So: $S^2 = \frac{(n_1-1)s_1{}^2 + (n_2-1)s_2{}^2}{n_1+n_2-2}$

$= \frac{(20-1)29.4 + (20-1)25.9}{20 + 19 - 2}$

$= 28.39$

$S = 5.3$

Therefore:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$t = \frac{71.75 - 23{,}25}{5.32\sqrt{\frac{1}{20} + \frac{1}{19}}}$$

$t = 9.11$

$dk = n_1 + n_2 - 2 = 20 + 19 - 2 = 37$

t_{table} by $dk = 37$ is $t_{0.05} = 2.262$

Table 4. Summary of the experimental and control classes' speaking abilities based on t-test results

Technique	$t_{observed}$	t_{table}	Note
Android-Based Maritime English Application	9.11	2.262	$t_{observed} > t_{table}$ Ha: accepted

The table above makes it evident that t_observed>t_table. It suggests that although Ha is rejected, Ho is accepted.

4 Conclusion

Using statistical analysis of the aforementioned hypothesis testing, it can be showed that Android-Based Maritime English Application was more effective in learning English for Maritime than conventional teaching. Android-Based Maritime English was better than conventional teaching to students' English for Maritime Ability

According to the hypothesis, the experimental class, which used an Android-based maritime English application to teach its students, had a higher mean score than the control class, which received traditional instruction. Android-Based Maritime English Application helped the students to memorize the word easily. It made them interested in learning English by using application in which given the pictures and colorful color. So, Android-Based Maritime English Application gave significant effect toward students' English for Maritime Ability. This application gave more opportunity for the students to practice their English wherever they are. Students in the control class, on the other hand, who received instruction using traditional methods, felt disinterested and impatient with learning English..

According to the results of the aforementioned study, which involved marine students enrolled in SMKN 1 Bukit Batu's Nautical Study Program, the experimental class was taught using a Maritime English application based on Android, while the control group got conventional instruction.. Twenty kids were being taught maritime English using an Android-based application. The findings of the experimental class's pre- and post-tests showed that the lowest pre-test score was 10 and the highest was 40. Furthermore, the best post-test score was 80, while the lowest was 64. The average pre-test score was 23.25, and the average post-test score was 71.75. After the pre- and post-tests were administered, an average score of 48.5 was obtained. Hence, it can be concluded that learners who utilized the Android-Based Maritime English Application for instruction achieved greater scores on the post-test compared to the pre-test. Since t-observed = 9.11 was greater than t-table = 2.262, Ha was accepted.

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