The Use of Kahoot! in Teaching English Maritime Subject

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Abstract
Technology is being increasingly integrated as a part of teaching in view of enhancing students' achievement in learning English. This paper presents outcomes of research that examined the effect of using Kahoot! in teaching English Maritime for second semester at Nautika II class of Politeknik Ilmu Pelayaran Makassar. This study used pre-experimental design. In taking the sample, this study used purposive sampling technique. This study was carried out among 20 students from total population of Nautika II classes. The data were analyzed by using descriptive and inferential statistics. Descriptive statistics in the form of frequency, means, standard deviation and independent t – test. From this study, it was found that the students' test scores were higher when they were taught using Kahoot! on the learning process. The result of hypothesis testing showed t-test (17.321) was more than t-table (2.093). Therefore, it can be concluded that H0 was rejected and Ha was accepted. It means that there was a significant effect of using Kahoot! on the students' vocabulary and grammar achievement at second semester in Nautika II class C. From these findings, it can be suggested that online media like Kahoot! is strongly recommended to be used in the teaching and learning process of English vocabulary and grammar. It is expected that the finding of this study would enlighten the relevant literature of the area.

Keywords: English Maritime, Online Media, and Kahoot!

1. Introduction

The use of technology as media has become a popular in everyday life. It is even used for collaborative learning especially in language learning. Media of Information and Communication Technologies (ICT) are also considered capable of helping students interact more easily, particularly in terms of language learning [16] and get helpful information in various formats such as images, PDFs, videos and animations [10].

In education, the advancement of technology in educational media become more popular and have created useful applications such as Edmoodo, Google Classroom, Kahoot and many others. The increasing use of technological resources in all areas of our daily lives has led to their implementation in the classrooms, in order to respond effectively to the demands of students [13]. The most recent popular application is interactive technologies that contributed to the adoption of games in instructional science and higher education teaching to foster collaborative learning, exploration and discovery [11].

In this context, the integration of ICT and game based-learning remarked that the combination of both learning and entertainment called "edutainment" is now being used media to educate better. These devices facilitate communication and access to information, and enable learning anytime and anywhere [5]. One of modern games is Kahoot! that

allows teachers to draw course content to construct quizzes in which students participate as players in a "game-show" [19]. There are a number of researchers have been conducted this topic [4]. In their study, Correia and Santos (2017) emphasized this fact and stated that Kahoot! promotes greater student engagement in learning and fosters academic success [8]. The results obtained, and above all the fact that the students consider that they would like to continue using this tool, demonstrate that this use should be extended to other scientific fields. Moreover, it is noted that level of satisfaction towards the use of the application Kahoot, in terms of learning achievement, carried out by a sample of 68 students of second, third and fourth year of secondary education, between the ages of 12 and 16 years, in the subjects of mathematics, biology and geology and physics and chemistry, during the academic year 2017/2018. This analysis is carried out from a previous study in which a methodological proposal to work with Kahoot Edpuzzle applications is designed [15].

In conclusion, integrating Kahoot! in the classroom promotes learning dan assessing process become hand in hand, it is supported by the result of the students' point of view at Correia and Santos's research (2017) [8]. The research revealed that Kahoot! application allows doing assessment activities in a more dynamic way and with the possibility of obtaining immediate feedback; in the perspective of the teacher, refers to "performing assessment activities with automatic correction and with the possibility of obtaining immediate feedback on students' performance". Moreover, it is possible to conducting the discussion around students' answers.

Recently, in Indonesia, a study of Kahoot! application in teaching reading at tenth grade students has been conducted by Wibisono D. (2019) [20]. This study intended to identify the students' scores in reading comprehension after implementing the online media called "Kahoot!" in the classroom and the effects of applying the online media in the classroom on the students' reading scores. The result showed that the online learning media called "Kahoot!" is effective to improve the reading comprehension scores compared to Jigsaw teaching technique. The evidence are seen from the reading pre- and post-test scores with the analysis and the qualitative explanation on those two groups show that this research has proven the question and given detailed evidences to support the effectiveness of this online learning way of teaching. Nevertheless, the studies on the effects of game online upon interaction between people and learning-teaching processes are very limited. On the other hand, the presence of evidence that support the fact that this application has a great effect on the social development of students necessitates the determination of their impact on their academic development and expectations [6].

Consequently, the aim of this study is to explore the effects of Kahoot! use for education specifically in teaching English Maritime subject. Meanwhile, there is no previous study that the researcher can use as comparative or resources about how the effect of this media (Kahoot!) toward increasing students' learning achievement in English Maritime subject. In addition, a research about Kahoot! on students' learning achievement has never been doing in Politeknik Ilmu Pelayaran Makassar. Even the using Kahoot! in teaching and learning English has been existed, but it has not been using as media for increasing students' learning achievement.

In this case, English Maritime subject discusses about learning new vocabulary and grammar, listening, speaking, reading and writing for Maritime purposes. As the result, in Maritime classroom, educators provide to the students and it must use more learning tools/media that educators can use to facilitate students' vocabulary and grammar understanding in English language use and motivate students to prepare themselves during

evaluation section. Siegle (2015) defined Kahoot as an online game that can test the knowledge of the students on English reading skill [17]. For this reason, Kahoot! is appropriate media to engage students participation in answering questions in limited time, they will learn to use their high order thinking skill and manage their time to get best score. However, the subject matter can be given before the class begins so it allows students to be ready for facing the challenge.

Based on the previous explanation the researcher interesting to do the research what does the effect of using Kahoot! on students' vocabulary and grammar achievement of second semester in learning English at Maritime classroom.

2. Research Method

In this study used an experimental study especially pre- experimental design which involved one group pre-test and post-test [18]. This study is designed to measure achievement by doing pre-test. Then, the researcher used Kahoot! as media during learning teaching process and making a final measurement of post-test. The design of the study can describe as follow:

$$O1 \ X \ O2$$
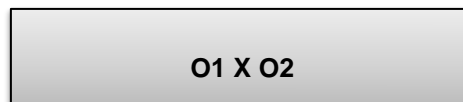
Where:
O1 = Pre- test
X = Treatment
O2 = Post-test   (Arikunto, 2002).

In this study, there are two variables that are used, namely independents variable and dependent variable; independent variable is Kahoot! and dependent variable is students' achievement. Then it was conducted at second semester of Maritime Program Study at Politeknik Ilmu Pelayaran Makassar in the academic year of 2019/2020 as population of this study. According to Arikunto (2013), population is all the subject of the research, while sample is part of population that representative. Therefore in taking the sample, the researcher applies purposive sampling [2]. Purposive sampling is an acceptable kind of sampling based on the specific purpose [2]. The reason why the researcher uses purposive sampling in this study is because only one class using Kahoot!, namely class Nautika II C with the total number of Cadet is 20.

In this study the data was analysed by using descriptive and inferential statistic. Descriptive statistics was used to describe the maximum and minimum scores, mean, and deviation standard, while the inferential statistic uses to test normality, homogeneity, and the hypothesis (Sugiyono, 2010). Before the hypothesis was done, it conducted the homogeneity test and normality test of the data as the condition for testing the hypothesis.

1. Descriptive Statistics
   a. Mean   b. Standard Deviation
   Formula: Formula:

$$X = \frac{\sum X}{n}$$

$$S = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$$

Where:

X = mean score
Σ = summation sign　　　　　S　　　= standard deviation
ΣX = sum of all X score　　　Σfxi2(Σfxi)2 = standard for the sum of the squared
n = total number of score　　　　　　deviation i.e. the mean.
[14]　　　　　　　　　　　　n　　　= number of score　　[18]

c. Minimum and Maximum

Minimum and maximum was used to examine the minimum and maximum pre-test and post-test. Where is minimum is the lowest score of the result of pre-test and post-test. While, maximum score was the highest score of the result of pre-test and post-test. To count the range score, the researcher issued formula:

Range (Rn) = Maximum score – Minimum score.

2. Inferential statistic

In inferential statistic analysis, paired sample T-Test is used. The Paired T-Test is used when the the sample are dependent of each other, so each data point from one distribution corresponds to a data point in the other distribution. When using a paired t-test, the test statistic is calculated using the average difference between the data pairs, the standard deviation of the differences, and the sample size of either population. The result of t – test then was used to examine the hypothesis of the study based on the following criteria:

1. If ttest≤ ttable, the hypothesis (H0) is accepted, it means that there is no significant effect of using Kahoot! on students' achievement of second semester at English Maritime classroom.

2. If ttest>ttable, the hypothesis (Ha) is accepted, it means that there is a significant effect of using Kahoot! on students' achievement of second semester at English Maritime classroom.

3. Results and Analysis

The result of mean score of pre-test and post-test of English Maritime at second semester students of Politeknik Ilmu Pelayaran Makassar is arranged into the following table:

Table 1 Summary of mean score for pre-test and post-test

	N	Max. Score	Min. Score	Mean	Std. Deviation
Pre-test	20	65	30	48.75	10.04
Post-test	20	88	63	78.95	6.50

Based on the result of students' pre-test and post-test, it was found that students mean score in pre-test was 48.75 and standard deviation was 10.04. The mean score in post-test was 78.95 and standard deviation was 6.50. It means that at the standard deviation of pre-test was higher than at the post-test, in which the mean scores showed contrastive trend. Thus, it can be assumed that there is a significant effect of applying Kahoot! on students learning achievement at Nautika II class C. The scores significantly improved between before treatment and after treatment. Therefore, it is important to measure the significance of students' score from pre-test to post-test by using inferential statistics.

Then in classifying the students' score on pre-test and post-test, the same criteria was used such as very good, good, fair, low and very low to classify the students'

attainments in this section. The classification of both scores' test is illustrated in the table below:

Table 2 Description of students score on pre and post-test

No.	Classification	Score Level	Frequency	Percentage%	Frequency	Percentage%
			Pre-test		Post-test	
1	Very Good	$86 \leq x < 100$	-	0	3	15
2	Good	$70 \leq x < 86$	-	0	16	80
3	Fair	$55 \leq x < 70$	9	45	1	5
4	Low	$45 \leq x < 55$	3	15	-	0
5	Very Low	$x < 45$	8	40	-	0
		Total	**20**	**100%**	**20**	**100%**

The table above showed that there was an improvement after the treatment had been conducted. It can be seen on the different frequency and percentage of pre-test scores. The result of frequency and percentage of post-test scores were higher than at the pre-test. The summary of both scores can be seen in the chart below:
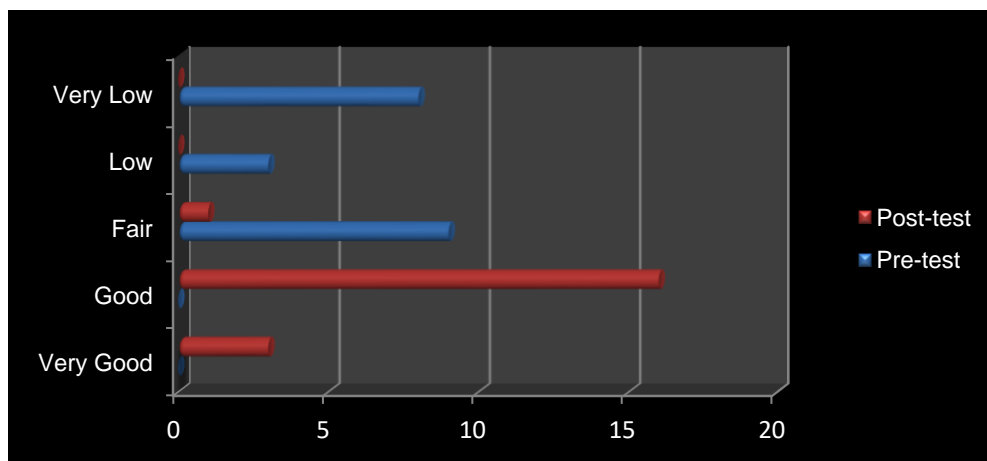

Chart 1 The accumulation scores from pre to post-test

The chart above illustrates the summary result of pre-test and post-test of students learning outcomes in category. It can be seen that the percentage of students fell into very low category that decreased from pre to post test (40% and 0% respectively). Although some students were categorized as low and fair in pre-test (15% and 45% respectively) the students' scores increased in post-test. Most students fell into good category (80%) while some were categorized as very good (15%) in post-test. It means that students' learning achievement in pre-test in English for Maritime at Nautika II class C before treatment was very low but after giving treatment the students' learning achievement in post-test improved.

3.1. Inferential Statistical Analysis

The inferential analysis aims to find the normality of the data, the homogeneity of the variants and the result of hypothesis testing. Prior to testing the hypothesis with t-test formula, both pre- and post-test data should be in normal distribution and homogenous. Both pre and post-test data were analyzed using SPSS 16.0 version.

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The data of nomality test explained clearly that the value of Asymp.Sig. (2-tailed) of pre-test is 0.513 and the value of Asymp.Sig. (2-tailed) of post-test is 0.928. It means both the value is greater than the rate of 5% alpha (0.513 & 0.928 > 0.05). It can be concluded that the data of pre-test and post-test were normally distributed. Then, the value of Sig. (2-tailed) of the homogeneity test was 0.713 which was greater than 5% alpha (0.713 > 0.05). It can be concluded that the variances were homogenous. This homogeneity test is done by knowing whether the two tests have the same variant or not, then to determine the statistics that was used in hypothesis testing.

After conducting the normality test and the variance homogeneity test, so the results of the data are normally distributed and get a homogeneous variance. Furthermore, the t-test statistical test was conducted to determine whether there was an effect of Kahoot! application on the learning outcomes of second semester Cadet of Politeknik Ilmu Pelayaran Makassar. In other words, this hypothesis testing was conducted to find out whether using Kahoot! could improve the students' achievement at English Maritime subject. The hypothesis testing was analyzed using SPSS 16.0with significant level or α = 0.05

The SPSS result can be seen in the table below:

Table 3 Test of Hypothesis Testing

Paired Samples Test								
	Paired Differences							
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1 pretest - posttest	-30.200	7.797	1.744	-33.849	-26.551	-17.321	19	.000

Based on the table, it can be seen the value of Sig. (2-tailed) = 0.000. It means the value was smaller than the alpha (0.00 < 0.005). It can also be seen that the value of t-test was 17.321 while t-table was 2.093. It highlighted that T-test value was higher than t-table (17.321 > 2.093). Indeed, it can be stated clearly that Ha was accepted and H0 was rejected. In conclusion, there is a significant effect of using Kahoot! application on teaching English for Maritime at second semester of Nautika II class C of Politeknik Ilmu Pelayaran Makassar.

3.2. Discussion

Considering the results of findings, it could be summed up that learning vocabulary and grammar comprehension using online media such as Kahoot! has more positive effects that lead the students' vocabulary and grammar comprehension better by making them be more active in mind. The process of learning also results in the students' better understanding and readiness to do the real test. After analyzing the data through inferential analysis, the first finding is the result of this study showed that Kahoot! could improve students' achievement at Nautika II class C. It was indicated by the analysis result in determining the differences of students' achievement on pre-test and post-test. The result showed that the students' mean score improved significantly from pre- to post-test at the point of 48.75 and 78.95 respectively. This happen because some reasons as follows:

Firstly, Kahoot! gave students more opportunities to interact and engage with the lecturer, peers and lecture content by providing a fun platform on which to engage. The use of Kahoot! fostered interactivity and engagement during lectures, through answering questions, participating in quizzes, and discussions triggered by Kahoot!. The use of

Kahoot! encouraged wider participation in class as opposed to conventional classrooms where discussions are often dominated by a few extraverted students. The wider student participation in the class also fostered deeper engagement in the learning environment. Sixty-four percent of the studies on learning effect from Kahoot! in our review describes experiments where the effect of Kahoot! was compared to traditional teaching. In a quasi-experiment in Spain with 89 chemistry students, a control group exposed to traditional teaching was compared to two groups using Kahoot! where one was using Kahoot! twice as much the other [1]. The results showed a significant improvement in the final grade from traditional teaching to the use of Kahoot! (both groups), and that the group using Kahoot! frequently improved more (þ38.4%) than the other (þ32.0%).

Secondly, the next findings showed that students' maximum and minimum score on post-test was higher than students' maximum and minimum score on pre-test. It means that the students who were taught by using Kahoot! performed progress on their achievement. This might happen because Kahoot! fostered wider and active student participation, and yet provided students with the opportunity to retain their most desirable personal choice of participation. The study was conducted by Chen, W. et al. (2017) reported that the students interacted more with peers around them when engaging with Kahoot! and with the lecturer during and after lectures than they normally would in any other lecture [7]. Moreover, they pointed out that with Kahoot! in the classroom, the students could decide on the level of interaction that they felt comfortable with, either participating anonymously or overtly with friends, other classmates, the lecturer or with the whole class.

Furthermore, the application like Kahoot! are an excellent choice for teaching university students given the access to mobile devices, availability of Wi-Fi, and students' affinity for computer games. Such eLearning tools add positive energy, support concept exploration, and add fun to the classroom, which seems to translate into increased comprehension and motivation. Perhaps most significantly, the "gamification" of learning increases student's engagement by appealing to all students, even the most introverted, combining both a cooperative fast-paced learning environment and friendly competition [12]. Bergin and Reilly (2005) conclude that to some academics, the entire game industry is considered to contain little scholarly merit [3]. Games, especially eLearning games, are sometimes not believed to be the result of serious work or worthy of attention. In this sense, this application can be used not only for assessing students' understanding but also for creating positive circumstance for creative language learning. Wang's (2015) research shows that integrating GSRS (e.g., Kahoot!) into regular classroom lectures contributes to improvements in student engagement [19]. When students did not perform well in Kahoot!s, those specific Kahoot!s were used to drive revision efforts, in view of overcoming learning deficiencies. In addition, Kahoot! offered students the opportunity to focus on specific relevant content, when a large amount of materials were delivered in lectures, which, again, is consistent with Wang's (2015) findings [19].

Thirdly, the standard deviation value in the post-test was 6.50 and pre-test was 10.04. This means that standard deviation in pre-test was higher than post-test. It means that the degree of distribution variety ability in pre-test more distributing than post-test. There were three students from post-test who fell into the very good category, and there was no student from pre-test who fell into the very good category. There were sixteen students fell into good category and there was no student from pre-test fell into good category. There was one student fell into fair category and there were nine students from

pre-test fell into this category. And there were three and eight students from pre-test fell into low and very low category, in contrast there was no student fell into these category.

To begin with, the first finding that the researcher found in this study that after analyzing and calculating the data in this study, the students' achievement improved after applying kahoot!. This can be seen from the hypothesis testing of the study that Ha was accepted and H0 was rejected. It indicated that there was a significant effect of using Kahoot! on the students' achievement at second semester of Nautika II class C. To strengthen this account, the value of t- count was higher than the value of t- table (17.321>2.093). Moreover, it can be said that H0 is rejected. It indicated that there was a significant effect of using Kahoot! application in teaching English Maritime at second semester of Nautika II class at Politeknik Ilmu Pelayaran Makassar.

4. Conclusion

Based on the findings and discussion in the previous chapter, the researcher concluded that this research was intended to appraise the finding whether or not there was a significant effect of Kahoot! on the students' vocabulary and grammar achievement at second semester in English Maritime class of Nautika II at Politeknik Ilmu Pelayaran Makassar. This study used descriptive quantitative method. The result of this research was expected to be beneficial for educator or English teacher and students to enhance the quality of teaching and learning English especially in English for Maritime. This Kahoot! application could also support the course. Students communicate, discuss, and share ideas to the course through this application. Indeed, all of these items might help the students to get involve with the course. Besides, the students work cooperatively with their friend so that it will make the students as the center of learning activity.

In answering the research question of this study, this study employed essay, multiple choice questions and true or false test as an instrument. This instrument revealed that there was a significant effect of Kahoot! on the students' vocabulary and grammar achievement at second semester in Nautika II class C. This result was supported by calculating and computing hypothesis testing, the researcher found that t-test was 17.321 and t-table was 2.093. This means that t-test was higher than t-table. Ha was accepted and H0 was rejected. It can be concluded that there was a significant effect of using Kahoot! on students' vocabulary and grammar achievement especially on grammar achievement at second semester in English Maritime class.

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