The Effectiveness of the Kahoot app! on the Game Based Learning Method for Mastering the Vocabulary of SMAN 9 Pekanbaru Students

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Abstract
This study aims to determine the effectiveness of Kahoot! about vocabulary mastery of class X SMAN 9 Pekanbaru. This research is an experimental research with a quasi-experimental type, where the data collection instruments used are pretest and posttest control groups. There are 2 classes with 35 students in each class. The samples in this study were class X IPA 2 as an experimental class and X IPS 2 as a control class. Based on the results of the Independent Sample T Test, then Sig. (2-tailed) of 0.000 which shows that the result is smaller than 0.05 so it can be concluded that Ha is accepted and Ho is rejected, which means that the use of Kahoot! effective in mastering vocabulary class X SMAN 9 Pekanbaru.
Keywords: Effectiveness, Kahoot!, Vocabulary

INTRODUCTION

In Riau Province, there are several high schools that have been teaching Japanese for a long time, one of which is SMAN 9 Pekanbaru. Learning Japanese at SMAN 9 Pekanbaru one of which refers to communication skills. To communicate, it is necessary to pay attention to aspects of language skills. There are four language skills, namely listening, speaking, reading, and writing. Every aspect of language skills is closely related to one another. The language skill aspects above also apply to Japanese language skills, namely listening/hearing (kiku), speaking (hanasu), writing (kaku), and reading (yomu) skills. In JF Standard there is a basis for learning Japanese, one of which is linguistic ability. This ability includes the ability to master vocabulary.

Vocabulary is one of the learning materials that is very important for students to master in language skills. Kasno (2014) explains that vocabulary mastery will affect students' ways of thinking and creativity in the learning process. However, because in a language the number of vocabularies is very large, especially in Japanese which has a form of language that is different from Indonesian, judging from the letters, grammar and form of the language used, it is not uncommon for students to experience difficulties in the process of learning vocabulary. One way to improve Japanese language skills is with interest and motivation (Suryadi, 2018). There are various ways to increase one's interest and motivation to learn. According to Susanto (2013) interest can generate interest and attention so that they can choose objects or carry out activities that are profitable, enjoyable, and provide longer satisfaction because everything is done from self-motivation.

In addition to interest and motivation, choosing the right media will certainly increase student motivation in the learning process. Choosing the right media will make the learning process more enjoyable. According to Kemp (in Efendi, 2005) based on the results of his research showing the positive impact of using media as an integral material in communication and learning, including (1) the delivery of messages becomes more standardized, (2) learning is more interesting, because of the clarity and sequence of messages, the power of attractive,

changing images and the use of special effects that generate motivation and interest, (3) learning becomes more interactive, (4) learning time is more effective, (5) the quality of learning outcomes can be improved, (6) students' positive attitude towards the learning process learning can be improved, (7) the role of the teacher can change in a more positive direction.

Anam (2018) suggests that by making changes from conventional learning to active and interactive learning will make students motivated in learning. Students will be motivated if learning in class matches their interests. One way to increase students' interest in learning is by playing games. Referring to this, it is necessary to have an innovative learning approach that is able to accommodate learning activities to be more fun based on education that can stimulate students' adrenaline in learning such as competition in games. One of the game-based learning methods is game-based learning. Game based learning is a system that is implemented in the educational process, where users (teachers) can adopt a game for the needs of cognitive interest and learning motivation (Vusić, Bernik, & Geček, 2018). The motivational psychology found in game-based learning allows students to engage with learning material in a more fun and dynamic way. In the industrial era 4.0, various learning applications have been made available that can overcome several problems regarding interest and motivation that always occur in the teaching and learning process, one of which is the Kahoot! application. Kahoot! is one of the online-based applications that are used as interactive learning media in learning. Kahoot! facilitate users in conducting quizzes and learning in class (Hartanti, 2019).

In Kocakoyun's research (2017) it proves that Kahoot! is the most popular application as a learning medium, besides that the research results of Irwan, Zaky Farid Luthfi, and Atri Waldi (2019) show that Kahoot! can be an alternative interactive learning media in tertiary institutions because it is proven to significantly improve student learning outcomes. According to Nokham (2017) Kahoot! also makes students concentrate more, work together more, enjoy learning, and increase learning motivation by competing in answering questions provided in Kahoot! with a predetermined time. Use of the Kahoot! can make the class atmosphere more interesting and attract students' interest in memorizing Japanese vocabulary.

Based on the results of observations made by researchers, learning SMA Negeri 9 Pekanbaru still uses conventional methods in learning, namely by recording a collection of vocabulary and then memorizing it independently. This method is seen as less effective because students still experience difficulties in learning Japanese, especially learning. This can be seen from the attitude of students when learning, such as difficulty understanding the subject matter so they cannot answer questions from the teacher about the material that has been taught. When working on practice questions and daily tests, most students still have difficulty doing it. This is proven by the students' scores which are still low on daily tests and midterm tests.

Based on the description above, the problem formulation in this study is whether there is a significant difference in class X students of SMAN 9 Pekanbaru before and after using the Kahoot! application. The purpose of this study was to analyze differences in vocabulary mastery at SMAN 9 Pekanbaru before and after using the Kahoot! application.

RESEARCH METHODS

This research is an experimental research with a quasi-experimental type that aims to determine the effectiveness of the Kahoot! on vocabulary mastery in class X SMAN 9 Pekanbaru. This research was conducted at SMAN 9 Pekanbaru from February to March 2023. There were 2 classes that were sampled in this study with a total of 35 students in each class, namely class X IPA 2 as an experimental class using the Kahoot! while X IPS 2 as the control class uses conventional methods in learning vocabulary. The instrument used in this study is a test. In this study, the Pretest and Posttest Control Group design was used with the test as comparing the

significance values of the pretest and posttest results of the two classes to be able to see the effectiveness of the Kahoot! application. The treatment given to the experimental class was 4 times and the vocabulary used was vocabulary from the book Nihongo Kira Kira chapters 7 and 8. The hypothesis testing in this study was carried out with the Independent Sample T-Test with the provision that if the value of Sig. (2-tailed) < 0.05 then Ho is rejected and Ha is accepted, which means that there is a difference in the average student learning outcomes between the two groups (Priyatno, 2014)

RESEARCH RESULTS AND DISCUSSION
Research Result

In this study, the treatment was carried out in 4 meetings with 2 classes as the experimental class and the control class. Before giving treatment to the experimental class who will learn Japanese vocabulary using the Kahoot! application, the researcher gave a pretest to the control class and the experimental class to find out students' initial abilities in mastering Japanese vocabulary. Then the treatment was carried out 4 times for the experimental class using the Kahoot! while the control class still uses conventional methods in learning. After being given treatment, the control class and the experimental class were given a posttest to find out the differences in the results of the ability of the control class and the experimental class after using the Kahoot! application. in learning Japanese vocabulary. The following are the results of the pretest and posttest data analysis that was carried out in that class.

Pretest Results

The material for the pretest questions is the vocabulary contained in the Nihongo Kira Kira book chapters 5 and 6. The pretest questions consist of 25 questions with 4 different sections based on the type of questions and different question points based on the weight of the questions given with a total score of 100.

Table 1. Experiment Class and Control Class Pretest Results

Value Scale	Categori	Experiment Class	Control Class
91-100	Very good	-	-
81-90	Good	-	-
71-80	Enough	1	1
61-70	Not enough	3	4
≤ 60	Very less	31	30
Total		**35**	**35**
Average		**42,5**	**44,3**

Based on the table above, it is known that the average score achieved by experimental class students during the pretest was categorized as very low with an average value of 42.5. The maximum score obtained was 71 and the minimum score obtained was 16. Among the 35 students who carried out the pretest, 1 student was in the moderate range, 3 students were in the less score range, and 31 students were in the very poor range. The average score achieved by control class students is also categorized as very poor with an average value of 44.3. The maximum score in the pretest was 71 and the minimum score was 19. Among the 35 students who carried out the pretest, 1 student was in the moderate score range, 4 students were in the less grade scale and 30 students were in the very poor range.

Homogeneity Test

Before being given treatment, it is necessary to carry out a homogeneity test to see whether the experimental and control classes have homogeneous or the same abilities. This

homogeneity test uses the pretest value of the experimental class and the control class. The decision making in the homogeneity test in this study is that if the significance number is above 0.05 then Ha is accepted, but if the significance number is below 0.05 then Ho is rejected. The following in table 2 is presented a table showing the results of the homogeneity test of the experimental class and the control class:

Table 2. Homogeneity Test Results

Test of Homogeneity of Variances		Levene Statistic	df1	df2	Sig.
Pretest Result	Based on Mean	.425	1	68	.517
	Based on Median	.381	1	68	.539
	Based on Median and with adjusted df	.381	1	67.981	.539
	Based on trimmed mean	.416	1	68	.521

Based on the table above, the results of the homogeneity test show that the significance value (Sig.) Based on Mean is 0.517. This value is more than 0.05 so that Ha is accepted and it can be concluded that the variance of the pretest data from the experimental class and the control class is homogeneous or the same.

Normality Test

Furthermore, to find out whether the data in this study are normally distributed or not, it is necessary to carry out a normality test. The normality test is also used as a condition before using the Independent Sample T Test hypothesis test. This normality test uses the Shapiro Wilk normality test formula

Table 3. Normality Test Results

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Experiment Class	.090	35	.200*	.973	35	.531
Control Class	.155	35	.032	.950	35	.111
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Based on the table above, the results of the normality test show that the significance value for the experimental class is 0.531 and that for the control class is 0.111. Both values show a significance of more than 0.05, which means that Ha is accepted. So it can be concluded that the two classes are normally distributed.

Posttest Results

After being given treatment 4 times then given a posttest. The material for the posttest questions is the vocabulary contained in the Nihongo Kira Kira book chapters 7 and 8. The posttest questions consist of 25 questions with 4 different sections based on the type of questions and different question points based on the weight of the questions given with a total score of 100.

Table 4. Posttest Class Experiment Results

Value Scale	Categori	Experiment Class	Control Class
91-100	Very good	15	3
81-90	Good	10	11
71-80	Enough	10	10

61-70	Not enough	-	6
≤ 60	Very less	-	5
Total		**35**	**35**
Average		**87,6**	**75,8**

Based on the table above, the average value achieved by experimental class students at the posttest was categorized as good with an average score of 87.6. The maximum score is 100 and the minimum score is 76. Among the 35 students who took the posttest, 3 students were in the very good range, 11 students were in the good range and 10 students were in the fair range. The average score achieved by control class students at the time of the posttest was categorized as sufficient with an average value of 75.8. The maximum score obtained was 97 and the minimum score obtained was 50. Among the 35 students who carried out the posttest, 3 students were in the very good range, 11 students were in the good value range, 10 students were in the moderate score range, 6 students were in the the range of values is less, 5 students are in the range of values very less.

Hypothesis Testing

Hypothesis testing using the Independent Sample T test was used to determine whether there was a significant difference between student learning outcomes in vocabulary learning that was treated using the Kahoot! with that of students whose vocabulary learning uses conventional methods. With the condition that if the value of Sig. (2-tailed) < 0.05 then Ho is rejected and Ha is accepted, which means there is a difference in the average student learning outcomes between the two groups.

Table 5. Independent Sample T Test Results

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Experiment	.149	35	.047	.942	35	.066
Control	.129	35	.149	.960	35	.222
a. Lilliefors Significance Correction						

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
Hasil Test	Equal variances assumed	10.283	.002	4.726	68	.000	11.886	2.515	6.867	16.905
	Equal variances not assumed			4.726	54.352	.000	11.886	2.515	6.844	16.928

Based on the table above the results of the Independent Sample T Test obtained the value of Sig. (2-tailed) of 0.000. This result is less than 0.05 which is the basic value for decision making in the Independent Sample T Test, it can be concluded that Ha is accepted and Ho is rejected, which means that there is a significant difference between the values of the experimental class using the Kahoot! with a control class that uses conventional learning.

Discussion

The students' ability in Japanese vocabulary using conventional methods was very low. Therefore the researcher conducted research on the control and experimental classes where the experimental class was given treatment by learning using the game based learning method using the Kahoot! and the control class will continue to study with conventional methods.

Before conducting research, researchers must know the initial abilities of the experimental class and homogeneous control class or not by giving a pretest. After giving the pretest, a homogeneity test was carried out to find out whether the pretest data for the control class and the experimental class were homogeneous or not. The result is a value concluded that the variance of the pretest data from the experimental class and the control class is homogeneous or the same. Then, the researcher conducted a normality test on the pretest scores of both classes to find out whether the data was normally distributed or not. The results obtained are the experimental class and the control class are normally distributed. Once it is known that the two classes are proven to be homogeneous, the next step is that the researcher gives treatment to the experimental class using the Kahoot! application. The treatment was carried out 4 times in class X IPA 2 as an experimental class.

After the treatment was given, a posttest was carried out in the experimental class and the control class. It can be seen that the average value of the experimental class is higher than the control class with a difference of 11.85 points. Based on the results of the Independent Sample T Test it was concluded that there was a significant difference in scores between the two classes and it could be concluded that the use of Kahoot! Effective in learning vocabulary. Media Kahoot! triggering student enthusiasm in learning and motivating students to understand vocabulary due to the use of game-based learning methods that make students expressive, active and enthusiastic in learning. So that students' understanding of vocabulary is getting better because students can memorize vocabulary by bringing out a competitive spirit among students to be the best.

CONCLUSION

Based on the results of the research and data analysis that has been presented, it can be concluded that the use of the Kahoot! on the mastery of class X students of SMAN 9 Pekanbaru proved to be effective. Using the Kahoot! can further improve students' ability to understand and master vocabulary compared to just using conventional methods. This can be seen from the difference in the posttest scores between the experimental class and the control class. The average value of the experimental class posttest was 87.65 and that of the control class was 75.8. The experimental class got a higher average score than the control class. Even though there was an increase in grades in both classes, in the control class there were still some students who did not reach the standard score of completeness, while all students in the experimental class had achieved the standard score of completeness. Then, based on the results of the Independent Sample T Test, the Sig. (2-tailed) of 0.000 which indicates that the result is less than 0.05 which is the basic value of decision making in the Independent Sample T Test so that it can be concluded that Ha is accepted and Ho is rejected which means that the use of the Kahoot! effectively improve the vocabulary mastery of class X SMAN 9 Pekanbaru.

Based on the observations of researchers during the learning process using the game based learning method in the experimental class, it can be seen that students are enthusiastic about learning Japanese vocabulary using the Kahoot! application. During the treatment process students were able to answer the Kahoot! quiz. well, being able to distinguish the writing of similar Japanese vocabulary and also being able to understand and memorize the vocabulary in each chapter in a fairly short time.

BIBLIOGRAPHY

Ahmad Susanto. 2013. Teori Belajar Pembelajaran di Sekolah Dasar. Jakarta. Kharisma Putra Utama

Anam, A, N. 2014. *Upaya Peningkatan Motivasi Belajar Melalui Layanan Informasi Dengan Tehnik Game*, Jurnal Ilmiah Pendidikan Bimbingan dan Konseling, 2(1)

Devianty, R. 2017. *Bahasa Sebagai Cerminan Kebudayaan*. Jurnal Tarbiyah

Efendi, Mohammad. 2005. *Orientasi Media Video Pembelajaran*. Malang. Universitas Negeri Malang.

Hartanti, D. 2019. *Meningkatkan Motivasi Belajar Siswa Dengan Media Pembelajaran Interaktif Game Kahoot Berbasis Hypermedia.* Prosiding Seminar Nasional PEP 2019

Irwan, Irwan, Zaky Farid Luthfi, and Atri Waldi. 2019. *Efektifitas Penggunaan Kahoot! Untuk Meningkatkan Hasil Belajar Siswa*. PEDAGOGIA: Jurnal Pendidikan8(1):95–104

Kasno. 2014. Kamus Sebagai Sumber Rujukan dan Pengajaran Kosakata. Jakarta: Pusat Bahasa.

Kocakoyun, H. B. S. 2017. *Determination of University Students' Most Preferred Mobile Application for Gamification.,*. World J. Educ. Technol. Curr. Issues 9, 18-23

Nokham, Y. C. R. 2017. *The effect of Kahoot, Quizizz and Google Forms on the student's perception in the classrooms response system,*. Econ. Sustain. Growth, ICDAMT , 178–182

Priyatno, Dwi. 2014. Mandiri Belajar Analisis Data dengan Spss. Yogyakarta: Mediakom.

Suryadi, Dedi. 2018. *Motivasi Belajar Bahasa Jepang Mahasiswa Program Studi Pendidikan Bahasa Jepang Universitas Muhammadiyah Yogyakarta,* 2(1), 180-181

Vusić, D., Bernik, A., & Geček, R. 2018. *Instructional Design in Game Based Learning and Applications Used in Educational Systems. Technical Journal*