

THE EFFECT OF GAME BASED LEARNING USING WOW CROSSWORD APPLICATION ON STUDENTS' VOCABULARY ACHIEVEMENT

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Abstract

The objective of this research are 1) to find out whether using Words of Wonders (WOW) Crossword application as the implementation of game based learning is effective to teach vocabulary or not. 2) to find out if there is any significant difference in students' vocabulary achievement between students who are taught by using WOW crossword application and without using it. 3) to find out the students' responses of the implementation of game based learning using WOW crossword application. The type of this research is experimental research with quasi-experimental design. A purposive sampling technique is used to decide the sample. The total sample is 72 students of class X AKL 3 as the experimental group and X AKL 4 as the control group. The instrument used in this research is a vocabulary test and feedback form. The SPSS 22 Window Version is used for the technique of analyzing the data. Based on the result, the maximum score of post-test in the experimental was higher than the control class ($97.5 > 95$). The paired sample t-test results showed a sig. (tailed) value is $0.000 < 0.05$ and the independent T-Test results showed a sig. (tailed) value is $0.04 < 0.05$. The feedback form shows 1854 until 2044 for the implementation of the Word of Wonder (WOW) crossword application. In conclusion, the implementation of the game based learning using Word of Wonder (WOW) crossword application is effective toward students' vocabulary achievement and give the positive responses rather than the student in conventional learning.

Keywords: Game Based Learning, Word of Wonder (WOW) Crossword Application, Vocabulary Achievement, Teaching Vocabulary.

PENGARUH PEMBELAJARAN BERBASIS GAME MENGGUNAKAN APLIKASI WOW CROSSWORD TERHADAP PRESTASI KOSAKATA SISWA

Abstrak

Tujuan dari penelitian ini adalah 1) untuk mengetahui apakah penggunaan aplikasi Words of Wonders (WOW) Crossword sebagai implementasi pembelajaran berbasis permainan efektif untuk mengajarkan kosakata atau tidak. 2) untuk mengetahui apakah ada perbedaan yang signifikan dalam pencapaian kosakata siswa antara siswa yang diajar dengan menggunakan aplikasi teka-teki silang WOW dan tanpa menggunakannya. 3) untuk mengetahui respon siswa terhadap penerapan pembelajaran berbasis permainan menggunakan aplikasi teka-teki silang WOW. Jenis penelitian ini adalah penelitian eksperimen dengan desain eksperimen semu. Teknik purposive sampling digunakan untuk menentukan sampel. Jumlah sampel sebanyak 72 siswa kelas X AKL 3 sebagai kelompok eksperimen dan X AKL 4 sebagai kelompok kontrol. Instrumen yang digunakan dalam penelitian ini adalah tes kosakata dan formulir umpan balik. SPSS 22 Window Version digunakan untuk teknik analisis data. Berdasarkan hasil tersebut, nilai maksimum post-test pada kelas eksperimen lebih tinggi dibandingkan kelas kontrol ($97,5 > 95$). Hasil uji Paired Sample T-test menunjukkan sig. (tailed) nilainya $0,000 < 0,05$ dan hasil Uji T independen menunjukkan sig. (berekor) nilainya adalah $0,04 < 0,05$. Formulir umpan balik menunjukkan tahun 1854 hingga 2044 untuk penerapan aplikasi teka-teki silang Word of Wonder (WOW). Kesimpulannya, penerapan pembelajaran berbasis permainan menggunakan aplikasi teka-teki

silang Word of Wonder (WOW) efektif terhadap perolehan kosa kata siswa dan memberikan respon positif dibandingkan siswa dalam pembelajaran konvensional.

Kata Kunci: Pembelajaran Berbasis Game, Aplikasi Teka-Teki Silang Word of Wonder (WOW), Pencapaian Kosakata, Pengajaran Kosakata.

1. INTRODUCTION

According to Brown (1941), language is a crucial aspect related to perception and relation. Language can reflect culture, society, or even education. There are many languages in the world, one of them is English. According to Kaharuddin (2023), English is an important language in several countries such as Indonesia, and it is used for several purposes from education to job vacancies. So, English has facilitated communication worldwide and has become an international language. To be mastering and improving their English language proficiency, as Nurgun AKAR (2010) said that language elements of vocabulary knowledge must be mastered between students and teachers to raise better communication.

Vocabulary has an essential role in acquiring and learning the language process. Cameron (2001) explained that vocabulary is knowledge about the meaning of language as well as the structure of language. By understanding vocabulary, it is easy to know the meanings inside the context and arrange the words with meaning in the language. To teach vocabulary needs a teaching approach to support the process, such as communicative approach and the approach with collaboration of technology such as using games. According to Reinhardt (2020), games can be used as educational tools to build students' interest and motivation. Game provided a challenge to explore a new things and expand between knowledge and skills. This is also supported by Wernbacher et al. (2011) that games are beneficial learning tools for enhancing skills and make it challenging to provide information on the new teaching strategy of the game-based learning approach. The crossword games include the kinds of games related to the meaning and form of words and it can improve students' vocabulary achievement. Karakedo et al. (2020) also define the material of a crossword puzzle game is focused on the part of a word such as a noun, adverb, verb, and adjective. It means that the content can be found relatively easily in daily life. Fachrozi et al. (2021) also said that the crossword games give positive responses in the teaching and learning process. Inside the crossword game, the learners can figure out the new word based on some clues, find the meaning of the word, and memorize it. By playing a game, Rostina & Rahayu (2022) argues that the crossword game can control the

class and build enthusiasm among all the students in the classroom. The crossword game application became a suitable application for learning vocabulary providing simple features and easier access, so the students can learn vocabulary independently.

On the other hand, the researcher found in the observation that the student's ability to comprehend the vocabulary through the factual text types was still weak and it influenced the English mean score in the midterm tests, which the students' values mainly did not achieve the Minimum Competence Criterion (MCC) arrangement at the tenth grade of SMK Negeri 1 Warureja is 76, and the students' value under the minimum competence criterion must do the additional test. So, it means the students' vocabulary should be improved. The students also faced another problems include their capability, motivation and respond.

As a matter of fact about the importance of vocabulary in learning and teaching language and also to solve those problems, Fachrozi et al. (2021) said that a teacher should be able to create teaching strategies to avoid boring and uncomfortable situations. Selvi Destiana & Ujang Suparman (2019) added that the appropriate strategy and media will help students use their vocabulary in various contexts and make them memorize the words in long-term memory, such as through crossword games. This research will implement a game-based learning strategy that is suitable for students' vocational high school. It can be effective to support the skills, especially vocabulary skills in an enjoyable process. The new strategy is expected the students to be more active in the classroom and increase students' motivation to learn vocabulary which affected to the students' achievement.

The objectives of this research are 1) to find out whether using Words of Wonders (WOW) Crossword application as the implementation game based learning is effective to teach vocabulary or not, 2) to find out is there any significant difference in students' vocabulary achievement between students who are taught by using WOW Crossword application and without using it, and 3) to find out the students' responses of the implementation of game based learning using Word of Wonders (WOW) crossword.

2. METHODS

The research uses a quantitative approach to find out the effect of implementing game-based learning using the WOW Crossword application as a learning medium. At the same time, this research also focuses on students' vocabulary achievement in the classroom. According to Siyoto & Sodik (2015) cited in Ahyar et al. (2020), quantitative research is a research that mainly consists of numerical data in the form of numbers within the process of data collection, data analysis and data presentation. Quantitative research also uses statistical methods that are adapted to existing numerical data. This study used a quasi-experimental design in which the experimental and control groups are not randomly selected. In this study, the experimental group consisted of students who were taught by implementing game-based learning using the Word of Wonders crossword application and the control group consisted of students who were taught using conventional learning methods.

The population in this research is 144 from the tenth grade of accounting students at SMK N 1 WARUREJA. The researcher chose the accounting program as the field to be researched and used two classes as the experimental and control groups of tenth grade accounting students at SMKN 1 WARUREJA for the academic year 2023/2024. The samples were taken from class X AKL 3 as the experimental group and X AKL 4 as the control group. The research used purposeful sampling technique in this research. According to Fenti (2020), the purposive sampling technique is a sampling technique where data is not selected based on strata or random, but it is selected based on a specific purpose that is related to the subjects or sample. In this case, the researcher choose a sample from the accounting class program that mostly of student are interested in learning English and the daily score of english assignment are better than another program.

The researcher collecting data using test and rating scale. The researcher will carry out a pre-test before giving treatment, and the post-test after the treatment was given both the control and experimental groups will carry out. The purpose of test is usually to measure the subject's ability in a learning process, an achievement test is carried out (Fenti, 2020). Then, rating scales is given to the students to explain an opinion or an assessment and show the responses of the impact of behavior on the condition of each subject (Ahyar et al., 2020).

The instruments of this research is used vocabulary test by using a multiple-choice model and it consists of 40 questions with four options. The time given is 70 minutes to answer the questions correctly and carefully. For the rating scale by an online feedback form to find out the students' responses of the implementation of the Word of Wonders (WOW) crossword application and it consisted of 15 statements. According to Ahyar et al. (2020), this feedback form includes knowledge and skills acquired, technical fluency in the learning process, and feelings when the activity occurs and finishes. To analyze the data, the researcher conducted the validity and reliability test to testing the instruments. Then, it continued to analyze the data using normality test, homogeneity test, Paired Sample T-test and Independent Sample T-test. The paired sample T-test and Independent T-test are used to test the hypothesis about the implementation of game based learning using WOW Crossword application is effective towards students' vocabulary achievement and significant different between the students.

3. RESULTS AND DISCUSSION

Results of Pre-Test and Post-Test

The Results showed a short analysis of pre-test results. For the experimental class, the minimum score of the pre-test was 67.5 and the maximum score was 87.5. The average score was 77.22 from the total score of 2780. Meanwhile, in the control class, the minimum score was 55, and the maximum was 85. The average pre-test score was 71.59 from the total score of 2577.5. Then, there is a summary of the analysis post-test score. For the experiment class, the minimum post test score was 80 and the maximum post test score was 97.5. At the same time, the average post-test score of the experimental class was 88.47 from the total score of 3185. Then, the control class got the minimum post-test score of 77.5 and the maximum score of 95. The average post-test score of the control class was 85.90 from the total score of 3092.5.

Table.1 Results of Pre-Test and Post-Test

	Pre-Test		Post-Test	
	Experi ment Class	Contr ol Class	Experi ment Class	Contr ol Class
Total	2780	2577.5	3185	3092.5
Min	67.5	55	80	77.5
Max	87.5	85	97.5	95
Mean	77.22	71.59	88.47	85.90

Results of Rating Scale

The rating scale as a feedback form for learning activities during English lessons. The rating scale can show the students' responses after the implementation of game based learning using Word of Wonders (WOW) crossword. The rating scale filled in a Google form link as the supporting media. The rating scale results consists of 15 statements and points that analyzed the criteria to get a description of the score. The researcher used the IBM SPSS version 22 Window application to analyze the results.

Table.2 The Total Rating Scale Results of Experiment Class

Meeting	1	2	3	4	5	6
Total	1854	2032	2023	2044	1982	1962
Dscrpt.	Agree – Strongly Agree					

The results of rating scales in the experimental class was significantly change at every meeting. The lowest score was 1854 in the first meeting, and the highest score was 2044 in the fourth meeting, so the total score inside the integral between agree and Strongly Agree. The results of rating scale means that the implementation of Word of Wonder application was successful and give the positive responses between the students in learning vocabulary.

Table.3 The Description of Rating Scale Results

No	Statement	Results	Conclusion
1	The implementation of the Word of Wonders game application in the learning activities in the classroom was running well.	72.2% Strongly agree	The implementation of the Word of Wonders game application in the learning activities in the classroom was running well and did'n found any trouble or obstacles in classroom
2	The implementation of the Word of Wonders game application supported the classroom activities.	75.0% Strongly agree	The implementation of the Word of Wonders game application supported the classroom activities
3	The Word of Wonders game application is easy and enjoy to play	75.0% Strongly agree	The Word of Wonders game application is easy and enjoy to play
4	The material in the Word of Wonders game application was suitable for the topic presented.	75.0% Strongly agree	The material in the Word of Wonders game application was suitable for the topic presented
5	I found it easy to identify the vocabulary in the descriptive material.	80.6% Strongly agree	The Word of Wonders game application help students to identify the vocabulary in the descriptive material
6	I can use nouns in the vocabulary practices	72.2% Strongly agree	The Word of Wonders game application help students to use nouns in the vocabulary practices
7	I can use verbs in the vocabulary practices	83.3% Strongly agree	The Word of Wonders game application help students to use verbs in the vocabulary practices
8	I can use adverbs in the vocabulary practices	72.2% Strongly agree	The Word of Wonders game application help students to use adverb in the vocabulary practices
9	I can use adjectives in the vocabulary practices	66.7% Strongly agree	The Word of Wonders game application help students to use adjectives in the vocabulary practices
10	The implementation of the Word of Wonders game application helped me know the definition of the unfamiliar word.	72.2% Strongly agree	The implementation of the Word of Wonders game application helped students to know the definition of the unfamiliar word
11	I can compare the similar meaning of the word.	72.2% Strongly agree	The Word of Wonders game application helped students to compare the similar meaning of the word.
12	I can compare the different meanings of the word.	75.0% Strongly agree	The Word of Wonders game application helped students to compare the different meaning of the word.
13	I can develop the sentences with a specific word.	77.8% Strongly agree	The Word of Wonders game application helped students to develop the sentences with a specific word.
14	The use of the Word of Wonders game application was reflected in the practice of building daily conversations	80.6% Strongly agree	The use of the Word of Wonders game application was reflected in the practice of building daily conversations.
15	The implementation of the Word of Wonders game application was effective in producing skills based on knowledge possessed	72.2% Strongly agree	the implementation of the Word of Wonders game application was effective in producing skills based on knowledge possessed. 107

Normality Test

The normality test results for the significance in the pre-test of the experimental class were 0.109 and post-test of the experiment class were 0.134 for Shapiro-Wilk. Then, the normality test for the significance in the pre-test of control class was 0.110 and post-test of the control class was 0.078 for Shapiro-Wilk. It means that the results in both classes are higher than 0.05 P_value and "H0" was accepted. So, it is concluded that the data was distributed normally.

Table.4 Normality Test of Experiment and Control Class

Tests of Normality							
	Kelas	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Student Vocabulary Achievement Score	PreTest Eksperiment	.118	36	.200*	.951	36	.109
	PostTest Eksperiment	.115	36	.200*	.953	36	.134
	PreTest Control	.122	36	.195	.951	36	.110
	PostTest Control	.123	36	.190	.946	36	.078

Homogeneity Test

The homogeneity results show that Sig P_value based on the mean was 0.696 and $\alpha = 0.05$. It means that the homogeneity test results are higher than 0.05 P_value . So, it concluded that the variance of data was homogenous.

Table.5 Homogeneity Test of Experiment and Control Class

Test of Homogeneity of Variance					
		Levene Statistic	df1	df2	Sig.
Student Vocabulary Achievement Score	Based on Mean	.154	1	70	.696
	Based on Median	.085	1	70	.771
	Based on Median and with adjusted df	.085	1	69.699	.771
	Based on trimmed mean	.150	1	70	.699

Paired Sample T-Test

The results of paired sample t-test show the value of significant generated Sig. (2 tailed) of was 0.000 It means that the results of the hypothetical test of Sig. are lower than 0.05 ($P_value < \alpha$). So, H_{a1} was accepted and H_{01} was rejected. In addition, the result of paired sample test concludes that the implementation of game based learning using WOW Crossword application is effective towards students' vocabulary achievement in the tenth grade of SMKN 1 Warureja in the academic 2023/2024.

Table 6. The Result of Paired Samples Test

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre Test - Post Test	-11.2500	5.7165	.9528	-13.1842	-9.3158	-11.808	35	.000

Independent T-Test

The results of independent t-test show the value of significant generated Sig. (2 tailed) of the equal variance was 0.04. It means that the results of the hypothetical test of Sig. are lower than 0.05 ($P_value < \alpha$) which α was 0.05. So, H_{a2} was accepted and H_{02} was rejected. In addition, the result of hypothetical test concludes that there is a significant difference in students' vocabulary achievement between students who are taught by using WOW Crossword application and without using the application.

Table 7. The Result of Independent T-Test

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 Belajar Siswa	Equal variances assumed	.154	.696	2.096	70	.040	2.5694	1.2257	.1249	5.0140
	Equal variances not assumed			2.096	69.760	.040	2.5694	1.2257	.1248	5.0141

Discussion

Based on the research results, the researcher would like to summarize the effect of game-based learning using the WOW crossword application on students' vocabulary achievement. The research was conducted in the tenth grade of SMKN 1 Warureja in 2023/2024.

The students' vocabulary achievement at SMKN 1 Warureja have difficulties in learning vocabulary, including difficulty in understanding the meaning of a specific word, comparing the meaning, choosing the proper word based on the content of the text, and remembering the vocabulary they have learned. The students also feel lazy and uninterested in finding unfamiliar vocabulary in the classroom activities, while they need interesting teaching methods to build their motivation to learn vocabulary. Apart from the limitation of students' vocabulary, they also had difficulties

in developing the words into sentences because they could not express what they were thinking and spelling in the form of words. The research implemented game-based learning as the teaching method and it used the Word of Wonders (WOW) crossword application as media to overcome the students' difficulties and increase the students' vocabulary achievement. Teaching vocabulary by Word of Wonders (WOW) crossword application becomes one way to encourage the students' vocabulary learning. Hermawan & Prayoga (2022) stated that the Word of Wonders application used in teaching and learning vocabulary can make attractive and fun situations during classroom activities. Word of Wonder (WOW) crossword application can study descriptive text in the form of words and meaning because it provides lots of words with over 100 levels to find the word. Students are challenged to find the word's meaning and excited to unlock the new level. Students can learn independently to unlock the level of words and develop the students' achievement because the game application is quite simple and easier. As a whole, the Word of Wonder crossword application is effective to teach vocabulary, and it also related to the game-based learning method, where in this method, the role of games is really supports and helpful to the learning process (Putri & Wibawa, 2021).

In addition, the Word of Wonder (WOW) crossword application effectively improves the students' vocabulary achievement. As stated by Nasution (2019) the application can help the students acquire vocabulary knowledge, develop the skills related to the material, and practice in real-time. Word of Wonder (WOW) crossword application shows some letters constructing a meaningful word. With the features available in the application, it is easy to know the form of words, but students need a dictionary to better understand the meaning of words. However, in the first treatment, they were given guidance to play the game because some students were unfamiliar with that application. The teacher also explains to the students related to the implementation of words, both form and meaning.

This is supported by the results of the paired sample t-test also showed the value of the significant generated Sig. (2 tailed) was 0.000 which lower than 0.05. So, it means that the alternative hypothesis H_{a1} was accepted and H_{01} was rejected. Nurgun AKAR (2010) state

the student have to consistent in the processing of learning vocabulary especially in building and understanding the context of word. The students succeeded in answering a vocabulary test where most of them experienced an increase in understanding the meaning of words, and it requires more practice in comparing and choosing the proper words according to the context of a text. If the students have obstacles in guessing the word, hints are available to help the student easily. By those implementations can increase vocabulary skills, which effect students' achievement. This is in line with previous research findings of Afif Ardiansah (2021) and Putra et al. (2022) who also said the game is suitable and effective to support the learning classroom.

Furthemore, the treatment between experimental and control class was given in the same material but in a different way to use media to support vocabulary learning. The teacher conducts a learning process as usual, starting with delivering the topic, explaining the material and closing by giving the practices and assignment. For the experimental class, the student can play the application after the teacher explains the material. The results of the post-test showed that the score of the experimental class was higher than the score of the control class. It means both classes have differences in improving students' vocabulary learning outcomes between the experimental class, which implemented game-based learning using the Word of Wonder crossword application, and the control class which implemented a conventional method. This is also supported by the results of independent t-test showed show the value of significant generated *Sig.* (2 tailed) of the equal variance was 0.04. It means H_{a2} was accepted that the results of the hypothetical test showed of *Sig.* are lower than 0.05 ($P_{value} < \alpha$).

Moreover, the rating scale results in the experimental class shows 1854 until 2044 and almost all the students' rating scale results got 4 points or "Strongly Agree" in the statement about the implementation of the Word of Wonder crossword application, which means the implementation was successful. The implementation of the application in the students' experimental class finished 36 levels until the sixth meeting, and the total amount of vocabulary reached 194 words, not including the vocabulary that they found in the text analysis during the learning process. Whereas

in the control class, only get the vocabulary inside the text analysis and conversation. Students could pass over several levels of the Word of Wonder (WOW) crossword application excellently and appropriately. The students also gave positive responses during the activities. Some students enjoy remembering the vocabulary that they have learned, and some students remember the meaning of the word and forget the form of the word. The students were active and interested in implementing the teaching method. The students also active in creating a specific word and explaining the whole meaning of sentences. This is in line with previous research findings of Englis et al.(2022).

4. CONCLUSION

After the researcher conduct a research in SMKN 1 Warureja in the academic year 2023/2024 which focused in students who are taught by using Word of Wonder (WOW) crossword application as the implementation of game based learning and students who are taught by using conventional learning without using the application. The researcher gave the conclusion to answer the objective of the study. The implementation of game-based learning using the Word of Wonders (WOW) crossword application is effective to teach vocabulary. It also has an effect towards students' vocabulary achievement. The students can also understand the meaning of a specific word related to the text's material in a game application, comparing the word and choosing the proper word based on the context. The conclusion related to the results of paired sample t-test that could be seen from *Sig.* (2-tailed) was 0.000 is lower than α ($0.000 < 0.05$). It means that the null hypothesis H_0 was rejected, and the alternative hypothesis H_{a1} was accepted. The implementation of game-based learning using the Word of Wonders (WOW) crossword puzzle application also develops students' vocabulary achievement because students obtained high scores by applying this application, the maximum score was 97.5, and the average score was 88.47.

The independent t-test also showed that there any significant difference in students' vocabulary achievement between students who are taught by using WOW Crossword application and without using it. The data analysis that could be seen from *Sig.* (2-tailed) of equal variance assumed in the independent t-

test where the Sig. (2-tailed) is lower than α ($0.04 < 0.05$). It means that the alternative hypothesis H_{a2} was accepted and H_{02} was rejected.

The rating scale results concluded that the implementation of the application give the positive responses between students during the activities. The students more active and enjoyable in the classroom. The game also gives more practice to finding and understanding the new vocabulary both meanings and forms of words, so that it can develop the students' motivation in learning vocabulary. It could be seen from the results of the rating scale was 1854 for the minimum total score and 2044 for the maximum total score and get 4 point or "strongly agree" in the implementation of Word of Wonders crossword application.

The researcher suggests that teachers should implement game-based learning as a teaching method in teaching vocabulary lessons. Then, the use of Word of Wonders (WOW) crossword application becomes the appropriate media for developing students' vocabulary and improving students' vocabulary achievement because it provides practice in finding the word on several levels and makes learning exciting and fun in the classroom. The students should learn harder and more seriously in learning vocabulary. Moreover, further researchers should develop the game-based learning as the teaching method especially in vocabulary lesson and the use of Word of Wonders (WOW) crossword application as a media in learning that can be used on different skills.

REFERENCES

- Ahyar, H., Maret, U. S., Andriani, H., Sukmana, D. J., & Mada, U. G. (2020). *Buku Metode Penelitian Kualitatif & Kuantitatif* (Issue March).
- Asst.Prof.Dr. Nurgun AKAR. (2010). *Teaching Vocabulary. Bridging the Gap between Theory and Practice (PDFDrive).pdf* (p. 143).
- Fachrozi, I. F., Indonesia, U. P., Indonesia, U. P., Andini, M. A., Indonesia, U. P., Tampubolon, E. M., Indonesia, U. P., Athalia, E., Tarigan, B., & Indonesia, U. P. (2021). *The Use Of Crossword Puzzles As The Way To Increase Student ' S Vocabulary*. 4, 249–256.
- Fenti, H. (2020). *Metodologi Penelitian*. Pt Rajagrafindo Persada.
- H.Douglas brown. (1941). *Principle of language learning and Teaching* (fifth edit).
- Kaharuddin. (2023). *The Power Of English : Recognizing And Utilizing The Tremendous Impactof The English Language On The*. 39–48.
- Karakedo, A. P., Saukah, A., & Muhtar, A. (2020). *Crossword Puzzle Games As A Learning Tool For Improving Students ' Vocabulary In Reading Comprehension*. 2017, 54–61.
- Reinhardt, J. (2020). Gameful Second and Foreign Language Teaching and Learning. In *BELT - Brazilian English Language Teaching Journal* (Vol. 11, Issue 2). <https://doi.org/10.15448/2178-3640.2020.2.38517>
- Rostina, P., & Rahayu, S. (2022). *The Implementation Of Crossword Puzzles In*. 5(1), 25–34.
- Selvi Destiana, Ujang Suparman, H. (2019). *Improving students' vocabulary mastery through crossword puzzle at the first grade of SMPN 14 Bandarlampung*. 1.
- Wernbacher, T., Wagner, M., Rusch, D., & Hofstaetter, J. (2011). Learning by playing. In *Proceedings of the European Conference on Games-based Learning* (Vols. 2011-Janua). <https://doi.org/10.4324/9780203006863-22>
- Yokubjonova, S. (2001). The Importance of Teaching vocabulary. *Journal of Building Physics*, 24(3), 177–182. <https://doi.org/10.1106/70V2-62VX-7LCK-YDPN>