

***WORD OF WONDERS: CROSSWORD GAME-
BASED IN OPTIMIZING THE STUDENTS'
VOCABULARY***

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ABSTRACT

The most crucial part of English learning is having and understand a proper vocabulary. To be involved in English academic as the learning topic, students must be able to have and understand words collection sufficiently. The purpose of this study is to find out that, the vocabulary learning through the game of Words of Wonders: Crossword in groups learning has been declared to perform better than individual learning. This study arises the quantitative analysis approach with a comparison design to reveal the students' vocabulary. The use of pre-test and post-tests vocabulary were utilized as the role of instruments within this study. The samples were the faculty of Management Secretary A and B of the academic year in 2019/2020, in Ciwaringin, Bogor. The results of this study infer

that, the students who are taught by using Words of Wonders: Crossword in group learning has performed better than the students who learn individually. It is shown by the pre-test scores of 59.58 and 59.00, and post-test scores of 83.47 and 73.62.

Keywords: *Word of Wonders: Crossword game-based, technology, vocabulary,*

Introduction

In learning a particular language, the existence of vocabulary represents one of the most important skills necessary for being involved in any of a foreign language; especially English. It is the fundamental part for the development of all the other English skills (Wilde, Eyckmans and Brysbaert, 2019); they are like reading comprehension, listening comprehension, speaking, writing, spelling, and pronunciation. Likewise, (Tran, 2020) have confirmed that, the vocabulary plays a vital role in any stages or level of the learners' language development. The point shows, vocabulary is really needed in gaining English skill.

(Al-Khresheh and Al-Ruwaili, 2020)

Vocabulary is said to be the main tool for everyone

who wants to learn English -also students- and to be used it effectively and properly. The sample case, when he or she is confronted with a native English speaker, when watching a movie or when listening to a favorite song, when reading a text or when writing a letter to a friend, absolutely it needs vocabulary to be with words.

As regarding vocabulary needed from another aspect, for example the aspect of higher institution, it turns out to be very important thing. To understand vocabulary has an essential role; especially for those who concern English as a foreign language. By vocabulary, it is able to support in speaking (communicative) when they are talking to people, they listen, and give the feedback or respond (Rano, 2022). On the contrary, if they do not know the meaning of words, they will not be able to speak and translate anything in English.

In the educational aspect, the teacher has a valuable part in applying interesting teaching

methods. The teacher, or lecturers, educator and *etc.* should be providing in creating a good atmosphere in the classroom activities. He or she should know how to build the suitable technique, so that the topic of the current about vocabulary learning, will not become such a flat and plain English educational session. In teaching vocabulary, the teacher gives single word or several word (looking the particular situation) as the stimuli for about once or twice. Then the students refined their understanding and also pronunciation (Srimanee, Ruangnoi and Abidin, 2021).

To support the educational system, teacher also needs to follow the development of current technology. The fast-growth of technology makes teaching to be innovative, productive, internet-integrated, and so on. It is said so, because it is able to attract language learners. Technology is familiar for this era, students mostly are able to operate their cellphone, laptop, tab and even many other applications.

Mostly, the presence of internet as the tools of learning is found at school, universities and other educational places. It is to facilitate the learning system. The result, it has a goal to be practical, easy, and simple. As the common example: It used to be book, but now it has electronic book (eBook), electronic mail (email), electronic learning (eLearning), google form and many more. The accessibility and availability of well-resourced multimedia equipment has led to be critical role in the development of the new learning-style for English as a foreign language learning. The pedagogical practices of knowledge transmission have been dramatically transformed and improved by integrating new technology into English language classrooms.

Shortly, the pedagogic area of education has been affected by ICT (Internet Communication and Technology). Then, the contribution of ICT in English language teaching is expected to give more benefits for teaching English. By recognizing the growth of

internet and referring to the English vocabulary learning, the researcher wants to find out of teaching English in grouping about how to improve students' vocabularies by using the application of *Words of Wonders: Crossword* which is found on Play store (Android).

Technology to Support the English Learning

Within this 21st century, there have been many changes in several areas such as technology, culture, society, education, and many more. In this moment of modernization, mostly people depend on a technology; while for the sector education, technology has an important part in teaching and learning process. Information Communication Technology (ICT) is defined as any technology used to support information gathering, processing, distribution and use (Kh, 2020).

The development of information technology is very largely quick, so that it has a very significant

change on the matter of education. One of the most vital contributions of ICT in the field of education points out the ease in learning. It is in line with what (Shahrol *et al.*, 2020) had declared to the preservice EFL teachers' engagement in utilizing technology for learning supports. So, the learning style has been stated to be up-dated and keep following with the development of technology.

For instances, by applying the ICT, both students and learners are able to browse information, sample examination papers, previous year papers, *etc.* This flexibility has heightened the availability of just-in-time learning. Also, it provides learning opportunities for many more learners who previously were constrained by other commitments (Qibamawarnie, 2021). In addition to the matter of flexibility in usability, ICT is also considered flexible in time space. The flexible session space accounted for by the integration of ICT into teaching and learning processes. It contributes to increase the interaction

and reception of information. ICT also can be used in various ways; means, it helps teachers and students to learn about the respective subject areas. It is put forward that, modern classroom must be involving the technology as the primary key in the current learning.

As the context of implementing the technology in the educational era, commonly is said the ICT. Massively, it has been used in almost all fields of life, including in education. In education, computer technology has become significant matter. The utilization of ICT in education has recently started to appeal the potential and amazing progress in language learning, especially English. Now, it has become a top issue in education world and has been applied from pre-school into higher institution and so on (Krajka, 2021). It has been popularized as potentially widespread enabling tools for educational change and the latest thing. The computers and internet play significant role in the learning process especially in

learning language. A set of computers is a tool and media that facilitates people in learning it.

The technology in this era has been grown up not only from the quality but also the efficiency. It moves rapidly without any limit from every product. The need of technological innovation has brought the communication revolution. Also, it has the quick development of technological application in teaching and learning. From computer then, it has a certain application. The application absolutely has a role to support the learning system.

Vocabulary Understanding

The aforementioned paragraph tells that, understanding vocabulary is crucial for learners since it is stated to be one of the basic components of those four language skills. Vocabulary is needed for telling the meaning expression and in using the receptive (listening and reading) and the productive (speaking and writing) skills. For example, (Bariqlana, 2020) if

language structures are made up by the skeleton of language, then the vocabulary provides the vital organs and the flesh. Moreover, vocabulary is the knowledge of words and word meanings

By arising vocabulary or sufficient word collections, the students do not only get the meaning of words, but will be able to use and learn from the simple one, that is the daily life communication. An explanation tells that, the vocabulary knowledge is not something that can ever be fully mastered (Mohamad and Ariff, 2020); it is something that expands and deepens over the cause of a lifetime. It is stated out, because the language growth is always growing gradually.

In addition, vocabulary is the main core component of language proficiency and provide much of the basis for how learners speak, listen, read and write. If the students want to be success in learning English language skill, they should be update, increase, gain more about vocabulary (Setiawan and Wiedarti,

2020). After that, they will be able to express their idea, they will write in their own words, they will hear other people speak easily and they can be a good reader. The benefit of good vocabulary is communicated more effectively, improves self-confidence and self-esteem, better job offers and improves people's perception.

From the statement above, it has been said that if the students need to have good vocabulary. Even more than that, they are able to enhance their self and vocabulary is noteworthy, because it allows to communicate clearly with other people. So, a larger vocabulary will be having a greater precision than a person who has a small vocabulary

***Word of Wonders: Crossword* as the application and relevant Publication**

It is a kind of application on Android user of cellphone. Then, it is able to be downloaded in a play store. Seeing that, there are many applications about

English vocabulary on Android – Play store, but the writer figures this out by a rating scale. It has 4.6 out of 5 of the star-rating, version of 3.7.2, 152 Megabytes for the memory needed, and more than 100,000,000 to download it.

This application is offered by Fogo Games which allows the player to be started with few letters as a unique clue, the player will have to test his or her brain to write and create new words from scratch and connect all of them to get the final crossword solution. This game is a perfect entertainment tool to improve and develop in searching, writing, and solving problem skills.

To have the relevant studies, the result obtained by the other researcher also proven by other researchers of the similar research regarding the vocabulary, English, and this digital era, (Ajisoko, 2020) said that, “One of many applications in improving English word collection, it is Duolingo, it is

claimed as the effective media in teaching-learning vocabulary.”

That mentioned application is considerably interesting, fun, and nice for learners. Students will have the positive expression of sharing the excellent responses by applying this apps. That application is easy to be understood and it allows of having the English moment to all learners to get a fair turn in practicing material.

(Hamer, 2021) Also, “The technological advancement in education is very influential on the learning process. By using the Memrise application can be considered to be a solution to the challenges that arise when students attempt to enhance their vocabulary while studying English.” Moreover, seeing face-to-face learning in schools has begun to change to online learning partly. Therefore, teachers should take good advantage of current technological advancement to create up to date of learning media/methods, especially in vocabulary learning. Students’

vocabulary will almost certainly grow as a result of using that application.

(Wu, Chuanyi Wang and Zhang, 2020) say: “The studies found that digital games played the significant role in promoting English vocabulary learning.” So, the point is, it has an impact of the game activity in learning, game-aided teaching method, and game scenario have widespread successively. The point is, it is to promote the high-quality application of digital games into education and teaching. Moreover, both learning platforms can effectively promote learning for that journal. Then ICT bring better learning effect, for which the reason underlies in that ICT perform better in enhancing students’ concentration. Thus, it is able to be improving the learning skill as the output.

Method

As for the research method for conducting the study, it is done finishing of making it critically and in detail. The proper experiment is conducted by the

researcher. Then, it makes easier for giving the point.

Here is the methodology research. It is seen on table 1.

Table 1.

The Group	Pre-Test	Treatment	Post-Test
1	0	X_1	0
2	0	X_2	0

Additional info:

X_1 : Treatment, *Word of Wonders: Crossword* by having a group learning.

X_2 : Treatment, *Word of Wonders: Crossword* of an individual learning

0 : The Vocabulary test.

As seen on table 1, it shows the experimental groups were given a pre-test (X). Then, for the

treatment (O) was completed for about eight weeks by implementing *Word of Wonders: Crossword*, with X_2 representing the post-test taken by the students at the end of the treatment.

This study uses quantitative for the research. It uses a comparative design. Both classes were given the same materials, and the implementation of *Word of Wonders: Crossword* were used for both classes during the treatment. However, the students learn in groups and the other class was taught in individual learning; where the student learn individually not in a group. The pre-test was given to students before having treatment. Then, for the post-test was prided after the treatment.

The populations of this study were the class of Management Secretary A and B in Ciwaringin, Bogor. Two classes used in this study, A and B' class who enrolled in the second semester of the academic year 2019/2020. Then for the average range age of the sample was 23 – 25 years old. The English as the topic

was held twice a week. Both classes have the schedule of morning for A class, then in the evening for B class.

The researcher used both classes (A and B) to involve different treatments, the A class was taught by *Word of Wonders: Crossword* with learning in groups. It consists of 29 students. For the B class, it was taught by implementing *Word of Wonders: Crossword* with individual learning which consists of 25 students.

Thence, the pilot test was done for two weeks before the pre-test held. In conducting this study, a lesson plan and a self-made test were made before the treatment was given to the students. After the pilot test was piloted and calculated, the pre-test then was administered. The next, when the data were collected, the step of pre-test, treatment, post-test, and score were processed. Finally, the result of each test was gained.

Afterward, the pre-test was given for both classes to determine the initial knowledge of the students' vocabulary knowledge mastery before

having the treatment. After the pre-test was performed by the students, so the treatment was given to both classes. The post-test was given to both groups after the treatment.

Due to the Covid 19 (lock-down situation and condition), the post-test was given by sharing a google form. Then students then answer or fill it out all. Next, the *Word of Wonders: Crossword* were used in both classes. As for the vocabulary achievement, they are nouns, verbs, adjectives, and adverbs.

Results

It is about revealing as the research answer's bottom-line whether the use of *Word of Wonders: Crossword* in vocabulary mastery learning perform better in groups learning than in individual learning or not. So, the result is shown below.

Table 2. Pre-Test, Post-Test, Standard Deviation and Normalized Gain

	<i>Word of Wonders: Crossword</i> by group learning		<i>Word of Wonders: Crossword</i> by individual learning	
	Mean	St. Deviation	Mean	St. Deviation
Pre-Test	59.58	12.346	58.00	12.751
Post-Test	83.47	6.849	73.62	8.306
Normalized Gain	0.591991	0.92051	0.342543	0.1800092

Table 2 informs that, the average score of pre-tests of *Word of Wonders: Crossword* with group learning is shown 59.58 by stating out Std. Deviation of 12.346, while for the individual learning is shown 58.00 with Std. Deviation 12.751. The mean of the post-test of *Word of Wonders: Crossword* with group learning is seen 83.47 with Std. Deviation 6.849 and for *Word of Wonders: Crossword* with individual learning is 73.62 with Std. Deviation 8.306.

Concluding that matter, the initial score for both classes is high enough. The mean gain of *Word of Wonders: Crossword* with group learning is 0.591991 and for *Word of Wonders: Crossword* with

individual learning is 0.342543. It can be pointed out that, the mastery of both classes has been either improved or increased.

The next is about the normality test. As it is known, the definition of normality tests are tests of whether a set of data is distributed in a way that is consistent with a normal distribution. It has been done to be determining the result of the score of the gain. The result can be seen in the table below.

Table 3. Normality Test's Result

	Group	Shapiro-Wilk		
		Statistic.	Df	Sig.
Pre-Test	<i>Word of Wonders:</i> <i>Crossword</i> by group learning	.138	32	.214
	<i>Word of Wonders:</i> <i>Crossword</i> by individual learning	.096	30	.618

Based on the data displayed in Table 3, it is stating out that, data population for both groups of

students are normally distributed, since the significant value of Group 1 is seen $0.214 > 5-007$ (0.05). Then, for the significant value of Group 2 is shown $0.618 > 5-007$. (0.05).

Table 4. The Homogeneity Test's Result for the Pre-Test Score

Gain Based on Mean	Levene Statistic	df1	df2	Sig.
	.805	1	60	.372

Pointing out in table 4 below, the result of the significant value is seen to be having $0.372 > (0.05)$. Since the normality test was normally distributed and the result of the test of homogeneity was homogeneous. Then, the Independent Sample t-test was performed.

Table 5. Independent Pre-test sample test

Levene's Test for Equality of Variencies					
	F	Sig.	T	Df	Sig.(2-tailed)
Pre-Test Equal Variances Assumed	.292	.591	.186	60	.852

The above table's result of the independent sample t-test above shows the same variances assumed because the population variances are homogeneous. Since the value of the pre-test score is 0.852, which is > 0.05 , this means that H_0 is not rejected. On the other hand, there is no significant difference between the students' vocabulary pre-test in both groups.

Table 6. Test of Normality of Normalized Gain

	Group	Shapiro-Wilk		
		Statistic	Df	Sig.
Gain	<i>Word of Wonders:</i>	.096	33	.585
	<i>Crossword</i>			
	by group learning			
	<i>Word of Wonders:</i>	.092	31	.445
	<i>Crossword</i>			
	by individual learning			

Seeing on table 6 above, it can be concluded that both data population are normally distributed. It is said so previously since the significant value of group 1 is $0.585 > 5-007 (0.05)$. Then, as for the significant value of group 2 is shown $0.445 > 5-007 (0.05)$.

Table 7. Independent test of the sample

Levene's Test for Equality of Variances					
	F	Sig.	T	Df	Sig.(2-tailed)
Gain Equal Variances Assumed	.804	.372	5.955	59	.000
Equal Variances not Assumed			5.918	60.471	.000

Since the gain data were normally and properly distributed, the result of the significant value is $0.372 > 5-007 (0.05)$ as it is seen in Table 7. Due to the population variances are homogeneous, the t-test then has been used. From Table 6, the result of the t-test shows that the sig (2-tailed) was $0.000 < 0.05$, it means for the assumption declares that, (H_0) was rejected and (H_a) was accepted. Thence, there was a significant difference between students who were

taught by *Word of Wonders: Crosswords* in groups with learning in individuals.

Based on the results presented on the tables above, here is to answer the research's problem of whether *Word of Wonders: Crosswords* in vocabulary learning has performed better in groups learning than in individual learning or not. Then, it can be seen on table 1. Both groups have almost the same initial vocabulary knowledge before the treatment. However, after the treatment the learning in groups class have shown a higher score than the learning individual class.

The extra data are required for this study to find out the research question number of number two and to be supporting the research question number one. The data were collected through the administration of a distributing a questionnaire. It was given to the students to seek out the response towards the use of *Word of Wonders: Crosswords* for vocabulary learning. There are 15 questions for

questionnaire and delivered or distributed through google form to the students.

Table 8. The Result of *Word of Wonders: Crosswords* with Learning in Group

Percentage %	Degree in Percentage	Interpretation
37	$80 \leq t \leq 100$	Very Good
47	$60 \leq t \leq 80$	Good
13	$40 \leq t \leq 60$	Enough
0	$20 \leq t \leq 40$	Bad
0	$t \leq 20$	Very Bad

Looking at the average percentage of students' responses in using *Word of Wonders: Crosswords* with group learning, can be seen calculating as the sum of the percentage of students' responses. It is divided by the number of respondents and the result is 47%, which can be labeled as "Good."

Table 9. Result of *Word of Wonders: Crosswords* with Individual Learning

Percentage %	Degree in Percentage	Interpretation
15	$80 \leq t \leq 100$	Very Good
83	$60 \leq t \leq 80$	Good
0	$40 \leq t \leq 60$	Enough
0	$20 \leq t \leq 40$	Bad
0	$t \leq 20$	Very Bad

Getting know on the above table, the average percentage is shown to be 83%, which means that the response toward the use of *Word of Wonders: Crosswords* with individual learning is saying to be "Good."

From the both above data from table 8 and table 9, can be concluded that, most students in both classes have agreed that the use of *Word of Wonders: Crosswords* have been increasing the vocabulary mastery. Next, based on the results of the student data analysis and the discussion, it was concluded that,

there is a significant difference between those who have been taught by using *Word of Wonders: Crosswords* with group learning and on the contrary, it is for those who have been taught by *Word of Wonders: Crosswords* with individual learning.

Findings

Based on the results presented above, it was determined that students who were taught using *Word of Wonders: Crosswords* in group learning perform better than students who were taught using *Word of Wonders: Crosswords* in individual learning. Also, it is to be enhancing the students' mastery of English words vocabulary. This means that the H_0 has been rejected while the H_a has been accepted.

To elaborate further, the researcher should conduct the lesson for both classes for the same period of meetings when conducting this research. Unfortunately, the class that taught using *Word of Wonders: Crosswords* with group learning only had

four meetings, whereas the group that taught using *Word of Wonders: Crosswords* with individual learning had six meetings. For each class, the lessons should be completed over the course of eight meetings.

This occurred as a result of government regulations related to the Covid-19 pandemic. However, based on the findings, the group that uses *Word of Wonders: Crosswords* with group learning outperforms better than the group that uses *Word of Wonders: Crosswords* with individual learning. Despite the fact that the class that learned in group only had four meetings, as opposing to the class that learned individually, which had six, the post-test score of the group learning was higher. It implies that group learning is more efficient compared to individual learning.

Conclusion

Based on the results, it has been shown that students' learning vocabulary performance has shown to be much better for them who have been taught by using *Word of Wonders: Crosswords* with group learning than for students who have been taught by having the individual learning. Therefore, it can be concluded that most students have enjoyed learning English through the use of *Word of Wonders: Crosswords*, and it also can be determined that vocabulary learning through its application in group learning and individual learning have positive output where both groups experience an improvement in their English vocabulary.

In a drawn-conclusion, vocabulary learning through *Word of Wonders: Crosswords* is more effective in improving students' vocabulary and learning in groups perform better than individual learning. It is said so, because students are able to share ideas and work (study) together when they are learning in groups. Having with the communication in

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a certain studying is needed in improving English vocabulary by games of *Word of Wonders: Crosswords*.

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