Vol. (8), No. (2); 2022
ISSN : 2355-2069 (Print)
ISSN : 2656-5765 (Online)
Published by UIN Fatmawati Sukarno Bengkulu

THE EFFECTIVENESS OF STORIGAMI IN TEACHING ENGLISH VOCABULARY: AN EXPERIMENTAL RESEARCH

ROIHATUL MILLAH
Universitas Terbuka
millah@ecampus.ut.ac.id

WIDI SRIYANTO
Politeknik Negeri Media Kreatif
widi.sriyanto@polimedia.ac.id

DOI: 10.29300/ling.v8i2.8117

Received: October 8th 2022 Accepted: November 14th 2022 Published: December 20th 2022

Abstract

This research aims at investigating and finding out whether storigami is effective in teaching English vocabulary for vocational higher students. Based on the researchers' observation, most of the students have lack of vocabulary though in mastering English vocabulary is an essential thing that should be known and mastered, especially for vocational higher students who will directly face the working situation. This problem happened because, in their perspective, understanding vocabulary only can be reached through translation and memorization. The subject of this research was taken two classes purposively named control class and experimental class. The samples were taken by determining specific characteristics of students during the learning process. The experiment class applied Storigami as the treatment, while the control class applied the Grammar Translation Method (GTM). Before applying the treatment, a pre-test was conducted for both classes with the same questions. Then, after the treatment, a post-test was conducted for both classes. After collecting and analyzing the data, the researchers found that teaching vocabulary by Storigami is more effective than GTM. The finding showed that T0 :2.639 > T.Tabel: 2.01 means the null hypothesis is rejected and the experiment hypothesis is accepted, or there is any significance between X and Y variables. Furthermore, the mean score of the post-test in the experiment class is higher than the mean score in the control class. It happened because teaching vocabulary by using Storigami is more fascinating for students, and origami can be applied to building students' English vocabulary and students' creative thinking.

Keywords: vocabulary, storigami, GTM

INTRODUCTION

Vocabulary is an essential element in foreign language acquisition because it is impossible to learn a language without words. It contributes to the understanding of spoken and written language. Vocabulary is a word expression that creates an interpretation based on its function in different contexts and problems will occur without it. Wilkins (cited in Thornbury, 2002) summed up the importance of vocabulary pointing out "Without grammar very little can be conveyed, without vocabulary, nothing can be conveyed". In addition, it is supported by Viera (2016, p.89) in his previous study that vocabulary knowledge of foreign languages is necessary, it provides learners with a broader ability to produce well-structured

How to cite this article: Millah, R., & Sriyanto, W. (2022). The Effectiveness of Storigami in Teaching English Vocabulary: An Experimental Research. Linguists : Journal Of Linguistics and Language Teaching, 8(2), 158-168. doi:http://dx.doi.org/10.29300/ling.v8i2.8117

written text and contributes to the comprehension of utterances as well. Furthermore, Walters (cited in Susanto, 2017) states that teachers and students agree that the acquisition of vocabulary is a central factor in language teaching. However, a recent study mentions that teaching vocabulary in ELT is considered the most difficult part. The problem is how to teach students to gain satisfying results with appropriate techniques. Good techniques combined with suitable materials can eliminate students' vocabulary problems (Susanto, 2017; Amelia, et. al., 2022). Therefore, vocabulary is the main aspect of every language production because no one can tell the information in spoken and written if they have a limited vocabulary and the appropriate techniques can gain students' vocabulary.

According to the researchers' observation, most of the students assume that memorizing English vocabulary is uneasy. They need to open a dictionary to get the right meaning or do a translation if they don't know its meaning. Sometimes, this situation will make them bored and unmotivated to build up their English vocabulary. Doing translation also needs hard work and appropriate translation tools due to the words may have more than one different meaning.

One of classical methods is often used in learning vocabulary is Grammar Translation Method or GTM. According to Chastain, Grammar Translation Method or GTM was called the classical method since it was first used in the teaching of classical language, Latin and Greek (cited in Rahman, 2012, p. 4). This method has been used by language teachers for many years. This method originally teaches languages by grammar and translation where learners gather knowledge of foreign languages and apply the knowledge for interpreting text with the use of a dictionary. Therefore, this method is familiar and simple to use, but it is better if teachers can combine various methods based on students' needs and learning objectives.

Ideally, in tertiary-level of vocational education, English is taught as the main skill to create graduate students who can compete in the global world especially related to their passions and majors. Therefore, vocabulary is the main aspect of English language production because every communication and connection will grow up if language users can use their vocabulary effectively. Teachers should be careful in designing and selecting learning methods to achieve that competence (Saputri, et. al., 2021). As facilitators of English language learning, teachers are responsible for the acquisition and development of English students' vocabulary. Teachers should help them to acquire and develop it by applying some interesting media and methods. It is a way to help them in raising their vocabulary because vocabulary is the main part of the language and absolutely cannot be separated from language skills. Every material in English learning can use various media and methods. It depends on classroom objectives.

Storigami is one of the methods of teaching vocabulary. This method is the combination of two things, which are story and origami. Storigami is the method of telling stories through origami and this method has many educational advantages including strengthening memory, improving fine motor muscle coordination, enhancing left and right brain accordance, and fostering creativity (Mastin, 2007, p. 206-212). When students tell stories by using origami or named as storigami, they can improve their English vocabulary and it will be easy to memorize. Currier adds that (2015), origami could benefit conceptual learning, vocabulary building, and problem-solving. Besides, listeners also can develop their listening skill because this way allows them to comprehend better. Because of that, during this activity, students will learn to listen something curiously and everybody will participate in the lesson with great joy. Storytellers also will be more motivated and confident to tell stories. It absolutely will make a positive impact on storytellers and listeners.

Originally the word origami comes from two Japanese words "ori", which means to fold, and "kami" which means paper (Beech, 2009). In general, origami is known as Japanese art of paper folding (Franco, 1999). It is often used as an instructional method in teaching mathematics, geometry, and science because based on the study from Oguz (2016, p. 10-11), the high frequency of math use was an expected result due to one generates multiple geometrical shapes and reference lines during the origami-making process. In this case, using storigami is also needed and required for the effective use of language skills.

In line with Katz (2017) statement, "If you put the word storytelling and the word gami together, you get storigami. It is fun to use your imagination as you see the shapes emerge and put them into a story. Then, when you want to make the model again, the story will help to remain you of what to do next. When the story is very helpful in remembering the fold, I call it a teaching tale". As stated by Tugrul & Kavici in Arici and Aslan-Tutak (2013), "Origami has been suggested as a useful educational tool considering its several benefits ranging from cognitive to motivational gains". Furthermore, in the study of Tugrul and Kavici in Arslan (2012), characteristics of origami were investigated to evaluate its appropriateness with respect to different learning models. Thus, origami not only has various educational benefits but also can be used in accordance with different learning models.

Based on the previous research from Oguz (2016, p.14) about conveying stories through origami (storigami), storigami could have positive effects on language skills, social skills, sensory skills, psychomotor skills, cognitive development, instructional processes, and students' motivation. It also can improve retention, develop kinaesthetic skills, gather attention, support conceptual learning, make learning fun, develop creative thinking and imagination, trigger curiosity, support audio-visuals, provide concrete examples, achieve self-

confidence, and many more. In addition, storigami is also rarely used in teaching English vocabulary. Therefore, the researchers would like to investigate whether storigami is more efective in teaching vocabulary than Grammar Translation Method for the 1st semester of Graphic Design students. This method is quite challenging because students are pushed to be creative and innovative in listening to a story in English vocabulary and retelling it by origami, then making their own English short story while shaping the origami.

RESEARCH METHODOLOGY

The method in this study is a quantitative research with experimental design by applying storigami for teaching English vocabulary. The researchers took two classes as a research sample. The researchers used a purposive sampling technique which the sample was taken by determining specific characteristics of students during the learning process. In this case, the researchers decided to take 50 students from both classes (experiment and control class). These students are the first semester students of Graphic Design, Politeknik Negeri Media Kreatif, Jakarta. The reason to choose them is most Graphic Design students have good creativity and imagination. It belongs to researchers' curiosity to apply a unique method that needs to combine English vocabulary and creative nature. The students argue that English is not a compulsory subject in Polytechnic then makes them unmotivated in learning English.

Moreover, the researchers applied Grammar Translation Method for the control class and storigami for the experiment class. This is a different procedure to apply those treatments. In applying storigami of the experiment class, the researchers told them the way to shape origami step by step while telling them a story. The students must listen and follow the researchers' instructions by doing the same action. The researchers asked them to take notes of the vocabulary, identify, and consider the word classes based on the story. The researchers told them the importance of word class understanding because it can determine words' meaning in different contexts. After that, the researchers asked them to make their own stories by shaping the origami in pair work. Then, they presented it in front of their friends. Others must listen and take notes on new vocabulary, translate, and classify it into different word classes. The researchers also gave them worksheets to ensure their understanding. Meanwhile, in applying GTM in control class, the researchers asked the students to read a story and translate it. Then, the students answered some questions, translate, and classified the vocabulary into word classes and meanings.

The instrument in this research is two tests namely pre-test and post-test, and both results were used as the data. The technique of data was carried out for getting the research finding whether storigami is more effective in teaching vocabulary than Grammar Translation

Method. A pre-test is the first step to know the students' capacity in English vocabulary before giving them treatment. The pre-test was carried out to get scores between the control class and the experiment class. The question in the pre-test is same for both classes. The researchers had already given a pre-test which contains 30 questions which 20 multiple choice questions and 10 essay questions. 14 questions are about word classes of English vocabulary and 16 questions are about synonyms and antonyms. The post-test was given after the treatment; storigami for the experiment class and Grammar Translation Method for the control class. In this test, the researchers wanted to know the students' vocabulary capacity after conducting two different methods in different classes to get the result of problem formulation and give suggestions. The researchers made the same questions for the classes which also contain 30 questions which 20 multiple choice questions and 10 essay questions. 14 questions are about word classes of English vocabulary and 16 questions are about synonyms and antonyms.

The data was analysed by using statistic calculation of t-test formula with the significance degree 5%. The formula is:

$$t_o = \frac{M1 - M2}{\sqrt{\frac{\sum_{x1} 2 + \sum_{x2} 2 \quad \{N1+N2\}}{\{N1+N2-2\}\{N1 \; x \; N2\}}}}$$

The procedures can be seen below:

1. The formula for determining mean in variable X1:

   $M1 = \frac{\sum X1}{N1}$

2. The formula for determining mean in variable X2:

   $M2 = \frac{\sum X2}{N2}$

3. The formula for determining deviation in variable X_1:

   $X_1 = X1 - M1$

4. The formula for determining deviation in variable X_2:

   $X_2 = X2 - M2$

5. The formula for t_o:

$$t_o = \frac{M1 - M2}{\sqrt{\frac{\sum_{x1} 2 + \sum_{x2} 2 \quad \{N1+N2\}}{\{N1+N2-2\}\{N1 \; x \; N2\}}}}$$

6. The formula for determining t-table in significance level 5%:

   d*f* =N1 + N2 – 2

   Notes:

   M1 : Mean of post-test in experiment class

   M2 : Mean of post-test in control class

   $\sum X_1^2$: Sum of square deviation score in experiment class

   $\sum X_2^2$: Sum of square deviation score in control class

   N1 : Number of students in experiment class

   N2 : Number of students in control class

   d*f* : Degree of freedom

FINDINGS AND DISCUSSION

Findings

The researchers described the data of pre-test from both classes, the experiment class, and the control class to find the result. The following table can be described that the highest score on the pre-test is 70 and the lowest one is 33. Meanwhile, after applying storigami and conducting a post-test, the highest score is 83 and the lowest one is 40. Then, the mean of the pre-test is 50.32 and the mean of the post-test is 69.24 or almost 70. Then, the total gained score is 463. Therefore, it can be said that there is any significant improvement based on the post-test mean score and there is no student who was getting lower.

Table 1.The Score of Each Student in Experimental Class

No	Name	Pre-Test	Post-Test	Gained Score
1	NN	67	70	3
2	NH	47	63	16
3	YH	47	77	30
4	IN	63	67	4
5	AB	33	70	37
6	FA	37	73	36
7	RF	47	53	6
8	AN	57	77	20
9	SA	40	67	27
10	T	37	67	30
11	AD	50	67	17
12	ZR	60	70	10
13	RA	57	67	10
14	HF	53	77	24
15	F	30	40	10
16	GI	53	83	30
17	A	37	53	16
18	NBS	50	76	26
19	AS	33	57	24
20	LI	43	70	27
21	NN	60	70	10
22	MR	47	77	30
23	AA	70	80	10
24	RA	70	77	7
25	BB	70	83	13
	TOTAL	1258	1731	463

The following table is the result in the control class. It describes that the highest score on the pre-test is 73 and the lowest one is 27. Meanwhile, after applying GTM and conducting a post-test, the highest score is 77 and the lowest one is 23. Then, the mean of the pre-test is 53, the mean of the post-test is 61.28, and the total gained score is 207. Therefore, it can be stated that there is any improvement, but it is not significant because the improvement is only 8.28 from 61.28 – 53 of the mean score. In addition, there are some students who get down the score or get the same score.

Table 2.The Score of Each Students in Control Class

No	Name	Pre-Test	Post-Test	Gained Score
1	D	53	70	17
2	ZH	53	60	7
3	S	57	70	13
4	UH	57	77	20
5	A	27	23	-4
6	RF	33	70	37
7	NS	63	70	7
8	RG	43	43	0
9	AT	47	43	-4
10	FS	60	70	10
11	FD	47	67	20
12	CP	73	73	0
13	AR	43	77	34
14	M	70	73	3
15	NA	60	70	10
16	JA	60	67	7
17	S	39	37	-2
18	DR	53	57	4
19	RA	63	60	-3
20	AP	67	73	6
21	H	43	45	2
22	KN	47	57	10
23	AR	57	60	3
24	HL	47	60	13
25	NS	63	60	-3
	TOTAL	1325	1532	207

The following table is the score comparison between students in the experiment class and the control class.

Table 3. The Score Comparison between Students in Experiment Class and Control Class

No	Gained Score (X1)	Gained Score (X2)	X_1	X_2	X_1^2	X_2^2
1	3	17	-15,92	8,72	253.4464	76.0384
2	16	7	-2,92	-1,28	8.5264	1.6384
3	30	13	11,08	4,72	122.7664	22.2784
4	4	20	-14,92	11,72	222.6064	137.3584
5	37	-4	18,08	-12,28	326.8864	150.7984
6	36	37	17,08	28,72	292.7264	824.8384
7	6	7	-12,92	-1,28	166.9264	1.6384
	20	0	1,08	-8,28	1.1664	68.5584
9	27	-4	8,08	-12,28	65.2864	150.7984
10	30	10	11,08	1,72	122.7664	2.9584
11	17	20	-1,92	11,72	3.6864	137.3584
12	10	0	-8,92	-8,28	79.5664	68.5584
13	10	34	-8,92	25,72	79.5664	661.5184
14	24	3	5,08	-5,28	25.806	27.8784
15	10	10	-8,92	1,72	79.5664	2.9584
16	30	7	11,08	-1,28	122.7664	1.6384
17	16	-2	8,48	-10,28	71.9104	105.6784
18	26	4	7,08	-4,28	50.1264	18.3184
19	24	-3	5,08	-11,28	25.8064	127.2384
20	27	6	8,08	-2,28	65.2864	5.1984
21	10	2	-8,92	-6,28	79.5664	39.4384
22	30	10	11,08	1,72	122.7664	2.9584
23	10	3	-8,92	-5,28	79.5664	27.8784
24	7	13	-11,92	4,72	142.0864	22.2784
25	13	-3	-5,92	-11,28	35.0464	127.2384
N=25	463	∑X1 = 207	∑X2 = 225	$\sum X_1 = 0$	$\sum X_2$= 2646,224	$\sum X_1^2$ = 2813,04

After both pre-test and post-test calculations, the researchers analyzed by using t-test formula with the significance degree 5% to find the answer of formulation of the problem.

$$t_o = \frac{M1 - M2}{\sqrt{\frac{\sum_{x1} 2 + \sum_{x2} 2}{\{N1+N2-2\}} \frac{\{N1+N2\}}{\{N1 \; x \; N2\}}}}$$

$$t_o = \frac{M1 - M2}{\sqrt{\frac{\sum_{x1} + \sum_{x2} 2}{\{N1+N2-2\}} \frac{\{N1+N2\}}{\{N1 \; x \; N2\}}}}$$

$$t_o = \frac{69{,}24 - 61{,}28}{\sqrt{\frac{2646{,}224 + 2813{,}04(25+25)}{\{25+25-2\}\{25 \; x \; 25\}}}}$$

$$t_o = \frac{7{,}96}{\sqrt{\frac{5459{,}264(50)}{\{48\}\{625\}}}}$$

$$t_o = \frac{7{,}96}{\sqrt{\frac{272963{,}2}{30.000}}}$$

$$t_o = \frac{7{,}96}{\sqrt{9{,}0988}}$$

$$t_o = \frac{7{,}96}{3{,}016} = 2{,}639$$

T-table is 2.01 from d*f*: N1 + N2 – 2 or 25 +25 – 2: 48. Because there is no d*f* (degree of freedom) from 48, the researchers used the closer d*f* which is 50. Therefore, t-table is 2.01 and t_0 is 2.639. It can be concluded that T_0 :2.639 > T.Tabel: 2.01, which means t_0 is higher than t-table.

Discussion

This section is about the interpretation and discussion of the findings. Based on the finding, there is any significance of students' scores after applying storigami method in teaching English vocabulary. The significance score described that storigami is more effective than GTM. The students looked interested in joining the class activity. Meanwhile, students in the control class that used GTM, were not quite interested and looked confused at that time. Origami brings imagination of students easily to capture the learning process with their interest and curiosity in the class. As the media is interesting with the uniqueness of the shape, it helps lecturers in conveying the material. The most common problem in understanding the material given from the lecturer is because there is no interest or the boredom from the students when their lecturers teach them. Storigami uses a combination of storytelling and creating an object, yet GTM depends on the lecturing from their lecturers during the teaching and learning activity. It clearly shows that storigami can be more interactive in teaching and learning activity as students have chance to memorize the story, building vocabularies, and asking to their lecturers during the class activity.

Moreover, there are some factors of the students' improvement such as the students are motivated because the learning process is enjoyable and challenging. They can make and share their ideas into a good story which can be described by origami and from the origami. Their friends are easy to understand the vocabulary in the story, and they also learn vocabulary while activating their creativity. Therefore, the researchers can answer the formulation of the problem and knows that using storigami is more effective than Grammar Translation Method in teaching vocabulary.

CONCLUSION AND SUGGESTION

The research finding shows that teaching vocabulary by storigami is more effective than grammar translation method. It is shown by T_0 :2.639 > T.Tabel: 2.01 which means the null hypothesis is rejected and the experiment hypothesis is accepted or there is any significance between x and y variables. The mean score of post-tests in the experiment class is higher than the mean score of post-tests in the control class. It happened because teaching vocabulary by using Storigami is more interesting and it will build up students' vocabulary

and comprehension. Meanwhile, in GTM, the students only do some practice by translating and answering some questions that make them bored and unmotivated.

Storigami is a rarely used method in teaching English vocabulary because it gathers language skills, sensory skills, psychomotor skills, cognitive development, instructional processes, and students' motivation, creative thinking, and imagination. The combination gives positive impacts on students' language development and classroom climate. The class would be fun and interactive. Students also get concrete examples from origami shapes. It is easier to remember new vocabulary. Storigami is a recommended method to develop English vocabulary and creative thinking. Whereas, using a classical method – translation – is a common method that needs to be combined with a different activity.

English is a foreign language in Indonesia, so it is not easy for students to build up their English vocabulary. Students need a quite long time to translate and memorize new vocabulary. Therefore, teachers or lecturers should motivate students by applying various methods. However, it is better if teachers can do experimental research to ensure whether a method is effective or not because every class has different learning objectives, and every problem has different ways to solve. Other researchers can also use storigami for another research method in order to get different findings or novelty for better English language learning.

REFERENCES

Amelia, Y., Martina, F., & Afriani, Z. L. (2022). The effect of word walls media on students' vocabulary mastery. *JPT: Jurnal Pendidikan Tematik, 3*(2), 129-137.

Arici, S., & Aslan, T. F. (2013). The effect of origami-based instruction on spatial visualization, geometry achievement, and geometric reasoning. *International Journal of Science and Mathematics Education, 13*(1), 179-200. http://dx.doi.org/10.1007/s10763-013-9487-8

Arslan, O. (2012). *Investigating Beliefs and Perceived Self-Efficacy Beliefs of Prospective Elementary Mathematics Teachers Towards Using Origami in Mathematics Education*, Master Thesis, Middle East Technical University, Ankara.

Beech, R. (2009). *The Practical Illustrated Encyclopedia of Origami: The Complete Guide to the Art of Paper Folding.* London: Lorenz Books

Boakes, N. (2008). *Origami-Mathematics Lessons: Paper Folding as a Teaching Tool. Mathidues, 1*(1), 1-9.

Cagle, M. (2009). *Modular Origami in the Secondary Geometry Classroom*. In R. J. Lang (Eds.), Origami 4: Fourth international meeting of origami science, math, and education (pp. 497-506). Natick, MA: A. K. Peters.

Currier, S.C. (2015). *Unfolding a Problem, Teaching Children Mathematics*, 21 (8), 476-482. http://dx.doi.org/10.5951/teachingchilmath.21.8.0476

Franco, B. (1999). *Unfolding Mathematics with Unit Origami*. Emeryville: Key Curriculum Press.

Harmer, J. (1991). *The Practice of English Language Teaching New Edition*. London: Longman.

Hell, Gy. (2009). A fordításhelye a rómaioktatásban (és Cicero fordításai). *Modern Nyelvoktatás XV.*1-2, 3-12.

Ishihara, S. (2014). *Science Origami, an Effective Teaching Sid on Dcience*. Proceedings of the 12th Asia Pacific Physics Conference JPS Conf. Proc., *1*, 017024

Katz, R. (2017). *Storigami*. Retrieved from https://origamimuseum.org/rachel-katz/. Date of Access: 21.03.2018.

Larsen-Freeman, D (2000). *Techniques and Principles of Language Teaching (2nd ed).* Oxford, UK: Oxford University Press.

Mastin, M. (2007). *Storytelling + Origami = Storigami Mathematics, Teaching Children Mathematics*, 14 (4), 206 – 212.

Mondal, N. K. *Assessment of English Teaching Methodologies at Secondary Level in Bangladesh*. language in India 2012; 12(1):310-327 (ISSN: 1930-2940). Retrieved 7th January 2012 from http;//www.languageinindia.com

Oguz, A. (2016). An Instructional Method Suggestion: Conveying Stories Through Origami (Storigami). *Journal of Education and Training Studies, 4*(8), 9-22.

Rahman, M. (2012). *Grammar Translation Method (GTM): An Effective and Feasible Method in Bangladeshi Context*. A Paper Report of Department of English and Humanities: BRAC University.

Richards, J.C, and Rodgers, T.S. (2003). *Approaches and Methods in Language Teaching.* Cambridge: Cambridge University Press.

Saputri, Y. A., Rizal, S., & Afriani, Z. L. (2021). An analysis on English teacher strategiesin teaching reading comprehension. *Jadila: Journal of Development and Innovation in Language and Literature Education, 1*(3), 353-361.

Susanto, A. (2017). The teaching of vocabulary: A perspective. *Jurnal Kata, 1*(2), 182-191. doi: 10.22216/jk.v1i2.2136

Stern, H.H. (1992). *Issues and Options in Language Teaching* (edited posthumously by Patrick Allen & Birgit Harley). Oxford: Oxford University Press.

Thornbury, S. (2002). *How to Teach Vocabulary*. Harlow: Pearson Educational Limited

Viera,T.R. (2016). Vocabulary knowledge in the production of written texts: A case study on EFL language learners. *Revista Tecnologica ESPOL – RTE, 30*(3), 89-105.

Walch, J Weston. (2003). *Vocabulary Content- Area Strategies Social Studies*. United States: Walch Publishing.