

VOCABULARY ENHANCEMENT USING CROSSWORD PUZZLE (WORD LINK) & GTM

Angie S. Suryali¹, Caroline V. Katemba²

School of Education, Universitas Advent Indonesia

Correspondence author: Caroline(ctobing@unai.edu)

ABSTRACT. The English language is distinguished by its vocabulary. To master the four language-learning abilities of hearing, speaking, reading, and writing, vocabulary is essential. Many of the instructional strategies used to teach the English language are incorporated into vocabulary instruction, which achieves the same goals as earlier strategies. This study seeks to examine whether Word Link and Grammar Translation Method (GTM) will increase students' vocabularies. This research employs the Pre-experimental designs methodology. The pre-experimental group consisted of 25 fifth-graders from an Elementary School in West Bandung. A pre-test was administered at the beginning of the program, and a post-test was administered at the conclusion of the 32-hour meeting. The adoption of GTM utilizing the Word Link application (crossword puzzle) has a good and statistically significant impact on the vocabulary development of students, according to the findings of this study. The crossword puzzleword Link apps appear to aid youngsters in expanding their vocabularies, and it is recommended that teachers employ this strategy while teaching and studying English, particularly in the early grades.in elementary school.

Keyword: Crossword Puzzle Game, Educational Technology, Grammar Translation Method, Vocabulary

A. INTRODUCTION

For a multitude of reasons, such as education, cultural interaction, and others, English is growing in popularity in Indonesia. English is a foreign language that is taught in elementary, junior high, and senior high schools throughout Indonesia. The English language's structure has long been emphasized, and students are expected to retain the pattern of tenses. The students find it to be excessively difficult, which slows down their attempts to learn English. This is owing to the kids' poor vocabulary in addition to their incapacity to communicate in English. Learning new words is difficult for Indonesian pupils. (Katemba & Sinuhaji, 2021). “Indonesian students often experience problems when learning English, specifically vocabulary, because English differs from Bahasa Indonesia (the Indonesian language) in its structure, pronunciation, and vocabulary” (Katemba, 2019, p. 88). Further, whether speaking or writing, vocabulary is essential for carrying out communication (Berliani & Katemba,2021). Consequently, in order to help students increase their vocabulary, teachers need employ a range of tactics. (Taebenu & Katemba, 2021).

A strong vocabulary is essential for acquiring the four English language abilities of speaking, listening, reading, and writing (Redman & Edwards, 2017). Teachers need to be informed of how their kids are doing right now. The method is essential to the teaching and learning process. Various techniques can be employed in the teaching and learning process (Brown, 2001). One approach teachers in Indonesia could use is the GTM (Grammar Translation Method). Writings can be translated both ways, from the target language to the author's original tongue, using the Grammar Translation Method. Language constructions, grammar rules, and bilingual word lists—lists of English terms with their translations—were all introduced to the students. All of this information needed to be committed to memory because it was necessary for the learner to complete translation exercises that would allow them to practice applying their new vocabulary and other knowledge. To learn and recall new vocabulary, students should engage in a range of task-based activities in the classroom, such as guessing, describing, and chatting. Vocabulary games are another type of activity that focuses on assisting students in acquiring and using words in a variety of contexts while also making courses more enjoyable. It's crucial to consider whether and how pupils learn languages through games as a result. Additionally, Katemba & Sinuhaji (2021) noted in their study that game-based learning vocabulary has been utilized and has taken over the classroom, particularly during the epidemic COVID-19, where schools from around the world are connecting virtually. We cannot escape it because we are a part of the globalization period and the 4.5.0 industrial technological revolutions. Technology has permeated both our daily lives and the educational system (Katemba, 2021). According to a subsequent study by Katemba (2020), schools today require instructors to use technology in their instruction, and her research found that doing so was beneficial. Crossword puzzles, an interactive game that the researcher is utilizing in this study, can assist pupils in developing their memory for new words (Sabiqoh, 2016). Furthermore, through cooperating to solve the crossword puzzle, the pupils can learn English. Crossword puzzles and discussion are two activities that will help you increase your vocabulary. The researcher suggests utilizing a crossword puzzle to teach vocabulary as a result. Today's smartphones are incredibly handy tools. "Cellphones can be used for activities other than merely communication, such as learning and gaming" (Prensky, 2004, p. 1). Learner-friendly game apps abound. Researchers selected the Word Link app because it is a fun crossword puzzle game that can help children build their vocabulary and teach their brains to retain new words.

Hypothesis

This study was a preliminary investigation that investigated the following hypothesis: The null hypothesis (Ho) states that there is no discernible difference between students' vocabulary before and after the intervention.

Ha: There is a considerable difference between the students' vocabulary before and after the treatment, according to the formulator's alternative hypothesis (Ha).

B. REVIEW OF LITERATURE

Vocabulary

Vocabulary is a crucial component of language instruction; without grammar, very little can be communicated, and without vocabulary, nothing can be communicated (Thornbury, 2002). A list of words and phrases in alphabetical order makes up a vocabulary. Because it can make pupils enjoy language classes, vocabulary is important. Students having a broad vocabulary will experience fewer difficulties than those with a narrow vocabulary. It implies that vocabulary is essential to the development of language learning and that we are helpless without it. Consequently, improving teaching and learning efficacy requires the use of instructional approaches. According to O'Dell, F., Read, & McCarthy, M. (2000), a vocabulary test's goal is to find out whether students can match each word with a synonym, a definition from a dictionary cassette, or an analogous word in their home language. Vocabulary is knowledge that needs comprehending word meanings. We must first comprehend the meaning of the words and be able to employ them in sentences before we may learn vocabulary effortlessly.

Vocabulary learning is the process of advancing the meaning of terms in the target language from the meanings of their closest relatives in the mother tongue (Gu, 2003). Additionally, it learns how to pick the best lexical possibilities for a particular language and contextual situation. Vocabulary is particularly crucial when learning a language because it is a significant skill or grasp of a language's collection of words in alphabetical order. It must therefore be thoroughly comprehended by the students.

Grammar Translation Method

The Grammar Translation Method (GTM), a method for teaching foreign languages based on applied linguistics, was developed from the classical (or "traditional") approach to teaching Greek and Latin. Students are required to memorize a broad list of vocabulary words as well as a variety

of grammatical rules and exceptions as part of the process. One of the main objectives of teaching the target language using the Grammar Translation Method is the ability to read literature published in the target language. (Hartono, 2014) reports that there are nine primary characters in GTM: (1). The classes are given in the student's mother tongue with no effective usage of the target language. (2). Lists of single words are used to teach much of the vocabulary. (3). There is a comprehensive explanation of grammar complications. (4). Grammar includes rules for linking words together, and training often emphasizes word structure and inflection. (5). Young children start reading challenging classic books at an early age. (6). Less consideration is given to the content of texts that are seen as grammatical exercises. (7). Only exercises in translating fragments of the target language into the mother tongue are typically employed. (8). Pronunciation is hardly ever taken into account. (9). Fluency comes last; precision comes first. This method will help pupils understand the content and grammatical conventions of a language. Students' vocabulary can be expanded with the use of this strategy. The learner must comprehend the sentence structure and terminology because it is essential to passing the test, which is often grammar- and reading comprehension-focused. In order to understand written target language, students must first acquire the grammar of the foreign language.

Crossword Puzzle Game

Recently, there has been a boom in interest in employing digital games for language learning in the subject of computer-assisted language learning (Godwin-Jones, 2014). Games can be used effectively for training and skill development, they have a place in the teaching of facts and knowledge, and they may be useful for creating a context for repetition and recall (especially in areas where memorization is key, such as language learning). (2010) Whitton, p. 44 According to (Nurteteng & Nopitasari, 2019), crossword puzzle games can help students increase their vocabulary and can help them find a meaningful, tranquil environment in which to do so. In a crossword puzzle game, words must be arranged across and downwards into spots with numbers on a square diagram. The words are revealed by solving clues. The crossword puzzle game is suitable for students at all levels and can motivate them to study English. According to Azhar, Abdullah, Erliana, Nurdiawan, Dikananda, Rinaldi & Sudarsana (2019), completing or playing crossword puzzles can help us gain more insight into a variety of topics, including vocabulary, various key phrases, and popular words that we frequently encounter when filling out crosswords.

The crossword puzzle game aids in spelling and vocabulary development in students. It is hoped that employing a crossword puzzle game will help kids learn a number of new terms and enjoy the word game while they do so. Another benefit of utilizing a crossword puzzle game is that it stimulates kids to take their education more seriously and encourages them to look up new words to add to their vocabulary.

The Use of Crossword Puzzle in Teaching Vocabulary

The crossword puzzle continues to be the most well-liked word game. Its construction is straightforward, which contributes to its simplicity. Both vertically and horizontally, the words are piled. It is backed up by Silberman (2009), who claims that building an exam around a crossword puzzle motivates students to actively participate and interact. Participation in crossword puzzle games is open to both individuals and groups.

Crossword puzzle development can be done in the following stages, according Zaini, Munthe, and Aryani (2008): (1). Make a list of words, names, and other phrases that apply to the content. (2). Make a grid that the selected words can be used to fill in (as in crossword puzzles). (3). Create a succession of questions, one after the other. Share this puzzle with the learner in a group or individually in step four. (5). Work hours ought to be restricted. Recognize and applaud the group or individual who completes their work the quickest and most precisely. According to Pravita (2010), there are many measures that can be performed when learning English through strategy. Here are a few instances of crossword puzzle games: Motivating Strategies: By asking kids to say hello in English as speaking practice, you can complete this part of the motivating strategy. Give inspiration related to the main topic of the conference. Presentation strategies At this moment, the instructors start the class and go over the material. Lecturers start by presenting the course information in a way that is similar to a game. Additionally, lecturers employ four techniques for learning languages (Listening, Speaking, Reading, and Writing).

According to Webster in Tino (2011), a crossword puzzle is a layout of numbered squares that must be filled with words. Each square is assigned a letter, ensuring that any letter that appears in a word placed horizontally also appears in a word placed vertically. Numbered synonyms and definitions are provided as clues for the words. Additionally, Njoroge, Ndung'u, and Ganthigia (2013: 313-221) define the crossword puzzle as a game that makes the teaching-learning process enjoyable and engaging while also giving students plenty of opportunities to practice and repeat

vocabulary and phrase patterns. The teacher gives out copies of the "crossword problem" and goes over the guidelines, which include that it must be finished as soon as possible. The student who finishes the individual game first and receives a grade of "a" from the teacher is declared the winner. The winner of a pair or group project is the first pair or group to complete it. The teacher will present prizes to each winner. This enhances the appeal of the game.

Word Link Application

Games demand both teamwork and rivalry with other teams or individual players. To develop and enhance their talents, students must play while using the language and repeating patterns. In order to communicate, the player could use words, mime, body language, and gestures in addition to other methods, providing fun and unpredictability (Rixon, 1981).

Crossword Link is a unique form of the game that tests your proficiency in English. The goal of Word Link is to have players use letters to fill up the blank spaces at the top of the screen. English words must be typed into the blank boxes. Some of the game's letters are visible to the player at the bottom. By drawing a straight line from the first to the last letter, players must now connect these letters to create words. Players can draw a line from the letter S to A, then to L, then to T, creating the word SALT, for instance, by connecting the letters S, T, L, and A. If the player successfully guesses the word, it will appear at the top of the screen. Although a letter can only be used once in a word, it can still be used in words after that. Therefore, once the word SALT has been formed, players can draw a line to create the following word, such as LAST. The player receives a reward in the form of a diamond once all the words required by the stage have been completed, and the game advances to the next one.

Unusually, the player will receive an extra prize in the shape of an extra diamond if he or she is successful in finding a term that is not mentioned by the stage. Since there is no time restriction, participants are free to think clearly while playing. Fear not if you've given up trying to locate a word because Word Link also offers Hints, which can be used to reveal a letter on the screen. Naturally, these tips must be purchased with diamonds and are not offered for free.

The best part of Word Link is that there are mini-games to play that are even harder than the main game, one of which is Imagine Mode. Players in Imagine Mode must combine two existing images into a single new image in a very short amount of time. In this mode, each player completes multiple

levels. Along with Imagine Mode, other entertaining game modes include Find Mode, Mole Mode, Line Mode, Nail Mode, Tooth Mode, and Snake Mode.

C. METHOD

Research Design

This quantitative study employed an experimental design to determine whether employing Word Link with GTM has a beneficial substantial impact on improving students' vocabulary. The investigation was conducted for 32 hours between February 2 and May 5, 2021.

Fifth-grade students in primary school were the study's participants. 25 students took part in the investigation. They are between the ages of 10 and 12. Each of them is a Sundanese student. In addition to using Bahasa Indonesia in the classroom, they speak Sunda with one other.

Instruments

Cellphone, Word Link, pre- and post-tests were the equipment utilized in this investigation.

1. Cellphone, which is used to download and run the application.
2. Crossword Puzzle Game Application via Word Link
3. Pre- and post-testing:

The test administered prior to treatment is known as a pre-test. A post-test is a test that was administered following therapy.

Data collection

The study was carried out at Elementary school in West Bandung for four months beginning with all students taking a pretest as the first step in collecting the data. The students then played the Word Link Application for an additional hour before receiving GTM instruction. The pupils were then given the post-test following the treatment.

Pre and Post-test

1. Pretest

The Pre-test was conducted in February 2021, with 25 students from grade 5.

2. Post-test

The Post-test was conducted in May 2021, with 25 students from elementary school.

3. The goal of the test was to measure the number of students' vocabulary before and after receiving the treatment.

Treatment of the Experimental

The GTM method for the Word Link application is as follows:

1. For an hour, the students used the app.
2. The pupils record the words they have learned from the program.
3. The instructor uses their mother tongue to translate.
4. The instructor instructed the class to memorize the translation and the words.

D. FINDINGS AND DISCUSSION

The discussion and analyses of the data gathered to respond to the aforementioned research topic are provided below. Table 1 below lists the study participants' pre-test scores, obtained before to the start of the intervention, their post-test scores, as well as the average and individual participants' gain scores.

Table 1. Pre-test and post test and gain

No.	Name	Pre-test	Post-test	Gain
1	Student 1	40	84	0,73
2	Student 2	54	90	0,78
3	Student 3	60	98	0,95
4	Student 14	40	78	0,63
5	Student 5	30	88	0,83
6	Student 6	10	60	0,56
7	Student 7	54	76	0,48
8	Student 8	18	70	0,63
9	Student 10	34	72	0,58
10	Student 111	50	96	0,92
11	Student 12	30	84	0,77
12	Student 12	32	82	0,74
13	Student 13	52	92	0,83
14	Student 14	46	78	0,59
15	Student 15	14	68	0,63
16	Student 16	52	90	0,79

17	Student 17	26	66	0,54
18	Student 18	38	72	0,55
19	Student 19	36	78	0,66
20	Student 20	26	62	0,49
21	Student 21	38	76	0,61
22	Student 22	30	78	0,69
23	Student 23	28	70	0,58
24	Student 24	42	80	0,66
25	Student 125	44	84	0,71
AVERAGE		36,96	78,88	0,68

The experimental class consisting of 25 students taking the pre and post-test score falls on the Moderate category because the gain average is 0,68 which is between 0,30 until 0,70.

Table 2: Test of Normality

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PRETEST	.083	25	.200*	.977	25	.814
POSTEST	.095	25	.200*	.982	25	.923
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

The outcome of the normality test is shown. Since Gain A's sig. value of 0,814 is higher than alpha's threshold of 0,05, the null hypothesis is not rejected. We do not reject the null hypothesis because the sig. value = 0,923 for Gain B is bigger than alpha = 0,05.

Table 3. Test of Homogeneity of Variances

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
HASIL	Based on Mean	1.502	1	48	.226
	Based on Median	1.510	1	48	.225
	Based on Median and with adjusted df	1.510	1	45.901	.225
	Based on trimmed mean	1.487	1	48	.229

The result of the normality test is displayed. We do not reject the null hypothesis because Gain A's sig. value of 0,814 is higher than alpha's threshold of 0,05. We do not reject the null hypothesis because Gain B's sig. value of 0,923 is greater than alpha's threshold of 0,05.

Table 4. the t-test

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre test	36.9600	25	12.95016	2.59003
	Post-test	78.8800	25	10.10083	2.02017

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	Pre-test & Post-test	25	.781	.000

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	-41.92000	8.09280	1.61856	-45.26054	-38.57946	-25.900	24	.000

Since the sig. (2 tailed) is 0.000 is smaller than 0.05, the Paired Sample Test also demonstrates that there is a significant difference between the two groups before and after the therapy (α). It indicates that the research's central hypothesis—that employing Word Link to apply GTM can help students' vocabulary—was confirmed. Due to their interest in the topics, the students actively engaged in the teaching and learning of vocabulary through the use of crossword puzzles (Nurteteng & Nopitasari, 2019). This occurs because using crossword puzzles to learn vocabulary makes kids feel more at ease and less intimidated.

The study's findings supported the hypothesis by showing that one advantage of crossword puzzles is that they encourage and inspire children to employ critical thinking, vocabulary, spelling, and organizing abilities (Cheryl, 2012). The kids instinctively picked up the spelling of the terms while working on crossword puzzles. Crossword puzzle hints and blank spaces might be used to determine how many letters the answer contained. Playing a crossword puzzle game in class is one of the alternative methods for assisting pupils in developing and growing their vocabulary proficiency. Crossword puzzles are one of the vocabulary practice activities that can help students become more familiar with the words, recognize them, manipulate them, and recall them, as stated by Puspita & Sabiqoh (2017). Perhaps it's to expand their vocabulary. According to table 4, which supports the study's hypothesis, there is a substantial difference in the students' vocabulary before and after treatment. In other words, after integrating the GTM and the word link into the teacher's instruction, the achievement score increased, as seen by the data previously stated in Table 1, where the pre-test score was 36.96 and the post-test score was 78.88. Its gain score of 0.68 places it in the moderate gain category.

E. CONCLUSION

The researcher draws the conclusion that implementing Word Link in GTM applications has a favorable, significant impact on increasing students' vocabulary. It implies that the crossword problem significantly contributes to the pupils' vocabulary growth. Finally, the researcher draws the conclusion that using a crossword puzzle to use GTM is appropriate for pupils to employ in expanding their vocabulary. The word connect app is popular with the pupils when used in class for learning. They had the impression that they were playing games, which lessened their anxiety about learning the new words and replaced it with excitement.

REFERENCES

- Azhar, R., Abdullah, D., Erliana, C. I., Nurdiawan, O., Dikananda, A. R., Rinaldi, A. R., & Sudarsana, I. K. (2019). The Implementation of Backtracking Algorithm on Crossword Puzzle Games Based on Android. In *Journal of Physics: Conference Series* (Vol. 1363, No. 1, p. 012075). IOP Publishing.
- Berliani, N., A. & Katemba, C., V. (2021). The Art of Enhancing Vocabulary Through Technology. *Journal of English Language Teaching and Applied Linguistics* (SMART). 7(1). <https://doi.org/10.26638/js.1340.203X>
- Brown, H. D. (2001). *Teaching by Principles: An Interactive Approach to Language Pedagogy, Second Edition*. New York: A Pearson Educational Company.
- Cheryl, S. (2012). English Puzzle. *The Asian EFL Journal*, 1-12.
- Godwin-Jones, R. (2014). Games in language learning: Opportunities and challenges. *Language Learning & Technology*, 18(2), 9–19.
<http://llt.msu.edu/issues/june2014/emerging.pdf>
- Gu, P. Y. (2003). Vocabulary learning in a second language: Person, task, context, and strategies. *TESL-EJ*, 7(2), 1-25.
- Hartono, R. (2014). Application of grammar-translation method (GTM) in translating narrative texts from English into the Indonesian language. *ELTTL Proceedings. UNNES*, 666-680.
- Katemba, C., V. (2019), Students' Vocabulary Enhancement at Grade 10: A Comparative Study Using CALL & MALL in Indonesia. *CALL-EJ*, 20(1), 87-114
- Katemba, C. V. (2021). Enhancing Vocabulary Performance Through Mobile Assisted Language Learning at a Rural School in Indonesia. *Acuity: Journal of English Language Pedagogy, Literature, and Culture*, 6(1), 1-11. <https://doi.org/10.35974/acuity.v6i1.2457>
<https://jurnal.unai.edu/index.php/acuity/article/view/2457>
- Katemba, C., & Sinuhaji, G. (2021). Can ESA Method Through Quizizz Games Enhance Vocabulary Knowledge? *International Journal of Game-Based Learning (IJGBL)*, Vol. 11 no. 3. DOI: 10.4018/IJGBL.2021070102

- Katempa C., Tobing J.,H.,L., and Putri,A., T., (2022) "Kahoot! Games Enhance Vocabulary Learning?", *REI*, vol. 15, no. 3, pp. 393-408, DOI-<https://doi.org/10.18690/rei.15.3.393-408.2022>
- M.C., Njoroge, Ndung'u, R.W., and Gathigia. 2013. International Journal of Current Research Vol. 5(2), 313- 321: The Use of Crossword Puzzles as a Vocabulary Learning Strategy: A Case of English as a Second Language in Kenyan Secondary Schools. Nairobi: Resources for Education. Available on:<http://www.journalcra.com/article/use-crossword-puzzles-vocabularylearning-strategy-case-english-second-language-kenyan-secon>
- Nurteteng, N., & Nopitasari, D. (2019). The Use of Crossword Puzzle towards the Students Vocabulary. *INTERACTION: Jurnal Pendidikan Bahasa*, 6(1), 9-17.
- O'Dell, F., Read, J., & McCarthy, M. (2000). *Assessing vocabulary*. Cambridge university press.
- Pravita, NRS (2010). *The Advantages And Disadvantages Of Using Games In Teaching Vocabulary To The Third Graders Of To School Elementary School Unpublished Final Project Report*. Surakarta: Eleven March University.
- Prensky, M. (2004). What Can You Learn From A Cell Phone? – Almost Anything. *Journal of Online Education*, 1 (5).
- Puspita, Nurul and Sabiqoh, Nuraily. (2017). *Teaching Vocabulary by Using Crossword Puzzle*. Lampung: UIN Raden Intan Lampung.
- Redman, S., & Edwards, L. (2017). *English Vocabulary in use*. Cambridge University Press.
- Rixon, S. (1981). How to use games in language teaching. London: Macmillan.
- Sabiqoh, N. (2016). Teaching Vocabulary By Using Crossword Puzzle At The Fifth Semester Of The Seventh Grade Students of MTS Ma'arif Nadatul Ulama Mataram. *A Thesis*.
- Silberman, M. L. (2009). Active Learning. *Bandung, Nusamedia*.
- Taebenu,S.F., & Katempa, C.,V. (2021). Vocabulary Enhancement through Memrise and Google Classroom. *Language Literacy: Journal of Linguistics, Literature and Language Teaching*. Volume 5, Number 1, pp: 228-241. <https://doi.org/10.30743/ll.v5i1.3813>

Thornbury, S. (2002). *How to teach vocabulary*. Harlow: Longman.

Tino, CrosswordPuzzle, Available on: <http://ozi379.blogspot.com/2011/04/crosswordpuzzle.html>,
2015, Accessed on December 10th, 2015

Whitton, N. (2010). *Learning with digital games: A practical guide to engaging students in higher education*. New York, NY: Taylor & Francis.

Zaini, H., Munthe, B., & Aryani, S. (2008). *Active learning strategy*. Yogyakarta: PustakaInsanMadani.