

**OUTCOMES OF USING QUIZLET FLASHCARD WEBSITES IN  
TEACHING AND LEARNING VOCABULARY TO IMPROVE  
VOCABULARY KNOWLEDGE AND READING COMPREHENSION  
OF UNDERGRADUATE STUDENTS IN  
A PRIVATE UNIVERSITY IN NAKHON PATHOM PROVINCE**



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## Abstract

Quizlet is a flashcard website that allows learners to create study sets and learn vocabulary by themselves. Moreover, it is believed that vocabulary knowledge could be directly related to reading comprehension. Therefore, this study aimed to compare students' English vocabulary knowledge and their reading comprehension before and after using Quizlet including their satisfaction. The participants were the 30 students who enrolled in English II during the second semester of the 2020 academic year at a private university in Nakhon Pathom province. The instruments used were: 1) the vocabulary pre-test and post-test; 2) the reading comprehension pre-test and post-test; and 3) the satisfaction level of the students through questionnaire. The data were statistically analyzed through a Paired T-test to determine the mean scores of the pre-test and post-test, also, in identifying the differences between the means. The results revealed that: 1) the mean scores of the post-test were significantly higher than the pre-test, at  $p < .05$ ; and 2) the students' satisfaction using the Quizlet was high with the average of 4.24. Based on the findings, students were able to remember more words from the vocabulary list with the help of Quizlet and got high scores in reading comprehension. Additionally, the results indicated that the participants preferred using Quizlet as their learning tool helping them to improve their vocabulary and reading comprehension.

**Keywords:** vocabulary knowledge, reading comprehension, Quizlet

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## Introduction

Vocabulary plays an important role in effective communication. Without enough vocabulary, it is difficult to communicate effectively and to learn other skills in English (Aprilani, 2021). However, the research showed that students had problems or difficulties in learning vocabulary. For example, they had difficulties in pronouncing words, writing and spelling, and get confused of the words based on context (Surmanov & Azimova, 2020). Also, some students felt bored and stressed while learning vocabulary (Wahjuningsih, 2018; Aprilani, 2021). Therefore, foreign language teachers need to find out some effective vocabulary teaching and learning techniques to develop and enhance the students' vocabulary knowledge (Atalan & Subasi, 2023). These challenges lead to integrate technology in classes and English instruction. (Lesiak-Bielawska, 2015).

The progress of technology has an important impact on the method of teaching and learning (Sangtuptim, 2018). The use of technology provides many benefits for teaching and learning such as increasing motivation, fostering autonomy, improving interactivity and independent learning potential. (Atalan & Subasi, 2023). In addition, mobile technology provides many new application tools and websites that make language learning more efficient for students (Thedpitak, 2019). An example of technology in education is Web 2.0 assessments tools. For instance, Quizlet is a website that changes traditional flashcard experience to digital flashcard.

Quizlet is an online learning tool that has many advantages for education. Students can access Quizlet from both computers and mobile devices. Quizlet can help students learn vocabulary effectively. Students are free to choose study modes such as Flashcards, Learn, Write, Spell, Test, and Play to work with vocabulary. (Valeeva et al., 2019; Caglar, 2022). Consequently, Quizlet was chosen to investigate in this study.

At present, Thai EFL students are not able to communicate in English well because they did not acquire enough vocabulary and their concern is that foreigners might did not understand what they are saying or have a misunderstanding during communication or conversation (Yuh & Kaewurai, 2021; Chema et al., 2023). Also, in terms of reading comprehension, many researchers found that Thai EFL students have low English reading skill (Hayikaleng et al., 2016; Sawangsamutchai & Rattanavich, 2016; Liangpanit, 2018). In a private university in Nakhon Pathom province, according to the university's grade report of academic year 2562 to 2563, the numbers of students who received grade D (29.41%), D+ (23.53%), C (29.41%) and C+ (17.65%). In the grade's criteria, "D" means (51-55%). "D+" means (56-60%). "C" means (61-65%). "C+" means (66-70%) respectively. Therefore, this grade report demonstrates that majority of students in the private university in Nakhon Pathom province have low English vocabulary knowledge and reading proficiency. Therefore, this research investigates an innovative teaching method in improving both vocabulary knowledge and reading comprehension of the undergraduate students.

## Literature Review

### 1. Vocabulary Teaching and Learning

Oxford and Crokall (1990) presented common techniques of vocabulary teaching into four categories: de-contextualizing, semi-contextualizing, fully contextualizing, and adaptable. Oxford & Scarcella (1994) suggested a new research-based approach to vocabulary teaching where teachers are able to focus on words that learners need to know. In addition, this approach enables learners to study vocabulary systematically by considering learners' various learning styles and contextualized and partially contextualized activities are rather employed than decontextualized one. According to Nation (2001), kinds of vocabulary learning strategies were divided into three general classes of strategies as Planning: choosing what to focus on and when to focus on it, Sources: finding information about words and Processes:

establishing knowledge. In planning, Nation believes that accessing to lists of high frequency and academic words is crucial for vocabulary learners.

## 2. Vocabulary in Reading Comprehension

Most researchers believe that vocabulary could be directly related to reading comprehension. (Deng & Trainin, 2015; Hedgcock & Ferris, 2009; Hunt & Beglar, 2005; Liangpanit, 2018); Ouellette, 2006; Wagner & Meros, 2010). This relationship is a complicated one, and it can be explained by three hypotheses: the general aptitude hypothesis, the metalinguistic hypothesis and the instrumental hypothesis. The general aptitude hypothesis points that effective communication skills are crucial for expanding one's vocabulary and comprehending the world around them. One key issue of general aptitude is how quickly a person can recall and regain a word. The metalinguistic hypothesis shows that the way people interpret language plays a significant role in shaping their understanding of written text. The instrumental hypothesis signals that knowing lots of vocabulary enlarges the opportunity to understand what learners read (Anderson & Freebody, as cited in Guthrie, 1981).

## 3. Mobile Assisted Language Learning (MALL)

The use of Mobile Assisted Language Learning (MALL) has become an important part of Education. The advance in internet and the emergence of web 2.0 technologies enhance using MALL. Mobile applications on smartphones encourage learners to personalize their learning by accessing internet resources and downloading applications as needed. (Pegrum, 2014 as cited in Thedpitak, 2019).

New generation of MALL applications allows L2 Learners to employ web 2.0 tools to communicate and improve their linguistic competence. More interactive aspects are now available to language learners including customizable e-flashcards, engaging games and quizzes, and collaborative activities. A few examples of these applications are Quizlet and Kahoot. Also, Parupalli (2019) pointed students have been developing their language learning skills in and outside English classrooms by using mobile technology. Besides, increasing of smartphone ownership provides learners unlimited opportunities to study L2 vocabulary. Moreover, Dizon (2016) stated that many apps which focus on vocabulary learning have appeared on the Google Play app stores and the iTunes. Most of them, the users are allowed to download and use freely. According to Azabdaftari and Mozahab's (2012), the results found that using mobile phone to learn language and vocabulary was better than other techniques, such as using flash cards.

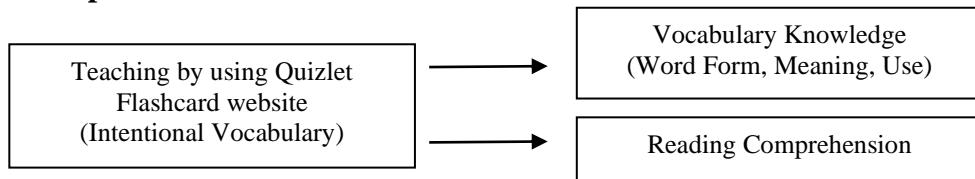
## 4. Quizlet

Quizlet is one of the most widely used flashcard systems with 350 million user-created study sets and 60 million users every month (Quizlet, 2023). As teachers and students are able to use the software on a PC, a free mobile application is also available on both the Apple iOS and Google Android mobile platforms. In Quizlet, English learners can learn vocabulary by using flashcard, learn, write, spell, test, match, and gravity features. Moreover, Dizon (2016) pointed that Quizlet improved students' vocabulary knowledge and learners believed that this is useful and easy to use for studying vocabulary on smartphone.

## Research Objectives

1. To compare the students' English vocabulary knowledge before and after using Quizlet.
2. To compare the students' English reading comprehension before and after using Quizlet.
3. To investigate the students' satisfaction towards using of Quizlet as a vocabulary learning tool.

## Conceptual Framework



**Figure1:** The conceptual paradigm of the study

## Methodology

This research utilized quasi-experimental design to investigate the students' vocabulary knowledge and reading comprehension.

### 1. Population

The population were the 60 second year students enrolled in English II (IENG 3105) in academic year 2020.

### 2. Sample

The participants were 30 second-year students selected using purposive sampling from among students enrolled in English II (IENG3105) in the second semester of the 2020 academic year.

### 3. Research Instruments

#### 3.1 A vocabulary test with 50 items gap filling multiple – choice

The pre-test and post-test were the same according to the textbook, Q: Skills for Success Reading and Writing (Lynn, 2019) from unit 1-5

#### 3.2 A reading comprehension test with 50 items multiple-choice

The test had 10 short passages with 5 questions after each passage. The pre-test and post-test were the same according to the textbook, Q: Skills for Success Reading and Writing (Lynn, 2019) from unit 1-5.

#### 3.3 A Satisfactory Questionnaire

15 Likert-type items with five points rating scale were included in the questionnaire. The questionnaire was adapted from Acosta and Valerina (2019) and Sangtupim (2018)

### 4. Reliability and Validity

The vocabulary test, the reading comprehension test and the satisfactory questionnaire were checked and verified by three experts in English language section. The content validity of the tests and questionnaire were calculated by using the index of item – objective congruency (IOC)>0.67. The reliability of the tests and questionnaires were calculated by using the Cronbach's alpha > 0.7.

### 5. Data Analysis

The data from pre - test and post - test were analyzed by using the Paired T-test statistics. Besides, the data from the satisfactory questionnaire was assessed by using a mathematical mean and standard deviation.

## Results

### Vocabulary Knowledge

**Research question 1:** Does the Quizlet Flashcard Websites improve the students' English vocabulary knowledge?

**Table 1** The comparison of the mean scores on pre-test and post-test of participants' vocabulary knowledge using the Quizlet flashcard websites

Section	N	Mean	S.D	Mean Differences	Std. Deviation Differences	t	P
Pre-test	30	21.53	7.29	-9.10	7.56	-6.59	.000*
Post-test	30	30.63	5.30				

\* $p < .05$

As to table 1, the mean of the post-test scores of participants' vocabulary knowledge was higher than the mean of the pre-test scores. The mean score of the pre-test was 21.53 and the post-test was 30.63. The mean difference was -9.10 and the t-values were -6.59. The mean scores of the pre-test and post-test were different, at the significance level of .000 ( $p < .05$ ). This data showed that learning was facilitated by the Quizlet improved the vocabulary knowledge of the participants significantly.

### Reading Comprehension

**Research question 2:** Does Quizlet Flashcard Websites improve students' English reading comprehension?

**Table 2** The comparison of the mean scores on pre-test and post-test of participants' reading comprehension using the Quizlet flashcard websites

Section	N	Mean	S.D	Mean Differences	Std. Deviation Differences	t	P
Pre-test	30	16.80	5.61	-8.07	6.99	-6.32	.000*
Post-test	30	24.87	5.68				

\* $p < .05$

As to table 2, the mean of the post-test scores of participants' reading comprehension were higher than the mean of the pre-test scores. The mean score of the pre-test was 16.80 and the post-test was 24.87. The mean difference was -8.07 and the t-values were -6.32. The mean scores of the pre-test and post-test were different, at the significance level of .000 ( $p < .05$ ). That is why in study, learning was also significantly facilitated by the Quizlet in improving the reading comprehension of the participants.

### The Students' Satisfaction

**Research question 3:** What is the students' satisfaction towards using of Quizlet as a vocabulary-learning tool?

**Table 3** The mean scores and S.D. scores of the students' satisfaction towards using Quizlet as a vocabulary learning tool.

Items	Mean	S.D	Interpretation
1. Quizlet is helpful for me to learn English	4.67	.48	Very High
2. I am really willing to use Quizlet in class.	4.83	.38	Very High
3. I am really willing to use Quizlet at home.	4.40	.62	High
4. I often use paper flashcards to memorize English words.	3.53	.68	High
5. I would like to use Quizlet app on my mobile devices.	5.00	.00	Very High
6. I prefer to use Quizlet on computer.	4.33	.55	High
7. I intend to use Quizlet every day to practice vocabulary.	4.33	.76	High
8. I intend to use Quizlet twice a week to practice vocabulary.	4.30	.60	High
9. I intend to use Quizlet once or twice a month to practice	3.60	.68	High

vocabulary.			
10. I think that I have to use Quizlet.	4.00	.79	High
11. Quizlet helps me remember English words.	4.67	.48	Very High
12. Quizlet improves me to pronounce English words.	4.47	.63	High
13. I enjoy to play games in Quizlet.	4.57	.57	Very High
14. My English has improved after using Quizlet.	4.57	.57	Very High
15. I intend to use Quizlet after this course	4.33	.66	High
Average	4.24	.56	High

As shown in Table 3, the overall average was 4.24 showing that the students' satisfaction toward using Quizlet as a vocabulary learning tool was at a high level.

## Discussion

There are three main research results to be discussed in the study according to three research objectives:

1. To compare the students' English vocabulary knowledge before and after using Quizlet.

The students learned vocabulary using the Quizlet. Since the response of the students from the questionnaire item 5 "I would like to use Quizlet app on my mobile devices" ( $\bar{X}=5.00$ ) is very high, they are encouraged to study vocabulary using the Quizlet features like flashcard, learn, spell, test and match. Moreover, the average scores of post-test after using Quizlet is higher than the pre-test with differences of mean score of -9.10. It was proved that the students' English vocabulary knowledge was gradually improved from the time they started using Quizlet. It was agreed with Dizon (2016), who stated that the students' results pointed the average score of the post-test increased more than the pre-test. The results revealed a significant difference between the pre-test and the post-test means at the 0.05 level, suggesting that the students' vocabulary scores significantly enhanced due to the Quizlet. According to Montaner-Villalva (2019), the results found that post-test scores were better than pre-test scores, so this means that the vocabulary knowledge of the participants was enhanced through Quizlet. In accordance with Apriliani (2021), Quizlet is efficient and attractive in learning vocabulary as it makes the learners enthusiastic in learning vocabulary in English. They have fun because they can play while learning. Also, the learners are comfortable in using the Quizlet because it will help them to memorize vocabulary better.

However, according to Atalan and Subasi (2023), the findings found that the Quizlet does not enhance productive knowledge of a word because it does not give example sentences in a context. It might be more suitable for receptive knowledge of a word with its features. Thus, the teacher should give study sets to students with example sentences. Furthermore, during the interview, some of participants pointed out that they felt bored and felt like being non-autonomous in choosing words to do their study sets. Therefore, learners should have an autonomy to choose the vocabulary they want to study in the lesson and create their own learning set.

2. To compare the students' English reading comprehension before and after using Quizlet.

As the students rated the questionnaire item 1 "Quizlet is helpful for me to learn English" ( $\bar{X}=4.67$ ) and item 11 "Quizlet helps me remember English words" ( $\bar{X}=4.67$ ). Moreover, the average scores of post-test after using Quizlet is higher than the pre-test, and the difference of mean score was -8.07. It indicates that the Quizlet could help students in improving their reading comprehension. Similarly, Putri's study (2019) believed that Quizlet can improve students' vocabulary knowledge through the six components namely repetition, enjoyable learning, generate autonomous learning, collaboration, competition, and increase persistence. Therefore, students can understand the word meaning in the reading text and they have better reading comprehension. It is consistent with Acosta and Valerina (2019), the results of the study showed that, both vocabulary knowledge and reading comprehension were increased, it was revealed through the development of knowledge vocabulary and reading

comprehension since they are interconnected skills. Besides, Vocabulary learning is more accomplished in EFL classroom when this is improved with technology like Quizlet.

3. To investigate students' satisfaction towards using of Quizlet as a vocabulary-learning tool.

The questionnaire data indicates that students were satisfied with Quizlet as a vocabulary learning tool at a high level ( $\bar{X}=4.24$ ). From the questionnaire's item 5 "I would like to use Quizlet app on my mobile devices" ( $\bar{X}=5.00$ ). Moreover, in items 1 and 11 "Quizlet is helpful for me to learn English" and "Quizlet helps me remember English words" were equal rate ( $\bar{X}=4.67$ ). Also, item 13 "I enjoy to play games in Quizlet" and in item 14 "My English has improved after using Quizlet" were the same rate ( $\bar{X}=4.57$ ). It is consistent with Sangtupim (2018), the results of the study showed that the students were satisfied with using Quizlet ( $\bar{X}=4.53$ ). It is also in accordance with Atalan and Subasi (2023), the results of the interview from 26 students pointed that more than half of the students' opinions of using Quizlet were mostly positive.

## Conclusions/Recommendations

Based on the findings, Quizlet significantly improved the students' vocabulary knowledge. Students felt fun and enthusiastic in learning vocabulary. Moreover, they can memorize vocabulary better through the help of Quizlet. In line with reading comprehension, Quizlet also helps the students in improving their reading because vocabulary and reading have a strong correlation. When the students increase their vocabulary knowledge, the chances of reading comprehension development are high. From the questionnaire's data, the students' satisfaction towards using Quizlet was positive. The students realized that the Quizlet was helpful, and it could help them in memorizing vocabulary and developing their reading comprehension. Thus, teachers should use Quizlet in teaching English vocabulary inside and outside the classroom to make their students have fun and be interested in the lessons. Moreover, the suggestion for further research is to use interview method to collect more in-depth data since in this research, the researchers compared pre-test, post-test scores and collected students' satisfaction. Future researchers will use this study as one of their baselines since this study measured the Quizlet as one of the tools in enhancing vocabulary knowledge and the reading comprehension of the students. Also, at present, many applications are available to help students to memorize and familiarize English vocabulary words. Researchers may use other applications such as Bright, WordBrain, and Learn English Vocabulary Daily for future studies and application to the teaching and learning aspects.

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