



## **Vocabulary List Learning Supported by Gamification: Classroom Action Research Using Quizlet**

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### **Introduction**

Vocabulary has been one of the popular topics in language learning. In the last twelve years, thirty percent of the research in L2 has explored vocabulary learning in various contexts (Schmitt, 2019). Empirical studies have found strong associations between learners' receptive vocabulary size and the skills of listening, reading, writing, and speaking (Stæhr, 2008; Uchihara & Clenton, 2018). However, acquiring L2 vocabulary has always been challenging for students and the success is often subject to the levels of learner autonomy in vocabulary learning (Agustín-Llach & Alonso, 2017). Learner autonomy is the learners' ability to self-direct their own learning process to attain learning goals, which eventually leads to the development of life-long learning skills (McDevitt, 1997). As important as it sounds, learner autonomy does not develop on its own and the advancement relies on teachers' supports in helping students learn how to study autonomously in the initial stages of learning. In recent years, facilitating the growth of learner autonomy in vocabulary learning can be supported by means of online websites and mobile applications. Quizlet has appeared to be among the potential applications (Cunningham, 2017). However, empirical evidence supporting the use of online applications that create gamification such as Quizlet for enhancing autonomy in vocabulary learning is still scant, and the impact on vocabulary learning outcomes is little known.

Because of such a need, the current study explores learning through vocabulary lists that is supported by gamification in a classroom action research design. Learning through vocabulary lists was selected for it is assumed to promote learner autonomy, whereas gamification through the use of Quizlet was chosen because it has the potential to facilitate learner vocabulary training outside the classroom. By implementing a classroom action research design where learners experience both with and without the support of gamification, the researchers expect to obtain empirical evidence of how the support of gamification affects vocabulary learning outcomes and enhances learner autonomy.



## Literature Review

### Vocabulary List Learning

One common challenging aspect in vocabulary learning is that there are too many words to acquire while there is limited time available (Chujo & Oghigian, 2009). Determining which words are worth focusing on within class time and independent study time has always been problematic, especially for teachers (Coxhead, 2000; Vasiljevic, 2009). Therefore, vocabulary lists can serve as guidelines in the process of determining vocabulary learning goals, assessing vocabulary knowledge and growth, and designing and integrating vocabulary learning tools (Gardner & Davies, 2014). In a study involving first-year Social Sciences students at a private university in Kanagawa, Japan, Yamamoto (2014) investigated vocabulary acquisition through deliberate vocabulary list learning and observed positive effects not only on the development of receptive vocabulary knowledge, but also on the progress of productive vocabulary knowledge as well as the depth of vocabulary knowledge overall. In another study, Bakla and Cekiç (2017) found that students who learned through a set of vocabulary lists individually outside class hours outperformed those who studied vocabulary through reading text only. Despite the skepticism that learning through vocabulary lists only promotes rote memorization, an experimental study from Mehrpour (2008) discovered that students who memorized and independently studied word lists had better performance in sentence-making tests than those who studied by using a contextualizing technique. As well, students who studied through word lists independently attained similar results to those who studied through semantic mapping (Khoii & Sharififar, 2013).

### Autonomy in Vocabulary Learning

Finding ways to develop learner autonomy has been one of the major concerns in vocabulary research due to the significant impact of autonomy on learner vocabulary learning and acquisition. Although it has not been explicitly confirmed in the literature, signs that indicate the link between vocabulary lists learning and the development of learner autonomy are noticeable from previous studies. Almusharraf (2018), for instance, investigating foreign language learner autonomy and vocabulary development, found that teachers' practices influenced learners' levels of autonomy and learners expected teachers to provide lists of vocabulary that they could study independently outside classroom. Similarly, in Feng's study (2015, p. 89), learners remarked, "Teachers often explained the meaning of new words in class, but they did not tell us how to learn vocabulary autonomously." and expected the teacher to arrange weekly vocabulary learning goals for them. In addition, Teng and He (2015) conducted a study that involved the use of vocabulary list after each reading text provided by the teacher and the overall results of the study suggested the development of learner autonomy. Smith (2008) argues that learners' progressive development of autonomy may be tied to supportive arrangements by the teacher. Illés (2012) further suggests that autonomy should be developed, "... through tasks and activities that engage learners on their own terms and allow them to effectively exploit their linguistic resources in online negotiation of meaning." (p. 505). This study, hence, uses vocabulary list learning to observe learner autonomy development in vocabulary learning supported by gamification, i.e., Quizlet.

### Gamification in Vocabulary Learning

In the present day, vocabulary learning has gone beyond the traditional form of learning. Facing the learning only on teachers' explanations and class hours is simply ineffective and limits the number of words that students can acquire. Over the last decade, gamification has gradually appeared to be one alternative solution for enhancing learner vocabulary learning. It can provide a layer of fun where learners are engaged in game elements including quests, challenges, levels, and rewards, which potentially increases motivation and participation in the learning process (Kingsley & Grabner-Hagen, 2018).

Recently, Zou Huang, and Xie (2019) reviewed 21 research publications in SSCI journals that investigated digital game-based vocabulary learning; the study concluded, “(1) digital games promote effective vocabulary learning; (2) interactions in game environments are conducive to vocabulary learning; (3) game-embedded multimedia facilitates vocabulary learning; and (4) over-specified vocabulary information is better than isolated or minimally specified information.” (pp. 22-23). Abrams and Walsh (2014) created gamified vocabulary learning instructions and applied them in their classes in New York City involving eleventh graders and young adult learners. They confirmed that gamified vocabulary encouraged learners to be agents of their own learning and stimulated interest-driven learning. Nonetheless, it is also important to note that gamification may have the potential to discourage low level learners due to the competition feature and the frequent use of it may cause boredom and forfeit learning interest among learners.

The present study focuses on Quizlet, one online application that can help gamify vocabulary learning. The effectiveness of Quizlet for enhancing vocabulary learning has been confirmed by several studies. Dizon (2016), who utilized Quizlet for facilitating Academic Vocabulary List (AVL) learning for Japanese EFL learners in a 10-week class, disclosed significant learning outcomes and positive perceptions of Quizlet. The positive effect of Quizlet on vocabulary acquisition was also noted when implemented in a month of vocabulary learning (Sanosi, 2018). Drawn from experiences of teaching intensive English programs at community college and university levels, Cunningham (2017) acknowledges that Quizlet has the potential to serve as learner vocabulary training place outside class-hour which can result in the development of learner autonomy; however, teacher’s continuous supervision plays a key role in the learning process. Wright (2016) notes that available class time is no longer a barrier as Quizlet can be used outside the classroom, yet the accuracy of the word-meanings and applications need to be ensured by the teacher. Nevertheless, how Quizlet can be utilized as a place for student vocabulary learning outside the classroom or at home and enhance learner autonomy is still little explored.

## **The Study**

This study intends to add knowledge to the literature by examining the extent that Quizlet can facilitate learner vocabulary training outside the classroom and enhance learner autonomy. It seeks to draw a line connecting learning through vocabulary lists to learner autonomy development with the support of gamified vocabulary learning instructions. The following questions are raised:

- 1) Can Quizlet support learning through vocabulary lists and improve learning outcomes?
- 2) How do students perceive their experiences in using Quizlet for enhancing their autonomy in vocabulary learning and for facilitating vocabulary training?

## **Method**

### **Research Design**

A classroom-based action research design was employed in this study. The primary focus was on the examination of the effectiveness of using Quizlet for improving vocabulary learning outcomes and enhancing learner autonomy. From his review on Kurt Lewin’s work (the originator of action research), Adelman (1993) emphasized the benefit of action research for improving practice. In education, action research is manifested when teachers conduct several changes to their teaching practices in the attempt to address emerging problems in the classroom and in their learners. Action research not only provides the information of what works and what does not work, but also detailed accounts of teacher-student interactions leading to educational ideals (Cain, 2011). Driven by these benefits of action research, this

study created a two-cycle action research design, in which in the first cycle (5 weeks), learners learned without the gamification support, while in the second cycle (5 weeks), learners learned with the gamification support. The whole research was carried out for 10 weeks. The evaluation was conducted after the tenth week. This method provided the definite advantage of having a built-in control group. Since the same students and classroom environment were used for the first cycle with gamification as well the second cycle with gamification, we had increased proof of validity of the concept.

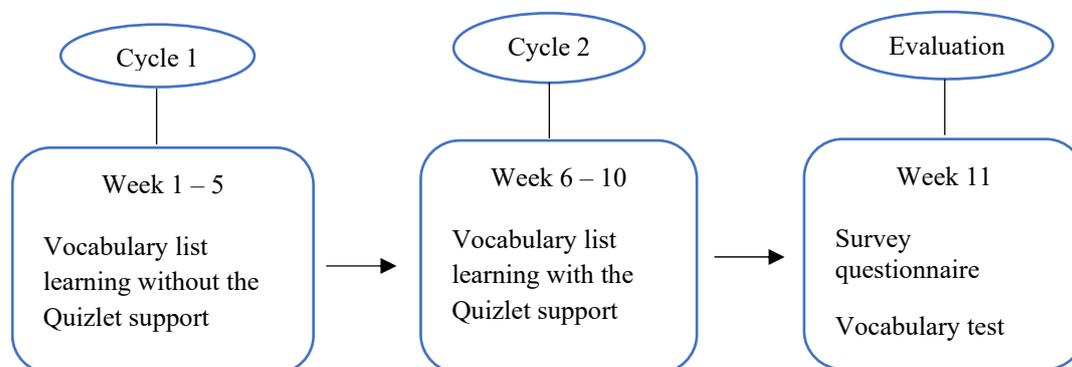


Figure 1. The illustration of how the action research was conducted.

## Context and Participants

The study was conducted for 11 weeks in the 1<sup>st</sup> academic term of 2019-2020 Academic Year at Walailak University, Thailand. The selected course was named “English for Academic Communication” and aimed at advancing students’ English knowledge and skills for both academic and professional communication. The class consisted of thirty second-year students (13% male, 87% female) who majored in Political Science, Physical Therapy, and Architecture and Design. Ranging from 18 to 20 years old of age, the students’ proficiency was at the level of basic users (A1 and A2) in the Common European Framework of Reference for Languages (CEFR). All the participants were informed about of the research and agreed to participate as long as it did not affect their course grades.

## Data

There were two types of data utilized in this study. The first data were students’ vocabulary scores from the weekly in-class vocabulary tests. The second data came from a survey, which was distributed on week 10. Each of the data are elaborated on in the next section.

## Vocabulary scores

The students had weekly vocabulary tests in the first 15 minutes of the class delivered using an online quiz application, i.e., Socrative.com. The tests were meant to assess the outcomes of the students’ autonomous vocabulary learning for each vocabulary list. There were fifteen multiple-choice questions in one test encompassing such questions as word meaning, part of speech, synonym and antonym and sentence completion. The test was conducted live in the class for 10 minutes and 5 minutes were for preparation. The students took the test by going to Socrative.com using their smartphones and teacher could monitor student progress from the class computer as well as display it on the projector screen.

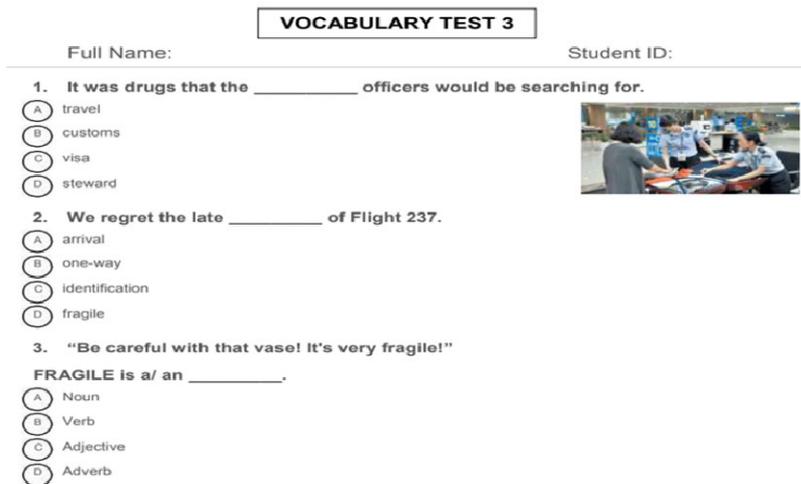


Figure 2. Example of the vocabulary test questions.

The target vocabulary underlying the vocabulary tests consisted of 500 academic English words at A2-B2 levels in the CEFR. The words were divided into ten lists of vocabulary, where one list consisted of 50 words. In each list, the students had to complete the definitions and examples for each word by using a dictionary at home. Through this process, it was expected that the students would develop their autonomous vocabulary learning.

TABLE 1  
*The First 50 of 500 Words that the Students Learned in 10 Weeks*

1. Abandon.v	11. Brainstorm.n	21. Satisfy.v	31. Elements.n	41. Geography.n
2. Abbreviate.v	12. Brief. Adj	22. Demonstrate.v	32. Email.n	42. Grammar.n
3. Abundance.n	13. Calculate.v	23. Denotation.n	33. Factor.n	43. Graph.n
4. Abstract.n	14. Choice.n	24. Depiction.n	34. Feature.n	44. Graphic.adj
5. According.a	15. Hesitation.n	25. Derivation.n	35. Figurative.adj	45. Header.n
6. Acronym.n	16. Optimism.n	26. Descriptive.adj	36. Figure.n	46. Journal.n
7. Psychology.n	17. Obsolete.adj	27. Edit.v	37. Expansion.n	47. Highlight.n
8. Body.n	18. Communicate.v	28. Editorial.n	38. Footer.n	48. History.n
9. Book.n	19. Communication.n	29. Effectivity.n	39. General.adj	49. Homework.n
10. Possession.n	20. Compare.v	30. Elementary.adj	40. Genre.n	50. Hypothesize.v

Note. v = verb; n = noun; a = adverb; adj = adjective

## Survey

A set of Likert-scale questionnaires was created to collect students' perceptions of their experience in using Quizlet in vocabulary learning. The surveys were distributed in week 11 by using *Google Forms*. Two aspects were measured: students' perceptions of the use of Quizlet as a place for learner vocabulary training and the impact of Quizlet on the development of autonomy. The former consisted of 8 items, for example "Quizlet from teacher really helped me learn the vocabulary sets more and better.", "Quizlet from the teacher really facilitated my vocabulary learning through practices.", and "Quizlet from the teacher enabled me to practice on vocabulary exercises more." The items were developed based on Cunningham (2017). Meanwhile, the latter part involved 6 items, such as "Quizlet helped me study the vocabulary sets independently.", "I could learn vocabulary autonomously on Quizlet.", and "I enjoyed learning vocabulary independently on Quizlet." The items were created by referring to Agustín-Lach and Alonso (2017). These two aspects had the responses ranging from 1 to 5, where "1" was strongly disagree

and “5” strongly agree. To validate the survey items, *Cronbach’s alpha* was used to evaluate the internal consistency. The results showed high internal consistency for all the items in the first ( $\alpha = .927$ ) and second ( $\alpha = .902$ ) parts of the questionnaire. All the items can be seen in Table 2.

## Procedures

### Stage 1 – Preparation

Prior to the start of the term, the 500 target words and 10 vocabulary lists were prepared. Then, the words in the vocabulary lists for week 6-10 were computed into Quizlet.

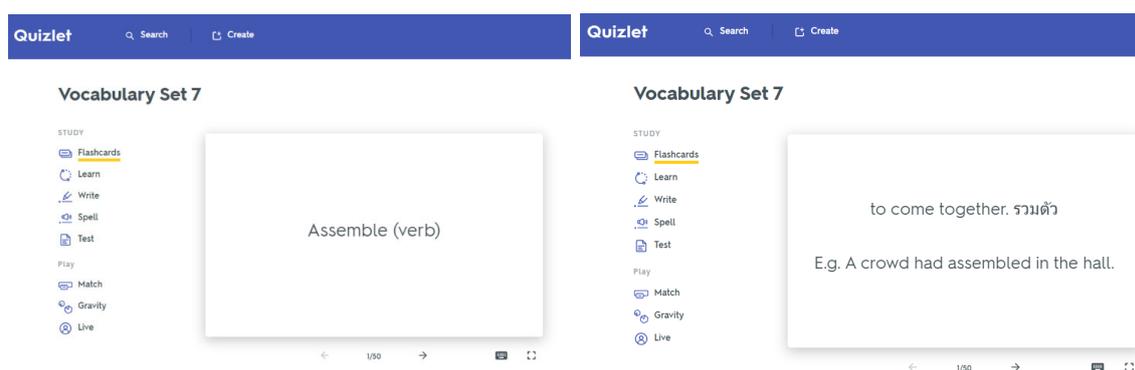


Figure 3. Samples of the words in Quizlet flashcards.

### Stage 2 – Implementation

Students learned the weekly vocabulary lists without the Quizlet support from week 1 to 5 and with the Quizlet support from week 6 to 10. In Quizlet, students could study the provided words through *Flashcards*, *Write* (involving word meaning), *Spell* (involving listening, pronunciation and spelling), and *Test* (involving word meaning, matching questions and true/false questions). They could do all these various vocabulary exercises repeatedly and autonomously anywhere and anytime accessible through their smartphone and/or computer.

### Stage 3 – Evaluation – data analysis

The evaluation involved two sets of data: students’ vocabulary test scores and surveys results. To answer the first research question, this study ran a paired-sample t-test to students’ scores before and after the Quizlet support was given. Afterwards, the survey data were analysed by using frequency and descriptive statistics. Three scales were used to interpret the mean, including Low level (1-2.4), Moderate level (2.5 – 3.4), and High level (3.5 – 5).

## Results

### Research Question 1

The results of the paired-sample t-test displayed a significant difference between the students’ scores before ( $M = 6.23$ ,  $SD = 1.64$ ) and after Quizlet was given ( $M = 7.45$ ,  $SD = 2.53$ );  $t(29) = -3.16$ ,  $p = .004$

with medium effect size (Cohen’s  $d = .57$ ). On average, the students’ vocabulary scores after using Quizlet were 1.36 higher. These results designate that the gamification support of Quizlet has significantly helped improve students’ vocabulary learning outcomes in class.

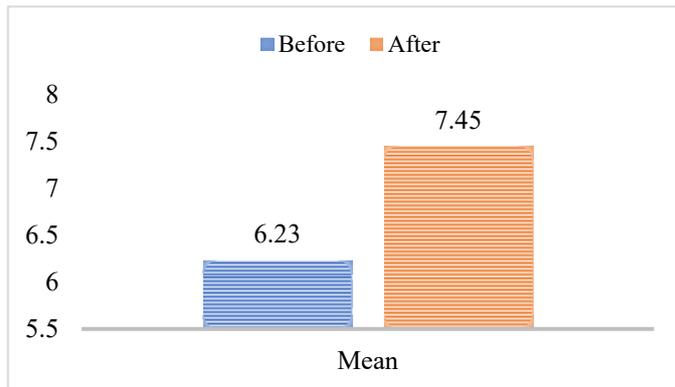


Chart 1. The means of the students’ scores before and after Quizlet was given.

### Research Question 2

The survey results indicated that students’ perceptions on the use of Quizlet for enhancing their autonomy ( $M = 3.49, SD = .72$ ) in vocabulary learning and for facilitating vocabulary training ( $M = 3.02, SD = .79$ ) were at Moderate level in general. The students perceived that the Quizlet helped them learn more vocabulary words and learn them better, facilitated their vocabulary learning through practices, and enabled them to practice on vocabulary exercises more. The majority of the students also reported that they used the Quizlet more than one time for vocabulary practice every week and they liked the exercises provided in Quizlet. Regarding learner autonomy, the students believed that Quizlet helped them study the vocabulary lists independently and felt that they had become more independent in vocabulary learning since using Quizlet. They expressed their enjoyment in learning independently on Quizlet in the survey. However, learners’ perceptions in these two aspects were not significantly correlated ( $r = -.06, p = .76$ ).

TABLE 2

*Descriptive statistics*

Item	Mean	SD	Level
<b>Students’ perceptions of Quizlet as a place for learner vocabulary training</b>			
Quizlet from teacher really helped me learn the vocabulary sets more and better.	3.70	.95	High
Quizlet from teacher really facilitated my vocabulary learning through practices.	3.51	1.12	High
Quizlet from teacher enabled me to practice on vocabulary exercises more.	3.63	1.11	High
I used Quizlet more than one time for my vocabulary practice every week.	3.37	.69	Moderate
I felt that I learned the vocabulary sets better using Quizlet from teacher.	3.33	.78	Moderate
My scores on vocabulary tests increased since using Quizlet from teacher.	3.37	.79	Moderate
Teacher should have created Quizlet since vocabulary test 1.	3.52	.80	High
I liked the exercises on Quizlet.	3.44	.75	Moderate
<b>Students’ perceptions of the impact of Quizlet on the development of autonomy</b>			
Quizlet helped me study the vocabulary sets independently.	3.22	.85	Moderate
I could learn vocabulary autonomously on Quizlet.	2.96	1.02	Moderate
I enjoyed learning vocabulary independently on Quizlet.	2.96	.98	Moderate
I enjoyed learning vocabulary independently on Quizlet.	3.04	.98	Moderate
Quizlet supported my autonomous learning effectively.	3.07	1	Moderate
I felt that I have become more independent in vocabulary learning since using Quizlet.	2.89	.97	Moderate

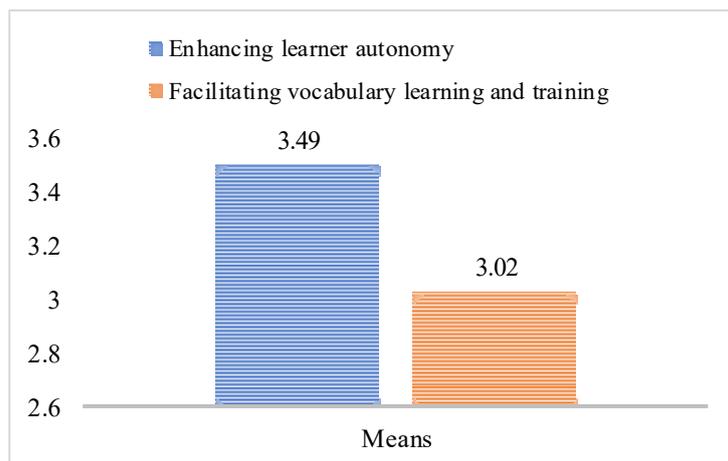


Chart 2. The means of the students' perceptions.

## Discussion

The current study aimed to explore vocabulary list learning supported by gamification for enhancing autonomy and vocabulary training in a classroom action research design using Quizlet. The paired-sample t-test analysis disclosed a significant difference in students' scores between cycle 1 (before Quizlet was given) and cycle 2 (after Quizlet was given), indicating that Quizlet had a positive effect on student learning through vocabulary lists. Previous studies on the use of Quizlet in vocabulary learning have been conducted in Japan and Saudi Arabia, while this study adds another country, i.e., Thailand, to the body of research in the literature. In Japan, there were two publications, namely Dizon (2016) who investigated Quizlet for facilitating Academic Vocabulary List (AVL) learning in a 10-week class, and Wright (2016) who explored the flashcard feature of Quizlet; both confirmed positive effects of Quizlet on vocabulary learning. Among low proficiency learners, Sanosi (2018) also found that Quizlet support assisted learners to improve their learning outcomes when measured in pre- and post-test design. One of the most challenging circumstances in vocabulary teaching and learning is limited class-time and Quizlet can help address this issue (Cunningham, 2017). The first finding of this study follows and sustains the positive suggestions from previous ones.

Students' reports on their experiences of using Quizlet for ten weeks in vocabulary reflected moderate levels on both the potential of Quizlet for enhancing autonomy and facilitating vocabulary training. In the studies on autonomy in vocabulary learning, learners' reflections revealed the need for teacher guidance through vocabulary instructions (Almusharraf; 2018; Feng, 2015) and the second finding of the present study suggests the inclusion of Quizlet in vocabulary learning instruction. Learning through vocabulary lists can be one alternative solution to help students acquire target words within limited class-hours and this approach offers similar results to other approaches (Khoii & Sharififar, 2013; Mehrpour, 2008). As effective vocabulary learning and acquisition happens when learners are engaged in various tasks and activities involving the exploitation of linguistic resources (Illés, 2012; Smith, 2008), the support of Quizlet can be very helpful.

## Recommendations

Most research around gamification has been extensively focused on the implementation of gamified learning in class, while it is evident that some aspects in foreign language learning, such as vocabulary, should be explored independently outside classroom. The results of this study have confirmed the benefits of providing gamified learning support by using Quizlet for students to explore autonomously at home on

vocabulary learning outcomes. Therefore, teachers are recommended to arrange their vocabulary learning instructions in a way that enables the integration of Quizlet for use outside the classroom. Providing academic vocabulary lists coupled with Quizlet support for vocabulary training can help teachers estimate how many words that students will learn by the end of the semester. In line with this, Abrams and Walsh (2014) suggest the inclusion of multimodal vocabulary instruction that connects in and out of classroom experiences and provides opportunities for students to develop their autonomous vocabulary learning. Practically, teachers can create a set of weekly vocabulary lists for students to learn, then create a Quizlet set for student vocabulary training at home. In class, teachers can implement various activities, ranging from quizzes to individual/ group work, that enable students to use the words they have learned from the vocabulary list and Quizlet set.

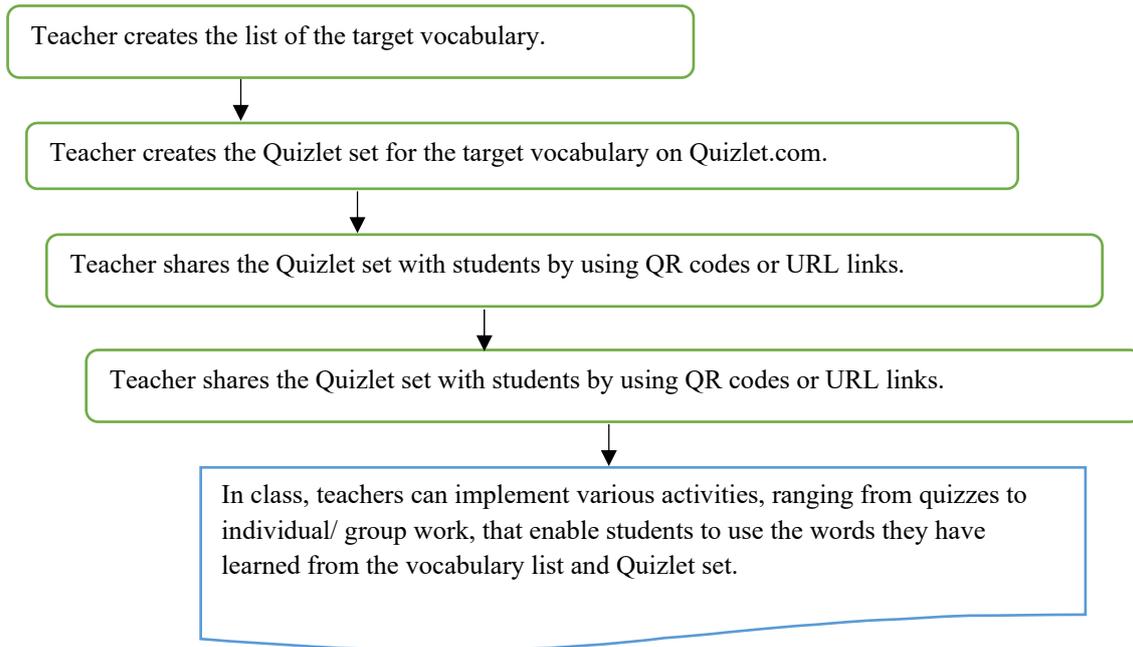


Figure 4. Suggested steps for implementation.

From our personal points of view and experience in conducting this study, vocabulary undeniably plays a key role in English language acquisition. However, class-time is never enough for teaching vocabulary as teachers need to cover other aspects too. The number of basic, important words that teachers have to teach is also high. Therefore, using vocabulary lists that students can study autonomously can be an alternative solution and Quizlet can help. Further, another noticeable advantage of using Quizlet is that students can access the provided vocabulary lists and do vocabulary training anywhere and anytime using their smartphones. As it does not involve video loadings, slower internet connections should suffice for the access. We can imagine our students doing vocabulary training on Quizlet while they are gathering with their friends at the university canteen, library, coffee shops, etc. The flexibility in access may be what stimulated our students to visit the provided Quizlet more than once. Up to this point, we have not encountered any complaints on the use of Quizlet, although students did complain about the number of words that they had to learn, which is understandable. Learning fifty new words a week is too high a goal.

## Conclusion

To sum up, the findings confirm the effectiveness of integrating Quizlet into learning through vocabulary lists, supported by students' learning outcomes and self-reports after ten weeks of learning.

The potential of Quizlet for developing learner autonomy was also reflected in students' reports. One of the pedagogical implications of these findings may include the encouragement of integrating gamification such as Quizlet into vocabulary learning outside the classroom. Nonetheless, this study was conducted on a small-scale classroom exploration; future studies involving a bigger sample size and qualitative data are strongly recommended for comparative perspectives. Studies around gamified learning outside the classroom are still limited. Gamification applications, such as Quizlet, Kahoot! and Quizizz, provide a homework feature, which allows teachers to assign gamified learning support for students to explore at home. Since students enjoy using technology, they are more willing to employ these applications in their learning. Therefore, more exploration on the potential of gamified learning outside the classroom for enhancing in-class learning outcomes is strongly suggested.

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### References

- Abrams, S. S., & Walsh, S. (2014). Gamified vocabulary. *Journal of Adolescent & Adult Literacy*, 58(1), 49-58.
- Adelman, C. (1993). Kurt Lewin and the origins of action research. *Educational Action Research*, 1(1), 7-24.
- Agustín-Llach, M. P., & Alonso, A. C. (2017). Fostering learner autonomy through vocabulary strategy training. In M. Pawlak, W. Mystkowska-Wiertelak, & J. Bielak (Eds.), *Autonomy in second language learning: Managing the resources* (pp. 141-158). Springer, Cham.

- Almusharraf, N. (2018). English as a foreign language learner autonomy in vocabulary development. *Journal of Research in Innovative Teaching & Learning*, 11(2), 159-177.
- Bakla, A., & Cekiç, A. (2017). Using an online vocabulary memorization tool versus traditional vocabulary exercises. *Ana Dili Eğitimi Dergisi*, 5(4), 948-966.
- Cain, T. (2011). Teachers' classroom-based action research. *International Journal of Research & Method in Education*, 34(1), 3-16.
- Chujo, K., & Oghigian, K. (2009). How many words do you need to know to understand TOEIC, TOEFL & EIKEN? An examination of text coverage and high frequency vocabulary. *The Journal of Asia TEFL*, 6(2), 121-148.
- Coxhead, A. (2000). A new academic word list. *TESOL Quarterly*, 34(2), 213-238.
- Cunningham, K. J. (2017). Quizlet for learner training and autonomy. *Teaching English Reflectively with Technology*, 123-135.
- Dizon, G. (2016). Quizlet in the EFL classroom: Enhancing academic vocabulary acquisition of Japanese university students. *Teaching English with Technology*, 16(2), 40-56.
- Feng, T. (2015). Assessing learner autonomy and EFL vocabulary acquisition: A case study. *Beyond Words*, 3(1), 78-99.
- Gardner, D., & Davies, M. (2014). A new academic vocabulary list. *Applied linguistics*, 35(3), 305-327.
- Illés, É. (2012). Learner autonomy revisited. *ELT journal*, 66(4), 505-513.
- Khoii, R., & Sharififar, S. (2013). Memorization versus semantic mapping in L2 vocabulary acquisition. *ELT Journal*, 67(2), 199-209.
- Kingsley, T. L., & Grabner-Hagen, M. M. (2018). Vocabulary by gamification. *The Reading Teacher*, 71(5), 545-555.
- McDevitt, B. (1997). Learner autonomy and the need for learner training. *Language Learning Journal*, 16(1), 34-39.
- Mehrpour, S. (2008). A comparison of the effects of two vocabulary teaching techniques. *The Asian EFL Journal*, 10(2), 192-208.
- Sanosi, A. B. (2018). The effect of Quizlet on vocabulary acquisition. *Asian Journal of Education and e-Learning*, 6(4), 71-77.
- Schmitt, N. (2019). Understanding vocabulary acquisition, instruction, and assessment: A research agenda. *Language Teaching*, 52(2), 261-274.
- Smith, R. (2008). Learner autonomy. *ELT Journal*, 62(4), 395-397.
- Stæhr, L. S. (2008). Vocabulary size and the skills of listening, reading and writing. *Language Learning Journal*, 36(2), 139-152.
- Teng, F., & He, F. (2015). An example of classroom practice using flashcards for young learners: Preliminary indications for promoting autonomy. *Studies in Self-Access Learning Journal*, 6(4), 382-398.
- Uchihara, T., & Clenton, J. (2018). Investigating the role of vocabulary size in second language speaking ability. *Language Teaching Research*, 24(4), 1-20.
- Vasiljevic, Z. (2009). Incorporating rich vocabulary instruction into a language classroom. *The Journal of Asia TEFL*, 6(1), 189-214.
- Wright, B. A. (2016). Transforming vocabulary learning with Quizlet. In P. Clements, A. Krause, & H. Brown (Eds.), *Transformation in language education* (pp. 436-440). Tokyo: JALT.
- Yamamoto, Y. (2014). Multidimensional vocabulary acquisition through deliberate vocabulary list learning. *System*, 42, 232-243.
- Zou, D., Huang, Y., & Xie, H. (2019). Digital game-based vocabulary learning: Where are we and where are we going? *Computer Assisted Language Learning*, 1-27.

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