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Collaborative Learning Management with Language Game to Develop 12th Grade Students' English Vocabulary Learning and Reading Competency

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Abstract

The purposes of this research were to (1) study twelfth grade students' English vocabulary and reading development by applying collaborative learning management with language game of the whole group and individual (2) examine twelfth grade students' attitudes towards collaborative learning management with language game in learning English vocabulary and reading and (3) investigate twelfth grade students' participating behaviors in collaborative learning management with language game. The target population in this study was 40 twelfth grade students who studied English reading and summarizing in academic year 2023 at The Demonstration School of Ramkhamhaeng University. The research instruments consisted of (1) collaborative learning management with language game lesson plans (2) pre and post-test of English vocabulary and reading achievement (3) the attitudes towards collaborative learning management with language game questionnaire and (4) group behavior observation forms. The data were analyzed by utilizing mean, standard deviation, frequency, percentage, and normalized gain. The results showed that (1) twelfth grade students' English vocabulary development by applying collaborative learning management with language game of the whole group was in medium gain ($\langle g \rangle = 0.45$) and there were 6 students obtaining high gain, 22 students obtaining medium gain and 12 students obtaining low gain; furthermore, twelfth grade students' English reading development by applying collaborative learning management with language game of the whole group was in medium gain ($\langle g \rangle = 0.41$) and there were 3 students obtaining high gain, 25 students obtaining medium gain and 12 students obtaining low gain, (2) twelfth grade students' attitudes towards collaborative learning management with language game in learning English vocabulary and reading were high ($\mu = 4.25$, $\sigma = 0.40$), and (3) twelfth grade students' participating behaviors in collaborative learning management with language game were good over 80 percent of all students ($\mu = 9.62$). This indicates that collaborative learning management with language game is one of the most effective teaching methods that contributes to developing learners' vocabulary knowledge and reading competency. Moreover, it creates a fun classroom atmosphere, facilitates learners to practice critical thinking, increases their interest and enthusiasm in learning English, and supports them to have good learning behaviors.

Keywords: Collaborative Learning, Language Game, Educational Game, Game Based-Learning, Vocabulary Learning, Reading Competency

Introduction

Reading is significant especially in senior high school and higher education since learners have to face more academic reading texts. Therefore, if students have sufficient vocabulary knowledge, it will support them to understand what they read more easily (Zano & Phatudi, 2019). Reading is a crucial skill for learners as it contributes to their success in education (Leahy & Fitzpatrick, 2017). However, there are some reading problems for high school students, such as lack of proficiency in English language, lack of motivation to learn, and neglecting reading lessons. There are also problems when teachers teach without applying instructional medias and use inappropriate methods (Dara, 2019; Ganie et al., 2019). Bondaug (2021) conducted a study on game-based

learning material for developing reading comprehension and discovered that students' English reading achievements were higher than their pre-test scores. Games not only helped learners increase their reading comprehension, but also made them more interested and participatory in learning process. [Kabir and Kiasi \(2018\)](#) studied the effects of cooperative strategic reading on EFL learner's reading comprehension and vocabulary knowledge and revealed that the experimental group's reading comprehension and vocabulary knowledge post-test scores were higher than the control group's.

Students' vocabulary knowledge and reading proficiency are related. Knowing sufficient vocabulary is necessary for learners to improve their reading abilities ([Hasan & Shabdin, 2017](#); [Zano & Phatudi, 2019](#); [Manihuruk, 2020](#)). Consequently, if teachers desire learners to develop their reading abilities, they should pay attention to students' vocabulary as well ([Djuarsa, 2017](#)).

Reviewing vocabulary by utilizing brief games as an introduction to the next lesson is an effective method ([Gower et al., 2005](#)). Teaching vocabulary through games helps students understand and memorize words step by step, and games enable them to recall new words independently ([Meliana et al., 2018](#)). To learn effectively, learners have to review vocabulary that they have learned. Using games to review vocabulary makes learning fun. Applying games on teaching and learning management to develop learning achievement is known as Game Based-Learning: GBL ([Tobias, 2021](#)).

Game-based Learning (GBL) means the games that are invented for education. It is designed to meet learners' needs and be suitable for learning contents by utilizing rules to make lessons more interesting and make students fancy participating in learning ([Plass et al., 2015](#)). Games play a vital role in education since they inspire learners to succeed in learning English and improve learning retention. Applying classroom games promotes vocabulary development, supports students to learn more words, increases student participation, and boosts their motivation to learn ([Bado & Franklin, 2014](#); [Plass et al., 2015](#); [Silsupur, 2017](#); [Jamaatthuddin & Otr-Kan, 2021](#); [Tobias, 2021](#)). In addition, students feel relaxed and enjoy the process of learning. Games

also encourage a positive attitude towards learning ([Tanago, 2017](#); [Liu et al., 2021](#)).

A game refers to an activity that contains rules and a goal; moreover, it is fun. There are two types of games: 1) a competitive game is a game that players compete against each other to be a winner, and 2) a co-operative game is a game that players work together to achieve the same goal. A number of techniques are employed in games, and variety is vital in language teaching. Games might be exciting at first, but if the same games are used continually with the same rules, they can soon lose their appeal ([Hadfield, 1984](#)).

A language game is the means of combination of language and play. Games create a fun learning atmosphere and help learners reduce stress. They also promote motivation in learning and encourage learners to understand the use of language ([Kaur & Aziz, 2020](#)). Games facilitate learners to learn and memorize vocabulary more effectively and quickly. They also capture learners' attention and help motivate learners to study English. Moreover, they contribute to developing learners' communication skills. There are many different kinds of language games, but it's crucial to consider the learners' skill levels when using them ([Perveen et al., 2016](#)). Selecting games for teaching, instructors should take into account individual differences and design games that are most suitable for learners. Each game serves a different purpose, so lesson plans should clearly specify the level at which the game should be used in teaching ([Chirandon et al., 2010](#)).

Collaborative learning is a teaching approach that focuses on child-centered learning and encouraging students to work together in small groups. It also allows learners to practice thinking, working together to find solutions, helping one another to solve problems, collaboratively plan to achieve their goals, and creating new ideas. Collaborative learning encourages learners to discuss and exchange their opinions. Furthermore, it assists in participation, interaction, collaborative attempt, thinking process, and learning community. These elements develop learners' knowledge and support them to learn more effectively ([Smith & MacGregor, 1992](#)).

An attitude is defined as an individual's internal mental state that influences their behavioral

expression. It consists of three components: (1) **cognitive**: knowledge, thinking processes, and intellectual skills, (2) **affective**: positive or negative feelings towards something, and (3) **behavioral**: expression of feelings towards something. Learning achievement is related to attitudes towards school subjects. Learners who have positive attitudes, such as impressing their teachers and subject learning, tend to learn better than learners who have negative attitudes, such as not liking learning, hate for teachers, not understanding, no fun, and failing the tests. The way to increase students' attitudes towards learning is teachers should make their classes fun and interesting ([Sukhphan, 2018](#)).

Participation behavior refers to students' desires to attend classes, learn English contents, and participate in learning activities as much as possible. This includes joining group activities with members who have different abilities, participating in game groups, answering questions in class, exchanging their opinions, supporting one another, and taking responsibility for their parts and groups ([Pakginnon et al., 2020](#)). When students engage in the learning process, they learn at their best and meaningful learning occurs when students participate in learning activities ([Madjdi & Rokhayani, 2021](#)).

Collaborative learning management with language game is an interesting approach that can draw learners' attention and encourage them to learn new vocabulary and read English in a fun and collaborative way. Moreover, this research employed modern teaching methods and innovative techniques that can be used as guidelines in teaching and learning management for instructors or researchers who are interested in solving problems on students' lack of interest in learning. It also aimed at learning development that helps students learn vocabulary and English reading effectively to meet the curriculum requirements.

Research Hypothesis

- The evaluation result of every component of 12th grade students' attitudes towards collaborative learning management with language game in learning English vocabulary and reading was at a high level.
- The evaluation results of 12th grade students'

participating behaviors in collaborative learning management with language game were at a good level, with over 80% of all students.

Methodology

This study was a quasi-experimental design and research methodology is explained below.

Target Population

The target population in this study was 40 twelfth grade students from classes 6/1(2) (28 science-mathematics students) and 6/2 (12 arts-mathematics students) who studied English reading and summarizing in academic year 2023 at The Demonstration School of Ramkhamhaeng University.

Research Instruments

This study utilized four research instruments and all of them were submitted to three experts together to determine the suitability and content validity. The details are as follows:

There were six collaborative learning management with language game lesson plans. Each plan spanned two class periods (100 minutes) and included six learning activities: 1) pre-reading, 2) vocabulary presentation, 3) vocabulary review, 4) while reading, 5) post-reading, and 6) summary. The games were applied in the pre-reading, vocabulary review, and post-reading activities. All lesson plans were evaluated by three experts to determine the relevance of the content, learning objectives, learning goals, language game activities, and the overall framework of collaborative learning management with language game. The lesson plans were then revised, following the experts' recommendations. After that the quality of the lesson plans was analyzed by using a five-point Likert scale. All lesson plans were scored at the most appropriate level, plan 1 ($\bar{x}=4.59$, $SD=0.52$), plan 2 ($\bar{x}=4.56$, $SD=0.50$), plan 3 ($\bar{x}=4.57$, $SD=0.56$), plan 4 ($\bar{x}=4.65$, $SD=0.48$), plan 5 ($\bar{x}=4.54$, $SD=0.50$), and plan 6 ($\bar{x}=4.62$, $SD=0.49$).

There were 20 questions on both the pre- and post-tests of English vocabulary and reading achievement. Each multiple-choice test had four possible answers. After gathering information from the experts, the index of item objective congruence (IOC) was

calculated and the items which had the IOC values less than 0.50 were revised and returned to the experts for further evaluation. Additionally, thirty students not in the target population were asked to do the vocabulary and reading competency tests during the first week of the first semester of the academic year 2023 in order to determine the reliability of the tests. After that the tests were computed by utilizing the formula of Kuder-Richardson 20 (KR-20). The vocabulary test's discrimination index scores were between 0.25 and 1.00, and the difficulty index scores were in the range of 0.31 to 0.75. The reading competency test's discrimination index scores were between 0.25 and 0.88, and the difficulty index scores were in the range of 0.25 to 0.75.

The attitudes towards collaborative learning management with language game questionnaire had two parts. Part one, attitudes towards collaborative learning management with language game contained 15 questions divided into three components: cognitive: knowledge and thinking processes (5 items), affective: emotions and feelings (5 items), and behavioral: expressions of feelings (5 items) using a five-point Likert scale. Part two comprised three open-ended questions: 1) In what aspects do you think the collaborative learning management with language game assists in developing? 2) What do you think are the benefits of the collaborative learning management with language game? and 3) What can the teacher do to develop the collaborative learning management with language game? After calculating the IOC values, the items that had the scores below 0.50 were revised and resubmitted to the experts. Thirty students who were not in the target population but taught by applying the collaborative learning management with language game in their learning lessons in the second semester of academic year 2022 were asked to complete the questionnaire online.

After collecting data, it was computed to determine the questionnaire's reliability by using Cronbach's Alpha Coefficient and the questionnaire's reliability level was 0.94.

The group behavior observation form included five assessment criteria: 1) participation, 2) cooperation, 3) enthusiasm, 4) respect for rules and regulations, and 5) listening to others' opinions. Each criterion was scored out of 2 points, with the following evaluation scale: 0-1-2 points. The quality assessment criteria were as follows: 7-10 (good), 4-6 (satisfactory) 0-3 (needs improvement). The analysis of each item had a consistency index of 1.00.

Data Analysis

The first research objective, normalized gain <g> was used to determine 12th grade students' English vocabulary and reading development of the whole group and individual. The second research objective, mean (μ) and standard deviation (σ) were used to analyze 12th grade students' attitudes levels. Students' written comments about collaborative learning management with language game were assessed for qualitative data analysis by first classifying the responses using keywords, then examining the frequency of repeated words and determining the percentage of each data group. The third research objective, the mean (μ), frequency, and percentage were used to analyze 12th grade students' participating behaviors.

Results

Table 1 presents the findings of the normalized gain <g> analysis used to examine 12th grade students' English vocabulary development by applying collaborative learning management with language game of the whole group.

Table 1 English Vocabulary Development of the Whole Group of 12th Grade Students by Applying Collaborative Learning Management with Language Game

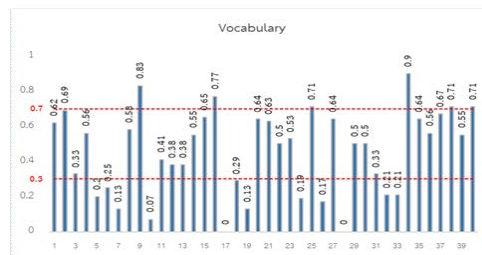
Class	Number of Students	Pre-test	Post-test	% Pre-test	% Post-test	Actual gain	Maximum possible gain	Normalized gain <g>
6/1(2)	28	5.14	11.36	25.71	56.79	31.07	74.29	0.42
6/2	12	8.92	14.83	44.58	74.17	29.58	55.42	0.53
Total	40	6.28	12.40	31.38	62.00	30.63	68.63	0.45

Table 1 shows that when tested with the vocabulary development test, out of a total score of 20 points, 40 students obtained a mean score of 0.45, which was in medium gain. When each classroom was considered individually, students in class 6/1(2) received a mean score of 0.42 and class 6/2 acquired a mean score of 0.53. Both classrooms were in medium gain.

The analysis results of individual vocabulary learning development by examining the normalized gain <g> of all 40 students, which included 28 students from class 6/1(2) (numbers 1-28) and 12 students from class 6/2 (numbers 29-40), are displayed in Figure 1.

Figure 1 shows that six students' vocabulary development scores, or 15% of the total, were in high gain. Student number 34 obtained the most development score of 0.9, followed by student number 9 with a score of 0.83. Next, there was a

medium gain group of 22 students (or 55% of the total) who acquired scores in the range of 0.33 to 0.69. The scores of the last group were in low gain containing 12 students, or 30% of the total, including two students, numbers 17 and 28, receiving a vocabulary development score of 0.



Normalized gain <g>

High gain - 6 students (15%); Medium gain - 22 students (55%); Low gain - 12 students (30%)

Figure 1 Individual Vocabulary Learning Development

Table 2 English Reading Development of the Whole Group of 12th Grade Students' by Applying Collaborative Learning Management with Language Game

Class	Number of Students	Pre-test	Post-test	% Pre-test	% Post-test	Actual gain	Maximum possible gain	Normalized gain <g>
6/1(2)	28	8.86	13.61	44.29	68.04	23.75	55.71	0.43
6/2	12	10.83	14.33	54.17	71.67	17.50	45.83	0.38
Total	40	9.45	13.83	47.25	69.13	21.88	52.75	0.41

Table 2 presents out of a total score of 20 points, 40 students' English reading development mean score was in medium gain ($\mu = 0.41$). When considering each classroom separately, 6/1(2) students' English reading development mean score was 0.43, and 6/2's was 0.38. Both classes were in medium gain.

The analysis results of individual English reading development by examining the normalized gain <g> of all 40 students, which included 28 students from class 6/1(2) (numbers 1-28) and 12 students from class 6/2 (numbers 29-40), are shown in Figure 2.

Figure 2 shows that there were three students, or 7.5% of the total, obtaining individual English reading development scores in high gain. Student number 8 received the most development score of 0.83, followed by student number 27 with a score of 0.73. Next, there was a medium gain group of 25 students, or 62.5% of the total, earning scores in the

range of 0.33 to 0.67. The last group was in low gain containing 12 students, or 30% of the total. However, there were three students in this group - numbers 18, 30, and 40 - having an English reading development score of 0.



Normalized gain <g>

High gain - 3 students (7.5%); Medium gain - 25 students (62.5%); Low gain - 12 students (30%)

Figure 2 Individual English Reading Development

Table 3 The Levels of 12th Grade Students' Attitudes towards Collaborative Learning Management with Language Game in Learning English Vocabulary and Reading (N=40)

Students' Opinions on Collaborative Learning Management with Language Game	μ	σ	Attitude Level
Knowledge / Thoughts about Collaborative Learning Management with Language Game			
It assists me to memorize vocabulary easier	3.70	0.72	high
It assists me to understand what I read better	4.23	0.77	high
It assists me to learn English better	4.23	0.77	high
It supports learners to learn English better than learning alone	4.10	0.84	high
It supports learners to practice their thinking processes	4.45	0.78	high
Total (Knowledge / Thoughts)	4.14	0.48	high
Emotions/Feelings about Collaborative Learning Management with Language Game			
It is a fun teaching and learning method	4.40	0.71	high
The games used in teaching are interesting	4.43	0.71	high
It assists learners in increasing their interest in learning English	4.40	0.67	high
It assists in creating a positive classroom atmosphere	4.55	0.55	very high
It assists students to have a positive attitude towards English	4.18	0.87	high
Total (Emotions/Feelings)	4.39	0.51	high
Behaviors Related to Collaborative Learning Management with Language Game			
It assists all learners to participate in the learning process	4.40	0.67	high
It helps learners dare to express themselves	4.10	0.84	high
It helps learners dare to make decisions	4.00	0.93	high
It assists in building unity within the group	4.15	0.83	high
It boosts learners' adaptability skills to work with others	4.40	0.67	high
Total (Behaviors)	4.21	0.57	high
Grand Total	4.25	0.40	high

Table 3 reveals that the 12th grade students' level of attitudes towards collaborative learning management with language game in learning English vocabulary and reading was at a high level ($\mu=4.25$, $\sigma = 0.40$). When investigating item by item, number 9 (It assists in creating a positive classroom atmosphere) was the most notable item, indicating the highest level of attitude ($\mu=4.55$, $\sigma = 0.55$). When examining each component, the emotional or feelings had the highest mean score ($\mu=4.39$, $\sigma = 0.51$), followed by the behaviors ($\mu=4.21$, $\sigma = 0.57$), and lastly, the knowledge or thoughts ($\mu=4.14$, $\sigma = 0.48$). All three components indicated a high level of attitude.

Table 4 shows that 12th grade students' participating behavior in collaborative learning management with language game total score for five items was 10. The mean score for all items was 9.62, or 96.2%, which was at a good quality level.

Table 4 The Results of Group Behavior Evaluation by Item (N=40)

Group Behavior Evaluation Items	Full Score	Average Score	Average Score %
Participation	2	1.98	19.8
Cooperation	2	1.97	19.7
Enthusiasm	2	1.75	17.5
Respect for rules and regulations	2	1.98	19.8
Listening to opinions	2	1.98	19.8
Total	10	9.62	96.2

Individual analysis of group behavior in collaborative learning management with language game was also explored by analyzing from 40 students' group behavior scores, which included 28 students from class 6/1(2) (numbers 1-28) and 12 students from class 6/2 (numbers 29-40), as illustrated in Figure 3.

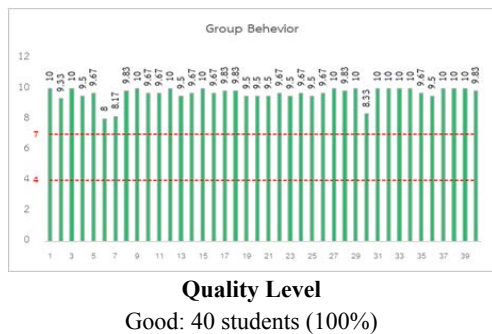


Figure 3 Individual Group Behavior Scores

Figure 3 shows that all 40 students acquired group behavior assessment scores at a good quality level, representing 100%. 14 students, numbers 1, 3, 9, 12, 15, 27, 29, 31-34, and 37-39, received a mean score of 10. The lowest mean score of 8 was obtained by the student number 6.

Discussions and Conclusions

70 percent of all students' English vocabulary learning achievement and reading competency were improved by the collaborative learning management with language game. The findings were satisfactory results since they demonstrate positive outcomes. This study supports [Bado and Franklin \(2014\)](#), [Plass et al. \(2015\)](#), [Silsupur \(2017\)](#), [Jamaathuddin and Or-Kan \(2021\)](#), and [Tobias \(2021\)](#)'s statements that employing games in the classroom promotes vocabulary development. The collaborative learning management with language game not only assisted students to develop their vocabulary knowledge, but also improved their English reading skills. The results are similar to [Bondaug's \(2021\)](#) research that applying games in teaching improves learners' English reading achievement. In addition, employing collaborative reading strategy improves learners' vocabulary knowledge and reading comprehension ([Kabir & Kiasi, 2018](#)). However, the majority of the students were in the medium gain group in both vocabulary knowledge and reading comprehension. According to student feedback, they could memorize the vocabulary they had learned, but in the tests, there were some unfamiliar words especially in the reading part that caused their learning achievements in this group. Nonetheless, the collaborative learning management with language game facilitates students' vocabulary development.

The collaborative learning management with language game also contributed to improving learners' positive attitudes towards English reading conforming to [Tanago \(2017\)](#) and [Liu et al. \(2021\)](#)'s studies. Furthermore, students thought the collaborative learning management with language game assisted in creating a positive classroom atmosphere and rated it as a very high level. This finding supports [Kaur and Aziz \(2020\)](#)'s statement that applying games in teaching creates a fun learning atmosphere.

Not only quantitative, but also qualitative data from questionnaire was investigated. Students expressed their opinions about the collaborative learning management with language game that it assisted in collaboration, building unity within the group, and communication skills both listening and speaking. They also pointed out about the benefits of this approach that games made learning fun and interesting. Language games also made learners active, pay attention, desire to participate in learning English. Moreover, students proposed ways to improve collaborative learning management with language game that teachers should provide a variety of games and reassure that each group contains students with varying skill levels, and rotate group members every week. They also recommended that teachers ought to add some rules that can change the winner at any time.

Games have both advantages and disadvantages. When students answer questions correctly, obtain score points, and become winners, they will feel motivated to compete. However, if students cannot answer questions, they may feel pressured as this could be the cause of losing some points for their group. Students who are often in losing groups may feel discouraged and bored. There was a student mentioned that she felt very excited when applying games first time because she had never learned English this way before; however, the excitement gradually diminished week after week. This experiment corresponds to [Hadfield's \(1984\)](#) declaration that games may be thrilling at first, but they soon lose their appeal if the same rules and games are used over and over again.

The collaborative learning management with language game could improve students' group

participation behaviors. The findings indicated that the scores of group participation behaviors were at a good quality level. This method encourages learners to learn actively, reduce sleep, and minimize playing cell phone in class. It also supports students to concentrate more on what they learn.

In conclusion, collaborative learning management with language game is an interesting approach that can help learners develop their vocabulary knowledge and English reading competency. This teaching method creates a fun classroom atmosphere, facilitates learners to practice critical thinking, and increases their interest and enthusiasm in learning English. It also contributes to collaboration, adaptability skills and communication. Furthermore, it inspires students to have a positive attitude towards English reading and supports them to have good learning behaviors.

Recommendations for Future Research

There should be other teaching methods integrated with the collaborative learning management with language game in teaching English reading in order to make classroom more interesting, such as role play activities by providing real-world scenarios related to the readings. This method can encourage students to understand what they read and employ English expressions or new words in their conversations. This approach can enhance three skills: reading, speaking, and listening. Utilizing the collaborative learning management with language game to examine the long-term retention of vocabulary and reading skills ought to be investigated as well.

Other variables should also be studied, such as students' writing achievement and motivation to learn English that arises from the collaborative learning management with language game.

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