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The Effects of Game-Based Learning on Enhancing Collocational Knowledge of the 11th Grade Students

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Abstract

This study investigated the effects of game-based learning on 11th grade students' collocational knowledge, vocabulary retention, and learning satisfaction. 36 students from Suraphinpittaya School, selected via cluster random sampling, participated in a five-week intervention using five non-digital games. Data were collected through a pretest, a posttest, a delayed posttest, and a questionnaire. Quantitative analysis involved mean, standard deviation, and dependent t-tests, while qualitative data were analyzed by using content analysis. Findings revealed a significant improvement in collocational knowledge post-intervention. However, vocabulary retention showed no statistically significant difference between posttest and delayed posttest scores. Questionnaire responses indicated students' high satisfaction, with game-based learning perceived as enjoyable, engaging, and promoting active participation.

Keywords: collocational knowledge, game-based learning, vocabulary retention

Introduction

Effective communication in a second language begins with vocabulary acquisition, as learners need a substantial word base to express ideas clearly and understand others (Lorenset & Tumolo, 2019). A strong vocabulary enhances learners' ability to form meaningful sentences (Viera, 2017), making vocabulary learning a fundamental step in English as a foreign language education.

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While numerous strategies exist for teaching vocabulary—such as visual aids, translation, and contextual examples (Shamiyeva, 2018) — not all are equally effective. Translation, for example, though economical, often leads to shallow learning due to learners' reliance on their first language (Alroe & Reinders, 2015; Nguyen, 2012). Research increasingly supports teaching vocabulary in "chunks," or word groups that appear together naturally, as this promotes better language retention and usage (Boers et al., 2017).

According to Krennmayr (2017) and Bui (2021), chunks, particularly collocations—frequently co-occurring word combinations—enable more natural and fluent speech. Lewis (1997) describes collocations as essential lexical units that enhance communication by reducing cognitive load during speech production. Spoken language studies further confirm the prevalence of collocations in everyday speech (Ellis, 2003).

Mastery of collocations is crucial for achieving native-like fluency in both oral and written language for EFL learners (Sararit et al., 2018). Collocations are essential for accurate language production and fluency, with fluency relying on the ability to recall whole phrases, not just individual words (Memarian-Mojarab & Farjami, 2019). Hill (2000) estimates that collocations make up 70% of language use, underscoring their importance from the early stages of language learning. Lewis (1997) emphasized collocation as central to vocabulary teaching through the lexical approach. Numerous studies further confirm that teaching collocations enhances language competence, retention, and communicative skills, particularly in oral fluency and comprehension across reading and listening (Aldubai & Almehdi, 2024).

However, for many Thai students, collocations remain difficult due to their unfamiliarity with the concept and interference from L1 (Sararit et al., 2020). Learners often translate directly from Thai, leading to incorrect combinations like "play yoga" instead of "do yoga" (Boonraksa & Naisena, 2022). Since collocations are often arbitrary (Lewis, 1997), EFL learners struggle with their acquisition and usage due to the unpredictable nature of word pairings and frequent L1 interference.

Given these challenges, many scholars suggest shifting the focus from isolated vocabulary teaching to collocation-based approaches (Sun & Park, 2023). Effective learning requires greater awareness of how words combine and function in real-world contexts (Wasuntarasophit, 2015). Teachers play a crucial role in guiding students toward this understanding (Margaret, 2019), although there remains ongoing debate about the best classroom practices for teaching collocations (Nizonkiza, 2017).

In response, game-based learning emerges as a promising method. By integrating games into lessons, learners become more active participants, increasing their motivation and engagement. Participation in game-based learning has also been shown to improve academic achievement (Al-Sofi, 2024).

Games such as dominoes, rapid sorting, verb + noun hunts, collocation on walls, and Pelmanism can enhance collaboration and active learning (Fuscoe, 2018; Lackman, 2011).

These methods make learning more enjoyable and effective, encouraging students to engage deeply with collocations (Kathinthong & Adipat, 2022).

Positive results from studies involving Thai primary students indicate game-based learning's success in teaching collocations (Kunnu et al., 2016). Therefore, this study aims to explore whether similar benefits extend to secondary students by assessing improvements in their collocational knowledge, vocabulary retention, and overall satisfaction. Based on previous findings, the researcher believes that integrating games can transform the classroom into an engaging space, increasing students' enthusiasm and effectiveness in learning collocations.

Literature Review

1. The Importance of Collocation for Language Learning

Collocations play a crucial role in language learning because they move beyond simply knowing the meaning of individual words. Researchers like Brown (1974) emphasized that understanding common word combinations improves oral fluency, listening comprehension, and reading speed. By studying collocations, learners can better recognize natural language patterns in native speakers' speech and writing, allowing them to use these patterns in their own communication. McCarthy and O'Dell (2017) also highlighted that collocations help learners sound more natural, offer expressive alternatives, and enhance writing style.

Many experts agree that collocational knowledge is essential for both vocabulary development and linguistic accuracy. Hill (2000) pointed out that collocations make up a large portion of language use and that lacking them leads to frequent grammatical errors. Learners who do not know key collocations may struggle to express ideas clearly, despite having good vocabulary and grammar knowledge. Expanding a student's internal bank of collocations through rich exposure to authentic language is therefore necessary to improve precision and fluency in both speaking and writing.

Furthermore, collocational competence helps learners think and communicate more quickly and naturally. Studies by Hill (2000) and Pawley and Syder (1983) show that native speakers rely on ready-made chunks for fluent communication, whereas EFL learners often struggle without them. Mastering collocations allows learners to process language faster, avoid hesitation, and improve their reading and listening skills. In short, gaining a strong command of collocations is a key factor in achieving higher levels of language proficiency and more confident communication.

2. Types of Collocation

Linguists categorize collocations into different types. Mahmoud (2005) identifies two main types: open collocations, where a word can combine with many others (e.g., red car, expensive car), and restricted collocations, which are more fixed or idiomatic (e.g., kick the bucket). Similarly, Huang (2001), building on Howarth's (1998) framework, further classifies collocations into free, restricted, figurative idioms, and pure idioms, based on how literally their meanings can be interpreted.

Lewis (2000) and Hill (2000) classify collocations by their strength: strong collocations are very fixed with limited combinations (e.g., rancid butter), weak collocations are more flexible (e.g., feel good), and medium-strength collocations are somewhat frequent and predictable (e.g., hold a meeting). Benson, Benson and Ilson (1986) also distinguish between grammatical collocations (content words plus prepositions) and lexical collocations (only content words).

O'Dell and McCarthy (2009) add another classification based on grammatical categories, such as verb-noun (e.g., pass up a chance) and adjective-noun (e.g., plain truth) combinations. Although many methods of classification exist, Mongkolchai (2008) notes that the most common ways are by lexical versus grammatical collocations and by strength: strong, medium, and weak.

3. The Roles of Game-Based Learning in Collocation Teaching

Game-based learning plays a significant role in teaching collocations by enhancing students' vocabulary, communication, and collaboration skills (Yahoui, 2012; Pivec et al., 2003). Through games, learners can encounter new words, observe their form, meaning, and pronunciation, and apply them in language-focused tasks (Nation, 2015). Games encourage memorization and deeper understanding, as students are motivated to learn collocations to succeed in game objectives, linking learning with enjoyment and active participation.

Non-digital games, such as collocation dominoes, sorting, rapid sorting, and the collocation game, have been recommended to make collocation learning engaging and cooperative (Conzett, 2000; Lewis, 2000; Fuscoe, 2018). Each activity promotes teamwork and quick thinking and reinforces already learned collocations. Lackman (2011) also introduced activities like verb + noun hunts, collocation on walls, and my favorite collocation to further encourage interaction and meaningful practice among students.

Finally, card-based activities such as sorting, dominoes, Pelmanism, and mingling help students notice and retain vocabulary more effectively (Fuscoe, 2018). These games focus on matching, categorizing, and collaboration, keeping the learning experience dynamic and student-centered. Overall, the fun, interest, and challenge offered by game-based learning are crucial factors that make collocation teaching more effective compared to traditional methods (Wu et al., 2012).

4. Related Studies

Several studies have highlighted the positive impacts of game-based learning on vocabulary acquisition and retention. Sukkrong and Teo (2010) demonstrated that university freshmen who learned English through games performed significantly better in vocabulary achievement and retention compared to those taught through traditional methods, and they also held favorable attitudes towards learning with games. Similarly, Kongprab (2019) found that upper primary students using digital games like Kahoot! showed greater vocabulary gains and higher learning motivation, though retention differences between digital and non-digital groups were insignificant. These results affirm that game-based learning can enhance not only vocabulary acquisition but also learner engagement and attitudes toward English learning.

In addition, researchers have investigated how game-based learning specifically impacts the development of collocational knowledge, especially among high school learners. For example, Lakkham (2020) carried out a semi-experimental study involving twelfth-grade students and found that their use of English collocations improved following engagement with collaborative games. The students also showed positive attitudes toward these games, suggesting that interactive learning settings can boost their comprehension and practical use of collocations. This indicates that game-based learning is not only effective for general vocabulary acquisition but also for mastering the more subtle and complex patterns of collocation essential for language fluency.

Supporting evidence from other contexts further emphasizes game-based learning's benefits. Studies by Hazar (2020) and Rabu and Talib (2017) indicated that digital and traditional game-based approaches significantly outperformed non-game methods in vocabulary learning achievements. Additionally, Listyowati and Hidayat (2021) found that teachers perceived game-based learning as a highly effective medium for improving students' vocabulary mastery. Collectively, these findings reinforce that game-based learning has the potential to substantially enhance students' vocabulary and collocational knowledge by offering engaging, motivating, and context-rich learning experiences.

Research Objectives

1. To investigate the effect of using game-based learning on enhancing the 11th grade students' collocational knowledge
2. To investigate the 11th grade students' vocabulary retention
3. To investigate their satisfaction towards learning collocation through game-based learning

Research Questions

1. Does game-based learning enhance the 11th grade students' collocational knowledge?
2. What is the 11th grade students' vocabulary retention?
3. What are the levels of their satisfaction towards learning collocation through game-based learning?

Methodology

1. Research Design

This study employed quantitative research methodology. A one-group pretest-posttest design was utilized, wherein data were collected in numerical form through standardized testing. The research design involved administering a pretest, implementing an intervention (treatment), and subsequently conducting a posttest with the same group of participants. Additionally, a questionnaire was used to examine students' satisfaction with learning English collocations through a game-based learning approach.

2. Population and Samples

The population for this study consisted of 187 eleventh-grade students from eight classes who were enrolled in the Basic English Course during the first semester of the 2024 academic year at Suraphinpittaya School, Surin Province. From this population, a sample of 36 eleventh-grade students was selected through cluster random sampling by randomly choosing one class out of the eight available.

3. Instruments

A total of 100 collocations were selected from "English Collocations in Use" by McCarthy and O'Dell (2017), focusing on topics aligned with the eleventh-grade curriculum: Everyday Verbs 1, Everyday Verbs 2, Eating and Drinking, Money, and Time (20 collocations each), from which 30 were used in the pretest and posttest. Each test consisted of the same 30 questions to assess students' knowledge of collocations before and after instruction through game-based learning. A questionnaire was also designed to measure students' satisfaction with this learning method, consisting of three parts: background information (e.g., gender, age), Likert-scale items on satisfaction, and open-ended questions for opinions and suggestions. To enhance learning, five non-digital games—dominoes, rapid sorting, verb + noun hunt, collocation on walls, and Pelmanism—were employed to promote collaboration and active engagement. Additionally, a five-week set of lesson plans was developed, with students participating in two 2-hour sessions per week, to systematically structure the teaching of collocations using the selected games.

4. Data Collection

In the first hour of the first week, the teacher provided students with an orientation, including the course syllabus, course description, and other necessary information. The 36 eleventh-grade students enrolled in the Basic English Course were then assigned to complete a pretest, which took approximately fifty minutes. From the second hour of the first week to the first hour of the sixth week, the researcher conducted the class using five lesson plans, teaching the students collocation through game-based learning over a period of six weeks. In the second hour of the sixth week, students completed both a posttest and a questionnaire, with the test lasting about one hour. In the first and second hours of the seventh week, there were no collocation lessons, and the students took the delayed posttest in the first hour of the eighth week.

5. Data Analysis

The pretest, posttest, and delayed posttest scores were analyzed by calculating the average scores to determine any significant differences. To assess the significance of the pre-test and post-test scores, a dependent t-test was applied. Additionally, the quantitative results from the close-ended questions in the questionnaire were analyzed by calculating the average scores and the Standard Deviation (S.D.) to identify any significant differences. The qualitative results from the open-ended questions were analyzed using content analysis to reveal the students' opinions on learning collocations through game-based learning.

Results

The findings of the study were presented through a combination of tables and descriptive analysis. The results of the data analysis were organized into four distinct parts:

Table 1

Comparison of Students' Pre-test and Post-test Scores

Test	N	M	S.D.	T	Df	P
Pretest	36	7.25	2.72	33.77	35	.00**
Posttest	36	24.50	3.20			

According to Table 1, the average score of the pretest was 7.25 with the standard deviation at 2.72, while the average score of the posttest was 24.50 with the standard deviation at 3.20. It showed that the students' posttest scores were higher than pretest scores with the statistical t-distribution value of 33.77, and the significance equals 0.00, which is smaller than the significance level at .05.

Table 2

Comparison of the Students' Post-test and Delayed Post-test Scores

Test	N	M	S.D.	T	Df	P
Posttest	36	24.50	3.20	-.25	35	.80**
Delayed Posttest	36	24.55	2.85			

According to Table 2, the average score of the posttest was 24.50, with a standard deviation of 3.20, while the average score of the delayed posttest was 24.55, with a standard deviation of 2.85. This indicated that students' delayed posttest scores were slightly higher than their posttest scores. The statistical t-distribution value for the comparison was -.25, with a significance level of 0.80, which exceeds the standard significance threshold of 0.05. The result suggested that there was no significant difference in vocabulary retention between the posttest and delayed posttest at the 0.05 significance level.

Table 3

Students' Satisfaction towards Learning Collocations through Game-Based Learning

Items	M	S.D.	Rank	Level of Satisfaction
1. Learning collocation through games is fun.	4.78	.485	1	Very high
2. Learning collocation through games creates a good atmosphere in the classroom.	4.69	.525	4	Very high
3. Learning collocation through games provides you more chance to participate in learning.	4.75	.500	2	Very high

Table 3 (Continued)

Items	M	S.D.	Rank	Level of Satisfaction
4. Learning collocation through games helps you memorize more words easier.	4.47	.654	9	High
5. Learning collocation through games provides you a chance to practice using words you have learned.	4.72	.513	3	Very high
6. Learning collocation through games provides you a chance to practice making a decision.	4.61	.599	6	Very high
7. Learning collocation through games helps to increase vocabulary knowledge.	4.64	.543	5	Very high
8. Learning collocation through games brings you good attitudes towards learning collocation.	4.53	.560	7	Very high
9. Learning collocation through games makes you feel more enthusiastic about vocabulary learning.	4.50	.697	8	Very high
10. Learning collocation through games encourages you to learn how to solve unexpected problems.	4.33	.828	10	High
Total	4.62	.320		Very high

According to Table 3, which presents the students' satisfaction towards learning collocation through game-based learning, it can be concluded that eight items that had the highest level of agreement consisted of item 1 (mean score = 4.78), item 3 (mean score = 4.75), item 5 (mean score = 4.72), item 2 (mean score = 4.69), item 7 (mean score = 4.64), item 6 (mean score = 4.61), item 8 (mean score = 4.53), and item 9 (mean score = 4.50). The eight items were considered a very high level of interpretation. On the other hand, the two items that were rated the lowest level of agreement were item 4 (mean score = 4.47) and item 10 (mean score = 4.33). However, all items were still considered a high level of interpretation. The overall mean score of the students' satisfaction towards learning collocation through game-based learning was 4.62, which was at a very high level.

The Students' Opinions on Learning Collocations through Game-Based Learning

1. Advantages of Game-Based Learning

Most students found it helpful for easier memorization and more enjoyable learning. They appreciated the social interaction, as they worked with classmates outside their usual circles. Incentives like snacks or candy were also suggested to motivate participation.

2. Disadvantages of Game-Based Learning

Some students felt game-based learning could be time-consuming and inefficient for language acquisition. They also noted limited opportunities for practicing spoken English, which they believed could hinder communicative competence. They suggested that learning collocations through real-life contexts would be more effective.

Discussion

Regarding Research Question 1, findings showed a statistically significant improvement in posttest scores, indicating enhanced collocational knowledge through game-based learning. These results align with earlier research by Sukkrong and Teo (2010), who reported higher achievement and retention via game-based instruction, and Kunnu et al. (2016), who noted vocabulary improvement using games like bingo and crosswords. Other studies also supported these outcomes, emphasizing increased motivation, interactive environments, and effective vocabulary retention through game-based learning (Kongprab, 2019; Taheri, 2014; Damayanti, 2014). Furthermore, games were found to support varied learning styles and social interaction (Lakkham, 2020) and to promote a low-pressure learning atmosphere (Honarmand et al., 2015). Hazar (2020) confirmed game-based learning's benefits across educational levels, and Saleh and Althaqafi (2022) highlighted its effectiveness with younger learners.

For Research Question 2, the study revealed that game-based learning significantly improved long-term vocabulary retention. This finding is consistent with Sukkrong and Teo (2010), who found better retention among students taught with games. Taheri (2014) and Hazar (2020) similarly noted that repeated and contextual game-based exposure strengthens memory. Supporting evidence from Kongprab (2019), Saleh and Althaqafi (2022), and Damayanti (2014) highlighted how engaging and meaningful game contexts enhance recall.

Regarding Research Question 3, students expressed high satisfaction with game-based learning, describing it as enjoyable, interactive, and memorable. This sentiment reflects earlier findings by Sukkrong and Teo (2010) and Kunnu, Uipanit and Sukwises (2016), who linked game use to stress reduction and better retention. Students also appreciated practicing vocabulary in context (Kongprab, 2019) and engaging in problem-solving and decision-making (Sukkrong & Teo, 2010). Studies by Lakkham (2020), Kathinthong and Adipat (2022), and Rabu and Talib (2017) further confirmed that game-based learning boosts motivation, attitude, and enthusiasm.

Conclusion

This study explored the effects of game-based learning on 11th grade students' collocational knowledge, long-term vocabulary retention, and overall satisfaction with learning collocations. The findings revealed that game-based learning significantly improved students' acquisition of collocations, supported by notable gains in posttest scores and aligning with previous research. The use of games in language instruction created an engaging and interactive learning environment that enhanced linguistic competence and fostered positive attitudes toward learning. Additionally, students who learned vocabulary through games demonstrated better

long-term retention compared to those taught through traditional methods. The study also found that game-based learning positively influenced student engagement and satisfaction, as learners viewed it as an enjoyable and effective approach that promoted active participation and sustained motivation for future language learning.

Recommendations

Future research should explore the use of a variety of digital platforms, such as Kahoot! and other interactive tools, to maintain student motivation and engagement. Special attention should be given to incorporating small group activities that encourage peer collaboration and active involvement, as these elements are beneficial for enhancing the learning and retention of collocations. It is also advisable for future research to include immediate formative feedback during the learning process, as this can help learners internalize collocational patterns more effectively. Conducting longitudinal studies lasting between 9 and 18 weeks is recommended to adequately measure students' progress in collocational competence. Furthermore, researchers should examine the influence of cultural and educational contexts on the effectiveness of game-based learning. For example, students from Asian educational systems may respond differently due to distinct teaching methods and learning styles. Comparative research across various cultural settings would therefore provide valuable insights into how game-based learning can be tailored to optimize collocation learning in diverse educational contexts.

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