

Research Article

## Effects of Game-based Learning on Grammatical Knowledge of EFL Secondary School Students in the South of Thailand

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### Abstract

The purposes of this study were: 1) to investigate students' grammatical knowledge of secondary school students in the South of Thailand by using game-based learning and 2) to study students' satisfaction with game-based learning. The target group consisted of 35 students who were in Grade 8 in a school in the south of Thailand. The study was conducted in the second semester for 13 weeks. The instruments used in this research were 1) the English grammar achievement test used as a pretest and posttest, and 2) a set of satisfaction questionnaires towards using game-based learning in English grammar learning. The results of this research were as follows: 1) the student's knowledge on English grammar post-test ( $M = 18.69$ ) was higher than pre-test ( $M = 13.80$ ) with the statistically significant level of .05 ( $p < .05$ ) and 2) the students were satisfied with learning English grammar by using game-based learning at the highest level ( $M = 4.67$ ,  $S.D. = 0.69$ )

**Keywords:** Game-based learning, Grammatical knowledge, Secondary EFL students

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## Introduction

At present, the Ministry of Education in Thailand has a policy to accelerate the reform of the learning system as a whole. The aim of this reform is to raise the quality of education and develop the potential of learners, especially to enhance their competency and English language skills as well as to enable students to use English for communication and as a tool for acquiring knowledge for their development, which will lead to increasing the country's competitiveness to achieve that goal. The Ministry of Education, therefore, formulated a policy to reform the teaching of English at the basic education level, which consists of six policies, and one of them is to adjust the focus of teaching English in accordance with the nature of learning by emphasizing communication. The communication includes listening, speaking, reading, and writing, respectively. Hence, the management of English language learning should take the nature of language learning into account. The teaching and learning process should be acquired as close as possible to learning the first language (Language Learning and Teaching Unit, 2016).

In order to do that, the teachers should find appropriate materials and teaching methods to help with students' learning, especially during the COVID-19 situation. Teachers manage teaching through various online meeting applications, including Google Meet, Zoom, Cisco WebEx and others. Several limitations were found after one semester of online teaching an English course. For example, students do not interact with teachers during the English course, and teachers are unable to observe students' behaviors during class because they do not have the readiness and convenience to turn on the camera during class. Those limitations and ineffectiveness in teaching and learning management affect English class, especially in teaching complex English grammar content, because it is quite difficult to understand. Alawamleh, Al-Twait, and Al-Saht (2020) studied about the effect of online learning on communication between instructors and students during the COVID-19 pandemic. The study showed online learning had a clear negative impact on the communication between teachers and students. Problems in online learning were lack of motivation to study and not understanding the learning materials. More importantly, the chances of communication between teachers and students were reduced, so that made students feel isolated due to online learning.

Lesson planning, preparing teaching materials, and finding effective online teaching methods are not an easy task for teachers because the environment of online learning and classroom learning is completely different. Research for Action (2020) surveyed teachers' use of digital tools during COVID-19 for teachers in Pennsylvania, the United States. The result showed that 97% of teachers used online tools for teaching, planning teaching, and engaging students in learning. It was also used to evaluate students' learning as well. Thus, teachers not only found the ways to help them plan lessons and prepare teaching materials, but they also needed to employ a suitable method to motivate students during online learning.

One of the teaching approaches for online learning is game-based learning. Plass, Mayer, and Homer (2020) stated that the game-based learning is a teaching approach that helps students learn different things in a fun and challenging way where the learners are the players themselves to gain direct experience in learning. It is aligned with a study conducted by Mahayanti, Kusuma, and Wibawa (2020). The study aimed to 1) study the effect of using digital games on self-regulation in students' learning in middle school, and 2) study how digital games affect self-regulation in students' learning. The results showed that the digital games used in this study had a positive effect on self-direction in learners' learning in English. Students developed different areas of thinking, work strategies, and motivation. Games also made activities fun, exciting, and engaging in learning. Consequently, students can study and collaboratively play at the same time.

Therefore, the researchers aimed to investigate effects of using game-based learning to enhance English grammatical knowledge and students' satisfaction with game-based learning in order to help the learners reduce the stress of studying and encourage them to use grammar to communicate in everyday life, either spoken or written. The games to be used in this research were a series of English grammar learning game activities combined with digital or online games that suited the target group of secondary high school students in the south of Thailand.

## Research Objectives

There are two objectives in this study as follows:

1. to investigate grammatical knowledge of secondary school students in the South of Thailand by using game-based learning.

2. to study students' satisfaction with game-based learning.

## Literature Review

### 1. English grammatical knowledge

Understanding subject-verb agreement, tenses, articles, and word order are all aspects of grammar (Qian, 2002). Different terminologies of grammar knowledge are used in the literature, with popular expressions in reading research including grammar knowledge, morphosyntactic, syntactic awareness, syntactic knowledge, and syntactic parsing (Fang, Tuan, Hui, & Wu, 2018; Gaux & Gombert, 1999; Jeon & Yamashita, 2014; Morvay, 2012; Susoy & Tanyer, 2019; Tunmer, Nesdale, & Wright, 1987; Zhang, 2012). Many academics contend that inferencing is significantly influenced by grammatical knowledge. Therefore, the role of grammar in L2 learning and processing have been well acknowledged (Haastrup, 1991; Kelly, 1990; Paribakht & Wesche, 1999).

Grammar is a key component of all language abilities and is important for all areas of language learning development. Therefore, a lack of grammatical understanding might unavoidably hinder learners' capacity to enhance their language abilities (Cam & Tran, 2017; Widodo, 2006). In an EFL classroom, grammar should consequently be given special attention. Grammar training appears to be one of the most difficult jobs in foreign language pedagogy, despite its importance in language performance (Abdo & Al-Awabdeh, 2017). Richards and Reppen (2014) add that grammar entails understanding how sentences are created as well as the ability to use the forms to communicate meaning in spoken or written form. It is difficult to foster learners' learning of both form and meaning. When teaching grammar, teachers must confront a variety of problems that are likely to hinder students' grammar learning ability, the most prominent of which being students' unfavorable views about language itself.

Richards and Renandya (2002) stated that most people today think that grammar is too crucial to ignore and that language learners' ability to enhance their language skills would be severely limited if they lack a solid grasp of grammar. Moreover, Savignon (2005) pointed out that a focus on understanding syntax norms is not excluded from communicative language instruction. Swan (2006) suggested that it is only possible to master structural aspects, an acceptable comprehension and application of these elements with the aid of pedagogic intervention in situations when time is restricted and learners have minimal experience outside of the classroom. Conscious classroom learning is a must since there is not enough time or the right context in which children may use, experience, and acquire the English language. It is therefore fundamental for Thai students to study grammar in order to communicate effectively due to the disparities between Thai and English.

### 2. Game-based learning (GBL)

Game Based Learning (GBL) is one of the teaching approaches that is designed for students to have fun while gaining knowledge by inserting all the contents of the study into the game and getting students to play games. There are a lot of scholars who are interested in GBL (Pivec, Dziabenko, & Schinnerl, 2003). In other words, GBL is based on an attempt to find a new teaching method, and new teaching materials to fill the gap and get rid of the limitations of learning to motivate and build the curiosity of the learners. The common problems in learning are often found in most students who perceived that learning is boring, and they had to read a lot of books. Therefore, they are unmotivated to study. Additionally, they had other activities that were more interesting. All of these problems are challenging for those who are in teaching professions that need to focus more on teaching styles and techniques that must be adjusted to suit their learners. At present, the direction of modern teaching and learning has changed from the traditional way (teacher-centered) to the emphasis on the students (student-centered). Modern teaching will focus on interesting activities and materials for learners to understand and practice on their own (Learning by Doing: LbD). For this reason, new learning materials, therefore, have been designed by applying games to learning by simulating various situations so that students can play and learn at the same time.

Idris, Said, and Tan (2020) conducted research using game-based learning to enhance English grammatical knowledge in Present Simple Tense for primary students by using Kahoot. The result revealed that the post-test result ( $M = 5.56$ ,  $S.D. = 2.04$ ) was higher than the pre-test result ( $M = 3.35$ ,  $S.D. = 1.89$ ).

Moreover, they also stated that using game-based learning can reduce the boredom and negative attitude as well as boosting the motivation in learning.

## Method

### 1. Research Setting and Participants

This present study was conducted in a secondary school in Yala, Thailand. The participants consisted of thirty-five grade 10 students selected through the purposive sampling technique.

### 2. Research instruments

To collect data, the researchers employed two research instruments consisting of 1) the English grammar achievement test used as online pre-test and post-test, and 2) a set of satisfaction questionnaires with game-based learning in English grammar learning.

#### 2.1 The English grammar achievement test used as online pre-test and post-test

The 20-item pre-test and post-test were designed based on the contents in the Basic Education Core Curriculum of foreign language subjects for eighth grade students. Moreover, the researchers used Quizizz.com as a platform to conduct the tests.

#### 2.2 A set of satisfaction questionnaires with game-based learning in English grammar learning

A questionnaire with Five-Likert scale was designed to explore students' satisfaction with game-based learning in English grammar learning. The questionnaire consisted of 10 questions developed by the researchers.

All instruments were validated by three experts in the field of English Language Teaching using Item-Objective Congruence (IOC). The evaluation form is presented on a rating scale ranging from -1 to 1. Items with scores higher than or equal to 0.5 were considered appropriate, whereas items with scores less than 0.5 were considered inappropriate and needed to be revised based on suggestions from the experts.

### 3. Data Collection

The data collection in this study lasted for one semester (13 weeks). In the first week, the researchers administered the pre-test to the students to complete via Quizizz.com. During week 2-12, the researchers implemented game-based learning using some game elements namely rewards, rankings, and points. Each lesson lasted for one hour. The students needed to study two English lessons for one week according to the requirement of the school. In the last week (week 13), the students were asked to complete the post-test and the satisfaction questionnaire using the Google Form.

### 4. Data analysis

After finishing the data collection process, the researchers analyzed the compared scores between pre-test and post-test using the Paired Sample T-test in order to investigate the effects of game-based learning on grammatical knowledge of EFL secondary students in the South of Thailand. Moreover, the researchers analyzed the questionnaire to study students' satisfaction with game-based learning by using mean and standard deviation.

## Result

The results from the study were answered according to the research objectives as follows:

### 1. To investigate the grammatical knowledge of secondary school students in the South of Thailand by using game-based learning

The result revealed that the post-test score ( $M = 18.69$ ,  $S.D. = 1.94$ ) was higher than the pre-test ( $M = 13.80$ ,  $S.D. = 3.04$ ) after the implementation of game-based learning in the English classroom. In the pre-test, the minimum score was 9 whereas the minimum score in the post-test was 13. Therefore, it showed game-based learning had a positive effect on grammatical knowledge of EFL secondary students; the level was significant at .05 shown in Table 1.

**Table 1** Descriptive Statistics of Students' Grammatical Knowledge Test Scores

	<b>M</b>	<b>S.D.</b>	<b>Minimum</b>	<b>Maximum</b>	<b><i>t</i></b>	<b><i>p-value</i></b>
Pretest	13.80	3.04	9	20	-11.94	.000
Posttest	18.69	1.94	13	20		

\* $p < .05$

## 2. To study students' satisfaction with game-based learning

The result gathered from the satisfaction questionnaire revealed that the students have high, positive satisfaction with game-based learning. The overall average score was 4.67 (S.D. = 0.69). The students strongly agreed that game-based learning makes grammar lessons more enjoyable and practical ( $M = 4.91$ ,  $S.D. = 0.37$ ). In contrast, the students were least likely to agree that gaining coins to promote their ranking system in game-based learning motivated them to participate actively in the class ( $M = 4.37$ ,  $S.D. = 0.94$ ).

**Table 2** Students' Satisfaction with Game-based Learning in English Grammar Learning

Statements	M	S.D.	Scale
1. Game-based learning can enhance my grammatical knowledge.	4.69	0.53	Strongly Satisfied
2. Game-based learning makes grammar lessons more enjoyable and practical.	4.91	0.37	Strongly Satisfied
3. Game-based learning betters my understanding of the content.	4.63	0.65	Strongly Satisfied
4. Coins used in game-based learning improves my motivation to participate in class.	4.57	0.88	Strongly Satisfied
5. Gaining coins to promote my ranking system in game-based learning motivates me to participate actively in the class.	4.37	0.94	Strongly Satisfied
6. The King and Queen cards in game-based learning enhance my leadership skill and self-esteem.	4.60	0.85	Strongly Satisfied
7. Being as a teacher assistant (TA) in game-based learning enhances my shared responsibility and honesty.	4.74	0.66	Strongly Satisfied

Statements	M	S.D.	Scale
8. Pre-test and post-test via Quizizz.com make the learning more enjoyable.	4.69	0.68	Strongly Satisfied
9. Using Quizizz.com to engage everyone in in-class activities make the learning more enjoyable and interesting.	4.74	0.66	Strongly Satisfied
10. Using Wordwall.com to engage everyone in in-class activities is more enjoyable and motivates me to learn.	4.71	0.71	Strongly Satisfied
<b>Total</b>	<b>4.67</b>	<b>0.69</b>	<b>Strongly Satisfied</b>

According to Table 2, the results from the questionnaire to investigate students' satisfaction towards game-based learning to enhance grammatical knowledge of EFL secondary students shows that most of the students had positive satisfaction towards the instruction. Overall, the students were strongly satisfied with the game-based learning with the average number at 4.67 (S.D. = 0.69). Most students highly agreed that game-based learning makes grammar lessons more enjoyable and practical (M = 4.91, S.D. = 0.37). On the other hand, the least aspect that the students perceived was "Gaining coins to promote my ranking system motivates me to participate actively in the class" (M = 4.37, S.D. = 0.94).

## Conclusion

After implementing game-based learning with EFL secondary students in the South of Thailand, the result revealed that the students acquired grammatical knowledge significantly. According to the result, it clearly shows that game-based learning has a positive effect on students' grammatical knowledge because it helps create an enjoyable and relaxing atmosphere as students concentrate on playing games in the English classroom. Due to that, students' motivation to win the games increased, and they feel more comfortable in learning. Moreover, it promotes the opportunity for the students to practice their English.

## Discussion

The game-based learning promotes the opportunity for the students to practice their English skills. Using game-based learning to reinforce students' grammatical knowledge in present tense verbs helps better their understanding and performance by comparing the mean score from pre-test and post-test. (Idris et al., 2020) Moreover, the researcher also mentioned that learning by using games can lessen the students' boredom and adverse attitudes towards English grammar as well as boosting their motivation to learn.

In addition, the result from the set of satisfaction questionnaires revealed that students' overall satisfaction towards game-based learning was at the highest level. Students mostly agreed that learning grammar with game-based learning could be fun and practical while the ranking system seemed to be the least satisfactory indicator. To some extent, the add-in game elements including rank, special cards, and coins specifically induced students' behavior to participate in class contributing to positive learning motivation and active engagement. These findings corresponded to Matas and Natolo (2011) suggesting that students held

very positive attitudes towards grammar game-based learning. Far from finding grammar ‘boring’, they ‘loved’ learning grammar.

### **Suggestions**

The researchers recommended that further research should be conducted by using qualitative data collection tools to gain more insightful data into students’ attitudes of game-based learning and should explore the features of gamification separately to shed light on the factors and its significance of adding game elements in learning. In addition, more valuable findings could be derived by collecting several samples in different contexts with the larger sample size and conducting long-time activities. The result would reveal in a greater detail if the future study should employ the quasi-experimental research in order to compare the achievement between the controlled and the experimental group. Moreover, game-based learning can also be implemented in other skills of English in order to motivate and engage students to learn the target language effectively.

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