The Effectiveness and Students' Perspectives on the Roles of Gamification in EFL Grammar Instruction: A Case of Thai Secondary School

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Abstract

English language instruction in Thailand is difficult due to limited opportunities for students to use the language outside of the classroom. The difficulty is exacerbated by the misconception held by a vast majority of students that the only purpose of studying English is to pass high-stakes examinations. Further, the many complex English grammar points seem to discourage students from learning it. The purpose of this study is two-fold: (1) to analyse the efficiency of gamification in English as a Foreign Language (EFL) classrooms, and (2) to better understand students' perspectives on using gamification to study grammar. Based on a one shot pre-and post-test design, the findings showed a significant improvement in the participants' performance in English grammar. Regarding individual feedback, a range of perspectives was found, including both positive and negative aspects. These viewpoints highlighted such factors as enjoyment, engagement, and excitement in the use of gamification as well as a certain level of stress. Pedagogical implications were also discussed.

Keywords :*Gamification; EFL learners; Grammar lessons.*

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1. Introduction

In an increasingly interconnected global landscape, English has emerged as a pivotal lingua franca, crucial not only for international communication but also integral to various professional domains such as business, diplomacy, and policy-making (Vonkova et al., 2021; Woodrow, 2017). Thailand, recognizing the significance of English proficiency within the ASEAN community and its educational framework, has long incorporated English as a foreign language (EFL) into its curriculum (Baker, 2008; Saengboon, 2017).

Despite its entrenched position in Thai education, the Ministry of Education (MoE) has identified persistent challenges, particularly in students' proficiency across all four language skills: listening, speaking, reading, and writing (MoE, 2008). A notable area of difficulty lies in mastering English grammar, which is essential for effective communication and comprehension of diverse sentence structures (Sari, Syarif, & Amri,

2019). The complexity of sentence types - from simple to compound, complex, and compound-complex - poses a significant hurdle, hindering students' ability to fully participate in professional and academic settings where English proficiency is paramount.

The onset of the COVID-19 pandemic further exacerbated these challenges, prompting a rapid shift towards online learning and necessitating innovative approaches to engage students effectively in virtual environments (Mannong, 2020; MacIntyre et al., 2020). Among the emerging strategies, gamification has gained prominence as a potentially transformative tool in education, including EFL instruction (Dichev & Dicheva, 2017; Severengiz et al., 2018). By integrating game elements into traditional learning contexts, gamification not only enhances learner motivation but also fosters interactive and immersive learning experiences that cater to diverse learning styles (Bai et al., 2020a).

This study aims to investigate the efficacy of integrating gamified approaches into traditional grammar instruction in Thai classrooms. The rationale for this investigation stems from several critical factors. First, despite the longstanding presence of English education in Thailand, students continue to face challenges in mastering complex sentence structures and applying grammar rules effectively. These foundational skills are essential for academic success and professional competency in English-speaking environments. By exploring how gamification can enhance grammar instruction, this research seeks to address these persistent educational gaps. Second, the COVID-19 pandemic has accelerated the adoption of online learning platforms, underscoring the need for engaging and effective pedagogical strategies that can transcend physical classroom limitations (Mannong, 2020; MacIntyre et al., 2020). Gamification, with its potential to increase student motivation and participation, offers a promising avenue to sustain learning engagement in virtual settings. Understanding its impact on student learning outcomes and attitudes towards grammar instruction is crucial for informing future educational practices and policies in Thailand.

Furthermore, this study aims to contribute empirical evidence to the broader discourse on gamification in education, particularly within the context of EFL instruction. By examining both quantitative metrics of learning effectiveness and qualitative insights into student perceptions and experiences, the research intends to provide nuanced recommendations for educators and policymakers. These insights could potentially inform curriculum design, teacher training programs, and the integration of technology-enhanced learning tools in Thai schools.

In summary, this research endeavours to bridge theoretical insights with practical applications by investigating how gamified grammar lessons can optimise English language learning in traditional Thai classrooms. By exploring innovative pedagogical approaches amidst evolving educational landscapes, the study aims to advance the understanding of effective language teaching methodologies and contribute to enhancing students' linguistic proficiency and educational outcomes.

2. Research Objective

2.1 To investigate the effects of gamification on English grammar development.

2.2 To ascertain students' perspectives towards using gamification in grammar instruction.

3. Research Question

3.1 Does the implementation of gamification have an impact on the enhancement of grammatical proficiency among students in higher secondary school?

3.2 What are the perceptions of students on the use of gamification to enhance their comprehension of grammar?

4. Literature Review

Nick Pelling characterised gamification in 2002 as widespread, long-term game play (Marczewski, 2013). This prompted the notion of adapting this striking method to other situations (Yildirim, 2017). For years, companies have utilised game-like scenarios to control behaviour and increase customer loyalty and engagement, but they have not called it gamification (Robson et al., 2015). Gamification began in 2008 in digital media and grew internationally in 2010, according to Deterding, Dixon, et al. (2011). Yildirim (2017) says "gamification" has been used since 2008. Grace & Hall (2008) named it "surveillance recreational activities," McDonald et al. (2008) "productiveness activities." Jesse Schell introduced "The Future of Games" at the 2010 DICE Summit. Nick Pellin coined "gamification" in 2002 (Bai et al., 2020; Marczewski, 2013). Research did not mention the word till 2010 (Yildirim, 2017).

Gamification differs from games. According to Bai et al. (2020a), gamification differs from games and serious games. Gamification in education has numerous titles but means the same. The Longman Dictionary of Contemporary English (LDOCE) and the Cambridge Dictionary of English Dictionary (2023) define gamification as engaging learning, problem-solving, or consumer interaction like a game. Educational Gamification Gamification increases user involvement and enjoyment of game characteristics in nongaming contexts, according to Deterding, Sicart, et al. (2011).

Gamification is the use of game aspects to influence user behaviour in non-gaming settings (Bai et al., 2020a; Çeker & Özdaml, 2017; Deterding, Dixon, et al., 2011; Isaacs, 2015; Robson, 2015; Sheldon, 2020; Zichermann & Cunningham, 2011 Gamification improves knowledge, passion, involvement, lesson interaction, and learning, according to Göksün & Gürsoy (2019), Lopez & Tucker (2019), and Zainuddin & Perera. Gamification engages and improves learning by motivating students to play and study (Krisbiantoro, 2021). Gamification involves game-like aspects in non-gaming contexts to encourage and engage students and increase learning.

Grammar teaching and understanding sentence types - simple, compound, complex, and compound-complex - are fundamental components of English as a Foreign Language (EFL) education. This integrated approach not only enhances language proficiency but also fosters effective communication skills among learners.

Grammar serves as the structural foundation of language proficiency in EFL contexts (Boonpattanaporn, 2017;Suwangard, 2014). Mastery of grammar enables learners to articulate thoughts clearly and accurately, forming the basis for both comprehension and productive language skills. Understanding sentence types, such as simple sentences, allows EFL students to express basic ideas succinctly, essential for everyday communication (AlAbri et al., 2022).

As students progress, knowledge of compound sentences becomes crucial (Batstone & Ellis, 2009). These sentences, which join independent clauses with coordinating conjunctions, enable learners to express relationships between ideas more cohesively. Complex sentences, consisting of an independent clause and at least one dependent clause, enhance the depth and nuance of communication by expressing causality or subordination (Ur, 1999). Compound-complex sentences combine elements of both compound and complex structures (Hudson, 1997). Mastery of these sentences empowers EFL learners to articulate complex relationships and conditions simultaneously. This is crucial for academic writing and professional discourse.

The debate between deductive and inductive approaches in grammar teaching influences how sentence types are introduced and practiced (Hedge, 2001; Richards & Rodgers, 2014). Deductive methods emphasise explicit instruction of rules followed by application, suitable for teaching sentence structure frameworks. Inductive approaches promote critical thinking by allowing learners to discover grammar rules through examples, enhancing engagement and understanding.

Innovative approaches like gamification complement traditional methods by enhancing student engagement in learning sentence types (Hashim et al., 2019). Gamification techniques not only motivate learners but also reinforce grammar concepts through interactive and enjoyable activities, improving retention and application.

In conclusion, integrating grammar teaching with the understanding of sentence types - simple, compound, complex, and compound-complex - is essential in EFL education. These components collectively enhance language proficiency, foster effective communication skills, and prepare learners for academic and practical language use. By employing diverse pedagogical approaches and innovative strategies, educators can optimise grammar instruction to meet the evolving needs of EFL students, ensuring comprehensive language development and proficiency.

Gamification is not necessarily tied to learning. Gamification improves students' behaviour, dedication, and motivation, which improves learning (Hsin-Yuan & Soman, 2013; Kiryakova et al., 2014). Gamification in education has several perspectives. This environment has three theoretical foundations: vicarious learning, Zone of Proximal (ZPD) and motivation (Krath et al., 2021). In order to answer the first question about whether gamification improves grammar learning, relevant learning theories must be used.

Vicarious learning, as illuminated by Krath et al. (2021) in their examination of game-based learning interventions, refers to the process where individuals learn by observing others. This concept is pivotal in educational contexts, especially within interactive games designed for learning purposes. Research indicates that the inclusion of role models in these educational games enhances vicarious learning experiences, leading to improved educational outcomes. The sociocultural theory of cognitive development, including Vygotsky's (1987) Zone of Proximal Development (ZPD), offers a theoretical framework to understand this phenomenon. According to this theory, cognitive development is influenced by social interactions and cultural practices. The ZPD specifically identifies the range of tasks that a learner can perform with the assistance of others, suggesting that learning occurs most effectively within this zone. In educational games, role models act as virtual characters or examples, allowing learners to observe and emulate behaviours and strategies within their ZPD. This process facilitates learning through observation and imitation, leveraging social interaction and guidance to scaffold learning experiences.

In essence, vicarious learning in educational games harnesses social observation processes to promote effective learning experiences. By presenting learners with virtual models or scenarios that embody desired knowledge and behaviours within their ZPD, educators and developers can optimize learning outcomes by facilitating guided learning and skill development in digitally mediated environments.

Student motivation is essential for success (Boo et al., 2015; ÇINAR et al., 2022; Dörnyei, 1998; Gardner & Lambert, 1972; MacIntyre, 2002). Gamification in education may improve student motivation and engagement. Even the smartest students may struggle to acquire a language without ongoing motivation (Gamlo, 2019; Gardner & Lambert, 1972). Gamification can help teachers solve student challenges by encouraging social and emotional development and learning from mistakes (Lee & Hammer, 2011; Yildirim, 2017).

Motivation is crucial to learning English. Previous study mentioned instrumental and integrative motivations. Gamlo (2019) discusses Gardner and Lambert's (1972) two motivations: instrumental motivation, which involves learning a second language for specific goals like a degree, employment, or travel, and integrative motivation, which involves learning a language to understand its culture and communicate with its native speakers. Research on language acquisition has widely examined the importance of

motivation in promoting effective language learning (Al-Qahtani & Higgins, 2013; Alrabai, 2014; Gamlo, 2019; Selvi, 2010). Gamification mainly guides user behaviour (Al-Dosakee & Ozdamli, 2021; Gatautis et al., 2016).

Motivation is crucial to learning a second language (Dimitroff et al., 2018; Kraus et al., 2020). Games in the language classroom engage and participate students, laying the groundwork for ESL grammar acquisition (Hamari et al., 2014; Leaning, 2015). Numerous studies show that gamification improves grammar learning. Students' motivation and passion for achievement affect their grammatical academic accomplishment, which indirectly affects their academic outcomes (Aslanabadi & Rasouli, 2013).

Several studies have examined university students' views on gamification as a way to teach English as a foreign language. There is not much research on secondary students' perceptions. However, further study shows that students like gamification in EFL classrooms. Öden et al. (2021) examined 88 ninth-graders in technical high schools. The experimental and control groups were pre-tested for attitudes, motivation, and exam anxiety. After the intervention, experimentation and control groups were assessed on exam attitude, motivation, and anxiety. The study examined a randomly selected experimental group of students' Kahoot! app opinions. Students' EFL course attitudes improved once Kahoot! was implemented. Kahoot! increased student motivation and reduced exam anxiety, although not significantly.

Academic literature shows a lack of empirical research on gamification's usefulness in teaching high school ESL grammar. Gamification may improve academic grammar education, according to new research. Hashim et al. (2019) examined whether internet-connected language games improve ESL learners' grammar. Pre- and post-tests were used on 30 secondary school students. Students' posttest grammar scores improved significantly from the pretest. Çinar et al. (2022) conducted a mixed-methods study to assess the efficacy of gamification and a learning management system (LMS) in virtual English language training in an Istanbul secondary school. The experimental group of 47 students used Kahoot, Classdojo, Quizizz, and web-based games, whereas the control group of 44 used traditional methods. Experimental group post-test results improved significantly.

5. Research Methodology

5.1 Population, Participants and Context

The population for this study comprised students in their final year of secondary education, specifically enrolled in the Fundamental English Course 1 (EN 33101) during the first semester of the 2023 academic year at a public secondary school under the Secondary Educational Service Area Office in Rayong Province, Thailand. The total population encompassed 290 students aged between 17 to 19 years, exhibiting a diverse range of English proficiency levels, including low, moderate, and high levels. To ensure

representative sampling, purposive sampling was employed. Participants were selected based on their enrolment in Fundamental English Course 1 during the specified academic term. The study focused on a subset of 40 grade 12 students, consisting of 11 males and 29 females, who were also part of the language programme at the school. These students were chosen due to their active participation in the researcher's classes during the academic year under study. Throughout the research period, these selected students received specialized instruction in English grammar and participated in interactive assessments using gamification platforms such as Kahoot! and Quizizz. This sampling approach aimed to capture a comprehensive view of how gamified grammar lessons influenced learning outcomes among students with varying English proficiency levels in a secondary education context in Thailand. Additionally, the study aimed to explore students' perspectives on the utilization of gamification in their grammar classroom, investigating how students perceived the effectiveness of gamification in enhancing their engagement, motivation, and understanding of English grammar concepts. By soliciting and analysing students' viewpoints, the study aimed to provide insights into the pedagogical benefits and challenges associated with integrating gamified approaches into traditional grammar instruction, crucial for informing future educational practices and optimizing the use of gamification in EFL classrooms in Thailand.

5.2 Intervention Procedures

Initially, the participants took a Google Forms pre-test to establish their current knowledge of English grammar.

Following this, an Intervention was run for a period of 4 weeks. During this period, the researcher taught the class a predesigned course. Sessions were held twice a week, with a total of 8 sessions. Each session had a duration of 50 minutes.

As per Figure 1, each of the 8 sessions comprised the following sequences: presentation, practice, and production, which is a conventional pattern used for organizing activities in Foreign Language Teaching (FLT) instructional materials. It has been widely depended upon and continues to be valued in the field today (Criado, 2013).
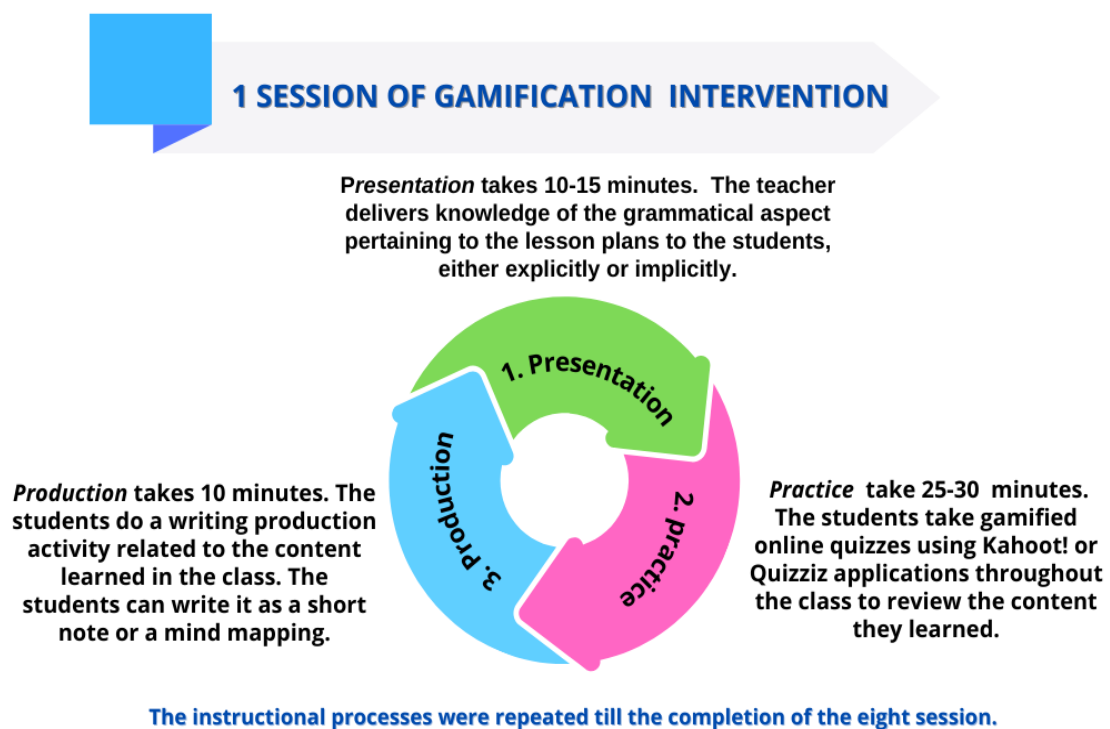
First, the researcher presented a grammatical subject explicitly or implicitly. Explicit teaching of grammar involved direct instruction where the teacher clearly stated and explained grammar rules, provided structured lessons with examples and offered immediate feedback to reinforce understanding. In contrast, during the implicit approach, the students discovered grammar rules through the exploration of the complexity of sentence types. Both methods catered to diverse learning preferences and objectives, ultimately aiming to enhance students' grammar proficiency effectively.

Second was the practice component, which required participants to use the researcher-chosen gamification software to check their language understanding and

proficiency. Each session included one gamified online quiz, using either Kahoot! or Quizizz applications, appropriate to the participants' learning level (CEFR A2-B1) with the aim of reinforcing lessons and improving understanding. To reduce bias during the intervention, each app was used an equal four times. The quizzes, each consisting of 10 to 20 questions, were displayed on a TV and the participants interacted with the software using their mobile devices.

Thirdly, the production component concluded each session. Participants were assigned a writing activity, to improve their comprehension of the session's lesson.

Following the completion of the 8-session intervention, participants took a post-test to allow determination of changes in their test scores, following the intervention, when compared to the pre-test. Each participant then also completed a questionnaire, distributed in the Thai language.

1 SESSION OF GAMIFICATION INTERVENTION

Presentation takes 10-15 minutes. The teacher delivers knowledge of the grammatical aspect pertaining to the lesson plans to the students, either explicitly or implicitly.

1. Presentation

Practice take 25-30 minutes. The students take gamified online quizzes using Kahoot! or Quizziz applications throughout the class to review the content they learned.

2. practice

3. production

Production takes 10 minutes. The students do a writing production activity related to the content learned in the class. The students can write it as a short note or a mind mapping.

The instructional processes were repeated till the completion of the eight session.

Figure 1. The 3 Ps Steps of Gamification Intervention.

5.3 Data Collection and Procedures

Table 1: Data Collection and Procedures used from September 24th to August 28th, 2023.

Procedures	Tasks	Time	Facilities
A Consent form and a Pretest	The instructor provided an overview of the research aims and addressed inquiries from the participants. Subsequently, all individuals within the class signed a consent form. All participants completed a pretest consisting of twenty items.	50 mins	A consent form and a pretest
Lesson 1	Learning about a Simple Sentence	50 mins	Kahoot: Simple Sentence
Lesson 2	Learning about a Compound Sentence	50 mins	Quizizz: Compound Sentence
Lesson 3	Identify a Simple Sentence and a Compound Sentence	50 mins	Quizizz: Simple Vs Compound
Lesson 4	Learning about a Complex Sentence	50 mins	Kahoot: Complex Sentence
Lesson 5	Identify a Compound Sentence and a Complex Sentence	50 mins	Kahoot: Complex Vs Compound
Lesson 6	Learning about a Compound-Complex Sentence	50 mins	Quizizz: Compound-Complex Sentences
Lesson 7	Select appropriate connectors and identify different types of sentences	50 mins	Quizizz: 4 Types of Sentences
Lesson 8	Select appropriate connectors and identify different types of sentences	50 mins	Kahoot: 4 Types of Sentences
A Posttest and a Survey	Following the completion of the post-test, the participants proceeded to complete the survey.	50 mins	A Posttest and a Survey

5.4 Data Analysis

The study used paired-sample t-tests to compare students' comprehension before and after assessments (pretest and posttests). Quantitative examination of pretest and posttest scores assessed intervention efficacy.

Twenty standardised and five open-ended items were included in the online questionnaire. The 20-question survey covered emotional perception, classroom

atmosphere perception, and motivating perception. The questionnaire data was analysed using standard deviations, while the open-ended section was analysed using grouping.

5.5 Findings

Results were examined in two sections: Section 1: Gamification's Effect on Senior High School Grammar Instruction. A grammar classroom examination of senior high school students' pre- and post-test scores is presented below.

Section 2: Student Perceptions of Kahoot! and Quizizz Use in English Grammar Classes. This section presents qualitative and quantitative studies on student perceptions towards grammar classroom gamification.

Section 1: The Efficacy of Gamification Utilised in the Intervention of a Senior High School Grammar Lesson.

The findings from this research were from the pretests and posttests used as measures for assessing the English grammar of students. The findings are outlined in the subsequent tables.

Table 2: Examining the Correlation Between Pre-Test Scores and Post-Test Scores in Grammar Lessons within the EFL classroom.

Test Score	Maximum Score Possible	N	Mean Difference ($\bar{x}$)	SD	t	Sig.
Pre - Post Tests	20	40	6.25	4.04	9.79	.001**

**p < 0.05

Table 2 indicates the mean ($\bar{x}$) = 6.25 and SD = 4.04 of the difference between students' pre-test and post-test scores. The t-test (independent) results show that the statistically significant difference between EFL students' pre- and post-test grammar scores is .001, which is less than the alpha level of 0.05, with a t-distribution value of 9.79 and a 95% confidence interval. Thus, the posttest mean score is much greater than the pretest mean.

Section 2: The Perceptions of Students Regarding Their Utilisation of the Gamification Instruments Kahoot! and Quizizz in an English Grammar Classroom.

1. The Impact of Students' Attitudes Towards the Implementation of Gamification in the English Grammar Classroom.

The five-point Likert scale was used to organise seventeen questions in this survey part. Using Google Forms, respondents chose the number that best matched their opinion. Five ratings were available, from "Strongly Disagree" to "Strongly Agree." This questionnaire included five questions about the pros and cons of gamification, why students are reluctant to use it in English classes, the barriers to implementing it in classrooms, and the relative appeal of gamification-based instruction versus traditional classroom instruction. Forty intervention students received questionnaires. The investigator used standard deviations and grouping to evaluate test significance.

2. The Attitudes of Students Towards the Use of Gamification During the Intervention.

Two distinct types of questions were administered to the participants. The first contained questions with positive answers. The second set of questions were negative. The questionnaire was created to reflect the perspectives of the participants. Therefore, both positive and negative queries were constructed.

Table 3: Quantitative Interpretation of 5-point Likert Scale Measurements.

Likert Scale Description	Likert Scale	Likert Scale Interval
Strongly Disagree	1	1.00 – 1.80
Disagree	2	1.81 – 2.60
Uncertain	3	2.61 – 3.40
Agree	4	3.41 – 4.20
Strongly Agree	5	4.21 – 5.00

Table 3 was used to ascertain the students' level of agreement in tables 4 and 5

Table 4: The Positive Questions Asked in order to Comprehend Students' Perspectives on Gamification in EFL Grammar Classrooms.

No	The positive questions	5 Strongly agree	4 Agree	3 Uncertain	2 Disagree	1 Strongly Disagree	Mean	SD	Rank	Level of Agreement
4	I have learned grammar through gamification	18 45%	16 40%	6 15%			4.30	0.72	2	Strongly agree

No	The positive questions	5 Strongly agree	4 Agree	3 Uncertain	2 Disagree	1 Strongly Disagree	Mean	SD	Rank	Level of Agreement
6	It is fun to utilise gamification in my grammar lessons.	22 55%	15 37.5%	1 2.5%	1 2.5%	1 2.5%	4.40	0.87	1	Strongly agree
7	I like using gamification in my grammar lessons.	20 50%	14 35%	3 7.5%	3 7.5%		4.28	0.91	3	Strongly agree
8	The points reward from games encourages me to participate.	17 42.5%	11 27.5%	10 25%	1 2.5%	1 2.5%	4.05	1.01	5	Agree
9	I prefer learning through gamification over traditional learning techniques.	17 42.5%	13 32.5%	6 15%	3 7.5%	1 2.5%	4.05	1.06	5	Agree
10	Ggamification is suitable for my grammar lessons.	15 37.5%	16 40%	8 20%		1 2.5%	4.10	0.90	4	Agree

The Positive Questions Asked in order to Comprehend Students' Perspectives on Gamification in EFL Grammar Classrooms. (Cont.)

No	The Positive questions	5 Strongly Agree	4 Agree	3 Uncertain	2 Disagree	1 Strongly Disagree	Mean	SD	Rank	Level of Agreement
13	I can recall grammar better while using gamification.	10 25%	15 37.5%	12 30%	3 7.5%		3.80	0.91	11	Agree
14	Gamification allows me to better critique	17 42.5%	9 22.5%	13 32.5%		1 2.5%	4.03	1.0	6	Agree

No	The Positive questions	5 Strongly Agree	4 Agree	3 Uncertain	2 Disagree	1 Strongly Disagree	Mean	SD	Rank	Level of Agreement
	different types of sentences.									
15	Gamification allows me to have a greater awareness of how to use grammar correctly.	12 30%	15 3.5%	12 30%		1 2.5%	3.93	0.92	9	Agree
16	The gamification used as an exercise was suitable for the grammar I learned.	18 45%	17 42.5%	3 7.5%	2 5%		4.28	0.82	3	Strongly Agree
17	I have had a good experience using gamification.	15 37.5%	13 32.5%	8 20%	3 7.5%	1 2.5%	3.95	1.06	8	Agree
18	I would love to practice the grammar exercises using Kahoot! again when I have free time.	14 35%	15 37.5%	9 22.5%	1 2.5%	1 2.5%	4.00	0.96	7	Agree
19	I would love to practice the grammar exercises using Quizizz again when I have free time.	12 30%	15 37.5%	11 27.5%	1 2.5%	1 2.5%	3.90	0.96	10	Agree
	Total						**4.08**	**0.87**		**Agree**

Table 4 displays students' mean scores and standard deviations on EFL grammar classroom gamification. The overall mean score was 4.08 ($\bar{x} = 4.08$). The standard deviation was 0.87. Overall, students strongly support gamification in EFL grammar lessons.

Students had these top three attitudes. 6: "It is fun to utilise gamification in my grammar lessons." Example 4 ($\bar{x} = 4.40$, SD = 0.87): "I learned grammar through gamification." ($\bar{x}= 4.30$, SD = 0.72), with identical amounts for items 7 and 16. "I like gamifying grammar lessons." "The gamification exercise was appropriate for my grammar learning." ($\bar{x} = 4.28$, SD = 0.91) and ($\bar{x} = 4.28$, SD = 0.82).

The three lowest-ranked student opinions were item 13: "I can recall grammar better while using gamification." (($\bar{x}$= 3.80, SD = 0.91) 19: "I would love to practise the grammar exercises using Quizizz again when I have free time." ($\bar{x}$= 3.90, SD = 0.96) Item 15: "Gamification enhances grammar awareness." ($\bar{x}$= 3.93, SD = 0.92)

Students' attitudes with higher standard deviations must also be considered. These follow 9: "I prefer learning through gamification over traditional learning techniques." The average ($\bar{x}$) is 4.05 and the SD is 1.06. Item 17 says "I have had a good experience using gamification." The average ($\bar{x}$) is 3.95 and the SD is 1.06. Additionally, item 8 adds, "The points reward from games encourages me to participate." The mean ($\bar{x}$) is 4.05 and the SD is 1.01. Item 14 says, "Gamification allows me to better critique different types of sentences." The average ($\bar{x}$) is 4.03 and the SD is 1.00.

The majority of students support gamification in EFL grammar classes ($\bar{x}$ = 4.08, SD = 0.87). However, the questionnaire showed that one student "strongly disagree" with some of the positive questions about gamification in the grammar classroom, so it is important to consider student attitudes.

Table 5: The Negative Questions Provided in order to Comprehend Students' Perspectives on Gamification in EFL Grammar Classrooms.

No	The Negative questions	5 Strongly Agree	4 Agree	3 Uncertain	2 Disagree	1 Strongly Disagree	Mean	SD	Rank	Level of Agreement
5	Gamification failed to facilitate my learning process.	2 5%	3 7.5%	9 22.5%	12 30%	14 35%	2.18	1.52	3	Disagree
11	I feel inconvenienced when using gamification.	1 2.5%	4 10%	4 10%	8 20%	23 57.5%	1.80	1.14	2	Strongly Disagree
12	I feel unconfident when using gamification	1 2.5%	4 10%	14 35%	12 30%	9 22.5%	2.4	1.03	4	Disagree
20	Learning grammar lessons using gamification is boring.		2 5%	4 10%	13 32.5%	21 52.5%	1.68	0.86	1	Strongly Disagree
	Total						**2.02**	**1.14**		**Disagree**

Table 5 displays the mean score and standard deviation for the negative questions about gamification in EFL grammar classrooms. The overall mean ($\bar{x}$) score was 2.02. The standard deviation (SD) was 1.14, which indicates a level of Disagree.

The top three student attitudes with negative questions were item 20: "Learning grammar lessons using gamification is boring." ($\bar{x} = 1.68$, SD = 0.86) Item 11: "I feel inconvenienced when using gamification." ($\bar{x} = 1.80$, SD = 1.14) and Item 5: "Gamification failed to facilitate my learning process." ($\bar{x} = 2.18$, SD = 1.52).

The majority of students disagree with all the negative questions related to gamification used in EFL grammar classrooms ($\bar{x} = 2.02$, SD = 1.14). Nevertheless, with a standard deviation exceeding 1.0, it can be inferred that there are numerous potential solutions derived from the negative inquiries presented.

The students' opinions toward the implementation of gamification in the EFL grammar classroom.

The study included analysing the students' attitudes towards the implementation of gamification in the EFL classroom. This was accomplished by distributing a questionnaire that included a section asking the students to share their viewpoints in an open-ended section. The students were given the chance to answer both positive and negative questions. The students' answers were then grouped based on their similarities. The most common responses for each question were as follows:

1. What are the benefits of gamification in grammar lessons?

Nineteen students highlighted gamification's positive impact on improving their English grammar skills. Thirteen students noted increased motivation and comprehension of grammar concepts. Six students enjoyed gamified instructional exercises.

These insights underscore the potential of gamified approaches in enhancing educational outcomes in grammar instruction.

2. What are the disadvantages of gamification in grammar lessons?

Seventeen students mentioned time constraints, tension, and pressure. Seven students mentioned an internet issue that occurred while gamification was being used. Four students mentioned some mistakes that occurred in the questions and answer choices.

These challenges underscore the complexities and the current obstacles involved with integrating gamification in grammar lessons and, therefore, the potential impact on students' learning experience.

3. What are the things that make you feel uncomfortable when learning English grammar using gamification?

Thirty students held the view that they were no things that made them feel uncomfortable while learning. Five students raised concerns regarding the internet issue, which made them feel that their participation in the gamified lessons was hindered.

Overall, the students did not feel uncomfortable while learning through gamification.

4. What are the obstacles for you when incorporating gamification into grammar classes?

Twenty-seven students did not encounter challenges with integrating gamification into grammar lessons. Eight students experienced stress during competitive activities with classmates. Factors contributing to their stress included time limitations and internet connectivity issues during classroom competitions. Additionally, five students expressed difficulty in fully comprehending grammar concepts presented through gamified activities.

These responses underscore that while many students experience no obstacles when incorporating gamification into grammar lessons, there are still obstacles that need to be considered.

5. What is your perception towards using gamification in your grammar classroom?

Thirty-four students exhibited positive attitudes towards gamification. These attitudes included improved comprehension, reduced anxiety, better preparedness for future exams, enjoyment in using gamification for learning, and increased enthusiasm when facing challenging aspects of language learning. Meanwhile, five students maintained pessimistic viewpoints, experiencing heightened anxiety and disappointment when receiving scores lower than those of their classmates.

The students mostly have a positive perception. However, the possible negative perceptions also need to be considered during the planning stage for any gamification intervention.

Based on the students' feedback to the five questions on gamification in EFL grammar lessons, several conclusions emerge:

Overall, students noted significant benefits from gamification, such as improved grammar skills, increased motivation, and better comprehension. However, challenges like time constraints, competitive pressure, internet issues, and occasional errors were also identified, highlighting complexities in integration.

Most students felt comfortable with gamified learning, though some cited internet issues affecting participation. While many reported no obstacles, others faced stress during competitive activities and difficulty grasping grammar concepts through gamification.

Perceptions towards gamification were mostly positive, indicating enhanced learning enthusiasm and reduced anxiety. However, a minority expressed concerns about performance pressure compared to the students.

6. Discussion

6.1 The Efficacy of Incorporating Gamification into High school English Grammar classes within an EFL Context.

The quantitative analysis revealed a statistically significant improvement in students' comprehension of grammar across various sentence types (simple, compound, complex, and compound-complex) following the implementation of gamification. Specifically, the paired-sample t-test indicated a substantial increase in post-test scores compared to pre-test scores ($t = 9.79$, $p < 0.001$). This finding underscores the efficacy of gamification as an intervention tool for enhancing grammar skills in EFL lessons. This conclusion aligns with findings from Çinar et al. (2022) and Hashim et al. (2019), suggesting that integrating gamification with grammar lessons effectively enhances learning outcomes for high school EFL students. By engaging students in interactive and competitive activities such as Kahoot! and Quizizz, gamification motivated them to actively participate and effectively learn grammar concepts, leading to measurable academic gains. Furthermore, the task sequences as reported above also suggest that gamification could provide the participants with ample opportunities to explore both theoretical knowledge and practical techniques to help them differentiate among sentence types.

6.2 Student Perceptions of Gamification Tools (Kahoot! and Quizizz)

The qualitative analysis of student perceptions provided nuanced insights into their experiences with gamified learning. Most students expressed strong positive attitudes towards gamification, citing enjoyment ($\bar{x} = 4.40$) and perceived learning gains ($\bar{x} = 4.30$) as key factors, which is supported by Hsin-Yuan & Soman (2013) and Kiryakova et al. (2014), indicating that gamification enhances student behaviour and motivation. The students appreciated gamification for its ability to make learning grammar engaging and memorable. This positive reception is crucial as it suggests that gamification not only improves academic outcomes but also fosters a favourable learning environment that students find enjoyable and motivating, which aligns with findings from Boo et al. (2015), ÇINAR et al. (2022), Dörnyei (1998), Gardner & Lambert (1972), and MacIntyre (2002), emphasizing the importance of motivation for learning success.

Despite the overall positive response, the study also highlighted challenges associated with gamified learning. Students reported occasional technical difficulties, perceived boredom during certain activities, and competitive pressure. These factors indicate that while gamification offers substantial benefits, careful consideration of implementation strategies and the mitigation of potential drawbacks are necessary to optimize its effectiveness. Addressing these challenges can ensure a smoother integration of gamification into grammar instruction, thereby enhancing its overall impact on student learning experiences.

6.3 Conclusion

In conclusion, this study provides robust evidence supporting the efficacy of gamification in enhancing grammatical proficiency among high school students in an EFL context. The quantitative data indicate significant improvements in post-test scores, reinforcing the positive impact of gamification on learning outcomes.

From students' perspectives, gamification is generally perceived as a valuable and enjoyable tool for learning grammar. It promotes engagement and facilitates a better understanding of complex grammatical concepts. However, attention should be given to addressing challenges such as technological issues and ensuring the quality of gamified learning materials to optimize student experiences.

These findings contribute to the growing amount of research advocating for the integration of gamification in educational practices, particularly in language learning contexts. Future research could explore further enhancements to gamification strategies and investigate additional factors influencing high school students' experiences and learning outcomes in gamified environments.

6.4 Pedagogical Implications

Based on the findings, several recommendations can be made for educators and curriculum developers:

Pedagogical Integration: Incorporate some games such as Kahoot! and Quizizz into lesson plans to complement traditional teaching methods and provide diverse learning experiences that cater to different learning styles. This integration has the added benefit of encouraging student participation and enjoyment in grammar learning.

Technology and Infrastructure: Ensure robust technological support to mitigate technical issues that may hinder students' participation and engagement. In addition, offline gamification may provide a solution to internet-related issues.

Continuous Evaluation: Regularly assess student perceptions and academic outcomes to refine gamification strategies and adapt them to evolving educational needs.

Professional Development: Provide training and resources for teachers to effectively integrate gamification into their teaching practices, fostering innovation and engagement in the classroom.

5.5 Limitations of the Study

To address the limitations of the study, future research could consider the following:
Expanded Sample Size and Diversity: Conduct studies with larger and more diverse student samples to enhance generalizability and explore potential differences across demographic groups.
Longitudinal Studies: Undertake longitudinal studies to track the long-term impact of gamification on learning outcomes, retention, and student engagement beyond immediate post-test scores.

Comparative Studies: Compare gamification with other instructional methods (e.g., traditional teaching approaches, other educational technologies) to evaluate relative effectiveness and identify best practices.

Technological Considerations: Address technological challenges and optimise gamification platforms to minimise disruptions and maximise student participation and learning engagement.

By addressing these considerations, future research can build upon the present study's findings and contribute to the development of effective strategies for integrating gamification into educational practices, particularly in language learning contexts.

6.6 Recommendations for Future Research

To advance understanding and address these limitations, future research could adopt longitudinal studies tracking the sustained impact of gamification on learning outcomes and student engagement over time would also be beneficial, offering insights into the durability and effectiveness of gamified approaches. Comparative studies could further explore how gamification compares with other instructional methods, shedding light on its relative advantages and challenges.

Additionally, expanding the sample size and diversity of participants would enhance the study's external validity and allow for a more comprehensive exploration of potential demographic or contextual factors influencing gamification's outcomes.

Addressing technological challenges and optimising gamification platforms to minimise disruptions and maximise student participation would also be critical for future research and implementation. By addressing these considerations, future studies can build upon the present findings and contribute to the development of effective strategies for integrating gamification into educational practices, particularly in language learning contexts.

7. References

Al-Dosakee, K., & Ozdamli, F. (2021). Gamification in teaching and learning languages: A systematic literature review. *Revista Romaneasca Pentru Educatie Multidimensionala*, *13*(2), 559-577.

Al-Qahtani, A. A., & Higgins, S. E. (2013). Effects of traditional, blended and e-learning on students' achievement in higher education. *Journal of Computer Assisted Learning*, *29*(3), 220-234.

Alrabai, F. (2014). Motivational practices in English as a foreign language class in Saudi

Alabri, A. J. H. B., & Technologies, E. (2022). Fear of missing out (FOMO): The effects of the need to belong, perceived centrality, and fear of social exclusion. 2022(1), 4824256.

Aslanabadi, H., & Rasouli, G. (2013). The effect of games on improvement of Iranian EFL vocabulary knowledge in kindergartens. International Review of Social Sciences and Humanities, 6(1), 186-195.

Avedon, E. M., & Sutton-Smith, B. (1971). The study of games (Vol. 10). Wiley.

Bai, S., Hew, K. F., & Huang, B. (2020a). Does gamification improve student learning outcome? Evidence from a meta-analysis and synthesis of qualitative data in educational contexts. Educational Research Review, 30. https://doi.org/10.1016/j.edurev.2020.100322

Bai, S., Hew, K. F., & Huang, B. (2020b). Does gamification improve student learning outcome? Evidence from a meta-analysis and synthesis of qualitative data in educational contexts. Educational Research Review, 30, 100322.

Baker, W. (2008). A critical examination of ELT in Thailand: The role of cultural awareness. RELC journal, 39(1), 131-146.

Batstone, R., & Ellis, R. J. S. (2009). Principled grammar teaching. 37(2), 194-204.

Boo, Z., Dörnyei, Z., & Ryan, S. (2015). L2 motivation research 2005–2014: Understanding a publication surge and a changing landscape. System, 55, 145 157.

Boonpattanaporn, P. J. U. o. t. T. C. o. C. J. H., & Sciences, S. (2017). Grammar and communicative English language teaching in the Thai educational context. 37(2), 152-169.

Çeker, E., & Özdaml, F. (2017). What" Gamification" is and what it's not. European Journal of Contemporary Education, 6(2), 221-228.

ÇINAR, A., Erişen, Y., & Çeliköz, M. (2022). A mixed-method research on the effectiveness of using gamification elements in an online English course. International Journal of Educational Research Review, 7(4), 280-291.

Criado, R. J. H. a. f. g. d. (2013). A critical review of the presentation-practice-production model (PPP) in foreign language teaching. 6, 97-115.

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining "Gamification". Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments,

Deterding, S., Sicart, M., Nacke, L., O'Hara, K., & Dixon, D. (2011). Gamification. using game-design elements in non-gaming contexts. In CHI'11 extended abstracts on human factors in computing systems (pp. 2425-2428).

Dichev, C., & Dicheva, D. (2017). Gamifying education: What is known, what is believed and what remains uncertain: A critical review. International Journal of Educational Technology in Higher Education, 14(1), 1-36.

Dimitroff, A., Dimitroff, A., & Alhashimi, R. (2018). Student motivation: A comparison and investigation of ESL and EFL environments. International Journal of Curriculum and Instruction, 10(2), 1-14.

Dörnyei, Z. (1998). Motivation in second and foreign language learning. Language Teaching, 31(3), 117-135.

Gamlo, N. (2019). The impact of mobile game-based language learning apps on EFL learners' motivation. English Language Teaching, 12(4), 49-56.

Gardner, R. C., & Lambert, W. E. (1972). Attitudes and motivation in second-language learning.

Gatautis, R., Vitkauskaite, E., Gadeikiene, A., & Piligrimiene, Z. (2016). Gamification as a mean of driving online consumer behaviour: SOR model perspective. Engineering Economics, 27(1), 90-97.

Göksün, D. O., & Gürsoy, G. (2019). Comparing success and engagement in gamified learning experiences via Kahoot and Quizizz. Computers & Education, 135, 15-29.

Grace, M. V., & Hall, J. (2008). Projecting surveillance entertainment. Presentation, ETech.

Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does gamification work?--A literature review of empirical studies on gamification. 2014 47th Hawaii international conference on system sciences.

Hashim, H., Rafiq, R. M., & Md Yunus, M. (2019). Improving ESL learners' grammar with gamified-learning. Arab World English Journal (AWEJ) Special Issue on CALL, (5).

Hedge, T. (2001). Teaching and learning in the language classroom (Vol. 106): Oxford

Hsin-Yuan, H., & Soman, D. (2013). Gamification of education. University of Toronto Press. Retrieved from Inside Rotman: http://inside.rotman.utoronto. ca/behaviouraleconomicsinaction/files/2013/09/GuideGamificationEducation Dec2013. pdf. university press Oxford.

Hudson, A. (1997). Selections from English Wycliffite Writings (Vol. 38): University of Toronto Press.

Isaacs, S. (2015). The difference between gamification and game-based learning. ASCD Inservice.

Kiryakova, G., Angelova, N., & Yordanova, L. (2014). Gamification in education. Proceedings of 9th international Balkan education and science conference,

Krath, J., Schürmann, L., & Von Korflesch, H. F. J. C. i. H. B. (2021). Revealing the theoretical basis of gamification: A systematic review and analysis of theory in research on gamification, serious games and game-based learning. 125, 106963

Kraus, H., Zhu, Y., & Deng, G. (2020). Gamification in large EFL classes: A preliminary investigation. Electronic Journal of Foreign Language Teaching, 17(2).

Krisbiantoro, B. (2021). The effectiveness of gamification to improve students' tenses mastery. International Conference on Education of Suryakancana (IConnects Proceedings),

Leaning, M. (2015). A study of the use of games and gamification to enhance student engagement, experience and achievement on a theory-based course of an undergraduate media degree. Journal of Media Practice, 16(2), 155-170.

Lee, J. J., & Hammer, J. (2011). Gamification in education: What, how, why bother? Academic exchange quarterly, 15(2), 146.

Lopez, C. E., & Tucker, C. S. (2019). The effects of player type on performance: A gamification case study. Computers in Human Behavior, 91, 333-345.

MacIntyre, P. D. (2002). Motivation, anxiety and emotion in second language acquisition. Individual differences and instructed language learning, 2, 45-68.

MacIntyre, P. D., Gregersen, T., & Mercer, S. (2020). Language teachers' coping strategies during the Covid-19 conversion to online teaching: Correlations with stress, wellbeing and negative emotions. System, 94, 102352.

Mannong, A. B. M. (2020). The students' eyesight: The effectiveness of learning-based applications on ELT in pandemic era. ETERNAL (English, Teaching, Learning, and Research Journal), 6(2), 394-407.

Marczewski, A. (2013). Gamification: a simple introduction: Andrzej Marczewski.

McDonald, M., Musson, R., & Smith, R. (2008). Using productivity games to prevent defects. The Practical Guide to Defect Prevention, Microsoft Press, Redmond, 7.

Moorhouse, B. L., & Kohnke, L. (2021). Responses of the English-language-teaching community to the COVID-19 pandemic. RELC journal, 52(3), 359-378.

Ministry of Education [MoE]. (2008). Basic education core curriculum B. E. 2551 (A.D. 2008). Agricultural Co-operative Federation of Thailand. Retrieved from https://neqmap.bangkok.unesco.org/wp-content/uploads/2019/06/Basic-Education-Core-Curriculum.pdf

Öden, M. S., Bolat, Y. İ., & Goksu, İ. (2021). Kahoot! as a gamification tool in vocational education: More positive attitude, motivation and less anxiety in   EFL. Journal of Computer and Education Research, 9(18), 682-701.

Richards, J. C., & Rodgers, T. S. (2014). Approaches and methods in language teaching: Cambridge university press.

Robson, K., Plangger, K., Kietzmann, J. H., McCarthy, I., & Pitt, L. (2015). Is it all a game? Understanding the principles of gamification. Business Horizons, 58(4), 411-420.

Saengboon, S. (2017). English grammar and Thai university students: An insurmountable linguistic battle? English Language Teaching, 10(11), 22-36.

Sari, I. D., Syarif, H., & Amri, Z. (2019). An analysis of compound sentences in students' writing. Paper presented at the Seventh International Conference on Languages and Arts (ICLA 2018).

Selvi, K. (2010). Motivating factors in online courses. Procedia-Social and Behavioral Sciences, 2(2), 819-824.

Severengiz, M., Roeder, I., Schindler, K., & Seliger, G. (2018). Influence of gaming elements on summative assessment in engineering education for sustainable manufacturing. Procedia Manufacturing, 21, 429-437.

Sheldon, L. (2020). The multiplayer classroom: Designing coursework as a game. CRC Press.

Suwangard, N. J. I. J. o. H., & Science, S. (2014). Grammatical error correction and retention in EFL students: A case study of EFL students in Thailand. 19(12), 51-58. Ur, P. (1999). A course in language teaching. Ernst Klett Sprachen.

Vonkova, H., Jones, J., Moore, A., Altinkalp, I., & Selcuk, H. (2021). A review of recent research in EFL motivation: Research trends, emerging methodologies, and diversity of researched populations. System, 103, 102622.

Woodrow, L. (2017). Motivation in language learning. Essential Competencies for English-Medium University Teaching, 235-248.

Yildirim, I. (2017). The effects of gamification-based teaching practices on student achievement and students' attitudes toward lessons. The Internet and Higher Education, 33, 86-92.

Vygotsky, L. S. (1987). The collected works of LS Vygotsky: The fundamentals of defectology (Vol. 2): Springer Science & Business Media.

Zainuddin, Z., & Perera, C. J. (2019). Exploring students' competence, autonomy and relatedness in the flipped classroom pedagogical model. Journal of further and higher education, 43(1), 115-126.

Zichermann, G., & Cunningham, C. (2011). Gamification by design: Implementing game mechanics in web and mobile apps. O'Reilly Media.