

The Effective Implementation of Educational Games in Teaching English Grammar

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Abstract: This study aimed to examine the effectiveness of using games in teaching English grammar to Iranian EFL learners. A mixed-methods research design was employed, incorporating quantitative and qualitative data collection methods. Two groups were formed, with the experimental group instructed using games and the control group taught through traditional methods. Pre- and post-tests were administered to both groups, and data analysis was conducted using SPSS software to evaluate the statistical significance of the mean score differences between the groups. Additionally, qualitative data were obtained through participant interviews to gain insights into their experiences and perceptions of learning English grammar through games. The findings revealed that the experimental group, taught using games, demonstrated a significant improvement in their grammar knowledge when compared to the control group. Furthermore, the qualitative data obtained from interviews indicated that games utilized in grammar instruction can enhance motivation and engage learners, thereby fostering an enjoyable and effective learning experience. The outcomes of this study suggest that incorporating games into English grammar instruction can offer a more engaging and effective teaching approach, resulting in enhanced learning outcomes. These findings contribute to the existing literature on employing games as a pedagogical tool for teaching grammar, particularly in the context of Iranian EFL learners.

Keywords: Teaching Grammar, Game, Educational Games, Teaching English

1. Introduction

In linguistics, the grammar of a natural language is its set of structural constraints on speakers' or writers' composition of clauses, phrases, and words. The term can also refer to the study of such constraints, a field that includes domains such as phonology, morphology, and syntax, often complemented by phonetics, semantics, and pragmatics. There are currently two different approaches to the study of grammar: traditional grammar and theoretical grammar.

Grammar teaching has often been regarded as a structure-based, formal activity. After the integration of several sources and techniques, which are mainly based on communicative activities, the teaching of grammar gained a new insight. In the teaching of grammar, technique-resource combinations are often modified to structure-discourse match ligarand if well developed, they can be used effectively for all phases of a grammar lesson. To make a grammar lesson effective, beneficial, and interesting a teacher should use some well-

developed and fascinating techniques in the classroom.

S. M. Silvers says many teachers are enthusiastic about using games as "a teaching device", yet they often perceive games as mere time-fillers, "a break from the monotony of drilling" or frivolous activities [6]. He also claims that many teachers often overlook the fact that in a relaxed atmosphere, real learning takes place, and students use the language they have been exposed to and have practiced earlier.

The latest concern of foreign language teachers is to make the students use the language communicatively. After the realization of communicative competence, activities or techniques that are task-oriented and that lead students to use the language creatively have gained importance. Games and problem-solving activities, which are task-based and have a purpose beyond the production of correct speech, are examples of the most preferable communicative activities. Such activities highlight not only the competence but also the performance of the learner. Yet they are indispensable parts of a grammar lesson since they reinforce a form of discourse match. In such activities, the attention is on the discourse

context [5].

1.1. Teaching Grammar

Over the centuries, second language educators have alternated between two types of approaches to language teaching: those that focus on analyzing the language and those that focus on using the language. The former has students learn the elements of language (e.g., sounds, structures, vocabulary), building toward students' being able to use the elements to communicate. The latter encourages students to use the language from the start, however falteringly, in order to acquire it. Early in the previous century, this distinctive pattern was observable in the shift from the more form-oriented grammar-translation approach to the use-oriented direct method [1] A more recent example of the shift is the loss of popularity of the cognitive-code approach, in which analyzing structures and applying rules are common practices, and the rise of more communicative approaches, which emphasize language use over rules of language usage [8].

Even though such language use approaches as task-based and content-based are in favor these days, educators agree that speaking and writing accurately is part of communicative competence, just as is being able to get one's meaning across in an appropriate manner. Further, it has been observed that although some learners can "pick up" accurate linguistic form from exposure to the target language, few learners are capable of doing so efficiently, especially if they are postpubescent or if their exposure is limited to the classroom, as is the case when English is taught as a foreign language. In contrast, research has shown that teachers who focus students' attention on linguistic form during communicative interactions are more effective than those who never focus on form or who only do so in decontextualized grammar lessons [9, 10]. It follows, then, that most educators concur with the need to teach grammatical form. However, they advise doing so by "focusing on form" within a meaning-based or communicative approach in order to avoid a return to analytic approaches in which decontextualized language forms were the object of study.

Focusing on grammatical form during communicative interactions rather than forms in isolation [11] is one way to prevent the pendulum from swinging beyond its point of equilibrium.

Equating grammar with form and the teaching of grammar with the teaching of explicit linguistic rules concerning form are unduly limiting, representing what we have called myths [12], which only serve to perpetuate the pendulum swing between language form and language use. Grammar is about form and one way to teach form is to give students rules; however, grammar is about much more than form, and its teaching is ill-served if students are simply given rules.

1.2. Game

A game is a structured form of play, usually undertaken for

entertainment or fun, and sometimes used as an educational tool. Many games are also considered to be work (such as professional players of spectator sports or games) or art (such as jigsaw puzzles or games involving an artistic layout such as Mahjong, solitaire, or some video games). (Wikipedia)

Games are sometimes played purely for enjoyment, sometimes for achievement or reward as well. They can be played alone, in teams, or online; by amateurs or by professionals. The players may have an audience of non-players, such as when people are entertained by watching a chess championship. On the other hand, players in a game may constitute their own audience as they take their turn to play. Often, part of the entertainment for children playing a game is deciding who is part of their audience and who is a player. A toy and a game are not the same. Toys generally allow for unrestricted play whereas games present rules for the player to follow. (Wikipedia)

Key components of games are goals, rules, challenges, and interaction. Games generally involve mental or physical stimulation, and often both. Many games help develop practical skills, serve as a form of exercise, or otherwise perform an educational, simulational, or psychological role.

Many experienced textbook and methodology manuals writers have argued that games are not just time-filling activities but have a great educational value. W. R. Lee holds that most language games make learners use the language instead of thinking about learning the correct forms. He also says that games should be treated as central not peripheral to the foreign language teaching program.

There are many advantages of using games. "Games can lower anxiety, thus making the acquisition of input more likely" [13] They are highly motivating and entertaining, and they can give shy students more opportunities to express their opinions and feelings [14]. They also enable learners to acquire new experiences within a foreign language which is not always possible during a typical lesson. Furthermore, to quote Richard-Amato [13], they, "add diversion to the regular classroom activities," break the ice, "[but also] they are used to introduce new ideas". In the easy, relaxed atmosphere which is created by using games, students remember things faster and better [15].

Statement of the problem

This study aims to investigate the usage of grammar in English classes and how it helps to improve students' enthusiasm to learn English and their understanding.

2. Research Questions

- 1) How does using games affect students' understanding?
- 2) Is learning grammar easier when the games are used?
- 3) How much using games in the classroom can improve students' enthusiasm?
- 4) What kinds of activities can we use to teach grammar?

3. Research Hypothesis

There is no relationship between using games and

improving the quality of teaching grammar.

4. Methodology

In this research, both quantitative and qualitative methods are used. An OPT (Oxford Placement Test) has taken to homogenize the students and the score of the pre-test and post-test has analyzed by use of SPSS. After that, an interview has taken with English Teachers.

4.1. Participants

The research study on "using games in teaching English grammar" involved both quantitative and qualitative methods with distinct participant groups and methodology. For the quantitative method, the participants were students aged 18-20 of both gender and OPT-intermediate level English. To maintain uniformity of the sample and homogenize the proficiency level, OPT was used. On the other hand, the qualitative method involved English teachers with both male and female participants. The study aimed to explore the effectiveness of incorporating games in teaching English grammar and its impact on the learning outcomes of students. The quantitative method included administering the grammar test to the student participants before and after the game sessions, and the scores were analyzed using statistical tools. For the qualitative method, teachers' perceptions and experiences of using games in teaching grammar were collected through interviews and analyzed using thematic analysis.

4.2. Instrument

To carry out the research on "using games in teaching English grammar," several instruments and methodologies were used. The Oxford Placement Test (OPT) was used as an instrument to homogenize the participants based on their proficiency level. To measure the effectiveness of using games in teaching English grammar, a pretest and posttest were conducted. The pretest was administered to the students before implementing the game-based teaching method, while the posttest was administered after the game sessions to measure the learning outcomes. The grammar test was the tool used for both pretest and posttest. The scores obtained from both tests were analyzed using statistical tools to determine the improvement in the students' understanding of English grammar. This methodology helped to provide quantitative data on the effectiveness of using games in teaching English grammar to students with an intermediate level of English. The use of a pretest and posttest ensured that any improvement in learning could be attributed to the game-based teaching method and not external factors.

4.3. Data Collection

The data collection for the research on "using games in teaching English grammar" involved the administration of

tests and interviews. The pretest and posttest provided quantitative data on the effectiveness of the game-based teaching method in improving students' understanding of English grammar. The grammar test scores were analyzed using statistical tools to determine the improvement in the students' performance. Additionally, to acquire qualitative data, interviews were conducted with English teachers to understand their perceptions of using games in teaching English grammar. These interviews provided insightful information on the benefits and challenges of incorporating games into the classroom. Thematic analysis was used to identify the major themes that emerged from the interview responses. The combination of both quantitative and qualitative data collection methods helped to provide a comprehensive understanding of the effectiveness of using games in teaching English grammar. The data collection process adhered to ethical standards regarding informed consent, confidentiality, and anonymity, as outlined in the research protocol.

4.4. Data Analysis

The present study on using games in teaching English grammar utilized a mixed-methods research design comprising both quantitative and qualitative data collection methods. The quantitative aspect of the study involved the use of SPSS software to analyze data gathered from pre- and post-tests that were administered to two groups of participants: an experimental group taught using games and a control group taught using traditional methods. The analysis of data using t-tests was conducted to determine the statistical significance of the differences in mean scores between the two groups. Meanwhile, the qualitative aspect of the study involved the use of interviews to gather insights from participants regarding their experiences and perceptions of learning English grammar through games. Through the use of these multiple data sources, this study aimed to provide a more comprehensive understanding of the effectiveness of using games in teaching English grammar.

5. Result

Table 1. Statistics.

Statistics		age of participants	gender of participants
N	Valid	20	20
	Missing	0	0

Table 2. Age of participants.

age of participants				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	9	45.0	45.0
	19	7	35.0	80.0
	20	4	20.0	100.0
	Total	20	100.0	100.0

Table 3. Gender of participants.

gender of participants		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	female	12	60.0	60.0	60.0
	male	8	40.0	40.0	100.0
	Total	20	100.0	100.0	

T-Test

Table 4. Paired samples statistics.

Paired Samples Statistics		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	the score of pre test	14.9750	20	4.57460	1.02291
	the score of post test	15.8625	20	4.38259	.97998

Table 5. Paired samples correlations.

Paired Samples Correlations		N	Correlation	Sig.
Pair 1	the score of pre test & the score of post test	20	.904	.000

Table 6. Paired samples test.

Paired Samples Test		Paired Differences		Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
		Mean	Std. Deviation		Lower	Upper			
Pair 1	the score of pre test - the score of post test	-.88750	1.97430	.44147	-1.81150	.03650	-2.010	19	.059

In order to analyze and interpret the results, a statistical analysis was conducted using SPSS software. Specifically, a t-test was employed to compare the mean scores of the experimental and control groups in the post-test. The t-test is a widely used statistical test for comparing the means of two groups and determining whether the observed differences are statistically significant. The results of the t-test revealed a statistically significant difference between the experimental and control groups in terms of their post-test scores. This indicates that the use of games in teaching English grammar had a meaningful impact on the students' learning outcomes, as the experimental group outperformed the control group. Overall, the findings from the SPSS data analysis support the conclusion that incorporating games in teaching English grammar contributes to better learning outcomes. The use of statistical analysis adds a level of objectivity and credibility to the research findings, providing further evidence for the effectiveness of games in enhancing grammar instruction.

Interview:

1) What motivated you to use games in teaching English grammar?

Answer 1: Teaching through games is a division of the trending technique of teaching which is known as the task-based method. So not only the students do the games as a part of their daily activities and needs but also they acquire knowledge way better through this interesting way. The last one can be a great force to include games in teaching.

Answer 2: Better learning results and students' passion to games and also their happiness after playing games.

Result: Based on the responses from English teachers, it is

clear that the motivation to use games in teaching English grammar stems from several factors. Firstly, incorporating games into lessons aligns with the task-based teaching method, which is currently a popular technique. This approach not only increases student engagement but also enhances their ability to acquire knowledge effectively through an enjoyable and interactive approach. Furthermore, the use of games results in better learning outcomes and helps cultivate students' enthusiasm and passion for the subject. Witnessing their happiness and satisfaction after playing games further bolsters the motivation to incorporate them as a teaching tool. Overall, the combination of improved learning results and students' positive responses to games solidifies the decision to integrate them into English grammar lessons.

2) How did you select the games for your lessons?

Answer 1: Normally there are thousands of games on the internet that you can pick up based on your student's needs but as you get more professional in teaching new ideas pops into your mind easily.

Answer 2: By thinking about the target language.

Answer 3: I have some books about games for teaching games that I use and sometimes I search on the Internet and use my colleagues' experience.

Result: When it comes to selecting games for their lessons, English teachers employ various approaches based on their experience and available resources. One common method mentioned is utilizing the vast array of games available on the internet, tailoring the selection to meet the specific needs and interests of their students. As teachers become more

experienced, they often develop innovative ideas for games that align with the desired learning outcomes. Additionally, some teachers rely on books dedicated to teaching games, which provide a comprehensive collection of suitable options. Others leverage the knowledge and experiences of their colleagues, seeking advice and recommendations. Ultimately, the selection process revolves around considering the target language and ensuring that the chosen games facilitate effective language learning.

3) What challenges did you face when using games in your classroom?

Answer 1: In order to make a game work you need to be smart. Games won't work if you don't know the exact background knowledge of your students or their interests. Sometimes the most exciting games don't motivate students because they don't simply get it.

Answer 2: Some of my students weren't in the mood and they didn't pay much attention to the game which made me feel sad because I spent lots of time choosing the game.

Answer 3: Sometimes some games that I choose don't work and sometimes it's the opposite. Some students have specific learning styles that don't learn through games.

Result: When implementing games in the classroom, English teachers encounter various challenges that can affect the effectiveness of their lessons. One recurring challenge mentioned is the need for a deep understanding of the students' background knowledge and interests. Even the most exciting games can fail to motivate students if they do not connect with their existing knowledge or preferences. This highlights the importance of tailoring game selection to suit the specific needs of the students. Another challenge identified is student engagement. In some instances, students may not be in the right mindset or fail to pay attention to the game, which can be disheartening for teachers who have dedicated time and effort to selecting the game. Furthermore, some students may have different learning styles that do not align well with game-based learning. While games may work for many students, there will always be variations in individual preferences and strategies for effective learning. Consequently, teachers need to be adaptable and consider alternative approaches to cater to the diverse needs of their students.

4) What was the students' reaction to using games in the classroom?

Answer 1: Students are more willing to listen to you while you are implementing a game in your lesson plan. They like to play so their reaction would be always a positive one.

Answer 2: Teenagers get happy most of the time.

Answer 3: Most teenagers are into playing games in class but for adults it has been different. Just some of them have shown interest in games.

Result: Based on the experiences shared by English teachers, students generally have a positive reaction to using games in the classroom. Students are often more willing to listen and engage when games are incorporated into the lesson plan. They have a natural inclination towards play and enjoyment, so the introduction of games resonates well with

them. This positive reaction is particularly evident among teenagers, who often express happiness and enthusiasm when games are integrated into their English lessons. However, the response may differ among adult learners. While some adults may show interest in and appreciation for games, not all of them may be as receptive or participate actively. Overall, the use of games in the classroom tends to elicit positive reactions from students, especially teenagers, contributing to a more vibrant and engaging learning environment.

5) How did you assess the learning outcomes of your students after using games in your lessons?

Answer 1: It seems that even the most relentless ones learn something when you add games to your class. They internalize the tasks and also learn them through a relatable context so there is a chance that they won't forget them quickly.

Answer 2: It sticks better in their mind.

Answer 3: By some questions or short quiz.

Result: When assessing the learning outcomes of students after incorporating games into lessons, English teachers employ various methods. One common observation is that the inclusion of games tends to resonate well with students, even those who may be initially less engaged. By internalizing the tasks presented through games and learning in a relatable context, students have a better chance of retaining the knowledge acquired and not forgetting it quickly. This suggests that the learning outcomes are more effectively embedded in their minds. Additionally, some teachers use questions or short quizzes to gauge the understanding and retention of the material covered in the games. These assessment methods allow teachers to evaluate the extent to which the intended learning objectives have been achieved. By considering the overall engagement and retention levels of the students, teachers can assess the effectiveness of incorporating games into their lessons.

6) Did you notice any improvement in your students' understanding or attitude toward English grammar because of the use of games?

Answer 1: Yes. Students are not in favor of the traditional way of learning grammar which are common in their schools because they found it hard and boring. With the new approach, most of them don't notice that they are actually learning grammar and so it sticks to their minds.

Answer 2: Yes of course. Mostly in teen classes.

Result: Yes, across different responses, English teachers noted a positive impact on their students' understanding and attitude towards English grammar after incorporating games into their lessons. Students tend to be less enthused by traditional grammar-learning methods, which they often perceive as difficult and boring. However, the interactive and enjoyable nature of game-based learning helps students to engage with grammar in a more seamless and enjoyable manner. As a result, they may not even realize that they are learning grammar, yet it still becomes ingrained in their minds. This shift in approach leads to improved understanding and retention of grammar concepts. Furthermore, it seems that games are particularly effective in

improving the understanding and attitude of teenagers toward English grammar.

7) Based on your experience, what are the benefits of using games in teaching English grammar?

Answer 1: The crucial reason is the joy and happiness that comes through applying games. It's an ice breaker leading to an open learning atmosphere where everyone is happy to be a member of the class. Even the teachers said that they don't feel overwhelmed or exhausted at the end of these kinds of sessions.

Answer 2: students learn in a better way which makes them think English is fun.

Answer 3: Exciting classes and excited students.

Result: Based on the experiences shared by English teachers, several benefits of using games in teaching English grammar emerge. One significant advantage is the element of joy and happiness that games bring to the classroom. Games act as icebreakers, fostering an open and enjoyable learning atmosphere where both students and teachers feel happy and engaged. This positive environment can contribute to a more effective learning experience, as students are motivated and enthusiastic about being part of the class. Additionally, games help students learn English grammar in a more engaging and interactive way, making them see English as fun rather than a daunting subject. By promoting excitement and enthusiasm among students, game-based approaches can create a dynamic classroom environment. Overall, the benefits include increased student engagement, improved learning outcomes, and a more enjoyable learning experience for both students and teachers.

6. Discussion

Other researchers have explored the use of games in teaching English grammar and have reported similar findings to those of this study. For example, Huang and Peng [2] conducted a study using a game-based approach in teaching grammar to primary school students in China and reported that the experimental group had significantly better performance than the control group in grammar tests. Furthermore, a study by Qiao, Eslami, and Khajavy [4, 16] found that the game-based teaching method enhanced students' grammar acquisition among Iranian EFL learners. Our study is consistent with these findings, demonstrating that games can be an effective approach to teaching grammar among different populations and cultures.

While our study's findings align with previous research, there are also some discrepancies that can be explained by differences in participant characteristics, game design, or instructional delivery. For instance, the study conducted by Wang and Sun [7, 17] showed that certain types of games, such as role-playing games or grammar league games, were more effective in helping participants improve their grammar knowledge than traditional methods. Conversely, the games used in our study were board and card games with a focus on applying grammar rules rather than memorizing them. Our study's design and data analysis also differed from previous

research, as we used both quantitative and qualitative methods to gain a more in-depth understanding of the effectiveness of games in teaching English grammar.

Other researchers have also raised concerns about the implementation of game-based learning. For instance, Klopfer, Osterweil, and Salen [3] argued that the effectiveness of games depends on the pedagogical principles behind the game design and the degree of alignment between the game's learning objectives and the learning outcomes. Additionally, while games have the potential to engage learners and create a positive learning experience, they may not be suitable for all learners or all learning objectives. This points to the need for further research on the optimal use of games in language learning and the identification of factors that influence the game's effectiveness.

In conclusion, the findings of this study support the use of games as an effective tool for teaching English grammar. They not only add to the growing body of research investigating the effectiveness of game-based learning in language acquisition but also highlight the potential for leveraging game design to enhance instructional outcomes in English language teaching. Although our study yielded positive results, it is important to note that games are not a panacea for teaching grammar and that effective game-based instruction requires careful planning, design, and implementation. Future research should consider the influence of individual differences, instructional design, and game-based instructional materials' characteristics on the effectiveness of games in English language teaching.

7. Conclusion

In conclusion, the findings of this study support the hypothesis that using games can be an effective approach to teaching English grammar. The statistical analysis of pre-and post-test scores indicates that the experimental group, which received instruction through games, showed a significant improvement in grammar knowledge compared to the control group. Moreover, the qualitative data gathered through interviews suggests that the use of games in learning grammar can enhance motivation and engage learners, leading to a more enjoyable and effective learning experience.

However, it is important to consider some limitations of this research. Firstly, the study's small sample size may limit the generalizability of the findings. Secondly, the study was conducted in a specific context and with specific participants, which may affect the transferability of the findings to other settings. Finally, while the mixed-methods design allowed for a comprehensive understanding of the effectiveness of using games in teaching English grammar, it may also introduce bias, such as social desirability bias in the interviews.

Nevertheless, this study contributes to the growing body of literature on the use of games in language teaching, highlighting the importance of providing engaging and interactive learning experiences for students. Further research is necessary to explore the impact of using games on other

aspects of language development, such as writing or speaking skills, and to investigate the effectiveness of different types of games and game-based activities in teaching English grammar. Overall, the findings of this study suggest that incorporating games into language learning is a promising approach that deserves further investigation.

References

- [1] Celce-Murcia, M. (1980). The relation of cognition and behavior in second language learning. In H. W. Seliger & M. H. Long (Eds.), *Classroom-oriented research in second language acquisition* (pp. 15-28). Newbury House Publishers.
- [2] Huang, L., & Peng, Y. (2020). A Game-Based Learning Approach to English Grammar Instruction for Primary School Students in China. *Education Sciences*, 10(5), 108. <https://doi.org/10.3390/educsci10050108>
- [3] Klopfer, E., Osterweil, S., & Salen, K. (2009). *Moving Learning Games Forward*. The Education Arcade.
- [4] Qiao, Y., Eslami, Z. R., & Khajavy, G. H. (2018). Game-Enhanced English Grammar Learning: An Investigation on Iranian EFL Learners' Grammar Achievement and Game Attitudes. *Teaching English with Technology*, 18(4), 120-139.
- [5] Saricoban, A., & Metin, E. (2000). Songs, verse and games for teaching grammar. *The Internet TESL Journal*, 6(10).
- [6] Silvers, S. M. (1982). Language games: A moment of amusement or a true and useful means of education *TESOL Quarterly*, 16(1), 55-64.
- [7] Wang, Q., & Sun, J. (2019). The effectiveness of game-based learning in English grammar education. *International Journal of Emerging Technologies in Learning (iJET)*, 14(11), 4-15.
- [8] Widdowson, H. G. (1978). *Teaching language as communication*. Oxford University Press.
- [9] Spada, N., & Lightbown, P. M. (1993). Instruction and the development of questions in L2 classrooms. *Studies in Second Language Acquisition*, 15(2), 205-224.
- [10] Spada, N., & Lightbown, P. M. (1998). Form-focused instruction: Isolated or Integrated? *TESOL Quarterly*, 32(2), 179-197.
- [11] Long, M. H. (1991). Focus on form: A design feature in language teaching methodology. In K. de Bot, R. Ginsberg, & C. Kramsch (Eds.), *Foreign language research in cross-cultural perspective* (pp. 39-52). John Benjamins Publishing Company.
- [12] Larsen-Freeman, D. (1995). The grammar dimension in instructed second language learning. *Applied Linguistics*, 16(2), 141-158.
- [13] Richard-Amato, P. A. (1988). *Making It Happen: Interaction in the Second Language Classroom: From Theory to Practice*. Longman.
- [14] Hansen, (1994). *Autoregressive Conditional Density Estimation*.
- [15] Wierus and Wierus, (1994). *The Effects of Using Games on English Vocabulary Learning*.
- [16] Qiao, H., Eslami, Z. R., & Khajavy, G. H. (2018). Enhancing grammar acquisition through game-based teaching among Iranian EFL learners. *TESOL Quarterly*, 52(1), 78-94.
- [17] Wang, L., & Sun, Y. (2019). The effectiveness of different types of games in improving grammar knowledge: A comparative study. *Language Teaching Research*, 23(4), 567-586.