

Gamifying Grammar: Maze-Based Learning for EFL Students' Mastery of Simple Past Tense

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Abstract

This research examines the extent of using Grammar Maze Games in enhancing students' grammar mastery in the use of simple past tense. This research was carried out to eight grade students in junior high school using pre-experimental with one group pretest posttest research design. There were twenty two students as the sample. The data was collected by using pretest and posttest in the form of Zep Quiz. There was improvement in the mean score from 60.45 to 67.73 in pretest and posttest but through Wilcoxon Signed Rank Test the improvement did not significantly prove that students' grammar mastery increased ($p=0.268>0.05$). This result gives the interpretation that Grammar Maze Game is potentially to be used for the students' motivation and training but in terms of grammar mastery it was not effective in this research, so it should be explored further how to set it and what time it should be used.

Keywords: *Grammar Maze Game, simple past tense, grammar mastery, game based learning, Zep Quiz*

Introduction

Grammar has a great contribution in language learning. It helps learners to create meaningful and correct sentence construction (Harmer, 2007; Thornbury, 1999). It has a strong impact on the development of the four language skills: listening, speaking, reading and writing (Ellis, 2006). For EFL students, mastery of grammar is an important aspect in achieving communicative competence which consists of both accuracy and effectiveness (Canale & Swain, 1980).

Preliminary observation during teaching practice program showed that the eight grade students of SMPN 3 Kedungwaru had difficulties in learning simple past tense in the significant way. In other words, most students often experienced difficulty in change verb into past form of irregular verbs and did not know how to make negative and interrogative sentences with “did”. This condition showed that there was a gap between the goals which is supposed to be gained by students, based on the curriculum, and the real result of students’ accuracy (Kemendikbudristek, 2022). In addition, learning grammar is sometimes not effective if it only talks about explanation of grammar rule without more practices, it makes the students have less control in grammar (Azar, 2002; Ellis, 2006). Therefore, in order to help the students master the grammar, it should be taught interactively and do practice.

Despite the importance of grammar, many students continue to face challenges. The abstractness of the rules and memorization aspect makes it difficult for many students to learn (Ellis, 2006). Many students can remember complicated structures, but many of them will face problems to apply it in real use. In other words, there are still many of them who cannot use grammar correctly when speaking or writing English. This phenomenon can decrease students’ motivation to learn grammar as it sounds not as interesting as learning other skills in language.

One of the grammar points that is often difficult for students is the simple past tense. The simple past tense requires students to learn changes in verb forms, including both regular and irregular verbs (Eastwood, 1999; Nurhasanah et al. 2024). It also requires knowledge of the correct structures for forming negative and interrogative sentence. Recent research have shown that EFL students continue to experience difficulties in using the simple past tense, particularly in forming appropriate verb forms and applying grammatical rules correctly ((Nahak et al., 2024; Nurhasanah et al., 2024). Although the simple past tense needs to be mastered by EFL students, many students still experience difficulties in applying it accurately.

To response to this problem, the game based learning has been considered as one of the appropriate methods for language teaching. It provides a more

exciting, less stressful environment (Prensky, 2003; Plass et al., 2015). This method encourages the students' participation in learning as it creates a more active environment. According to various studies, games can improve students' motivation and their involvement in the classroom (Fauzi et al., 2024; Sakdiyah et al., 2024). Moreover, game-based learning can provide immediate feedback on students' performance, particularly when supported by digital platform such as Zep Quiz (Wahid et al., 2025).

Zep Quiz is a gamified digital learning and assessment platform, by which a teacher can construct interactive quizzes for the classroom activities. Some specific features in Zep Quiz, like interactive maps, avatar creation, compete in real-time, instant feedback are the advantages to raise interactivity, arouse students' motivation, etc. Teacher could build up the quizzes by choosing from templates and appending questions, for students to play through a web-browser with a QRcode or accesscode without needing to download platform. These features might promote more active participation on student's part in a quiz activity. Nevertheless, these playful features may serve as a distraction from the educational task, if students became over-concerned with the gaming aspect and distracted from the learning content. Therefore the effectiveness of Zep Quiz would rely on the game playing must be properly managed, which has to serve the intended purposes and supported by a competent facilitator.

Many researchers are aware of the growing interest in game-based learning, and specifically its influence on learning a new vocabulary and students' participation in it (Wahid et al., 2025). The findings of the research indicate that game-based learning as a mean of developing grammatical competencies is not well-developed. Especially, there has not been enough research to explore the effectiveness of a Grammar Maze Game in making junior high school students master the usage of simple past tense, etc.

Therefore, this research aimed at investigate the effect of using Grammar Maze Game on the students' mastery of simple past tense through the combination of game based learning with structured grammar instruction. This research focused on the integration of the Grammar Maze Game and Zep Quiz as structured approach to grammar instruction. It also aimed to describe the

application of this game-based learning approach in grammar teaching and determine its effect on students' learning outcomes.

Methods

Research Design

Pre-experimental research design using one group pretest posttest was conducted in this research in order to know the effect of the Grammar Maze Game on the learning of simple past tense. In a one group pretest posttest design, one group of subject took a pretest before receiving the treatment and a posttest after the treatment was administered. The diagram of one group pretest posttest design is as follows: O1 – X – O2, O1 = pretest, X = treatment, O2 = posttest.

Data Collecting Technique

In conducting the research, quantitative data were collected from students' grammar test score. The data were collected through the pretest and posttest that were given to students using Zep Quiz to assess their prior knowledge of simple past tense and their learning after the treatment of using Grammar Maze Game. Students were given the pretest to assess the initial grammar mastery. Meanwhile, the posttest was given to assess the students' improvement after the treatment. The major source data of the research were the pretest and posttest scores of 22 students of VIII F grade of SMPN 3 Kedungwaru. Besides, the researcher made the supporting data used for applying the research, e.g. Teaching schedule and teaching material.

Instrument

The instrument applied in this research was a grammar test which was administered in the pretest and the posttest. There are 20 items pretest and 20 items posttest, with multiple choice and about simple past tense pattern (positive, negative, interrogative). This test tried to find out whether the students understand verb changes and the combination between subjects and verbs, including negative and interrogative form, with auxiliary "did". Before the instrument was used to research the students, it was validated by an expert to

check its content validity. The items in the test were checked and revised by the expert. Due to limited time, a second try out was impossible, however the revised instrument was approved by the expert and used in the research.

Table 1. Validity Test Result

No	Item	Initial Condition	Action Taken	Final Decision
1.	Q2	Low Correlation	Revised	Valid
2.	Q6	Low Correlation	Revised	Valid
3.	Q14	Low Correlation	Revised	Valid
4.	Q17	Low Correlation	Revised	Valid
5.	Q24	Low Correlation	Revised	Valid
6.	Q29	Low Correlation	Revised	Valid
7.	Q30	Low Correlation	Revised	Valid
8.	Q37	Low Correlation	Revised	Valid
9.	Q39	Low Correlation	Revised	Valid

The validity test was conducted through Pearson Product Moment Correlation using IBM SPSS Statistics for Windows version 26. Result found that the several items have low correlation value therefore the items are invalid. Those invalid items found were question 2, 6, 14, 17 for pretest, whereas the items found to be invalid for posttest were question 24, 29, 30, 37 and 39. Based on these, invalid items were reconstructed based on expert judgement.

Table 2. Reliability Test

Reliability Statistics

Cronbach's Alpha	N of Items
.855	40

To perform the reliability test, the IBM SPSS Statistics version 26 was used with the measurement of Cronbach's Alpha. The result obtained by Cronbach's Alpha value was 0.855, which means that the instrument had high reliability. According to Cresswell (2014), instrument with Cronbach's Alpha more than 0.80 possessed a high degree of reliability. Thus, the instrument used

in the research was reliable.

Table 3. Normality Test

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.129	22	.200*	.961	22	.513
Posttest	.263	22	.000	.855	22	.004

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Since the number of students was under 50 students, normality test was performed using Shapiro-Wilk test in the software IBM SPSS Statistics 26. As displayed in Table 3, the significance value for the pretest was 0.513, which is greater than 0.05, indicating that the pretest data were normally distributed. In contrast, the significance value for the posttest was 0.004, which is less than 0.05, indicating that the posttest data were not normally distributed.

Since the posttest data were not normally distributed, a parametric statistical test could not be used because its assumptions were violated. Therefore the researcher used Wilcoxon Signed Rank Test as non-parametric test to perform between pretest and posttest score.

Data Collection Technique

The data were collected in a pretest and posttest from by using Zep Quiz as testing instrument. The tests contained of 20 multiple choice items which examined the simple past tense, especially the past form of the verb and the use of the auxiliary “did” in positive, negative, and interrogative sentences. Prior to being administered to students, the tests items were created according to the English syllabus for junior high school and were given an expert review to determine content validity. The pretest was given to find out how good the students’ mastery was before the treatment was applied and the posttest was given to find out how improved the students were in mastering simple past tense after the Grammar Maze Game treatment was given to students.

Data Analysis Technique

Analysis was made through descriptive and inferential statistics. Descriptive statistic was utilized to determine the mean and standard deviation of students' pretest and posttest scores. This was used to describe the enhancement of students' grammar mastery. A normality test was conducted before performing hypothesis test in order to check if the data were normally distributed. From the normality test, the data were not normally distributed. For this reason, a Wilcoxon Signed Rank Test was conducted to check if there was any significant difference between the pretest and posttest scores. Moreover, the effect size, Cohen's *d*, was computed to measure the effect of the treatment of Grammar Maze Game on students' mastery of simple past tense.

Findings and Discussions

This research aims at discovering the effect of Grammar Maze Game on students' grammar achievement in simple past tense. To fulfill the research objective, the researcher applied a quantitative approach using one group pretest and posttest design. The research involved 22 students of class VIII F at SMPN 3 Kedungwaru who participated in both the pretest and posttest sessions. The pretest was administered before treatment, while the posttest was conducted after the implementation of the Grammar Maze Game through Zep Quiz platform. The findings of this research were analyzed using descriptive and inferential statistics to determine whether the treatment significantly affected students' grammar achievement.

Pretest and Posttest Result

The result of pretest and posttest score are in the table below:

Table 4. The Result of Pretest and Posttest

No	Students	Pretest	Classification	Posttest	Classification
1.	ARS	45	Needs Guidance	20	Needs Guidance
2.	AOV	60	Fair	45	Needs Guidance

3.	ARD	65	Fair	70	Fair
4.	AHA	70	Fair	80	Good
5.	AWP	45	Needs Guidance	80	Good
6.	AVD	90	Very Good	95	Very Good
7.	CA	70	Fair	85	Good
8.	DL	65	Fair	90	Very Good
9.	EAS	35	Needs Guidance	80	Good
10.	FAP	0	Needs Guidance	65	Fair
11.	GVP	100	Very Good	85	Good
12.	KVA	90	Very Good	80	Good
13.	M	80	Good	100	Very Good
14.	MRWA	85	Good	90	Very Good
15.	MDS	30	Needs Guidance	40	Needs Guidance
16.	MM	45	Needs Guidance	25	Needs Guidance
17.	NNA	75	Good	95	Very Good
18.	ONL	90	Very Good	100	Very Good
19.	SSFS	60	Fair	30	Needs Guidance
20.	SS	70	Fair	80	Good
21.	SA	40	Needs Guidance	25	Needs Guidance
22.	VA	20	Needs Guidance	30	Needs Guidance

The classification of students' achievement was determined based on the posttest scores using the scoring criteria adapted from the lesson plan.

Maximum Total Score : 100

Conversion Score :

- 86 – 100 = Very Good
- 71 – 85 = Good
- 56 – 70 = Fair
- <55 = Needs Guidance

The score obtained from 22 students of class VIII F SMPN 3 Kedungwaru for pretest and posttest are shown in the following table. The pretest was done prior to the application of Grammar Maze Game, while posttest was conducted

after treatment application in order to know the students' achievements toward simple past tense.

The pretest and posttest scores of each students are shown in table 4. From the table above, it could see that after getting the treatment there are 15 students getting an increase on their score. They got the low score during pretest got better score on posttest. However, there are 7 students get their scores lower during posttest, that is after they got the treatment.

Comparing the scores between pretest and posttest shows that learning process could be done using Grammar Maze Game. But the students' achievement during posttest are different.

Descriptive Statistics

The results of the descriptive statistics are presented in the table below:

Table 5. The Result of The Descriptive Statistics

Descriptive Statistics					
	N	Minimu m	Maximu m	Mean	Std. Deviation
Pretest	22	.00	100.00	60.4545	25.53751
Posttest	22	20.00	100.00	67.7273	27.59086
Valid N (listwise)	22				

Table 5 presented the descriptive statistics for pretest and posttest scores. The pretest mean score was 60.45, while the posttest mean score grew to 67.73. It could be interpreted that the students have a better performance on their grammar achievement after receiving the treatment by playing the Grammar Maze Game. The pretest minimum and maximum scores were 0 and 100, while the minimum and maximum score for the posttest were 20 and 100.

Moreover, the posttest standard deviation (27.59) was a little larger than the pretest standard deviation (25.54). This result shows that the variance of the scores of the students' performance after the treatment became a little larger. It seemed to show that some problems with the simple past tense.

Wilcoxon Signed Rank Test

Wilcoxon Signed Rank Test are in the table below:

Table 6. Wilcoxon Signed Rank Test

Test Statistics ^a	
	Posttest - Pretest
Z	-1.108 ^b
Asymp. Sig. (2-tailed)	.268

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

The Wilcoxon Signed Rank Test was performed to test if there was a significant difference in the pretest and posttest score of the students after being exposed to the Grammar Maze Game. According to the result of table 4, the number of students with posttest scores greater than pretest scores was 15. But the number of students with the scores decreased after the treatment was 7. There was no students with the same pretest and posttest scores.

Moreover, the significance value (Asymp. Sig. 2-tailed) reported in Table 4 was 0.268. As the value is greater than 0.05 ($0.268 > 0.05$) the result reveals that there was no significant difference in the pretest and posttest scores of students. Although the students had mean score increases from pretest (60.45) to posttest (67.73) it is not statistically significant. Therefore, the null hypothesis H_0 was accepted, and alternative hypothesis H_1 was rejected.

Discussion

The results partially supports with Fauzi et al., (2024) and Sakdiyah et al., (2024) who identified that game based learning could improve students participation, motivation, engagement and also interest towards grammar learning activity and classroom. In this research, the students also seem excited and participated in the lesson. Moreover, Wahid et al., (2025) argued that Zep Quiz gave students engaging learning experience and it became interaction to improve students' participate in class activities. In this research, students' enthusiasm had also been improved using the Grammar Maze Game and Zep

Quiz.

The finding in this research is contradiction to Arsandy & Damayanti, (2021) whose findings indicated that through playing games maze activities assisted the students to understand the patterns of the sentences through interaction. In the Grammar Maze Game, students will find their way to the next sentence if they choose is correct, and vice versa. However, from this research it can be observed that there are some students seemed to concentrate more to find the correct route toward the “YES” or “NO” option rather than knowing the underlying rules of grammar of the sentence to answer the “YES” or “NO” option until finish.

The situation here is in line with Larsen & Johansson, (2024) who clarified that maze activities in grammar must involves attention to grammatical processes and language options. In this research, it can be observed that several students are still seemed uncertain in understanding sentence structures and verb form in simple past tense. Some of the students perhaps utilized guessing or trial and error in completing the maze activity. In sum, the game can improve students' involvement, but cannot achieve great enhancement on grammar mastery.

Several things might contribute to this not being statistically significant. The first thing was that the research was during the month of Ramadhan and therefore the class time was only thirty minutes instead of forty. Second, the students were given little information of what to did concerning the grammar formulas and classification of the sentences in the maze of yes and no option. Third, the students also became distracted by fun options on Zep Quiz (creating avatar or changed display name). Furthermore, it seemed that technical problems and internet connections as well as six students absent during the test also influenced the implementation.

Overall, the Grammar Maze Game seems to work as it raised the students' motivation and also classroom engagement in grammar activities. However, according to the result of this research, motivation and engagement only cannot raise the students' knowledge on grammar to be statistically significant. Thus, future research must explanations on grammar formulas, and closer monitoring.

Conclusion

The purpose of this research was to find out how the Grammar Maze Game is able to make the students become master of simple past tense. The mean score of students increased from the pretest to the posttest after receiving the treatment which indicated an improvement in students' grammatical achievement. Nevertheless, Wilcoxon Signed Rank Test showed that students' improvement was not statistically significant ($p=0.268>0.05$). From these results, it is found that the Grammar Maze Game effectively improved students' motivation and engagement in the classroom. However, it failed to enhance students' grammar achievement in this research. The reason that lead to this result could include insufficient instructional time, students' engagement with the interactive features of Zep Quiz and insufficient grammatical knowledge at the time of playing the maze game. Thus, the Grammar Maze Game can be used as an alternative activity to make grammar learning more interactive but the use of it in the future would have to offer more explanation on the rules of the game, longer treatment time and teacher-intensive help to maximize students' grammar learning.

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