

## Exploring the Impact of Educational Gamification on Students' Academic Achievement in Learning English at Junior High School

Ismail\*

English Education Department, Muhammadiyah University of Enrekang, Indonesia

\*Corresponding author email: [smileummaspul@gmail.com](mailto:smileummaspul@gmail.com)

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### ABSTRACT

This research aims to evaluate the impact of implementing gamification in English language teaching on the academic performance of junior high school students, focusing on the context of SMPN 5 Enrekang, Indonesia. The study is based on the understanding that English education plays a crucial role in the development of student's communication skills but faces challenges such as the lack of appeal in conventional teaching methods and the limitations of interactivity in traditional learning. Descriptive analysis results indicate that before the intervention, the average pretest scores of both groups were relatively comparable, demonstrating the equivalence of students' prior knowledge. However, after the intervention, the experimental group showed a significant improvement in post-test scores, while the control group experienced a lower increase. These findings suggest that gamification has a greater positive impact on enhancing the English language proficiency of students compared to traditional teaching methods. This research contributes to the education literature by highlighting the potential of gamification in addressing challenges in English language learning at the junior high school level. The results also provide practical guidance for educators in designing innovative and effective learning strategies to enhance student motivation and academic achievement. Thus, the implementation of gamification is expected to be a step towards improving the holistic and relevant quality of education.

### Introduction

English education at the junior high school level plays a crucial role in shaping students' communication skills, an essential aspect of their academic progress and personal development. However, the reality in the field indicates significant challenges. Many students struggle to achieve optimal

academic performance in English language learning. These challenges include the lack of appeal in conventional teaching methods, which tend to be monotonous and fail to stimulate student interest. Additionally, the limited interactivity in traditional teaching approaches poses a serious obstacle, restricting the space for students to actively

engage in the learning process.

English education at the junior high school level is not only a vital step in educational development but also a crucial foundation for the development of students' language skills in facing global demands. Therefore, low academic achievement in English language learning is a serious issue that requires attention. Hence, an innovative approach is needed to overcome these challenges and create a learning environment that is motivating, interactive, and aligned with the developmental needs of students at the junior high school level (Chang et al., 2020; Felicia, 2019; Zainuddin, 2018).

Currently, students at SMPN 5 Enrekang, Indonesia, have demonstrated a good understanding of technology and a willingness to actively engage with it. The results of a 2023 survey of 83 seventh-grade students showed that 62% of them rely on the internet as their main source for accessing learning materials. Meanwhile, 27% have laptops and feel comfortable using the internet for accessing grades, assignments, and exam questions. Moreover, 91% of students reported owning smartphones.

Not only students but also educators at SMPN 5 Enrekang are actively seeking ways to integrate technology into the classroom learning process. This indicates a strong push to leverage technology as an integral part of the learning facilities, creating a more engaged and modern environment in the school (Huseinović, 2023; Lister, 2015).

One solution to address these challenges is by considering the implementation of gamification in the context of English education at the junior high school level. Gamification, as defined by Aljraiwi (2019); Muntean (2011); Öztürk & Korkmaz (2019), involves the use of game elements to create an engaging learning environment, providing motivation, and enhancing student involvement. This strategy goes beyond merely replacing traditional teaching methods with game elements; instead, it designs learning experiences that are enjoyable and relevant for students (Muntean, 2011).

In the context of English language

learning, gamification can introduce elements such as scores, leaderboards, and badges as incentives to achieve learning goals (Azzouz Boudadi & Gutiérrez-Colón, 2020; Pratama, 2020). For example, achievements in speaking or writing skills could be rewarded with points, and students' accomplishments could be reflected in class rankings. Thus, gamification can be an effective strategy to enhance achievement in learning English (Aljraiwi, 2019; Ortiz-Rojas et al., 2017; Wang, 2023).

The implementation of gamification also opens opportunities to address the lack of interactivity in English language learning at the junior high school level. Through gaming elements such as missions or challenges, students can engage in learning activities that are both challenging and motivating (Alsadoon et al., 2022; Laffey, 2022; Rachels, 2016). For example, the use of word games or simulation scenarios in English can provide practical contexts that make learning more dynamic and relevant for students.

The success of gamification implementation in English language learning at the junior high school level can also be measured through students' academic achievements Alam et al. (2023); Huseinović (2023). Research has indicated that this approach can have a positive impact on learning outcomes, creating an environment supportive of improved understanding of concepts and the application of English language skills in real-life situations (Alsaadoun, 2022; Günel & Demir, 2018; Hashim et al., 2019; Turan & Çimen, 2018).

As a contribution to the educational literature, this research is expected to offer a more comprehensive insight into the potential of gamification in addressing challenges in English language learning at the junior high school level. Additionally, the findings of this study are anticipated to provide practical guidance for educators in designing innovative and effective learning strategies to enhance student motivation and academic achievement. Thus, the implementation of gamification in the context of English education at the junior high school level is hoped to be a step

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towards improving the quality of education in a more holistic and relevant manner.

### Methodology

The aim of this research is to investigate the influence of game-based activities on the academic performance of junior high school students in English language teaching, particularly in the context of SMPN 5 Enrekang, Indonesia. Despite previous research on gamification in English education yielding diverse results in various regions, similar studies within the specific context of Enrekang, Indonesia, are lacking. Therefore, alternative variables are examined in this research. The central question of this study seeks to understand the extent to which the implementation of educational gamification can impact students' academic achievement in learning

English at the junior high school level. This research adopts a quasi-experimental approach to evaluate the effectiveness of gamified English language learning.

The research sample consists of 53 junior high school students in both the control and experimental groups. The control group comprises 23 students, while the experimental group consists of 30 seventh-grade students at SMPN 5 Enrekang. Subjects in the experimental group are taught using gamification strategies and tools, while traditional methods are employed in the control group. The implementation process spans five weeks, with two hours of classes each week. The gamification tool used is ClassDojo (<https://teach.classdojo.com/#/launchpad>) and Breakout Edu (<https://platform.breakoutedu.com/>).

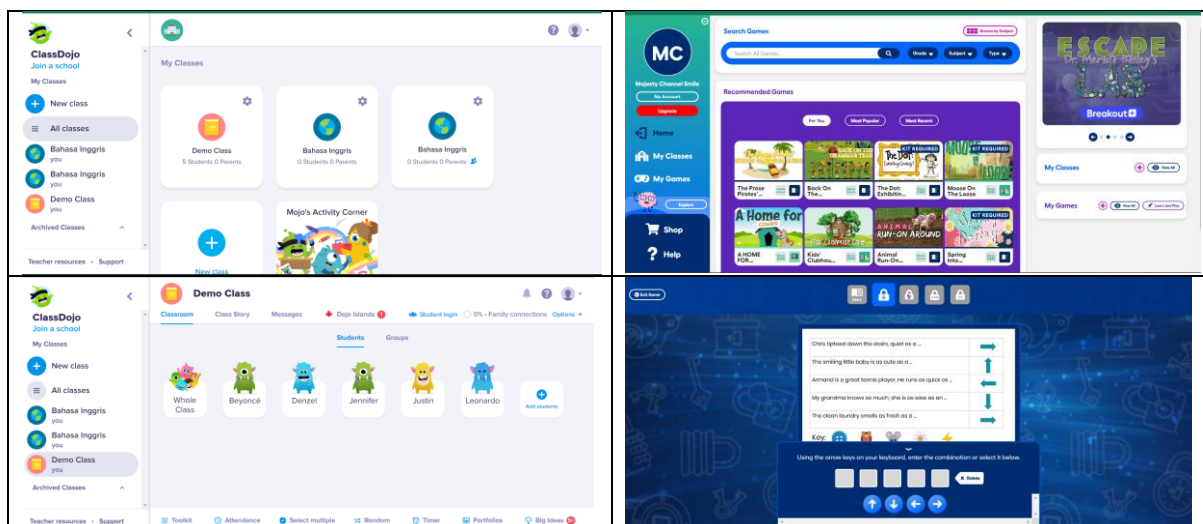


Figure 1. Dashboard Class Dojo (left) and Breakout Edu (right)

The instrument used in this research is the EF SET TEST, which is a standardized free English language test worldwide. This test provides a quick, reliable, and accurate measurement of participants' abilities in terms of reading and listening proficiency. The instrument was employed in this study twice, to assess the level of participants' knowledge before and after the intervention. The test consists of two parts: the first part evaluates reading proficiency, and the

second part assesses students' listening skills. The pre-test was administered to both the control and experimental groups to measure students' English proficiency before the treatment. The post-test was similarly conducted to assess students' English competence after the intervention. It is noteworthy that both the pre-test and post-test have similar types of sections and points, except for different yet equivalent content.

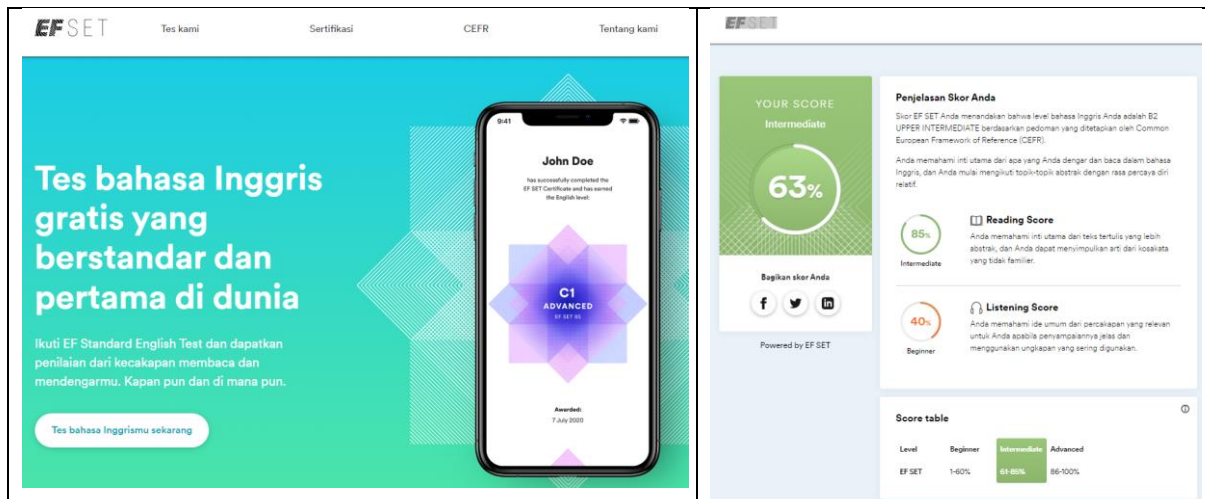


Figure 2. Dashboard EF SET (left) and SCORE EF SET (right).

To fulfill the research design, data were collected using quantitative data collection tools. Participant scores were subsequently input into the Statistical Package for Social Sciences (SPSS) version 25 for inferential analysis of the gathered data. Initially, a normality test was employed to assess whether the data followed a normal distribution. Subsequently, pre and post-test scores from both groups were compared and analyzed using the T-test formula. To address the first research question, an independent one-sample test was utilized to

identify differences within each group before and after the intervention. Meanwhile, to answer the second and third research questions, paired-sample t-tests were conducted to evaluate the effectiveness of the intervention on each group in the context of receptive vocabulary learning.

**Result**

To draw significant initial conclusions regarding the pretest scores, a descriptive analysis was conducted for both groups.

Table 1. Descriptive Statistics of Students' English Pre-test

Group	N	Mean	Std. Deviation	Std. Error Mean
Experiment	30	58.72	5.05	.92186
Control	23	57.30	5.28	1.10178

The descriptive analysis of pretest scores for students in English language learning shows that the average score in the experimental group is 58.72, with a standard deviation of 5.05. Meanwhile, the control group has an average pretest score of 57.30, with a standard deviation of 5.28. Thus, from these results, it can be concluded that before the intervention, the experimental group tended to have a slightly higher average

pretest score compared to the control group in English language learning. In other words, the average scores of the two groups are very similar, indicating a relatively equivalent level of knowledge before the intervention. Therefore, it can be concluded that the performance of students in both groups is somewhat homogeneous in the pretest.

Table 2. Descriptive Statistics of Students' English Post-test

Group	N	Mean	Std. Deviation	Std. Error Mean
Experiment	30	64.72	5.08	.92807
Control	23	56.30	5.27	1.09965

Based on the descriptive analysis of post-test scores in English language learning, the results indicate that the average score in the experimental group is 64.72, with a standard deviation of 5.08. On the other hand, the control group has an average post-test score of 56.30, with a standard deviation of 5.27. From these results, it can be concluded that after the intervention, the experimental group showed a higher increase in the average post-test score compared to the control group in the context of English language learning. In contrast to the descriptive analysis of the pretest, there is a noticeable difference between the average scores of the two groups. Looking at the table above, students in the experimental group have higher average scores compared to students in the control group.

### Discussion

Based on the descriptive analysis of pretest and post-test scores of students in English language learning, several significant findings can be identified. In the pretest stage, the experimental group and the control group showed relatively comparable average scores, with the experimental group having a slight numerical advantage (58.72 compared to 57.30). This analysis indicates that before the intervention, the initial knowledge of students from both groups was quite similar in terms of pretest scores.

However, a noticeable change occurred in the post-test stage after the implementation of the intervention. The experimental group showed a significant improvement in the average post-test score (64.72), while the control group only reached an average score of 56.30. This difference indicates that the intervention given to the experimental group had a positive impact on improving the English language abilities of students, compared to the control group that did not receive a similar intervention.

These results support the hypothesis that the teaching method or strategy applied to the experimental group contributes to a significant improvement in understanding and mastery of the English language. The

significant difference in post-test scores between the two groups indicates the effectiveness of the intervention in enhancing the learning outcomes of students in English language learning. The research conducted by Hashim et al. (2019) concluded that there was an unexpected increase in student achievement, especially in grammar understanding, when students engaged in learning through the use of games. Cheraghi & Omranpour (2023) support this statement by stating that post-test scores show remarkable improvement, and both gamification approaches are highly effective in enhancing vocabulary development for EFL learners.

In this paper, educational gamification is a tool that enables learners to achieve better results and further proves that educational gamification enhances English language learning for students. However, it should be noted that while these results indicate a positive impact of the intervention on the experimental group, a more in-depth interpretation and broader generalization require more sophisticated statistical analysis, such as significant difference tests between groups. Additionally, further research can explore other factors that may influence the learning outcomes of students in English language learning.

### Conclusion

Based on the results of descriptive analysis of pretest and post-test scores of students in English language learning, it can be concluded that before the intervention, the average pretest scores of both groups (experimental and control) were relatively comparable, although the experimental group had a minimal numerical advantage. This indicates that the initial knowledge of students from both groups was quite similar before the intervention.

However, a significant change occurred at the post-test stage after the implementation of the intervention. The experimental group showed a significant improvement in the average post-test scores, while the control group experienced a lower increase. This striking difference indicates that the teaching method or

strategy applied to the experimental group had a greater positive impact on improving the English language abilities of students compared to the control group.

Playing online language games is indeed very entertaining. When students are interested in playing, it can boost their confidence and self-esteem in understanding English. Therefore, it is recommended that teachers incorporate online games into their English teaching methods. It is important for educators to effectively leverage technology to enhance learning efficiency. Overall, with the rapid advancement of technology and the widespread use of gadgets, students can reap significant benefits through game-based learning. Thus, this conclusion confirms that educational gamification can be an effective tool in enhancing students' English language learning, but further research is needed to deepen the understanding of its impact and the factors involved.

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