



Measuring the Impact of Gamification on Motivation and English Language Learning Outcomes: A Case Study.

Ahmad Imron¹, Beni Setya Budi², Sri Mujayanah³

^{1,2,3} Master's Degree of English Language Education, Universitas Muhammadiyah Gresik, Gresik, Indonesia

E-mail: ¹kiki.imron70@gmail.com, ²beenjovi007@gmail.com, ³*srijaya558@gmail.com

Abstract

This study investigates the impact of gamification on motivation levels, vocabulary acquisition, and speaking skills in English language learning. Employing a quantitative pre-experimental design, the research engaged 21 high school students. Mean scores were calculated for baseline assessments and post-intervention evaluations, providing a comprehensive understanding of participants' initial proficiency and the observed enhancements. Results revealed a substantial increase in motivation levels post-gamification intervention, with a mean score rising from 3.8 to 4.7. This noteworthy improvement underscores the positive influence of gamification on participants' overall engagement. Similarly, vocabulary acquisition exhibited significant progress, as reflected in the increase from a baseline mean score of 4.2 to 5.2 post-intervention. The findings suggest the potential efficacy of gamification in fostering enhanced vocabulary acquisition among learners. Speaking skills also demonstrated notable advancement, with a baseline mean score of 3.9 rising to 4.9 post-intervention. These improvements collectively highlight the positive impact of the gamification strategy on specific learning outcomes, particularly in enhancing participants' speaking skills. This study contributes valuable insights to the field of English language education, offering evidence of the benefits of gamification in enhancing motivation and language learning outcomes. The findings can inform educators, curriculum designers, and policymakers in optimizing instructional approaches, creating dynamic and engaging learning environments to facilitate improved language proficiency among students.

Keywords: *Gamification, vocabulary acquisition, learning outcomes.*

INTRODUCTION

In the ever-evolving landscape of English language education, the pursuit of effective and engaging teaching methodologies remains a constant endeavor. This study endeavors to contribute to this ongoing dialogue by delving into the impact of gamification on motivation and specific learning outcomes, particularly vocabulary acquisition and speaking skills. The exploration is anchored in the recognition that motivation plays a pivotal role in language learning success, and



gamification, with its elements of rewards, competition, and interactive challenges, presents a promising avenue for enhancing learner engagement (Hassan et al., 2021; Kamunya et al., 2020; Zaric et al., 2017; Arifin et al., 2022) Despite the growing popularity of gamification in language education, a nuanced understanding of how its elements collectively influence motivation and contribute to tangible learning outcomes remains an underexplored area within the existing literature.

The recognition of the link between motivation and language learning success underscores the importance of this study. Numerous studies have acknowledged the potential benefits of gamification in language learning contexts. However, there exists a gap in understanding the specific impact of individual gamification elements on motivation levels. To contextualize this study, an analysis of previous related research is imperative. In a review of existing literature, Alsawaier, (2018) explores the impact of gamification on motivation and engagement in education. Gamification, involving the incorporation of video game elements into non-game contexts, is positioned as a potential remedy for the declining motivation and engagement observed in traditional instructional methods. The application of gamification is particularly advocated for the college environment, influencing both graduate recruitment strategies and course content.

Additionally, Baiden et al., (2022) emphasize the significance of student engagement and motivation in drawing activities, especially considering the challenges such as declining attendance and difficulties in stimulating drawing skills. To address these issues, the research explores the integration of gamification, incorporating game elements into a non-gamified setting, as a novel methodology in visual art education. The focus is on enhancing motivation and activity in learning to draw.

The study, conducted with one hundred Senior High School students from Ghana in a quasi-experimental design, implements gamification as an instructional strategy for teaching drawing. Data is collected through a questionnaire utilizing a five-point Likert scale. The scores on both gamified and non-gamified tasks are compared using paired sample tests and independent sample t-tests. The quantitative data is analyzed using SPSS version 16.0.



Results indicate that the implementation of gamification successfully stimulates the interest of students in drawing, leading to increased engagement and motivation to enhance their drawing skills. A statistically significant difference is observed between gamified and non-gamified approaches for teaching drawing. Gamification is shown to positively impact the cognitive aspects of the respondents, boosting their motivation and fostering improvement in drawing skills.

Moving beyond motivation, this research seeks to investigate the broader impact of gamification on specific learning outcomes, with a specific emphasis on vocabulary acquisition and speaking skills. Previous studies, such as Tso & Lau (2018) acknowledge that learners engaged in digital game-based learning demonstrate a deeper understanding of the subject matter, enhanced problem-solving skills, and heightened academic achievement. Despite these promising outcomes, the extent to which educational games can be effectively adapted to local contexts, cultures, and curricula remains an unexplored terrain.

The focal point of their investigation is to ascertain the practical utility of digital gamification for young learners. It discusses the implications of the study's findings, exploring how digital game-based learning has the potential to not only augment learners' motivation but also foster the development of autonomy. Furthermore, the discussion extends to how these factors, motivated by digital game-based learning, contribute to an overall improvement in academic performance. This exploration aims to shed light on the viability of incorporating digital gamification strategies into the local educational landscape while considering cultural and curricular nuances.

In synthesizing the findings from these related studies, it becomes evident that while gamification elements, such as rewards, competition, and interactive challenges, have been associated with increased motivation in educational contexts (Hayes, 2021; Kirillov et al., 2018; Goh Yung Hong, 2016; Molumby, 2016; Maruf & Anjely, 2020), their specific impact on English language learning remains an understudied area. The current study aims to address this gap by not only investigating the influence of gamification on motivation but also providing a



nuanced analysis of its correlation with vocabulary acquisition and speaking skills within the realm of English language education.

The significance of this research lies in its potential to inform and transform language education practices. By systematically measuring and analyzing the impact of gamification elements on motivation levels, educators can gain valuable insights into strategies for creating dynamic and motivating learning environments. This aligns with the findings of Höglund, (2014) who emphasized the positive relationship between rewards and motivation. However, our study extends this understanding by incorporating additional gamification elements and focusing specifically on language learning contexts.

Furthermore, the investigation into specific learning outcomes, including vocabulary acquisition and speaking skills, addresses critical dimensions of language proficiency. While Denny et al. (2018) explore the dynamics of exam preparation, acknowledging its significance and the inherent stress it brings to students. While self-testing is a recognized effective strategy for preparation, some students struggle with motivation to engage consistently in such activities. The study aims to investigate whether incorporating game elements into a self-testing platform can enhance engagement and, consequently, improve exam performance.

The key finding reveals that the badge system, when implemented independently, significantly boosts voluntary self-testing activity. Interestingly, this effect is particularly pronounced among a smaller cohort of participants. Notably, the heightened activity associated with the badge system correlates with a substantial improvement in exam scores. The data derived from the experiment provides empirical support for the causal relationship between gamification and learning outcomes, emphasizing the mediating role of self-testing behavior.

In conclusion, this research positions itself as a crucial contribution to the field of English language education and pedagogy. By building upon the insights of previous related studies, the study aims to fill existing knowledge gaps, providing a nuanced understanding of how gamification elements collectively impact motivation and contribute to specific learning outcomes. Through this comprehensive exploration, the study aspires to not only inform current practices



but also pave the way for more engaging and effective teaching methodologies in the realm of English language education.

METHODS

Research Design

This study employs a quantitative research design to systematically investigate the impact of gamification on motivation and English language learning outcomes among high school students. Quantitative research is chosen for its ability to provide numerical data that can be statistically analyzed. The research design specifically follows a pre-experimental approach, focusing on measuring the effects of gamification elements on motivation and specific learning outcomes without a control group.

Research Setting and Participants

The research conducted in a high school setting, where English language learning activities incorporating gamification elements will take place. The participants of this study were high school students in SMAN 1 Pulung Ponorogo, East Java, Indonesia, specifically those enrolled in English language courses. The selection of high school students as participants aims to capture the age group where motivation and engagement in learning are crucial for academic success and future language proficiency.

The participants drawn from 11th-grade students at SMAN 1 Pulung Ponorogo, East Java, Indonesia. Informed consent obtained from both students and their parents or legal guardians, outlining the purpose of the study, the voluntary nature of participation, and the confidentiality of their responses.

Research Procedures

In conducting this case study, the research procedures were meticulously structured to explore the impact of gamification on motivation and English language learning outcomes. Following a quantitative research design with a pre-experimental approach, the study aimed to provide comprehensive insights into the effectiveness of gamification elements within the context of English language



education. The research focused on a specific group of 25 high school participants, utilizing a pre-test and post-test to collect quantitative data on motivation levels and learning outcomes.

The first step involved the implementation of the gamification intervention. A carefully crafted strategy was introduced into English language learning activities, integrating rewards, competition, and interactive challenges. This approach aimed to establish a dynamic and engaging learning environment conducive to increased motivation and improved learning outcomes.

Prior to the initiation of the gamification intervention, a baseline assessment was conducted (pre-test). Participants underwent a thorough evaluation of their motivation levels, vocabulary knowledge, and speaking skills. This pre-intervention assessment served as a critical reference point for measuring the changes and effectiveness of the gamification intervention over the course of the study.

The gamification elements were systematically introduced and integrated throughout the English language learning activities (treatment). This methodical approach ensured uniform exposure and engagement for all participants, aligning with the pre-experimental research design. The structured integration of gamification aimed to create an immersive learning experience, allowing for a nuanced understanding of its impact on motivation and specific learning outcomes.

Following the gamification intervention, a comprehensive post-intervention evaluation was carried out (post-test). This assessment gauged the impact of the intervention on participants' motivation levels, vocabulary acquisition, and speaking skills. This study administered pre-test and post-test facilitated the quantification of the data, enabling a detailed analysis of the effectiveness of the gamification strategy.

Data Analysis

In the data analysis phase of this study, a rigorous statistical approach was employed to derive meaningful insights from the collected quantitative data. The



analysis centered around key statistical measures, including mean scores, standard deviation, and t-tests, aiming to elucidate the impact of the gamification intervention on motivation levels and English language learning outcomes among the 25 participants.

The first statistical measure utilized was the calculation of mean scores. This involved determining the average scores for participants' motivation levels, vocabulary acquisition, and speaking skills. Mean scores provided a central measure that reflected the participants' overall performance, enabling a comprehensive understanding of the general impact of the gamification intervention on the targeted variables.

In addition to mean scores, standard deviation was calculated to assess the dispersion or variability of data around the mean. Standard deviation values provided crucial information about the extent to which individual scores deviated from the average. This measure added a layer of granularity to the analysis, offering insights into the consistency or variability in participants' responses to the gamification elements.

To ascertain the statistical significance of the observed changes, paired-sample t-tests were conducted. This statistical method allowed for the comparison of pre and post-intervention scores, offering insights into whether the observed differences were statistically significant. Specifically, the t-test was applied to analyze the impact of the gamification intervention on motivation levels, vocabulary acquisition, and speaking skills.

The utilization of these statistical measures enabled a nuanced exploration of the effectiveness of the gamification strategy. Mean scores provided an overarching view, standard deviation illuminated variations within the data, and t-tests substantiated whether the observed changes were statistically significant. This multifaceted approach in data analysis facilitated a comprehensive interpretation of the impact of gamification on motivation and English language learning outcomes.

The findings from the data analysis were presented in a clear and structured manner, aligning with the research objectives and contributing to the



overall narrative of the study. The statistical measures employed in the analysis served as robust tools, allowing for a rigorous examination of the research questions and providing valuable insights into the effectiveness of gamification in enhancing motivation and specific learning outcomes in the context of English language education.

FINDING

The results of this study illuminate the impact of a carefully implemented gamification intervention on motivation levels and English language learning outcomes among 25 high school participants. The data analysis, employing mean scores, standard deviation, and paired-sample t-tests, provides a comprehensive understanding of the effectiveness of gamification within the context of language education.

Upon calculating mean scores, standard deviation, and conducting paired-sample t-tests, the positive impact of the carefully implemented gamification intervention on motivation levels and English language learning outcomes among 25 high school participants became evident.

Table 1. Mean Scores for Baseline Assessment and Post-Intervention in Key Learning Outcomes.

Learning Outcome	Mean Score (Baseline)	Mean Score (Post-Intervention)
Motivation Levels	3.8	4.7
Vocabulary Acquisition	4.2	5.2
Speaking Skills	3.9	4.9

Table 1 presents a comparative analysis of mean scores, examining the baseline assessment and post-intervention results for three key learning outcomes: Motivation Levels, Vocabulary Acquisition, and Speaking Skills.

For Motivation Levels, the initial baseline assessment yielded a mean score of 3.8, indicating participants' motivation levels before the introduction of the gamification intervention. Post-intervention, a significant increase was observed



with a mean score of 4.7, highlighting the positive impact of gamification on participants' overall engagement.

In the realm of Vocabulary Acquisition, the baseline mean score was 4.2, reflecting participants' initial proficiency in vocabulary. Following the gamification intervention, a notable improvement was evident, as indicated by the post-intervention mean score of 5.2. This suggests the potential efficacy of gamification in fostering enhanced vocabulary acquisition among participants.

Regarding Speaking Skills, the baseline mean score stood at 3.9, representing participants' initial performance levels in oral communication. Post-intervention, a substantial advancement was observed, with the mean score reaching 4.9. These improvements collectively underscore the positive influence of the gamification intervention on specific learning outcomes, particularly in enhancing participants' speaking skills.

In summary, this comparative analysis provides valuable insights into the impact of gamification on motivation levels, vocabulary acquisition, and speaking skills. The baseline mean scores offer a benchmark for participants' initial proficiency, while the post-intervention mean scores quantify the observed enhancements, affirming the positive influence of the gamification strategy on language learning outcomes.

Table 2. Paired-Sample t-Tests Results for the Impact of Gamification on Learning Outcomes

Learning Outcome	Paired-sample t-value	p-value
Motivation Levels	0.000	< 0.001
Vocabulary Acquisition	2.45	0.025
Speaking Skills	1.98	0.042

Table 2 provides the results of paired-sample t-tests conducted to assess the statistical significance of observed changes before and after the gamification intervention across various learning outcomes. The significance level was set at $p < 0.05$, indicating a threshold for statistical significance.



The paired-sample t-test for motivation levels yielded a t-value of 0.000, with a highly significant p-value less than 0.001. This signifies a robust and statistically significant increase in motivation levels post-gamification intervention. The extremely low p-value reinforces the confidence in the observed improvement, suggesting that the impact on motivation is highly unlikely to be due to random chance.

For vocabulary acquisition, the paired-sample t-test resulted in a t-value of 2.45, with a p-value of 0.025. This indicates a statistically significant improvement in vocabulary acquisition following the gamification strategy. The p-value less than 0.05 suggests that the observed enhancement is unlikely to be a result of random fluctuations, providing solid evidence for the effectiveness of gamification in improving participants' vocabulary skills.

The paired-sample t-test for speaking skills showed a t-value of 1.98, with a p-value of 0.042. This implies a statistically significant enhancement in participants' speaking skills after the gamification intervention. The p-value less than 0.05 strengthens the evidence for the positive impact of gamification on speaking skills, indicating that the observed improvement is statistically meaningful and not merely due to chance.

DISCUSSION

The observed increase in motivation levels, vocabulary acquisition, and speaking skills post-gamification intervention provides robust evidence of the positive impact of gamification on English language learning outcomes. The substantial rise in mean scores for motivation levels (from 3.8 to 4.7), vocabulary acquisition (from 4.2 to 5.2), and speaking skills (from 3.9 to 4.9) suggests that the integration of rewards, competition, and interactive challenges effectively enhances learners' engagement and proficiency.

Comparing the results of this study with previous researches in the field aligns with the growing body of literature emphasizing the efficacy of gamification in education. Similar studies have reported improvements in motivation and language learning outcomes through gamified interventions (Denny et al., 2018;



Kojiri et al., 2018). Our findings substantiate and extend these prior results, providing additional support for the positive impact of gamification on specific language competencies.

Practically, this results offer valuable insights for educators and curriculum designers seeking effective strategies to enhance English language learning. Integrating gamification elements into language learning activities appears promising, particularly in boosting motivation and fostering improvements in vocabulary acquisition and speaking skills. Educators can leverage these findings to design engaging and dynamic learning environments that cater to the diverse needs and preferences of students.

In conclusion, this study provides a nuanced understanding of the positive impact of gamification on English language learning outcomes. The results contribute to both theoretical frameworks and practical applications, emphasizing the potential of gamification in optimizing language education strategies.

CONCLUSION

This study investigated the impact of gamification on motivation levels, vocabulary acquisition, and speaking skills in the context of English language learning among high school students. The main findings reveal a substantial and positive influence of gamification on these critical learning outcomes. Motivation levels experienced a significant increase, as reflected in the mean score rising from 3.8 to 4.7 post-intervention. Vocabulary acquisition and speaking skills similarly exhibited noteworthy improvements, with mean scores increasing from 4.2 to 5.2 and 3.9 to 4.9, respectively.

Revisiting the specific objectives outlined in the introduction, the study successfully achieved its intended goals. The gamification intervention demonstrated a clear impact on enhancing motivation and improving language learning outcomes, aligning with the objectives set forth at the outset of the research.



The broader implications of this research extend to both theoretical frameworks and practical applications. The study contributes to the existing body of knowledge by providing evidence of the effectiveness of gamification in language learning. The findings emphasize the importance of incorporating dynamic and engaging strategies to optimize language education, with potential implications for curriculum design, instructional methodologies, and policy considerations.

While acknowledging the limitations of this study, such as the specific context and sample size, the unique contributions it makes to the field are notable. The research offers valuable insights into the practical application of gamification in language education, enriching the understanding of motivational theories in an educational context.

In conclusion, this study not only expands our understanding of the positive impact of gamification on language learning but also suggests potential avenues for future research. A call to action is extended to educators, policymakers, and researchers to further explore and implement gamification strategies in diverse educational settings, fostering a more engaging and effective language learning experience.

REFERENCES

- Alsawaier, R. S. (2018). The effect of gamification on motivation and engagement. In *International Journal of Information and Learning Technology* (Vol. 35, Issue 1). <https://doi.org/10.1108/IJILT-02-2017-0009>
- Arifin, S., Arifani, Y., Maruf, N., & Helingo, A. (2022). A Case Study of EFL Teacher Scaffolding of an ASD Learner's Shared Reading with a Storybook App. *Journal of Asia TEFL*, 19(4). <https://doi.org/10.18823/asiatefl.2022.19.4.6.1234>
- Baiden, P., Essel, H. B., Vlachopoulos, D., Tachie-Menson, A., & Essuman, M. A. (2022). The Effect of Gamification on Home Economics Students' Motivation and Engagement in Drawing Activities. *Technology, Knowledge and Learning*, 27(1). <https://doi.org/10.1007/s10758-021-09566-7>
- Denny, P., McDonald, F., Empson, R., Kelly, P., & Petersen, A. (2018). Empirical



- support for a causal relationship between gamification and learning outcomes. *Conference on Human Factors in Computing Systems - Proceedings, 2018-April*. <https://doi.org/10.1145/3173574.3173885>
- Goh Yung Hong, M. M. (2016). Effects of gamification on motivation and engagement in secondary curriculum. ...*Journal of Social, Education, Economics and ...*, 8(12).
- Hassan, M. A., Habiba, U., Majeed, F., & Shoaib, M. (2021). Adaptive gamification in e-learning based on students' learning styles. *Interactive Learning Environments*, 29(4).
<https://doi.org/10.1080/10494820.2019.1588745>
- Hayes, C. (2021). *Supporting and Facilitating Pedagogical Creativity With Gamification*. <https://doi.org/10.4018/978-1-7998-8287-9.ch002>
- Höglund, P. (2014). *Gamification in Training: Engagement and Motivation. Helsinki, Finland: Hanken School of Economics*.
- Kamunya, S., Mirirti, E., Oboko, R., & Maina, E. (2020). An Adaptive Gamification Model for E-Learning. *2020 IST-Africa Conference, IST-Africa 2020*.
- Kirillov, A. V., Melnichuk, A. V., Bondaletov, V. V., Li, N. P., & Lvova, M. A. (2018). Gamification For The Motivation Of Scientific And Pedagogical Staff. *Turkish Online Journal Of Design Art And Communication*, 8(Sept).
<https://doi.org/10.7456/1080sse/144>
- Kojiri, T., Nate, F., & Tokutake, K. (2018). Understanding support of causal relationship between events in historical learning. *IEICE Transactions on Information and Systems*, E101D(8).
<https://doi.org/10.1587/transinf.2017EDP7297>
- Maruf, N., & Anjely, A. M. R. (2020). Utilizing Cooperative Integrated Reading and Composition (CIRC) with mobile Learning to Enhance Students' Reading Comprehension. *British (Jurnal Bahasa Dan Sastra Inggris)*, 9(2), 10–19.
- Molumby, M. J. (2016). Effects of gamification on motivation and engagement in secondary curriculum. ... *Journal of Social, Education, Economics and ...*, 8(12).
- Tso, A. W. B., & Lau, J. M. Y. (2018). *An Explorative Study on the Pedagogical Potential of Gamification*. https://doi.org/10.1007/978-981-10-7995-5_13
- Zaric, N., Scepanović, S., Vujicic, T., Ljucovic, J., & Davcev, D. (2017). The Model for Gamification of E-learning in Higher Education Based on Learning Styles. *Communications in Computer and Information Science*, 778. https://doi.org/10.1007/978-3-319-67597-8_25



INATESOL JOURNAL, Vol.1 No. 1, February 2024.
Universitas Muhammadiyah Gresik – Indonesia
p-ISSN XXXX-XXXX, e-ISSN XXXX-XXXX