



The Influence of Gamification and Student Engagement Models on Students' Language Literacy Skills

Farida Ariani¹, Nora Afnita²

^{1,2}Tarbiyah, Institut Agama Islam Sumatera barat, Pariaman, Indonesia

E-mail: ¹arianifarida148@gmail.com*, ²noraafnita12@gmail.com

*Corresponding Author

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ABSTRACT

The education sector has witnessed significant technological advancements, leading to a shift from traditional teaching methods to digital systems. Technology-based learning has been introduced to address the issue of limited study time for students through self-directed learning. To foster students' creative thinking, it is essential to incorporate enjoyable learning methods, such as gamification. The use of digital-based gamification in language learning has become the latest trend in schools, simplifying the teaching and learning process by focusing on active student engagement and improved learning outcomes. This research aims to measure the influence of digital-based gamification models and student involvement on the language literacy skills of class VIII students at Madrasah Tsanawiyah Kota Pariaman. The study utilizes a quasi-experimental approach with a 2x3 factorial design and employs the Student Engagement in School Questionnaire and the Student Language Literacy Skills Test as instruments with a sample of 99 students. The results show that there is an influence of the gamification model and student involvement on language literacy skills. The interaction effect between gamification and student engagement on language literacy skills was observed to show an increase in students' language literacy skills. Gamification creates a fun and competitive learning environment, fostering high motivation for academic success. It is recommended that Madrasah teachers use a digital-based gamification model tailored to students' needs for digital learning media and flexible study times to increase student engagement and improve learning outcomes.

Keywords: *Gamification, Student Engagement, Language Literacy Skills*



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INTRODUCTION

The quality of learning related to students' competency achievement has not yet met the desired expectations (Fitri, 2021). In its implementation, many teachers are still found to conduct learning focusing solely on delivering information to students. Several factors causing the suboptimal quality of learning are the lack of teachers' ability to meet the learning needs of Generation Z students who are accustomed to technology-driven lives. Secondly, many students experience difficulty in understanding learning concepts outside the classroom. And thirdly, the learning concepts applied by teachers are not sufficiently relevant to the needs of technologically savvy students (Mustaji, 2012).

The traditional problems that are still important today include the dominance of teachers in delivering materials, strict time management, the creation of inflexible learning environments, and the emphasis on listening and note-taking activities. These factors negatively affect student engagement in the learning process, both in the classroom and during student-teacher interactions when completing tasks outside of class. This often results in a lower quality of the learning process and outcomes for students.

During our initial survey at Madrasah Tsanawiyah Pariaman, we found that students at MTsN 1, 2, and 3 showed low participation and interest in learning the Indonesian language. Most students were not very active in class discussions, showed little interest in reading, and lacked motivation to write. Based on these findings and discussions with Indonesian language teachers, we identified the need for a more engaging and appealing teaching approach to prevent students from feeling bored with traditional lecture methods.

One approach to improve student participation in classroom discussions is to provide both individual and group tasks that can create an engaging learning environment where all students are actively involved. This can be achieved through the implementation of gamified learning models (Gulinna & Lee, 2020)

Gamification models can effectively enhance student engagement (Rivera & Garden, 2021). This research aims to measure the impact of gamification and student involvement on their language literacy skills. By integrating gaming elements and challenges into learning, such as using digital-based Kahoot! games via mobile phones (Tan Ai Lin et al., 2018), technology-based learning innovations are considered suitable for today's Generation Z students (Hastini et al., 2020). This approach encourages students to actively participate in the learning process. The gamification model is expected to significantly improve students' literacy skills, making Indonesian language learning a more engaging and interactive experience.

Tundjungsari (2020) found that using mobile learning in digital gamification-based learning apps has the potential to improve students' motivation in learning programming languages. (Su & Cheng, 2015) stated that incorporating mobile technology and gamification into the botany learning process can lead to better learning performance and higher levels of motivation compared to traditional learning methods. There is a positive relationship between academic achievement and motivation. (Durão et al., 2019) discovered that lecturers' perceptions in higher education institutions in Southern Europe, South America, and Asian countries about the use of mobile technologies such as gamification and augmented reality significantly contribute to increasing motivation and academic performance, as more flexible learning supports student engagement both inside and outside the classroom. (Al Amri & Almaiah, 2020) concluded that mobile learning has been proven to enhance student engagement and learning outcomes as this model provides a fun, engaging, and flexible learning environment with facilities that allow students to learn anytime and anywhere.

The use of Information and Communication Technology (ICT) can support gamification-based learning activities and provide digital learning resources easily accessible to students. The development of mobile technologies, such as mobile devices, computing, and wireless networks, has sped up the implementation of learning concepts using these devices (Cheng & Zhu, 2021).

Numerous studies suggest that using mobile learning can improve student participation and provide flexibility in the learning process. In addition to using instructional materials in formal settings, teachers can also promote lifelong learning by using various technological devices (Kattayat et al., 2017). Jin (2017) claims that mobile phone usage not only enhances student performance and positively influences the learning process but can also lead individuals towards negative activities if the learning model is inappropriate, ultimately decreasing students' academic productivity. Furthermore, the integration of mobile phones into learning can result in cognitive overload if the instructional model is not tailored to

students' needs (Chu, 2013). Therefore, efforts are needed to maximize the use of mobile phone technology by developing digitally-based gamified learning models that meet students' needs and create an enjoyable and effective learning environment.

The research stands out from previous studies due to its focus on personalization and adaptation in applying gamification. The developed model can pinpoint the individual needs and understanding levels of each student. This allows for the creation of customized challenges or tasks based on students' competency levels, ensuring that the material they receive is neither too easy nor too difficult. As a result, students' engagement in language learning significantly increases. The research's novelty lies in the development of a digitally-based gamification model for learning environments. This technology is expected to provide a more engaging and profound learning experience by integrating game elements with language learning to enhance students' literacy skills as measured by their learning outcomes. By gaining a deeper understanding of these factors, gamification models can be better tailored to motivate madrasah students and address any barriers they may face during the language learning process.

The gamification model in learning has several advantages. It can increase student engagement because game elements, such as points, challenges, and rewards, make the learning process more interesting and enjoyable (Duggal et al., 2021). In gamified learning models, students have the opportunity to actively participate in the learning process, both inside and outside the classroom (Panmei & Waluyo, 2022). Moreover, it encourages students' intrinsic motivation for self-directed learning, as they feel challenged and driven to achieve high scores and win games (Zainuddin, 2018). Additionally, gamification can enhance memory retention and understanding of the subject matter, as students learn through interactive and repetitive experiences (Saleem et al., 2022). Lastly, gamification creates a competitive and collaborative learning environment where students support each other and work together to achieve common goals (Uz Bilgin & Gul, 2020).

In this study, we propose to develop a digitally-based gamified learning model aimed at enhancing the engagement and language literacy skills of Madrasah Tsanawiyah students in the city of Pariaman. Through the development of this model, we hope to improve student learning outcomes, address the learning loss issues in conventional education experienced by the Z generation during the pandemic, and fulfill the students' need for a technology-based mobile smartphone learning environment. The research will focus on the following questions: 1) Is there a difference in literacy skills between students who follow the gamified and conventional learning models? 2) Are there differences in literacy skill improvement among students with high, moderate, and low engagement levels? and 3) Is there an interaction between the model and student engagement regarding students' language literacy skills?"

METHODS

Research Design

This study uses a quasi-experimental design to explore the impact of gamified learning models and student engagement on learning outcomes. The research design is a non-equivalent control group factorial 2 x 3 design, which tested two methods, gamification, and the conventional method, along with three levels of student engagement: high, medium, and low. Instead of random assignment, predetermined experimental and control classes are used (Creswell W, 2014). For additional clarity, please see the conceptual framework in Figure 1.

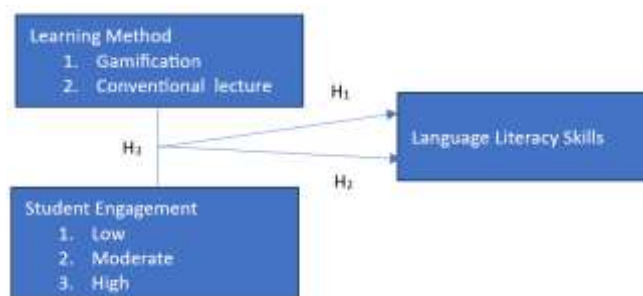


Figure 1. Conceptual Framework of the Research

Research Sample

The study included all eighth-grade students of Madrasah Tsanawiyah in MTsN 1, 2, and 3 Pariaman. Two classes were randomly chosen as samples for the study based on the research design (Setyosari, 2016). In the three schools, students were divided into a control class and an experimental class. A total of 99 students from the three schools were selected as research samples: 51 students for the control group and 48 students for the experimental group. The final sample comprised 99 students, divided into two groups: the experimental class and the control class, from the three schools under study. All selected students were initially ensured to have similar abilities based on their report card grades. Through a randomization method, the experimental and control classes were determined in each of the three schools. In each school, 17 students were selected for the control class, and 16 students were selected for the experimental class. All samples were considered eligible as they had fully participated in the entire classroom learning process, while students who did not fully participate in the learning activities were excluded from the final sample.

Data Collection

The study employs observation sheets, student engagement questionnaires, and learning tests as its primary instruments. Observation sheets are used to monitor the behaviors of both teachers and students during the learning process. Student engagement is measured through questionnaires, while students' literacy skills are assessed through summative tests. The literacy skills in the language are evaluated using a summative test that consists of multiple-choice questions. Each correct answer is given one point, and each incorrect answer receives zero points. Before administering the test questions, an analysis of the difficulty level is conducted to ensure the appropriateness of the questions.

The questionnaire used in this study was adapted from (Hart et al., 2011) and was based on the Student Engagement in Schools Questionnaire (SESQ). The researchers developed indicators of student engagement, which were then expanded into 20 statement items. These indicators included behavior engagement, emotional engagement, and cognitive engagement. Out of the 22 question items, 20 were deemed valid, while 2 were not. To ensure the reliability of the questionnaires used, the researchers calculated Cronbach's Alpha for both instruments. The Cronbach's Alpha value obtained for the SESQ was 0.926, indicating a high level of reliability and validity.

Procedures and Data Analysis

The research began by obtaining permission from the principals of MTsN 1, 2, and 3 in Pariaman City. After receiving permission, the initial step involved observing the teaching and learning activities conducted by Indonesian language teachers in the eighth-grade classrooms. Before distributing the Student Engagement questionnaire, all statement items in the questionnaire were tested for validity and reliability (Rose & Johnson, 2020). The students took

approximately 25 minutes to complete their responses using the Likert scale (e.g., 1= never, 5 = always). After collecting the students' engagement data, the levels of behavioral, emotional, and cognitive engagement for each student were tabulated based on their responses about their experiences of actively participating in the learning process.

In collaboration with teachers, researchers analyzed student engagement and grouped the responses into high, moderate, and low categories. The experimental class had 16 students in each category, while the control class had 17 students in each category. We then taught the persuasive text subject using a gamification model in the experimental class and a conventional model in the control class. This teaching approach was carried out for 6 sessions, after which a summative test was conducted to assess the learning outcomes. Following data collection, a Two-Way ANOVA test was used to analyze the data and address the research question hypothesis.

RESULTS AND DISCUSSION

Results

Student Engagement

The achievement of student engagement after participating in gamified learning using Kahoot! application is demonstrated as follows:

Table 1. Student Engagement in Gamification Learning

Number	Indicator	Likert Scale	Percentage	Level
Behavioral Engagement				
1	I participate actively by answering questions, presenting new ideas, and engaging in discussions effectively in class.	4.47	89.5	High
2	In learning Indonesian, I am actively involved in group discussions when the teacher applies the gamification model.	4.39	87.9	High
3	I am enthusiastic about asking questions and conveying new ideas to the teacher regarding the gamification steps in Indonesian language learning that the teacher applies	4.17	83.4	High
4	I evaluate every challenge I encounter when working on reading, listening, communicating, and writing explanatory and persuasive texts.	4.34	86.8	High
5	I actively participated in explanatory text writing exercises given by the teacher using the gamification model.	3.08	61.6	Moderate
6	I diligently looked for information on tips and strategies for writing explanatory and persuasive texts while taking gamification classes.	4.44	82.9	High
7	I actively asked the teacher about how to write explanatory text and persuasive communication	4.29	86.8	High
8	I am very interested in participating in game-based learning activities in class	4.20	83.9	High
	Average	4.17	82,85	High
Emotional Engagement				
9	I try harder to win the game by completing the tasks given by the teacher	3.07	61.3	Moderate
10	I felt satisfied and challenged when working on a gamification-based Indonesian language learning essay assignment in class	4.04	80.8	High
11	I enjoy collaborating in completing Indonesian language assignments to compete and try to win every game given by the teacher in completing the assignments given	4.41	88.2	High

12	I enjoy following the Gamification teaching approach because it is interesting and enjoyable	3.18	63.7	Moderate
13	I feel happy when winning in Kahoot games in writing and comprehending explanatory and persuasive text games	4.43	88.7	High
14	I am very enthusiastic about being actively involved in learning because I want to always win in every game session that I play when learning to collect vocabulary in writing explanatory texts.	4.26	85.3	High
Average		3.90	78.00	Moderate
Cognitive Engagement				
15	I was very focused during my studies, especially in mastering the techniques of writing explanatory text and persuasive communication.	4.28	86,5	High
16	I enjoy participating in gamification learning because there are challenges in each assignment session given	3.04	60.8	Moderate
17	The gamification model proved to be very interesting and encouraged me to be actively involved in learning both in class and outside of class (completing assignments at home)	4.39	87.9	High
18	I am very excited and enthusiastic about participating in class learning because there are exciting game sessions for every assignment given by the teacher	4.25	85	High
19	I enjoy competing with my friends in a race to see who can complete the task of writing explanatory text faster	4.26	85.5	High
20	I am present and actively involved in discussions in class	4.12	82.4	High
Average		4.06	81,35	High
Total		4.04	80.73	High

Table 1 presents data indicating that the average student engagement is 4.04 in the high category, with an achievement percentage of 80.73%. This suggests that students who participate in gamified learning using Kahoot! can improve their engagement in learning. The data also shows that the highest average score for student curiosity behavior occurred in the high category, with item number one having a Likert scale average of 4.47 and an achievement of 89.5%. The fourth indicator item, "I evaluate every challenge I encounter when working on reading, listening, communicating, and writing explanatory and persuasive texts," had an average score of 4.34 and a total achievement of 86.8%. These scores indicate that the indicators of student engagement behavior in Indonesian language learning fall in the high category. Similarly, the fifth item had an average of 3.08 and an achievement of 61.6%, suggesting that student engagement in learning explanatory and persuasive texts using gamification models is very active. Overall, the Likert scale behavior measurements are in the high category, with an average of 4.17 and an achievement of 82.85%.

In the emotional attachment sub-variable, item number 13 received the highest score, indicating that students feel happy when winning in Kahoot games related to writing and comprehending explanatory and persuasive text. The average student engagement through this application was 4.43, with a total achievement of 89.5%. This shows that students enjoy participating in Indonesian language learning using the Gamification model with the Kahoot application. On the other hand, item number nine received the lowest score, with an average of 3.07 and an achievement of 61.3%. This suggests that students state that they strive to win the game in completing tasks given by the teacher, falling into the moderate category from an emotional perspective. Overall, students' emotional engagement averages 3.90, with a total respondent achievement of 78.0%, placing it in the moderate criteria.

In terms of cognitive engagement, item 17 stands out with the highest Likert scale average of 4.39, indicating 87.9% agreement. This item reflects the belief that gamification

models are highly engaging and promote active involvement in learning, both inside and outside the classroom, especially when completing homework. Items 15 and 19 follow closely behind with average Likert scale ratings of 4.26 and 4.28, and agreement percentages of 86.5% and 85.5% respectively. These items are related to seeking solutions when faced with difficulties, often through seeking help from teachers or friends and reading books. This demonstrates a high level of cognitive engagement. On the other hand, item 16 received the lowest Likert scale average of 3.04, indicating 60.8% agreement with the statement "I enjoy participating in gamified learning because there are challenges in every task session provided." This puts the item in the moderate category. Overall, the cognitive engagement indicator has an average of 4.04, with an 80.73% agreement falling within the main criteria.

Students' Literacy Skills

The graph below presents research findings on the impact of implementing the gamification model on students' language literacy skills.

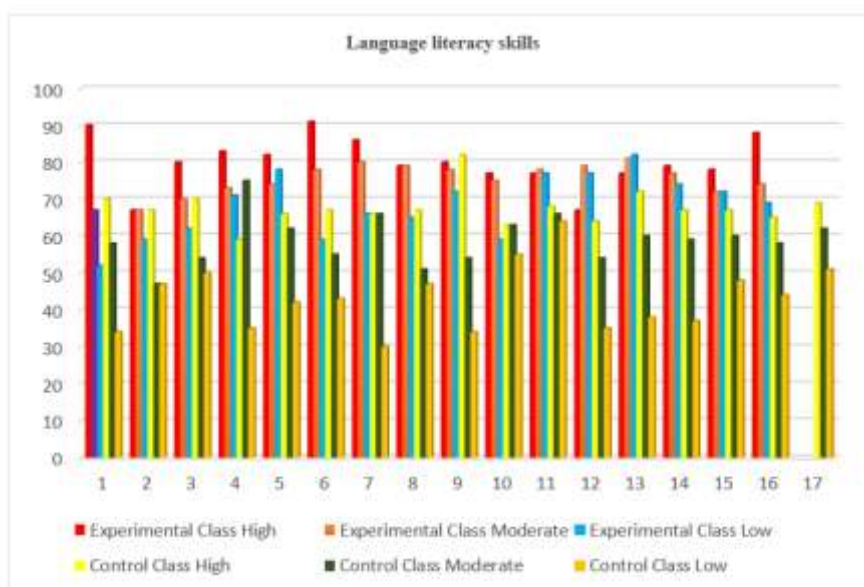


Figure 2. Students' Language Literacy Scores

The information shown in Figure 1 indicates that the language literacy proficiency scores of the experimental class students are higher compared to the average language literacy learning outcomes of the control class students. For more detailed information, please refer to the table 2.

Table 2. Descriptive Statistical Analysis

	GM-SE High	GM-SE Moderate	GM-SE Low	Convent-SE High	Convent-SE Moderate	Convent-SE Low
N	Valid 16	16	16	17	17	17
Mean	80.0625	75.1250	68.3750	67.5882	59.0588	43.1765
Std. Deviation	2.85535	1.41022	2.49215	1.75735	2.57144	2.93193
Minimum	67.00	67.00	52.00	59.00	47.00	30.00
Maximum	91.00	81.00	82.00	82.00	75.00	64.00

The table above shows that the High GM-SE group has an average score of 80.06, indicating a high level of understanding. The Medium GM-SE group has an average score of 75.13, indicating moderate understanding. On the other hand, the Low GM-SE group obtained an average score of 66.38, showing a lower level of understanding. In contrast, the Conventional-SE group has average scores of 67.58 for High Conventional-SE, 59.06 for Medium Conventional-SE, and 43.18 for Low Conventional-SE. These findings demonstrate variations in students' understanding of the subject, with the High and Medium Conventional-SE groups showing relatively higher levels of understanding compared to the Low Conventional-SE group.

Influence of Gamification and Engagement on Language Literacy Skills

Before conducting the One-Way ANOVA test, we checked the normality and homogeneity of the data. Here are the results of the normality assessment:

Table 3. Normality Test

		GM-SE High	GM-SE Moderate	GM-SE Low	Convent-SE High	Convent-SE Moderate	Convent-SE Low
N		16	16	16	17	17	17
Normal Parameters ^a	Mean	80.0625	75.1250	68.3750	67.5882	59.0588	43.1765
	Std. Deviation	6.85535	4.41022	8.49215	4.75735	6.57144	8.93193
Most Extreme Differences	Absolute	.203	.180	.121	.196	.103	.131
	Positive	.129	.092	.115	.196	.098	.131
	Negative	-.203	-.180	-.121	-.134	-.103	-.093
Kolmogorov-Smirnov Z		.810	.721	.486	.809	.425	.539
Asymp. Sig. (2-tailed)		.528	.676	.972	.529	.994	.934

a. Test distribution is Normal.

The Kolmogorov-Smirnov test produced p-values above 0.05, indicating that the learning outcome data from both test groups follows a normal distribution, as the significance level (Sig) is greater than $\alpha = 0.05$. With the data meeting the normal distribution criteria, the Independent Samples T-test is used to evaluate data homogeneity, leading to the following outcomes:

Table 4. Homogeneity Test

		Levene Statistic	df1	df2	Sig.
Language literacy skills	Based on Mean	1.061	1	97	.602
	Based on Median	2.731	1	97	.707
	Based on Median and with adjusted df	2.731	1	92.213	.707
	Based on trimmed mean	1.889	1	97	.602

The results above indicate that the homogeneity test conducted using Levene's Test has a significance value of 0.602, which is greater than 0.05. This suggests that the variances among the three samples are uniform. If the conditions of normality and homogeneity are met, the next step is to perform a Two-Way ANOVA test on the dataset.

Table 5. Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	14254.538 ^a	5	2850.908	60.149	.000
Intercept	425178.773	1	425178.773	8.970E3	.000
Method	7934.369	1	7934.369	167.401	.000
Engagement	5485.987	2	2742.994	57.872	.000
Model* Engagement	709.422	2	354.711	7.484	.001
Error	4407.967	93	47.397		
Total	440716.000	99			
Corrected Total	18662.505	98			

a. R Squared = ,764 (Adjusted R Squared = ,751)

In Table 5, we can see the strong connection between the teaching method and student engagement, as well as the combined impact of Method and Engagement on academic achievement in learning the Indonesian Language. The test findings reveal that the method utilized resulted in a sum of squares of 14254.538a with 5 degrees of freedom, yielding an average square value of 2850.908. The calculated F value is 60.149 with a significance value of 0.000, signifying a marked impact of the overall model on students' Indonesian language learning results. The gamification model variable (7934.369) significantly influences language literacy ability based on their learning outcomes. Similarly, the Engagement variable (2742.994) exhibits a significance value of 0.000, indicating the notable contribution of student engagement to Indonesian language learning outcomes. Furthermore, an interaction between the learning model and student engagement was uncovered, with a significance value of 0.001.

To assess the extent of interaction between high, moderate, and low levels of student engagement with the gamification model, an additional ANOVA test followed by Post Hoc analysis was conducted. The results of this Post Hoc analysis are presented in Table 6.

Table 6. Multiple Comparisons

Language Literacy Skills		Tukey HSD					
(I) Student Engagement	(J) Student Engagement	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		
					Lower Bound	Upper Bound	
High	Moderate	6.7879*	1.69487	.000	2.7510	10.8247	
	Low	18.2424*	1.69487	.000	14.2056	22.2793	
Moderate	High	-6.7879*	1.69487	.000	-10.8247	-2.7510	
	Low	11.4545*	1.69487	.000	7.4177	15.4914	
Low	High	-18.2424*	1.69487	.000	-22.2793	-14.2056	
	Moderate	-11.4545*	1.69487	.000	-15.4914	-7.4177	

This text explains the relationship between various levels of student engagement (high, moderate, and low) towards Indonesian language learning outcomes (students' language literacy abilities).

1. Students with high levels of engagement compared to those with moderate engagement obtained a calculated p-value of 0.00. Since the p-value is smaller than α , it can be concluded that there is a significant difference in language literacy abilities between students with high and moderate SE levels.

2. Students with moderate levels of engagement compared to those with low levels obtained a p-value of $0.000 < \alpha$, indicating a significant difference in language literacy abilities between moderate and low SE students.
3. Students with high levels of engagement compared to those with low levels obtained a p-value of 0.000. This indicates a significant difference in language literacy abilities between high and low SE students.

The graph shows the marginal average values of students who participated in classes using different strategies (gamification and conventional) and at varying levels of student engagement (high, moderate, and low). The graph illustrates the estimated marginal means of language literacy skills.

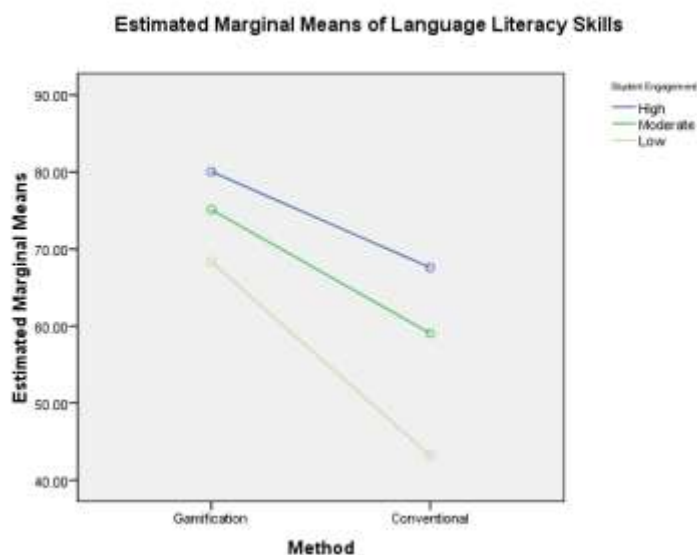


Figure 3. Estimated Marginal Means of Student Learning Outcomes and Student Engagement towards Teaching Methods

The marginal mean estimates in the graph above indicate that the average estimated literacy learning outcomes of students using gamification with high, moderate, and low engagement are higher compared to the literacy skills of students in conventional classes with the same level of engagement. The interaction graph depicts two non-parallel (intersecting) lines, indicating the interaction between approach and level of student engagement with language literacy skills.

Discussion

Effectiveness of the Model

The data from the graph shows that students using gamification with high, moderate, and low engagement have higher average estimated literacy learning outcomes compared to students in conventional classes with the same level of engagement. Additionally, the interaction graph displays two non-parallel intersecting lines, indicating the interaction between approach and level of student engagement with language literacy skills.

Based on the results, it can be concluded that utilizing gamification learning models with eighth-grade students (experimental class) can lead to an effectiveness range of 3.08 to 4.47 on a 5-point Likert scale. The average achievements of the respondents fall in the range of 78.00% to 82.85%, categorized as good to very good. These findings align with Willis (2017) research, which indicates that well-prepared learning, when implemented correctly, can yield

exceptional learning outcomes. The development of gamification-based teaching aims to integrate game elements into pedagogy, particularly to capture students' interest and enthusiasm for classroom learning. Teachers focus on applying concepts in their teaching, enabling students to understand and practice the material effectively.

In a class that uses gamification methods with Kahoot, each learning session becomes an engaging game. The teacher creates quizzes related to the lesson material, and students take part by answering questions through their devices about the process of rain formation. These questions not only assess students' knowledge but also aim to stimulate critical and creative thinking, particularly when analyzing persuasive texts about elections. Students compete to answer questions about the structure and meaning of the calls to action in these persuasive texts. When students answer questions correctly, they earn points, and a real-time leaderboard encourages a competitive spirit among them.

In the classroom, the atmosphere becomes lively and enthusiastic. Students work hard to achieve the highest score and win the learning session. This healthy competition not only makes learning more enjoyable but also encourages every student to give their best answers. Because each student has the opportunity to excel, even those who are usually less active in conventional learning become more motivated to participate actively.

The use of Kahoot's gamification method creates an engaging and collaborative learning environment. Students work together to answer questions related to different types of texts, such as those about day and night processes, tsunamis, floods, and persuasive texts on school discipline, stress reduction through reading, and promoting a healthy lifestyle. This encourages teamwork and mutual support among students while also helping them build skills in managing time and handling pressure, as they need to respond within a specified time limit.

In experimental classes, it is clear that employing gamification methods through the Kahoot platform in the classroom can enhance the enjoyment and interest in learning. This is particularly evident with the level of assessments in each student's responses leading to victory, which enhances their motivation to learn. This approach effectively boosts student engagement, leading to improved language literacy skills.

Bursa and Kose (2020) and Mendez and Florez (2018) support the findings of this research, indicating that using gamification models has been shown to improve student learning outcomes. Sailer and Sailer (2021) found that gamified flipped classroom models have a positive impact on student engagement, contrary to the findings of James (2020), who did not observe significant impacts on learning outcomes with gamification models. Hang and Van (2020), also discovered that the effectiveness of gamification models varies based on the timing and level of implementation.

Unal and Unal (2017) define the gamification approach as a learning method that incorporates game elements such as points, badges, leveling, progress bars, leaderboards, narrative arcs, restrictions, personal profiles, notifications, and toggles. These features make students feel engaged and enjoy the learning process. Students' interest in gamification indicates a high level of learning motivation and is a favorable condition for improving learning outcomes (Demir & Akpınar, 2018). Thus, the gamification model can be applied to enhance students' creativity and cognitive abilities in understanding the material and tasks given. Moreover, this model also provides convenience for teachers to select and adapt the curriculum and materials according to students' needs, as well as facilitating teachers in managing classroom learning time more effectively. Furthermore, teachers can also use this model to improve students' achievements.

Student Engagement

Research findings indicate that student engagement in learning the Indonesian language is relatively high, with an average score of 4.04 out of 5, falling into the "good" category on a

Ariani, F., & Afrita, N. (2024). *The Influence of Digital-Based Gamification on Student Engagement and Language Literacy Skills: A Study at Madrasah Tsanawiyah*. *Jurnal Komunikasi Pendidikan*, 8(2), 141-156. <https://doi.org/10.32585/jurnalkomdik.v8i2.5036>

Likert scale. The respondents achieved an average score of 80.73%, falling into the "good" category. Teachers provide comprehensive materials to students using Kahoot!' application to facilitate their learning and mastery of language literature through games. They also encourage students to understand the given materials, complete assignments, and practice at home, focusing on persuasive communication techniques and explanatory text writing.

In gamified learning using Kahoot, three main forms of student engagement improve: cognitive engagement, social and behavioral engagement, and emotional engagement. Cognitive engagement is when students actively think and process information to answer quiz questions correctly. They must understand the lesson material, recall key facts, and apply their knowledge to achieve high scores. Emotional engagement is reflected in students' enthusiasm and excitement during the game. They show high spirits and learning motivation, especially when they see their names appear on the scoreboard. Social and behavioral engagement is observed as students collaborate and support each other in answering questions for their group. Despite the competitive elements, they often share strategies and knowledge to help their peers. Behavioral engagement is apparent in students' active participation in every quiz session they join. Students are not just passive listeners; they actively use their devices to answer questions, compete, and respond to feedback given by the teacher. These forms of engagement demonstrate how gamification with Kahoot can create a dynamic, interactive, and enjoyable learning environment.

The research results support the findings of Thompson and Ayers (2015). They reveal that high course preparedness, perceived content relevance, and peer interaction value are all indicators of increased student engagement. This engagement can be stimulated when students participate in lessons using gamification learning models. Their research findings report a relevance between content and teacher professional practice in influencing student learning outcomes. Participants indicated that they learn as much as they are taught in peer interactions and consider both to be at a high level. Furthermore, evidence supports the use of worksheet formats, encouraging students to follow an active learning model that involves active participation in every task given in class. Participants show a high level of support for gamification classes.

Xu et al. (2021) found that the gamification model they developed acts as a facilitator and assistant in the teaching process. This transforms the roles of teachers and students for the better, enabling students to take on primary roles in independent learning. Additionally, Pfeiffer et al. (2020) revealed that the gamification model has a significant impact on the learning outcomes of female students from eighth to eleventh grades (N = 338, 45.3%). Their study indicated that the implementation of the gamification model significantly affects the confidence and achievement values related to female students' participation in their learning. The researchers concluded that the model influences positive motivation, especially for young female students in language education, and they use the gamification model to enhance students' learning motivation in participating in classroom activities.

The Influence of the Gamification Model on Language Literacy Skills

This research shows that using gamification models in language learning enhances students' outcomes in language literacy (writing, reading, listening, and speaking). The study indicates that students actively engage in writing exercises and communication at home through video lessons. They are encouraged to practice explanatory and persuasive writing exercises at home before discussing them in class. Summative tests are conducted at school to evaluate students' learning outcomes.

The comparison of learning outcomes before and after students underwent the gamification learning model through assigned home exercises shows a significant difference from the traditional approach, with a p-value of 0.003. This value is smaller than 0.05,

indicating that the gamification model has proven to significantly improve Indonesian language learning outcomes, especially in enhancing students' language literacy skills.

The gamification model has been proven to have a positive impact on students' language literacy abilities. This model creates a competitive and collaborative learning atmosphere, motivating students to study more diligently. Through playing quizzes with platforms like Kahoot, students are driven to strive for the highest scores while collaborating with classmates to enhance their understanding of the material. Overall, this not only makes learning more enjoyable but also increases students' motivation and engagement, ultimately contributing to a significant improvement in their language literacy skills.

Mischenko et al. (2020), supported this research finding by revealing that the gamification model they developed had a positive impact on students' learning outcomes. Throughout the academic year, they conducted pedagogical experiments with students to evaluate the model's effectiveness in the learning process at school. They reported that the implementation of the gamification model had a positive effect on learning outcomes by increasing student engagement. Additionally, Daniel et al. (2018) found that the gamification learning model is highly effective in improving students' literacy skills.

The gamification model has been successful in addressing students' difficulties in learning, especially in overcoming concentration issues while studying at school. Students can review lessons at home by using game-based models integrated into platforms like Kahoot, as provided by teachers. This model is an educational strategy aimed at reducing the amount of direct instruction during teaching practices while increasing student-teacher interaction.

According to Yamani (2021), integrating the gamification model with technology makes it an effective strategy for providing additional support for student learning materials that can be accessed online. Its application can be implemented at all levels of education, from elementary to tertiary, and has shown positive results in improving learning outcomes.

CONCLUSION

The research results indicate significant differences in literacy skills between students who followed the gamification learning model and those who followed the conventional learning model. Students who learned through the gamification model showed a higher increase in literacy skills compared to those who learned through the conventional method. Additionally, the research findings revealed disparities in the improvement of literacy skills among students with high, medium, and low levels of involvement. Students with high involvement experienced a more significant increase in literacy skills compared to those with medium and low involvement. Furthermore, the research identified an interaction between the learning model and student involvement in language literacy skills. It was observed that students who followed the gamification model and exhibited high engagement demonstrated the most optimal language literacy results. This research suggests that the gamification learning model is not only effective in enhancing students' literacy skills but also capable of maximizing students' potential based on their level of involvement in the learning process. It is recommended that Indonesian language teachers in Madrasah integrate gamification learning models to enhance student engagement and literacy skills in classroom learning by utilizing digital technology as a learning tool, which can provide a more flexible learning environment tailored to the needs of students today. The success of teachers in designing suitable learning models for the learning environment needs of students should be a significant concern for Madrasah policymakers in developing learning models that are appropriate for students' needs, aiming to increase student participation and improve learning outcomes.

The limitation of this research lies in the difficulty of designing digital learning access using gamification strategies like Kahoot! application, due to time constraints and the high demands and enthusiasm of both teachers and students for gamified learning designs. This necessitates

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researchers to exert extra effort, and limitations in data quotas as well as disruptions in internet signals also pose challenges in observing the implementation process of gamification in the experimental classes.

Teachers need to be able to create learning models that meet the current needs of students, who are increasingly engaging with the digital world. As a result, teachers should be able to use a variety of learning applications, whether web-based or through Learning Management Systems (LMS), which can be developed into educational gaming applications. It is suggested that future researchers explore other factors that could affect how gamification models impact learning styles, motivation, interests, cognitive styles, and intelligence.

CONFLICT OF INTEREST

Hereby the authors declare that we have no conflicts of interest.

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