# Enhancing EFL reading comprehension and motivation through interactive gamified learning in Indonesia

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**Abstract**
Teaching English as a Foreign Language (EFL) in Indonesian secondary schools continues to face major challenges due to students' weak reading comprehension. This study aims to evaluate the effectiveness of the Wayground gamified learning platform in improving reading comprehension and learning motivation among Indonesian secondary students of English as a Foreign Language (EFL). This study addresses the critical challenges of low literacy rates and high reading anxiety in the digital age. A quasi-experimental design was used, involving 60 tenth-grade students at SMAN 2 Sampang, who were divided into an experimental group using Wayground and a control group using traditional teacher-centered instruction. Data were collected over six weeks using a 20-item reading comprehension test and a modified Instructional Materials Motivation Survey (IMMS) based on Keller's ARCS model. Descriptive and inferential statistics, including the Mann-Whitney U test and the Wilcoxon Signed-Rank test, were used for data analysis. The results showed that students in the experimental group significantly outperformed the control group, achieving a post-test average of 85.43 compared to 71.07. In addition, student motivation in all ARCS dimensions reached high levels, with the highest satisfaction scores. It was concluded that Wayground served as a powerful catalyst, transforming passive reading activities into student-centered, interactive experiences while effectively mitigating cognitive fatigue. These findings indicate that integrating Wayground's interactive, gamified learning into the curriculum provides a fundamental basis for promoting learner autonomy and improving literacy outcomes in 21st-century education.

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## 1. Introduction

The phenomenon of low reading comprehension among secondary school students in Indonesia remains a crucial challenge in teaching English as a Foreign Language (EFL) (Allehyani, 2025; Md Abu et al., 2025). Recently, the National Academic Ability Test (TKA) in 2025 revealed that Indonesian students' English literacy remains at a worrying level (Kementerian Pendidikan Dasar dan Menengah, 2025). This score is the lowest among all subjects tested nationally. The 26.33% of English scores indicate that the foreign language literacy skills of secondary school students (SMA) in Indonesia and their equivalents remain at a very challenging level and require special attention. Additionally, the case can be observed at SMAN 2 Sampang, where the students' average test and daily scores are only less than 62, far below the minimum standard of 75.

Although the curriculum is literacy-oriented, many students are stuck on a literal understanding and think that making inferences or reading between the lines is too difficult. This case may be due to the dominant approach to teaching reading texts being monotonous, leading students to become bored and disengaged from reading (Indriyani, 2025; Rasyid et al., 2023). Consequently, linguistic barriers, such as a limited vocabulary, frequently combine with psychological barriers, such as reading anxiety and a lack of motivation, to prevent students from achieving literate success in the 21st century (Malik et al., 2021).

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To be more specific, the major difficulties among the secondary school students when reading English texts are their low Vocabulary Size (vocabulary threshold) and the complexity of the texts. Many students are overwhelmed by long, descriptive texts, leading to cognitive overload before they reach a clear understanding of the reading (Allehyani, 2025; Nurkamto et al., 2021). Besides the linguistic difficulties they face, students are also filled with reading anxiety, hindering their performance. Likewise, misread words will also raise doubt about whether he/she can successfully understand the text alone (Octaberlina et al., 2022). Without media that can break down the complexity of these texts into more interesting and digestible parts, students' motivation to engage in literacy activities will continue to decline.

The cognitive challenge faced by these students can be analyzed using Sweller's Cognitive Load Theory (2011), which posits that human working memory has a limited capacity to process new information. Especially at SMAN 2 Sampang, when students have to deal with a descriptive text containing complex noun phrases and unknown adjectives, they may experience extraneous cognitive load. Rather than focusing on the text's overall meaning, they spent all their cognitive energy on bottom-up processing, looking up word meanings or parsing sentence syntax. That robs the brain of computing resources and leaves it insufficiently loaded to support germane load, which helps people develop long-term mental schemas and make deep-level inferences (Sweller, 2023; van Nooijen et al., 2024). Consequently, the transition from literal reading to critical analysis becomes nearly impossible without a digital intervention that effectively manages this cognitive burden.

To address these multifaceted challenges, gamified learning environments have been increasingly implemented to transform passive reading into an interactive experience (Zhang & Crawford, 2024). Recent empirical studies have demonstrated the efficacy of gamification in the EFL context; for instance, research has shown that gamified platforms can significantly increase students' engagement time and reduce the cognitive load associated with language processing (Murray et al., 2024; Qiao et al., 2025; Raju et al., 2021). In the Indonesian context, studies using digital tools have reported improvements in students' word recognition and literal comprehension scores (Arsyad et al., 2024).

This condition is also similar in EFL contexts in other parts of Southeast Asia, as empirical studies indicate that traditional reading instruction often leaves students bored in most of those countries (Mediena et al., 2025). Studies in Thailand and Vietnam have shown that gamified micro-learning serves as a medium for students who are daunted by the long form of English literature (Panmei & Waluyo, 2023; Traverso-condori et al., 2024). In addition, several studies have underlined the importance of the feedback loop, which is the essence of gamification in the context of language learners. Instead of traditional classrooms where students could wait days for a graded assignment, gamified platforms offer immediate corrective feedback so students can be aware of their comprehension gaps on the spot (Raja & Khan, 2018). The effect of this immediacy extends not only to enhancing the accuracy of cognitive processes but also to maintaining the flow state in reading immersion.

Building on these findings, Wayground, a web-based platform formerly known as Quizizz, represents significant progress by integrating Artificial Intelligence to create flexible, personalized learning activities (Dorssom, 2025). Unlike traditional tools, Wayground utilizes mechanics such as real-time leaderboards and instant feedback to stimulate students' cognitive and affective engagement (Choo et al., 2026). By using its Passage feature, teachers can provide the scaffolding students need to navigate complex descriptive texts.

However, while previous evidence supports the use of gamification for vocabulary drills and general formative assessment, there is a notable lack of research focusing on Wayground for deep-level reading comprehension (Zuhriyah & Pratolo, 2020). The scientific novelty of this study lies in its focus on the Passage feature as a deconstruction tool for complex texts, combined with a dual evaluation of cognitive achievement and motivational patterns using Keller's ARCS model (Hao & Lee, 2021; Ma & Lee, 2021).

The integration of Keller's ARCS Model (Attention, Relevance, Confidence, and Satisfaction) in this research provides a holistic framework for evaluating learners' psychological transformation (Keller, 2010; Wang et al., 2025). Attention is stimulated through Wayground's sensory-rich interface and varied question types, preventing the typical boredom associated with paper-based texts. Relevance is addressed through the Passage option, which allows the presentation of descriptive texts at students' current proficiency levels and in areas of personal interest. Moreover, the Wayground platform helps students build confidence, enabling them to approach challenging sentences without the fear of immediate public failure (Choo et al., 2026; Safitri et al., 2022). Furthermore, satisfaction is achieved through the reward system and the sense of accomplishment as students ascend the leaderboard in real time (Ji et al., 2022). By isolating these four motivational pillars, the research goes beyond superficial measures of test scores to capture the emotional forces that fuel enduring literacy practices in the digital age.

In the current era of rapid digital transformation, the definition of literacy has expanded beyond traditional comprehension to include digital navigation and interactive engagement (Roberts et al., 2025). Thus, the timeliness of this study is also justified by the imperatives of preparing students for a future in which the English language and technological applications will be tightly intertwined. In tackling the literacy crisis through a contemporary medium, this paper calls for a pedagogical turn in which the Wayground platform is not a substitute for educators but a powerful tool to break down linguistic complexity (Durgungoz & Durgungoz, 2025).

Hence, to enhance EFL reading comprehension, this research aims to examine whether interactive gamified learning through Wayground influences students' reading comprehension and learning motivation at the Indonesian secondary level. The results of this study are anticipated to have far-reaching pedagogical implications beyond its aims. In practice, this study provides a strategic framework for EFL educators to use digital-based scaffolding, such as Wayground, to reduce cognitive and psychological barriers to literacy. Theoretically, this study contributes to the discourse on educational technology by validating the integration of Keller's ARCS motivation model in a modern gamification environment. Nevertheless, this research has limitations. It is limited to 10th-grade students at SMAN 2 Sampang, and the material used is only descriptive text. While the findings provide useful insights at the local level, further studies may investigate the application of this gamification technique across different text types and wider demographic groups.

## 2. Method

### 2.1. Design

Choosing an appropriate research design is crucial for the validity of the causal association between the digital intervention and students' learning outcomes. We employed a quasi-experimental design with a non-equivalent control group (Campbell, D. T., & Stanley, 2015; Muse & Baldwin, 2021). This approach allows for a rigorous comparison between the Wayground-integrated instruction and traditional methods while maintaining the natural classroom ecology. In this framework, two intact classes were assigned different roles (Cheng et al., 2025). The experimental group received scaffolded instruction via Wayground, while the control group followed the conventional teacher-centred approach using printed materials.

### 2.2. Participants and Procedure

To obtain representative data reflecting the actual challenges in the field, participants were selected from a population that directly experiences the identified literacy barriers. Sixty students participated in this study. The participants were 10th-grade students at

SMAN 2 Sampang, East Java, in the academic year 2025/2026, divided into the experimental class (X2) and the control class (X3). Each class had 30 students. The decision to choose these two particular classes was based on the most similar English proficiency level. Homogeneity ensured that any observed significant difference following the intervention was attributed to the treatment under study and not to pre-existing class differences (Liu et al., 2025; Yu & Abdullah, 2025).

A systematic research procedure was strictly followed over six weeks to ensure consistency and minimize external biases (Blagoev et al., 2024). The process commenced with a pre-intervention phase, where both groups completed the pre-test and the initial IMMS survey to establish a statistical baseline. During the subsequent intervention phase, the experimental group engaged with descriptive texts through the Wayground Passage feature, utilizing its real-time feedback and gamified mechanics to deconstruct linguistic complexity. In the control group, however, the same thematic materials were studied on traditional paper worksheets during teacher-led lectures. The study concluded with a post-intervention phase. The instruments were re-administered to both groups to measure the extent of improvement in their learning and motivation (Alsadoon et al., 2022).

The study was conducted in three phases over six weeks, from the third week of July to the fourth week of August, 2025. The pre-test was delivered in week 1. Students completed a 90-minute reading comprehension pre-test in class before the intervention to gauge their prior knowledge. After that, the treatment was administered over four weeks in eight sessions, two per week, lasting 90 minutes each. Wayground is a system that uses gamification elements such as points, badges, and leaderboards, was used by the students. The learning content was delivered via Wayground, in reading tasks with the teacher or as self-reading tasks on the platform. After the intervention, students took a post-test consisting of the same reading comprehension items as the week 6 test. A short debriefing followed to elicit students' experiences with using Wayground for reading practice.

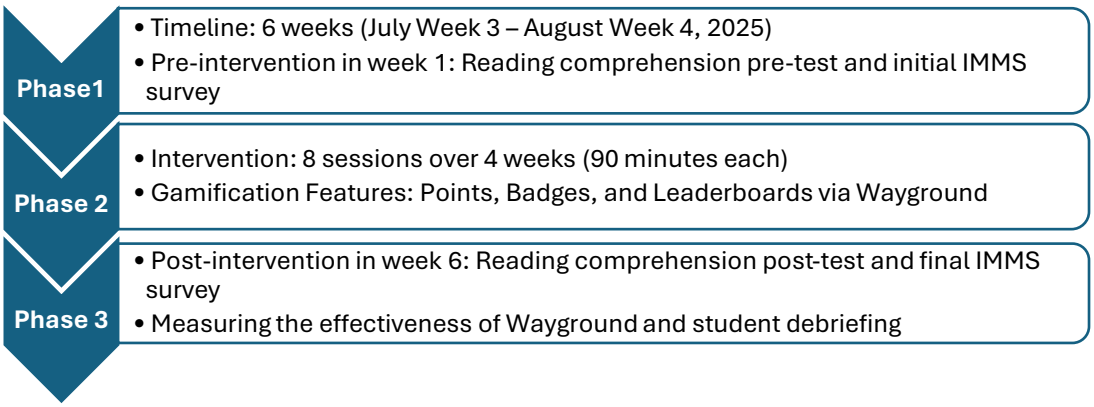


Figure 1. Research Procedure

## 2.3. Instruments

The accuracy of the findings depends heavily on the reliability and validity of the tools utilized to capture both cognitive and psychological shifts (Maciejewski, 2020; Maimaiti & Hew, 2025). This study used two major tools. They were a reading comprehension test and a motivation questionnaire. The reading comprehension test consisted of 20 multiple-choice questions on descriptive texts. The purpose was to evaluate literal understanding, inferential thinking, and vocabulary analysis. Before its application, the test underwent expert validation and a pilot study, yielding a Cronbach's Alpha coefficient of 0.82, confirming its high reliability. To evaluate the psychological dimension, a modified version of the Instructional Materials Motivation Survey (IMMS) was used. This 24-item survey, based on Keller's ARCS Model, offered a systematic approach to measuring changes in Students' Attention, Relevance, Confidence, and Satisfaction (Keller, 2010; Wang et al., 2025).

## 2.4. Data Analysis

A thorough statistical analysis was necessary to test the research hypotheses and draw meaningful conclusions. SPSS version 26 was utilized to process the quantitative data from the tests and surveys. Descriptive statistics, including mean, standard deviation, minimum, and maximum, were calculated to characterize the distribution of scores. To determine the significance of the results, the data were first checked for normality. Given that the data were non-normally distributed, the Mann-Whitney U Test was used to compare post-test scores between the experimental and control groups, and the Wilcoxon Signed-Rank Test was used to evaluate within-group improvements in reading comprehension and motivational shifts across the four dimensions of the ARCS model. Furthermore, the N-Gain score was calculated to assess the intervention's effectiveness. This comprehensive approach ensures a statistically significant answer to the question of how the Wayground platform influences the cognitive and affective aspects of EFL reading.

# 3. Results

This study focused on Wayground, an interactive learning platform integrated with game elements, to improve reading comprehension and motivation in learning English as a foreign language (EFL) among secondary school students in Indonesia. To answer the research questions, several tests were conducted.

## 3.1. Reading Comprehension Result

The first test the researcher conducted used descriptive statistics to provide an initial overview of the students' cognitive performance before and after the intervention. It was calculated for both the experimental and control groups. The following table summarizes the distribution of scores, including the mean and standard deviation, reflecting the participants' baseline and final reading comprehension levels.

**Table 1. Descriptive Statistics of the Experimental and Control Classes**

| | *N* | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Experimental Class (Pre-test) | 30 | 55 | 65 | 60.03 | 2.442 |
| Experimental Class (Post-test) | 30 | 80 | 90 | 85.43 | 2.661 |
| Control Class (Pre-test) | 30 | 58 | 65 | 61.70 | 2.020 |
| Control Class (Post-test) | 30 | 70 | 74 | 71.07 | 1.461 |

The descriptive statistics for both the experimental and control classes are presented in Table 1. The data showed that the experimental class, which used Wayground, started with a pre-test mean of 60.03 and achieved a post-test mean of 85.43. In contrast, the control class showed a smaller increase, moving from a pre-test mean of 61.70 to a post-test mean of 71.07. These initial findings suggested greater improvement in reading comprehension in the experimental group. To determine whether student scores were normally distributed, a Shapiro-Wilk normality test was conducted with 30 participants per class.

**Table 2. Normality Test of the Experimental and Control Classes**

| | | Shapiro-Wilk | | |
|---|---|---|---|---|
| | | Statistic | *df* | *Sig.* |
| *d score* | Experimental Class | .390 | 30 | .000 |
| | Control Class | .926 | 30 | .038 |

Table 2 presents the results of the Shapiro–Wilk normality test for gain scores. The findings indicate that neither the experimental group ($p < .001$) nor the control group ($p = .038$) met the normality assumption. Consequently, non-parametric statistical procedures were applied in the subsequent analyses. Before proceeding to the non-parametric test, homogeneity should be tested.

**Table 3. Test of the Homogeneity Variences**

| | Levene Statistics | *df1* | *df2* | *Sig.* |
|---|---|---|---|---|
| Reading Comprehension | 0.389 | 1 | 58 | .535 |

The homogeneity of variance between the experimental and control groups was examined using Levene's test. As shown in Table 3, Levene's test indicated that the variances in reading comprehension scores between the two groups were homogeneous (p = .535). Nevertheless, due to violations of the normality assumption, non-parametric analyses were conducted.

**Table 4. Mann-Whitney U Test Results for Post-test Scores**

| | Class | *N* | Mean Rank | Sum of Ranks | Mann-Whitney U | Wilcoxon W | *Z* | Asymp. Sig. |
|---|---|---|---|---|---|---|---|---|
| Post-Test | Experimental | 30 | 45.50 | 1365.00 | .000 | 465.000 | -6.759 | .000 |
| | Control | 30 | 15.50 | 465.00 | | | | |

The results of the Mann-Whitney U test are summarized in Table 4, indicating a significant difference in reading comprehension performance between the two groups ($U$ = .000, $Z$ = -6.759, $p$ < .001). The experimental group showed a substantially higher mean rank of 45.50 compared to 15.50 in the control group, suggesting that the digital intervention significantly improved learning outcomes. To measure the extent of internal improvement or development in each class after a six-week intervention period, the researcher used the Wilcoxon Signed-Rank test.

**Table 5. Wilcoxon Signed-Rank Test Results (Within-Group Improvement)**

| Class | | *N* | Mean Rank | Sum of Ranks | *Z* | Asymp. Sig. |
|---|---|---|---|---|---|---|
| Pos-test Experimental - Pre-test Experimental | Negative Ranks | 0 | .00 | .00 | -5.150 | .000 |
| | Positive Ranks | 30 | 15.50 | 465.00 | | |
| | Ties | 0 | | | | |
| Pos-test_Control - Pre-test_Control | Negative Ranks | 0 | .00 | .00 | -4.811 | .000 |
| | Positive Ranks | 30 | 15.50 | 465.00 | | |
| | Ties | 0 | .00 | .00 | | |

The Wilcoxon Signed-Rank test evaluated the internal progress within each group. As illustrated in Table 5, all 30 students in the experimental group achieved higher post-test scores ($Z$ = -5.150, $p$ = .000). Similarly, the control group also showed significant progress ($Z$ = -4.811, $p$ = .000). Furthermore, the normalized gain (*N-Gain*) score was calculated for both groups to assess treatment effectiveness.

**Table 6. Comparison of N-Gain Scores and Effectiveness Category**

| Group | Mean N Gain | Category |
|---|---|---|
| Experimental Class | .64 | Medium |
| Control Class | .24 | Low |

As shown in Table 6, the experimental group achieves a mean N-Gain score of .64, which is categorized as medium. In contrast, the control group achieved an N-Gain score of .24, placing it in the Low effectiveness category. These results indicated that integrating Wayground was more effective at enhancing students' reading comprehension than traditional teaching methods.

## 3.2. Motivation Result (ARCS model)

The second objective of this study was to evaluate student motivation toward EFL reading after the intervention. Motivation was assessed using the ARCS (Attention,

Relevance, Confidence, and Satisfaction) model. The descriptive statistics for these dimensions were summarized in Table 7.

**Table 7. Descriptive Statistics of Students' Motivation (ARCS Model)**

| ARCS Dimension | *N* | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Attention | 60 | 2.67 | 5.00 | 3.93 | .53716 |
| Relevance | 60 | 3.00 | 5.00 | 3.99 | .46567 |
| Confidence | 60 | 3.00 | 5.00 | 4.02 | .44010 |
| Satisfaction | 60 | 3.17 | 5.00 | 4.24 | .41891 |

Based on the data in Table 7, the students' motivation across all dimensions is high, with an overall average score of 4.03. This total score indicated that the gamified learning environment fostered a positive, engaging atmosphere for secondary school students. Both Attention ($M$ = 3.93) and Relevance ($M$ = 3.99) also fell into the high category, indicating that the platform successfully maintained students' interest and was perceived as personally meaningful to their learning needs. The Confidence dimension also showed strong results with a mean of 4.02. This result proved that the gamified elements effectively helped students feel more capable and self-assured when tackling challenging EFL reading tasks. The Satisfaction dimension reached the highest mean score of 4.24, placing it in the "Very High" category. This finding suggested that students felt a significant sense of accomplishment and pride in their learning outcomes after using Wayground.

To further confirm whether the increase in student motivation was statistically significant, a Wilcoxon Signed-Rank Test was conducted.

**Table 8. Wilcoxon Test Results for Student Motivation**

| | N | Z | Asymp. Sig. |
|---|---|---|---|
| Post_Motivation - Pre_Motivation | 60 | -6.737 | .000 |

As shown in Table 8, the Wilcoxon Signed-Rank Test yields an Asymp. Sig. (2-tailed) value of .000, which was lower than the significance level of 0.05. Additionally, the $Z$ value was recorded at -6.737. These results indicated a significant difference in students' motivation between the pre-test and post-test. Furthermore, the rank data revealed that all 60 participants increased their motivation scores. Therefore, it might be concluded that the use of Wayground gamified learning effectively and significantly enhanced students' motivation in EFL reading.

Based on the statistical analyses presented, these findings provided strong empirical evidence of the intervention's effectiveness. The Mann-Whitney U test results, which showed significance ($p$ = .000; $p$ < .05), explicitly answered the first research objective. This figure demonstrates that integrating the Passage feature in Wayground had a much more significant impact on students' reading comprehension than conventional methods, with an effectiveness level (N-Gain) of 0.64 (medium) compared to 0.24 (low). In line with this cognitive improvement, affective data also showed a similar positive trend. Regarding motivation evaluation, the average total score of 4.09 from the ARCS questionnaire confirms that this gamification intervention successfully achieved the second research objective. The highest score in the satisfaction dimension (4.24) indicated that digital rewards and instant feedback were key factors that made students feel successful in completing complex reading tasks.

## 4. Discussion

The findings of this study show that using Wayground not only improves technical learning outcomes but also shifts students' learning paradigm from passive to active. This fact supports the researcher's hypothesis that using Wayground as an interactive, game-

based learning tool can improve reading comprehension and student motivation in English learning. A more in-depth analysis of the relationship between cognitive improvement and affective reinforcement can be understood in the following explanations.

The dramatic increase in the experimental class's average score indicates that Wayground successfully overcame the cognitive boredom that often occurs in conventional reading instruction. According to the researcher's analysis, this surge occurred because Wayground broke down complex EFL reading texts into smaller, more digestible challenges (quests). This method aligns with Maimaiti and Hew (2025); gamified self-regulated learning significantly improves reading process patterns. Furthermore, a critical observation in this study is the presence of reading fatigue within the control group (Allehyani, 2025). In the control class, reading materials were presented in a static, one-way format without interactive elements, leaving students mentally exhausted when facing long texts (Dorssom, 2025). This phenomenon explains why their post-test mean score remained lower.

In contrast, the gamification elements in Wayground effectively mitigated this fatigue by maintaining students' cognitive stamina through an interactive journey. This case aligns with Alsadoon et al. (2022), who found that gamification provides a richer context for literacy practice. However, the researcher argues that the main advantage of this study lies in the instant feedback from the Wayground platform, which allows students to identify their comprehension errors immediately. This feature is certainly not found in the control class, which used conventional methods and had a final score.

Additionally, the questionnaire results show that the satisfaction dimension achieved the highest score. The researcher argues that this high level of satisfaction is the primary driver of N-Gain's effectiveness in the experimental class. When they are rewarded with a level-up or a digital reward upon completion, students experience a release of dopamine, which enhances their memory of the new vocabulary and text structure they have just learned. In terms of psychology, when students are digitally rewarded, they experience less cognitive load in processing the structure of the language. As explained by Sweller (2023), managing cognitive load is crucial for learning expansion; by making the reading process feel like "play" rather than a "test," Wayground significantly lowered the mental barriers to understanding English.

Furthermore, based on the confidence score, the researcher observed a decrease in affective barriers. In traditional EFL classes, students often fear making mistakes when interpreting texts. However, the Wayground mechanism allows students to retry without the stigma of failure. In the researcher's opinion, the internal progress experienced by all 60 participants proves that gamification creates a safe space for experimenting with language. This finding reinforces Sirojuddin's (2024) view of student autonomy. The researcher believes that this confidence is what makes students dare to tackle more difficult reading texts during the post-test stage.

Although the Attention score was slightly lower than the other dimensions, the researchers considered it crucial. During the intervention, the element of healthy competition in Wayground kept students focused longer than the lecture method. The researcher concluded that relevance was created because this medium aligned with high school students' identity as digital natives. As Zhang & Crawford (2024) emphasize, relevance increases organic engagement. Researchers consider the intervention's success not only a consequence of the technology but also of how the psychological features informed Wayground’s instructional design for adolescent students.

The results of this research can serve as a reference for the teaching of English, especially in high schools. The stark difference in the two classes' performance reveals that traditional, one-size-fits-all reading instruction is inadequate for the digital student body. Instructors need to shift from being the "sage on the stage" to the "guide on the side" in active learning classrooms. Furthermore, since all participants in the study, regardless of background, were more motivated to learn, the researchers suggest that the affective element is not simply a by-product but an essential prerequisite for effective learning.

Regarding the emotional aspects, the researchers believe that adding game elements will help eliminate students' emotional obstacles, thereby making them more open to receiving ingrained, complex language input. The findings imply that barriers to understanding reading passages among students are as much a result of mental strain and cognitive burnout as of low cognitive ability. By combating boredom and fatigue with challenging yet fun task design, teachers can better prolong students' attention than with conventional methods.

Based on the results and discussion above, teachers are suggested to use interactive learning media to reinforce the reading materials, especially on difficult material and when students' self-confidence is low. Because timely feedback is an important component in promoting understanding, teachers should consider provisions. They allow students to identify their errors as they occur, so that they are not misled. In addition, adequate technology support and teacher professional development should be provided to schools to effectively develop instructional materials that consider the psychological characteristics of adolescent students, including the reader.

As the current study focused on an intervention period, subsequent studies may examine the long-term effects of the intervention on students' reading ability and motivation to determine whether the positive effect of this media on reading is sustained. Despite the statistical results indicating a positive trend in motivation, qualitative methodologies, such as semi-structured interviews, allow for a more detailed understanding of which specific game mechanisms have the greatest impact on students' attitude shifts. Future studies should consider a more diverse population, including students in rural areas. In addition, the consideration of internet access makes it challenging. It is needed to assess the feasibility and acceptability of this gamified learning medium in other contexts..

## 5. Conclusion

This study provides solid evidence that Wayground, as a gamification tool, can substantially enhance Indonesian EFL learners' reading comprehension and learning motivation. The empirical findings indicate that the intervention based on meeting motivational needs was effective. It is achieved by addressing the ARCS motivation factors, especially the Servicing Motivation, which obtained the highest value. This study demonstrates that immediate feedback and digital rewards are the key drivers for maintaining student engagement. The intervention also promotes higher-level thinking, such as analysing textual details and making critical inferences, by reducing extraneous cognitive load through text deconstruction. In terms of motivation, the mechanics does successfully reduce language anxiety and close the gap between inflexible curricula and the learning styles of digital native learners. The literature review states that gamification is not just a complementary instrument but a principal pedagogical approach that integrates students' emotional experience with linguistic challenges. These findings can provide robust evidence for policymakers to consider integrating gamified learning into 21st-century curricula. It can promote students' autonomy and self-efficacy. Longitudinal studies are also necessary to measure skill retention and the platform's effects on productive skills in speaking and writing. Moreover, it is necessary to consider digital learning sustainability holistically.

## Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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