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# The Effect of Kahoot on EFL Students' Reading Comprehension: A Quasi-Experimental Study

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**ABSTRACT**

This study examined the effect of using Kahoot on students' reading comprehension of descriptive texts in an EFL classroom. A quantitative approach employing a quasi-experimental design was used. The participants were 54 tenth-grade students from a senior high school in Palembang, Indonesia, divided into an experimental group and a control group. Data were collected through pretests and posttests consisting of 20 multiple-choice items. The findings revealed that students taught using Kahoot achieved a significantly higher posttest mean score (M = 81.85) than those taught through conventional instruction (M = 62.22). An independent samples t-test indicated a statistically significant difference between the two groups ($t = -11.420$, $p < 0.05$). These results demonstrate that the use of Kahoot had a positive and significant effect on students' reading comprehension achievement. It can be concluded that integrating Kahoot into reading instruction is an effective pedagogical strategy for improving EFL students' comprehension of descriptive texts. The findings suggest that game-based digital learning tools can enhance engagement and learning outcomes in secondary school English classrooms.

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**KEYWORDS:**

Descriptive Text, Kahoot, Reading Comprehension, Teaching

## 1. INTRODUCTION

Reading comprehension is a central component of English as a Foreign Language (EFL) learning because it enables learners to construct meaning from texts, develop language knowledge, and succeed academically. In EFL contexts, reading comprehension is widely understood as an interactive cognitive process in which readers integrate textual information with prior knowledge, linguistic competence, and strategic processing to derive meaning (Fermín, 2026; Kim, 2020). Effective reading comprehension is therefore not limited to word recognition but involves higher-order processes such as inference, interpretation, and evaluation of ideas presented in the text.

Despite its importance, reading comprehension remains a persistent challenge for EFL learners, particularly in secondary school contexts. Empirical studies conducted in Indonesia and other EFL settings have consistently reported that students experience difficulties in identifying main ideas, understanding vocabulary in context, and maintaining engagement during reading activities (Manihuruk, 2020; Selian et al., 2022). These difficulties are often associated with teacher-centered instructional approaches that provide limited opportunities for active engagement and strategic interaction with texts (Ika Sari et al., 2024).

Reading comprehension is commonly conceptualized as a meaning-construction process that occurs through interaction between the reader and the text. According to Bouknify (2023), successful comprehension depends on readers' ability to apply cognitive and metacognitive strategies, such as monitoring understanding, making inferences, and linking ideas across sentences. Similarly, Melby-Lervåg and Lervåg (2014) emphasizes that reading comprehension in a second language is influenced by linguistic knowledge, background knowledge, and learners' engagement with the reading task. When learners are unable to actively engage with texts, comprehension outcomes are likely to be limited.

One text genre frequently taught in secondary EFL classrooms is the descriptive text, which focuses on describing people, places, or objects through detailed linguistic features. Research has shown that while descriptive texts are structurally less complex than other genres, they still

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pose comprehension challenges for learners due to dense vocabulary use and the need to visualize detailed information (Fitri et al., 2022; Mukhtar et al., 2023). These challenges are often exacerbated when instruction relies heavily on conventional reading exercises that fail to capture students' attention or promote meaningful interaction with the text.

To address these instructional challenges, recent studies have highlighted the potential of digital game-based learning (DGBL) in improving learner engagement and academic performance. DGBL integrates game elements such as competition, feedback, and rewards into learning activities, thereby fostering motivation and sustained attention (Deterding et al., 2011; Plass et al., 2015). In EFL contexts, digital game-based tools have been shown to support language learning by increasing learners' cognitive and affective engagement (Hung et al., 2018).

Among various DGBL platforms, Kahoot! has received considerable attention in peer-reviewed research due to its interactive design and ease of implementation in classroom settings. Kahoot! enables teachers to present learning content through real-time quizzes and competitive activities, providing immediate feedback and opportunities for learner interaction. Recent empirical studies have demonstrated that Kahoot! positively affects learners' motivation, participation, and academic achievement in EFL classrooms (Bicen & Kocakoyun, 2018a; Licorish et al., 2018a).

Specifically in reading instruction, Kahoot! has been found to enhance students' comprehension by encouraging active processing of texts and sustained focus during reading tasks. Manihuruk (2020) reported that EFL students who learned reading through Kahoot! showed higher comprehension achievement and more positive learning attitudes compared to those taught through traditional methods. Similarly, Plass et al. (2015) found that game-based digital platforms supported reading comprehension by promoting learner engagement and immediate feedback, which facilitated deeper text processing.

Although the positive impact of Kahoot! has been widely reported, most existing studies have focused on vocabulary acquisition, grammar learning, or general engagement, with limited attention given to genre-specific reading comprehension, particularly descriptive texts in secondary school contexts (Bicen & Kocakoyun, 2018b; Wang & Tahir, 2020). This indicates a need for further empirical investigation into how Kahoot! influences students' comprehension of specific text types within EFL reading instruction.

Therefore, the present study seeks to examine the effectiveness of Kahoot! in improving EFL students' reading comprehension of descriptive texts. By employing a quasi-experimental design, this study aims to contribute empirical evidence to the growing body of peer-reviewed research on digital game-based learning and provide pedagogical insights for EFL reading instruction in secondary school settings.

## II. METHODOLOGY

### *Research Design*

This study employed a quantitative approach using quasi-experimental research design. A quasi-experimental design was selected because the participants were assigned to groups through purposive sampling rather than randomization. This design is appropriate for examining potential cause–effect relationships between independent and dependent variables in educational settings where random assignment is not feasible (Cresswell & Poth, 2018).

The study involved two intact classes: one served as the experimental group and the other as the control group. Both groups received instruction on descriptive texts; however, only the experimental group was taught using Kahoot, while the control group received conventional instruction without the use of Kahoot.

The research followed a pretest–posttest control group design, as illustrated in Table 1.

**Table 1. Quasi-experiment Research (Source: Cresswell, 2012, p.310)**

| Group | Pretest | Treatment | Post-test |
|---|---|---|---|
| Control Group | Pretest | Teaching without Kahoot | Post-test |
| Experimental Group | Pretest | Teaching with Kahoot | Post-test |

The research procedure began with a try-out of the test instrument to ensure its validity and reliability. Subsequently, a pretest was administered to both groups to measure students' initial reading comprehension levels. After the pretest, the experimental group received instructions using Kahoot, while the control group was taught using conventional methods. At the end of the instructional period, a posttest was administered to both groups to measure students' reading comprehension achievement and to determine the effectiveness of the treatment.

### *Data Analysis Techniques*

Data was analyzed using IBM SPSS version 29. Both descriptive and inferential statistics were employed to address the research objectives. Prior to hypothesis testing, prerequisite analyses were conducted to ensure that the data met the assumptions required for parametric testing.

### *Prerequisite Analysis*

A normality test was conducted using the Kolmogorov–Smirnov test to examine whether the pretest and posttest scores of both groups were normally distributed. Data was considered normally distributed when the significance value exceeded 0.05 (Field, 2018).

In addition, a homogeneity test was performed using Levene's test to determine whether the variances of the control and experimental groups were equal. Homogeneous

variance is required to justify the use of an independent samples t-test.

***Hypothesis Testing***

After the assumptions of normality and homogeneity were satisfied, hypothesis testing was conducted using t-tests. A paired samples t-test was used to examine differences between pretest and posttest scores within each group, while an independent samples t-test was applied to compare posttest scores between experimental and control groups.

The level of significance was set at $\alpha = 0.05$. The result was considered statistically significant when the Sig. (2-tailed) value was less than 0.05, indicating a significant difference in students' reading comprehension achievement between the two groups. This analysis was used to determine whether the use of Kahoot had a significant effect on improving students' reading comprehension of descriptive texts.

## III. RESULTS

Prior to administering the pretest and posttest, a try-out was conducted to examine the validity and reliability of the reading comprehension test. The try-out involved 31 eleventh-grade students of SMA Muhammadiyah 2 Palembang and consisted of 30 multiple-choice items related to descriptive texts. Based on the r-table value of 0.355, 20 items were identified as valid and were subsequently used in the main study, while 10 items were excluded due to low validity. The validated items were then employed in both the pretest and posttest for the experimental and control groups.

The pretest results revealed that the control group and the experimental group had relatively similar levels of reading comprehension prior to the treatment. The control group obtained a mean pretest score of 51.48 (SD = 7.046), while the experimental group achieved a mean score of 51.85 (SD = 6.815). The small difference between the two mean scores indicates that the students in both groups had comparable initial abilities in reading descriptive texts before the instructional intervention. This similarity suggests that any differences found in the posttest results could be attributed to the treatment rather than pre-existing differences between the groups.

After the instructional intervention, both groups showed improvement in their reading comprehension performance; however, the magnitude of improvement differed considerably. The control group, which received instruction without the use of Kahoot, showed a moderate increase in performance, achieving a posttest mean score of 62.22 (SD = 5.938). In contrast, the experimental group, which was taught using Kahoot, demonstrated a substantial improvement, with a posttest mean score of 81.85 (SD = 6.672). This marked difference in posttest mean scores indicates that students who were exposed to Kahoot-based instruction performed significantly better in reading comprehension than those who experienced conventional teaching methods.

Before conducting hypothesis testing, prerequisite statistical analyses were carried out to ensure the suitability of parametric tests. A normality test using the Kolmogorov–Smirnov procedure was applied to the pretest and posttest scores of both groups. The results showed that all significance values exceeded 0.05, indicating that the data were normally distributed. In addition, a homogeneity test using Levene's test revealed that the variances between the control and experimental groups were homogeneous (Sig. = 0.608). These findings confirm that the assumptions for conducting an independent samples t-test were met.

**Table 2. The Result of t-test**

| | Categories | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Students' Scores | Post-test Control | 27 | 62.22 | 5.938 | .143 |
| | Post-test Experiment | 27 | 81.85 | 6.672 | .284 |

As presented in Table 2, the experimental group achieved a higher mean post-test score (M = 81.85, SD = 6.672) compared to the control group (M = 62.22, SD = 5.938). Although both groups consisted of the same number of students (N = 27), the experimental group demonstrated a substantially higher level of reading comprehension achievement. This descriptive statistical evidence suggests that the instructional treatment using Kahoot contributed positively to students' reading performance. To determine whether the observed difference between the post-test scores of the two groups was statistically significant, an independent samples t-test was conducted.

**Table 3. Independent t-test**

| | **Levene's Test for Equality of Variances** | | **t-test for Equality of Means** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | ig. | f | ig. (2-tailed) | ean Difference | td. Error Difference | 5% Confidence Interval of the Difference ower | pper | 9 |
| qual variances assumed | 267 | 608 | 11.420 | 2 | 000 | 19.630 | .719 | 23.079 | 16.180 |
| qual variances not assumed | | | 11.420 | 1.309 | 000 | 19.630 | .719 | 23.080 | 16.179 |

As shown in Table 2, the independent samples t-test revealed a statistically significant difference between the posttest scores of the control and experimental groups. The t-test result indicated a value of t = –11.420 with a significance level of p = 0.000, which is lower than the predetermined alpha level of 0.05. This result indicates that the difference in posttest scores between the two groups was not due to chance.

Based on the statistical analysis, the null hypothesis ($H_0$) stating that there is no significant difference in reading comprehension achievement between students taught using Kahoot and those taught using conventional methods was rejected. Conversely, the alternative hypothesis ($H_a$) was accepted. These findings confirm that the use of Kahoot had a statistically significant effect on improving students' reading comprehension of descriptive texts among tenth-grade students at SMA Muhammadiyah 2 Palembang.

## IV. DISCUSSION

The findings of this study provide empirical evidence that integrating Kahoot into reading instruction significantly enhances students' comprehension of descriptive texts. The substantial gain observed in the experimental group supports the effectiveness of game-based digital learning tools in EFL classrooms. This result is consistent with previous research reporting that Kahoot promotes higher academic performance through increased engagement and active participation (Manihuruk, 2020; Selian et al., 2022)..

One plausible explanation for the effectiveness of Kahoot lies in its interactive design. By transforming reading comprehension questions into a competitive and visually engaging activity, Kahoot encourages students to interact more actively with the text. Such interaction is crucial in reading comprehension, as students must process vocabulary, identify main ideas, and interpret meaning within context (Plass et al., 2015; Wang & Tahir, 2020). The immediate feedback provided by Kahoot also allows learners to recognize and correct misunderstandings in real time, reinforcing learning and supporting deeper cognitive processing.

In addition, Kahoot appears to positively influence students' motivation during the learning process. Motivation plays a critical role in reading comprehension, as motivated learners are more likely to engage with texts and apply effective reading strategies (Olson, 2009; Wang & Tahir, 2020). The competitive elements of Kahoot, such as scoreboards and rankings, may stimulate students' interest and encourage them to concentrate more carefully on reading tasks. This finding aligns with Alawadhi and Abu-Ayyash (2021) and Licorish et al. (2018), who found that Kahoot creates a fun learning atmosphere and increases student participation in English language learning.

By contrast, the control group, which received instruction without Kahoot, showed only moderate improvement. Although conventional teaching methods remain useful, they may not sufficiently address students' engagement and motivation, particularly in reading activities that require sustained attention. This suggests that traditional approaches, when used alone, may be less effective than interactive digital tools in improving reading comprehension, especially for descriptive texts that benefit from visualization and contextual engagement (Grabe & Stoller, 2019; Plass et al., 2015).

Despite these positive findings, several limitations should be acknowledged. The study involved a relatively small sample size from a single school, which may limit the generalizability of the results. Moreover, the intervention focused exclusively on descriptive texts and did not examine students' affective responses, such as motivation or attitudes, in depth. Future research is therefore recommended to involve larger and more diverse samples, explore different text types, and incorporate qualitative or motivational measures to provide a more comprehensive understanding of Kahoot's impact on reading instruction.

## V. CONCLUSION

This study provides empirical evidence that integrating Kahoot into EFL reading instruction significantly enhances students' comprehension of descriptive texts. Students who were taught using Kahoot demonstrated substantially higher reading comprehension achievement than those who received conventional instruction, indicating that game-based digital learning tools can be an effective pedagogical strategy in secondary school English classrooms.

The effectiveness of Kahoot can be attributed to its interactive and engaging design, which encourages active participation, sustained attention, and immediate feedback during the reading process. These features support key aspects of reading comprehension, including vocabulary processing, identification of main ideas, and interpretation of textual meaning. In addition, the motivational elements embedded in Kahoot, such as competition and instant scoring, appear to foster greater learner engagement, which is essential for successful reading comprehension in EFL contexts.

Despite its positive outcomes, this study has limitations. The findings are based on a relatively small sample from a single school and focus solely on descriptive texts. Therefore, the results should be interpreted with caution. Future research is recommended to involve larger and more diverse samples, examine other text genres, and incorporate qualitative or affective measures such as motivation and learner attitudes. Such investigations would provide a more comprehensive understanding of the role of Kahoot and similar digital tools in enhancing EFL reading instruction.

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## VII. DISCLOSURE

The author reports no conflicts of interest in this work.

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