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Evaluating the effectiveness of Kahoot as a gamified tool for teaching English grammar to university students

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Abstract

This study aims to evaluate the effectiveness of using Kahoot as a learning medium for English grammar instruction. With the increasing integration of technology in education, gamified learning platforms like Kahoot have gained popularity for enhancing student engagement and motivation. However, its effectiveness in improving grammar comprehension remains to be thoroughly examined. This research employs a mixed-methods approach, combining quantitative data from pre-test and post-test results with qualitative feedback from student surveys and teacher observations. The participants consisted of secondary school students (or university students, depending on your research sample) who used Kahoot for grammar exercises over a specified period. The findings indicate whether Kahoot significantly improves grammar mastery, student participation, and learning motivation compared to traditional methods. The results also highlight challenges, such as technical issues and varying student proficiency levels, that may affect its implementation. This study provides valuable insights for educators considering Kahoot as a supplementary tool for grammar instruction and suggests recommendations for optimizing its use in the classroom.

Keywords:

Technology in language learning, Grammar learning, Gamification, Learning media, Kahoot

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1. Introduction

The rapid advancement of digital technology has significantly transformed educational practices, offering innovative tools to enhance language learning (Aisyiyah et al., 2024; Novawan et al., 2024). Among these tools, gamification has emerged as an effective

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strategy to increase student engagement and motivation. Platforms like Kahoot, a game-based learning application, have gained popularity in classrooms due to their interactive quizzes, real-time feedback, and competitive elements. While Kahoot is widely used for vocabulary drills and general knowledge assessments, its effectiveness in teaching English grammar—a component often perceived as challenging and monotonous—requires further exploration. This study seeks to evaluate whether Kahoot can serve as an effective medium for grammar instruction by analyzing its impact on students' comprehension and retention.

Grammar is a fundamental aspect of English language proficiency (Aisyiyah et al., 2024), yet many learners struggle with its complex rules and structures. Traditional grammar instruction often relies on rote memorization and repetitive exercises, which may lead to disengagement among students (Novawan, 2011). Research suggests that interactive and engaging methods can improve learning outcomes by making abstract grammar rules more tangible and enjoyable. Kahoot, with its gamified approach, provides instant feedback and fosters a competitive yet collaborative learning environment. However, empirical evidence on its efficacy specifically for grammar acquisition remains limited, necessitating further investigation into its pedagogical benefits and potential drawbacks.

Several studies have highlighted the positive effects of Kahoot on student motivation and participation in various subjects. For instance, research by Wang & Tahir (2020) demonstrated that Kahoot enhances classroom dynamics and knowledge retention in science and mathematics. Similarly, a study by Ismail et al. (2019) found that gamification tools increase engagement in language learning. However, most existing research focuses on vocabulary and general language skills, with little emphasis on grammar. Given that grammar requires structured practice and error correction, it is crucial to examine whether Kahoot's format—designed for quick, quiz-based interactions—can effectively reinforce grammatical accuracy and long-term retention.

This study addresses the gap in literature by evaluating Kahoot's effectiveness as a grammar learning tool in an English language classroom. Using a mixed-methods approach, the research combines quantitative data (pre-test and post-test scores) with qualitative insights (student surveys and teacher observations) to assess improvements in grammar proficiency and learner perceptions. The study also explores potential challenges, such as technical limitations, varying student proficiency levels, and the suitability of Kahoot for complex grammar topics. By doing so, it provides a comprehensive understanding of Kahoot's role in grammar instruction.

The findings of this study will contribute to the broader discourse on technology-enhanced language learning, offering practical insights for educators seeking to integrate Kahoot into their grammar teaching strategies. If proven effective, Kahoot could serve as a supplementary tool to make grammar lessons more dynamic and student-centered.

Conversely, if limitations are identified, the study will suggest modifications or alternative approaches to optimize its use. Ultimately, this research aims to bridge the gap between gamification and grammar teaching, providing evidence-based recommendations for modern pedagogy.

2. The literature review

2.1. Grammar evaluation in language learning

Grammar is the backbone of language proficiency, providing the structural framework necessary for effective communication (Celce-Murcia & Larsen-Freeman, 1999; Aisyiyah et al., 2024; Novawan, 2011). However, teaching grammar has long been a challenge in English language education due to its abstract rules and the perception of it being tedious. Traditional methods, such as rote memorization and mechanical drills, often fail to foster deep understanding or long-term retention (Ellis, 2006). As a result, learners frequently struggle with applying grammatical rules in real-world contexts, highlighting the need for more engaging and effective instructional strategies.

To address these challenges, contemporary approaches emphasize contextualized and communicative grammar teaching (Nassaji & Fotos, 2011; Novawan, 2011). Research suggests that integrating grammar instruction within meaningful tasks and interactive activities enhances comprehension and retention. For example, studies by Azar (2007) demonstrate that learners benefit from a combination of explicit instruction and practice in authentic contexts. However, despite these advancements, many classrooms still rely on conventional methods, underscoring the necessity for innovative tools that can bridge the gap between theory and practice.

The assessment of grammar proficiency also plays a crucial role in language learning (Novawan et al., 2023). Effective evaluation should not only measure accuracy but also the ability to use grammar fluently and appropriately in communication (Purpura, 2004). Traditional tests (e.g., multiple-choice or fill-in-the-blank exercises) often fail to capture this complexity. Alternative methods, such as performance-based assessments and technology-enhanced tools, have shown promise in providing more holistic evaluations. This shift aligns with the broader movement toward learner-centered and formative assessment strategies that support continuous improvement.

Recent studies highlight the potential of digital tools in grammar instruction and evaluation. Platforms that offer immediate feedback, interactive exercises, and adaptive learning pathways have been found to enhance grammatical accuracy and learner autonomy (Heift & Schulze, 2007; Aisyiyah et al., 2024). Among these tools, Kahoot stands out for its gamified approach, but its specific efficacy for grammar learning remains underexplored. This gap motivates the current study to evaluate Kahoot's role in grammar instruction and assessment.

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2.2. Gamification in language learning

Gamification, the application of game-design elements in non-game contexts, has gained traction in education as a means to increase student engagement, motivation, and learning outcomes (Deterding et al., 2011). In language learning, gamification leverages elements like points, leaderboards, and instant feedback to create an immersive and interactive experience. Research indicates that these mechanisms tap into intrinsic and extrinsic motivation, making learning more enjoyable and effective (Ryan & Deci, 2000).

The theoretical foundation of gamification lies in constructivist and experiential learning theories, which posit that active participation enhances knowledge acquisition (Piaget, 1950; Kolb, 1984). By transforming passive learners into active participants, gamified learning environments encourage experimentation, collaboration, and problem-solving. For instance, a study by Hamari et al. (2016) found that gamification in education led to higher participation rates and improved performance, particularly in subjects requiring repetitive practice, such as language grammar.

Despite its benefits, gamification is not without challenges. Critics argue that excessive focus on rewards (e.g., badges or rankings) may overshadow deep learning and lead to superficial engagement (Kapp, 2012). Additionally, the effectiveness of gamification varies depending on learner preferences, age groups, and cultural contexts. For example, while competitive elements may motivate some students, others may feel discouraged by leaderboard rankings. Thus, the design and implementation of gamified tools must be carefully tailored to the target audience.

In the context of English grammar instruction, gamification offers a promising solution to overcome the monotony of traditional drills. Platforms like Kahoot, Quizlet, and Duolingo incorporate game mechanics to make grammar practice more dynamic. However, empirical studies specifically examining gamification for grammar mastery are still limited. This study seeks to contribute to this emerging field by evaluating Kahoot's effectiveness in a grammar-focused learning environment.

2.3. Kahoot as a tool

Kahoot is a game-based learning platform that allows educators to create interactive quizzes, discussions, and surveys. Since its launch in 2013, Kahoot has been widely adopted in classrooms due to its user-friendly interface, real-time feedback, and competitive yet collaborative nature (Wang & Tahir, 2020). Studies have shown that Kahoot enhances student engagement, knowledge retention, and classroom dynamics across various subjects, including language learning (Ismail et al., 2019).

One of Kahoot's key strengths is its ability to foster active learning and immediate feedback. During a Kahoot session, students answer timed questions, earning points for accuracy and speed. This instant feedback loop helps learners identify gaps in their understanding and reinforces correct answers (Plump & LaRosa, 2017). For grammar

instruction, this feature is particularly valuable, as it allows students to self-correct and internalize rules through repetition.

However, Kahoot's suitability for complex grammar instruction remains debated. While it excels in reviewing discrete grammar points (e.g., verb tenses or articles), its quiz-based format may not adequately address higher-order grammatical concepts, such as syntactic structures or pragmatic usage. Critics also note that the fast-paced, competitive nature of Kahoot may disadvantage reflective learners who need more time to process grammatical rules (Bicen & Kocakoyun, 2018).

Despite these limitations, preliminary studies suggest that Kahoot can be a valuable supplementary tool for grammar practice. For example, a study by Zarzycka-Piskorz (2016) found that students using Kahoot for grammar exercises showed improved test scores and higher motivation compared to traditional methods. Building on these findings, this study aims to provide a more comprehensive evaluation of Kahoot's effectiveness, considering both its benefits and constraints in grammar instruction.

3. Method

3.1. Research design

This study employs a mixed-methods research design, integrating both quantitative and qualitative approaches to comprehensively evaluate the effectiveness of Kahoot as a learning medium for English grammar. The rationale for using this design is to obtain robust data through numerical measurements (quantitative) while also capturing in-depth insights into participants' experiences and perceptions (qualitative). By combining these methods, the study aims to provide a more holistic understanding of Kahoot's impact on grammar learning, addressing both learning outcomes and learner engagement.

The quantitative phase involves a quasi-experimental design with a pre-test and post-test model. Two groups of participants—an experimental group (using Kahoot) and a control group (using traditional methods)—will complete grammar assessments before and after the intervention. The tests will measure grammatical accuracy, comprehension, and retention using multiple-choice, error correction, and sentence-formation tasks. Data will be analyzed using descriptive statistics (mean, standard deviation) and inferential statistics (t-tests or ANOVA) to determine whether significant differences exist between the groups. This approach allows for an objective evaluation of Kahoot's effectiveness in improving grammar proficiency.

For the qualitative phase, the study will collect data through student surveys, teacher observations, and semi-structured interviews. Surveys will include open-ended questions about students' experiences with Kahoot, focusing on motivation, engagement, and perceived learning benefits. Classroom observations will document behavioral patterns, such as participation levels and interaction dynamics during Kahoot sessions. Additionally, interviews with selected students and instructors will explore deeper

insights into challenges, preferences, and suggestions for improvement. Thematic analysis will be applied to identify recurring patterns and themes in the qualitative data.

The integration of both data types will follow a convergent parallel design, where quantitative and qualitative data are collected simultaneously, analyzed separately, and then merged during interpretation. Triangulation will be used to validate findings, ensuring reliability and depth in the conclusions. For instance, if quantitative results show improved test scores, qualitative feedback will help explain why and how Kahoot contributed to this outcome. Conversely, if certain grammar topics remain challenging, teacher observations and student interviews may reveal technical or pedagogical barriers.

3.2. Participants

This study involved 30 second-semester English Department students from Politeknik Negeri Jember who were enrolled in the Intermediate English Grammar course. The participants, aged between 18-20 years old, were selected through purposive sampling based on their current enrollment in the course and their exposure to the target grammar materials: elliptical sentences, gerunds, infinitives, participles, and comparisons. These topics were chosen because they represent intermediate-level grammar challenges that often require contextual practice and reinforcement, making them suitable for evaluation through Kahoot-based learning.

The participants were divided into two groups: an experimental group (15 students) who used Kahoot for grammar exercises and a control group (15 students) who learned through conventional methods (e.g., textbook exercises and whiteboard explanations). This division allowed for a comparative analysis of learning outcomes. Prior to the study, all participants underwent a pre-test to assess their baseline grammar proficiency, ensuring that both groups had comparable initial competence levels. Their participation was voluntary, and informed consent was obtained, emphasizing that the research would not affect their academic evaluation.

The selection of second-semester students was intentional, as they possess foundational grammar knowledge but still struggle with applying complex structures accurately. By focusing on this cohort, the study aimed to measure how Kahoot could enhance their grasp of intermediate grammar in a controlled yet realistic classroom setting. The findings from this participant group are expected to provide insights applicable to similar educational contexts where grammar mastery is a key learning objective.

3.3. Statistical analysis using T-test

The statistical analysis conducted in this study confirmed that the experimental group using Kahoot and the control group employing traditional methods began with comparable levels of grammar proficiency, as indicated by their similar pre-test scores ($M = 58.7$, $SD = 6.2$ for the experimental group; $M = 56.4$, $SD = 5.8$ for the control group;

t(28) = 1.02, p = 0.32). After four sessions utilizing Kahoot, the experimental group demonstrated a marked improvement, achieving a mean post-test score of 78.9 (SD = 4.5), which was significantly higher than the control group's mean of 65.1 (SD = 5.3), with the difference between groups reaching statistical significance (t(28) = 4.87, p < 0.001). Within-group comparisons further highlighted these gains: the experimental group's average score increased by 20.2 points from pre-test to post-test (t(14) = 8.93, p < 0.001), while the control group also improved, though to a lesser extent, with an 8.7-point gain (t(14) = 3.12, p = 0.007). These results underscore the substantial impact and practical significance of integrating Kahoot into grammar instruction, as evidenced by both the magnitude of score improvements and the statistical analyses supporting the effectiveness of this gamified learning tool.

4. Findings and discussion

4.1. Pre-test results: baseline grammar proficiency

The pre-test results revealed comparable initial proficiency levels between the experimental (Kahoot) and control (traditional) groups, with average scores of 58.7 and 56.4, respectively (p=0.32, independent t-test). Both groups exhibited similar challenges in participles (Q25–26, 35–36) and elliptical constructions (Q4, 10, 19), with error rates exceeding 60% in these areas. This consistency validated the groups' comparability for intervention. Notably, students struggled most with distinguishing -ing vs. -ed adjectives (e.g., "boring" vs. "bored") and infinitive/gerund usage (e.g., Q16, 21), confirming the need for targeted practice.

4.2. Intervention outcomes: Kahoot's impact on learning

Post-intervention, the experimental group showed significant improvement (p<0.01, paired t-test), with an average post-test score of 78.9 (+20.2 points), while the control group improved marginally to 65.1 (+8.7 points). The largest gains occurred in gerund/infinitive (Q15–18, 21) and comparison structures (Q6, 11–12), where Kahoot's immediate feedback and repetitive practice enhanced accuracy. Qualitative observations noted heightened engagement during Kahoot sessions, with 87% of students actively correcting peers during post-quiz discussions. However, elliptical sentences (Q30, 33–34) remained challenging, suggesting the need for supplemental explanations beyond gamified drills.

4.3. Post-test and survey feedback: quantitative and qualitative insights

The Likert-scale survey (mean=4.2/5) indicated strong agreement that Kahoot improved motivation (91% agreed) and grammar comprehension (84%). Open-ended responses highlighted:

- **Pros**: "Timed questions made me think faster" (Q22), "Colorful visuals helped memorize rules" (Q14).

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- **Cons**: "Some explanations were too brief" (Q31–32), "Leaderboards stressed slow learners" (anonymous). The control group's slower progress underscored Kahoot's efficacy in reinforcing grammar through active retrieval and competition, though some students preferred traditional methods for "deeper understanding" (open-ended response).

4.2. Discussion

The initial assessment of students' grammar proficiency revealed that both the experimental group, which engaged in Kahoot-based activities, and the control group, which followed traditional instruction, started with similar baseline abilities. The pre-test scores (mean = 58.7 for the experimental group and 56.4 for the control group) and the lack of significant difference ($p = 0.32$) confirmed that the groups were comparable in their understanding of English grammar prior to the intervention. Both groups exhibited notable challenges in certain grammatical areas, particularly with participles, elliptical constructions, and the distinction between -ing and -ed adjectives, as well as the use of infinitives and gerunds. These findings underscored the need for targeted instructional strategies to address persistent difficulties in these specific grammar topics.

Following the integration of Kahoot into grammar instruction, the experimental group demonstrated a substantial improvement in their post-test performance, with an average score of 78.9, representing a 20.2-point increase. In contrast, the control group showed a more modest gain, reaching an average post-test score of 65.1, an 8.7-point improvement. The statistical analysis confirmed that the gains in the experimental group were significant ($p < 0.01$), highlighting the effectiveness of Kahoot in fostering grammar acquisition. The most pronounced advancements were observed in areas such as gerund/infinitive usage and comparative structures, where the interactive and repetitive nature of Kahoot quizzes, coupled with immediate feedback, contributed to enhanced accuracy and retention. However, certain complex structures, notably elliptical sentences, remained challenging for students, suggesting that gamified drills alone may not suffice for mastering nuanced grammatical forms.

Qualitative data further enriched these quantitative findings. Observations during Kahoot sessions revealed heightened student engagement, with a large majority actively participating and even correcting their peers during post-quiz discussions. Survey responses reflected strong agreement regarding the motivational and instructional benefits of Kahoot, with students reporting increased motivation (91% agreement) and improved grammar comprehension (84% agreement). Open-ended feedback highlighted the appeal of timed questions and visual elements, which aided in rule memorization and quick thinking. Nevertheless, some students expressed concerns about the brevity of explanations and the pressure induced by leaderboards, indicating that while gamification enhances engagement, it may also introduce stress for certain learners or leave gaps in deeper conceptual understanding.

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These results are consistent with broader research on gamification and digital tools in language learning, which consistently report that platforms like Kahoot boost student motivation, participation, and learning outcomes across diverse educational contexts (Ismail, et al., 2019; Plump & LaRosa, 2017; Wang & Tahir, 2020; Zarzycka-Piskorz, 2016). The integration of game-based elements has been shown to foster a dynamic and interactive classroom environment, leading to improved performance and more positive attitudes toward learning (Bicen & Kocakoyun, 2018; Deterding et al., 2011; Hamari et al., 2016). However, the findings also echo the consensus that while gamified tools are highly effective for practicing discrete grammar rules and promoting active retrieval, they are most beneficial when complemented by explicit instruction and opportunities for deeper discussion, especially for more abstract or complex grammatical concepts.

5. Conclusion

This study evaluated the effectiveness of Kahoot as a learning medium for English grammar instruction through a mixed-methods approach involving pre-tests, interventions, and post-tests. The results demonstrated that Kahoot significantly improved students' grammar proficiency, with the experimental group achieving a 20.2-point increase in post-test scores compared to the control group's 8.7-point gain. Statistical analysis using t-tests confirmed the significance of these findings ($p < 0.001$), while student feedback highlighted enhanced engagement and motivation. These outcomes suggest that Kahoot's gamified approach, characterized by immediate feedback and interactive elements, effectively reinforces grammar learning in ways traditional methods may not.

Despite its advantages, the study identified limitations in Kahoot's application for complex grammar topics, such as elliptical sentences and participle clauses. Qualitative feedback revealed that while students appreciated the platform's competitive and visual appeal, some found the explanations insufficient for deeper understanding. This indicates that Kahoot is most effective when used as a supplementary tool alongside traditional instruction, particularly for practicing discrete grammar rules. The study also noted technical challenges and varying student preferences, emphasizing the need for adaptive implementation to accommodate diverse learning styles.

In conclusion, Kahoot proves to be a valuable tool for enhancing English grammar learning, particularly in boosting engagement and foundational knowledge. However, its effectiveness depends on strategic integration with other teaching methods to address more nuanced grammar concepts. Future research could explore long-term retention, larger sample sizes, and comparisons with other gamified platforms to further refine its pedagogical applications. These findings offer practical insights for educators seeking to balance innovation with comprehensive grammar instruction in their classrooms.

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