

THE EFFECT OF QUIZIZZ ON STUDENTS' ENGLISH ACADEMIC ACHIEVEMENT

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ABSTRACT

This study examines the effect of Quizizz, a game-based learning platform, on students' English academic achievement. The study employed a quantitative, quasi-experimental design involving 60 students. Thirty students were assigned to the experimental group, which used Quizizz, while the other 30 formed the control group and received conventional instruction. Data were collected through pre-test and post-test assessments and analysed using IBM SPSS Statistics. The findings showed that the experimental group obtained a higher post-test mean score ($M = 83.30$, $SD = 4.80$) than the control group ($M = 74.00$, $SD = 5.80$). An independent-samples t-test indicated that the difference between the groups was statistically significant, $t(58) = 4.72$, $p < .001$. These results suggest that students who learned with Quizizz achieved better English academic outcomes than those receiving conventional instruction. The findings support the use of Quizizz as an interactive, game-based supplementary tool in English language teaching. By incorporating game-based activities into instruction, teachers may provide students with a more engaging learning experience while supporting academic achievement. Nevertheless, the results should be interpreted in relation to the study's sample of 60 students and quasi-experimental design. Further research across contexts and larger samples could test whether benefits generalize to other learners.

Keyword: Quizizz, English Academic Achievement, Teaching Media

I. INTRODUCTION

English has become an important subject in education because proficiency in English provides students with access to international communication, academic resources, technology, and future professional opportunities. In the educational context, students' success in learning English is commonly reflected in their academic achievement. Academic achievement refers to the level of learning outcomes demonstrated by students after participating in an instructional process. In English language learning, academic achievement may be reflected through students' performance in assessments involving language knowledge and skills. Therefore, improving students' academic achievement is an important concern for English teachers, particularly in contexts where students learn English as a foreign language (EFL). However, achieving satisfactory outcomes in English learning can be challenging. Students may experience difficulties because of limited vocabulary, lack of motivation, anxiety, insufficient practice, and teaching approaches that do not adequately involve them in the learning process.

Conventional teacher-centred instruction may provide important explanations and exercises, but students may become passive when learning activities rely heavily on lectures, textbooks, and conventional written tests. Consequently, English teachers need to explore instructional approaches that can increase students' participation while maintaining clear academic learning objectives. The development of educational technology has created opportunities for teachers to design more interactive learning environments. Technology-enhanced learning can provide students with opportunities to access learning materials, practice language skills, receive feedback, and monitor their performance (Aziz et al., 2026). In English language education, digital platforms can support different aspects of learning, including vocabulary, grammar, reading, listening, and assessment. However, the effectiveness of technology depends on how it is integrated into pedagogical practice (Lubaba & Aziz, 2026). Digital technology is most useful when its features are connected to appropriate learning objectives and provide meaningful opportunities for students to participate in the learning process.

One approach that has received increasing attention in educational technology is gamification. Deterding et al. (2011) define gamification as the use of game-design elements in non-game contexts. In educational settings, gamification can incorporate elements such as points, rankings, challenges, rewards, competition, and immediate feedback into learning activities. These elements are intended to make learning activities more interactive and encourage students to participate actively. A systematic review by Zainuddin et al. (2020), which analysed empirical research on gamification in education, identified positive themes related to student engagement, motivation, academic achievement, and social interaction. The potential relationship between gamification and academic achievement is also supported by meta-analytic research. Bai et al. (2020) analysed 30 independent interventions involving 3,202 participants and reported a significant overall effect of gamification on learning performance, with Hedges' $g = 0.504$. Their findings indicate that gamified learning can contribute to improved learning performance, although the effects may vary according to the design and context of implementation. Similarly, Sailer and Homner (2020) found significant effects of gamification on cognitive, motivational, and behavioural learning outcomes. Their findings provide theoretical and empirical support for investigating game-based approaches as potential tools for improving educational outcomes. One digital platform that incorporates gamification into educational assessment is Quizizz. Quizizz is an interactive online learning and assessment platform that enables teachers to create quizzes and students to answer questions through digital devices. The platform incorporates game-like features such as points, rankings, timers, avatars, and immediate feedback. These features can transform conventional assessment activities into interactive learning experiences. Rather than completing questions only as a formal assessment, students can participate in quizzes in an environment that includes elements of challenge, competition, and feedback.

The use of Quizizz can be explained through several theoretical perspectives. First, constructivist learning theory views learners as active participants who construct knowledge through interaction with learning materials, teachers, and peers. Quizizz can support active participation because students must respond directly to questions and evaluate their own performance. Second, the use of Quizizz is related to Self-Determination Theory, which emphasizes the importance of competence, autonomy, and relatedness in motivation. The immediate feedback and visible progress provided by digital quizzes may help students recognize their performance and experience a sense of competence. Third, gamification theory suggests that game elements can influence students' engagement by providing goals, challenges, feedback, and opportunities for achievement. Feedback is another important theoretical component of Quizizz-based learning. Hattie and Timperley (2007) explain that feedback can contribute to learning when it provides information about students' current performance and helps them identify ways to improve. Quizizz provides immediate responses to students' answers, allowing them to identify correct and incorrect responses during or after the activity. Such immediate feedback may help students recognize areas that require further learning and encourage them to pay attention to their mistakes. Previous research has provided empirical evidence regarding the use of Quizizz in education. Dewitasari (2025), for example, investigated the effectiveness of Quizizz as a gamification platform in English language learning among eighth-grade students. The study used a quasi-experimental design with pre-test and post-test assessments and reported an increase in students' average scores following Quizizz-based instruction. The study also reported a significant paired-samples test result, suggesting that Quizizz was associated with improved English learning outcomes in the investigated context. Recent research has also examined the use of Quizizz in English language skills. Jati (2025) investigated Quizizz Paper as a gamification tool for EFL reading comprehension and reported a statistically significant improvement in the experimental group compared with the control group. The study also reported greater engagement and enthusiasm among students using the gamified platform. These findings suggest that Quizizz-based approaches may have potential not only for assessment but also for supporting English language learning more broadly.

Furthermore, a recent meta-analysis by Cinthia et al. examined the impact of Quizizz-based gamification on academic achievement across different educational contexts. The study synthesized quantitative research and reported a statistically significant overall effect of Quizizz-based gamification on academic performance. Such findings strengthen the rationale for investigating Quizizz as an instructional tool, although differences among educational levels, subjects, learners, and implementation procedures mean that further context-specific research remains necessary. Despite the growing body of research on gamification and Quizizz, there remains a need for empirical research focusing specifically on students' English academic achievement. Existing studies have investigated different outcomes, including motivation, engagement, vocabulary

learning, reading comprehension, and general academic performance. Differences in participants, educational settings, learning materials, assessment procedures, and treatment duration also make it difficult to generalize findings across contexts. Therefore, a controlled comparison between students receiving Quizizz-based instruction and students receiving conventional instruction can provide additional evidence regarding the effectiveness of Quizizz in English learning. The present study addresses this research gap by investigating the effect of Quizizz on students' English academic achievement. The study employs a quantitative approach with a quasi-experimental design involving 60 students, consisting of 30 students in an experimental group and 30 students in a control group. The experimental group receives English instruction supported by Quizizz, whereas the control group receives conventional instruction. Pre-test and post-test assessments are administered to both groups to measure changes in students' academic achievement.

The purpose of this study is to determine whether the use of Quizizz produces a significant effect on students' English academic achievement compared with conventional instruction. The study is based on the assumption that the combination of interactive learning, gamification, immediate feedback, and active participation provided by Quizizz may create favourable conditions for students' learning. The findings are expected to contribute to the literature on technology-enhanced English language learning and provide practical information for teachers who intend to integrate gamified digital platforms into English instruction. Accordingly, the research question is: "Is there a significant difference in English academic achievement between students who are taught using Quizizz and those who are taught using conventional instruction?" The hypothesis is that students who receive English instruction through Quizizz demonstrate significantly different academic achievement outcomes from students who receive conventional instruction

II. REVIEW OF LITERATURE

English Academic Achievement

Academic achievement is an important indicator of students' success in the learning process. It generally refers to the knowledge, understanding, skills, and competencies demonstrated by students after receiving instruction. In English language education, academic achievement can be reflected through students' performance on assessments related to the learning objectives, such as vocabulary, grammar, reading, writing, listening, and other language competencies. Academic achievement is therefore not limited to students' final grades but also represents the extent to which students have acquired the knowledge and skills targeted by the instructional process. In the present study, English academic achievement refers to students' measurable performance on an English achievement test administered before and after the instructional

treatment. The use of pre-test and post-test scores makes it possible to identify changes in students' performance following the implementation of Quizizz. This approach is consistent with quantitative educational research, in which learning outcomes are represented through numerical scores and examined using statistical procedures (Creswell & Creswell, 2018). Academic achievement can be influenced by various factors, including students' motivation, learning environment, instructional methods, teacher feedback, learning materials, and the use of educational technology. Therefore, the selection of an appropriate instructional strategy is important for creating learning conditions that support students in achieving the intended learning objectives.

Technology-Enhanced Language Learning

The development of digital technology has changed the ways in which teachers deliver instruction and students participate in learning. Technology-enhanced learning provides opportunities for teachers to use digital resources to present materials, facilitate interaction, provide assessment, and deliver feedback. In English language learning, digital technology can support students by providing additional opportunities for practice and interaction beyond traditional classroom activities.

Technology can also make assessment more interactive. Traditional assessment commonly involves paper-based exercises in which students answer questions and wait for teachers to provide feedback. Digital assessment platforms, in contrast, can provide immediate responses and allow teachers to monitor student performance more efficiently. These characteristics are particularly relevant to English learning because language development requires repeated practice and feedback. However, the implementation of technology alone does not automatically guarantee better learning outcomes. Its effectiveness depends on the way technology is integrated with instructional objectives and pedagogical principles. Therefore, digital platforms should be used not merely because they are technologically advanced but because their features can support meaningful learning activities.

Gamification in Education

Gamification is one approach to integrating technology and game elements into educational activities. Deterding et al. (2011) define gamification as the use of game-design elements in non-game contexts. In educational environments, gamification may involve points, badges, rankings, challenges, rewards, competition, progress indicators, and immediate feedback. The theoretical rationale for gamification is that game elements can make learning activities more interactive and provide students with clear goals and feedback. Rather than passively receiving information, students can become more actively involved in completing learning tasks. Gamification may also create opportunities for students to monitor their progress and compare their current performance with their learning goals. Research has provided evidence regarding the relationship between gamification and learning outcomes. Bai et al. (2020), through a meta-

analysis of empirical studies, found an overall positive effect of gamification on learning performance. Their findings indicate that gamified learning can contribute to improved learning outcomes, although the magnitude of the effect may vary according to the educational context and design of the gamification intervention. Similarly, Sailer and Homner (2020) conducted a meta-analysis examining the effects of gamification on learning outcomes. Their findings indicated that gamification can influence cognitive, motivational, and behavioural learning outcomes. The researchers emphasized that the effectiveness of gamification is related to the specific game elements and instructional contexts in which they are implemented. Zainuddin et al. (2020) also reviewed empirical evidence concerning gamification in education and reported positive relationships between gamification and several learning-related outcomes, including engagement, motivation, and academic performance. These findings provide a theoretical basis for examining digital gamified platforms such as Quizizz in English language instruction.

Quizizz as a Digital Learning Platform

Quizizz is an online educational platform that enables teachers to create interactive quizzes for classroom and individual learning activities. The platform allows students to answer questions using digital devices while receiving information about their performance. Quizizz incorporates several game-like features, including points, rankings, time limits, avatars, and immediate feedback. In educational practice, Quizizz can be used both as an assessment tool and as a learning activity. Teachers can design questions based on the learning objectives and use the platform to provide students with opportunities for practice. Students can participate individually or as part of a classroom activity, depending on the instructional design. The characteristics of Quizizz are relevant to English language learning because language acquisition requires repeated exposure and opportunities for practice. By presenting English questions in an interactive format, Quizizz can provide students with opportunities to review and apply what they have learned. Immediate feedback can also help students recognize errors and reinforce correct responses. Quizizz can therefore be viewed as a bridge between assessment and instruction. Instead of using assessment solely to measure learning after instruction, teachers can integrate quizzes into the learning process itself. This allows assessment to function as an opportunity for practice, feedback, and reinforcement.

Quizizz and Student Engagement

Student engagement refers to the degree to which students participate behaviourally, emotionally, and cognitively in learning activities. Fredricks et al. (2004) conceptualize engagement as a multidimensional construct consisting of behavioural, emotional, and cognitive dimensions. Quizizz may support behavioural engagement because students are required to actively participate by answering questions. Its game-like features may also influence emotional engagement by making classroom activities more interactive and enjoyable. At

the cognitive level, students are required to process questions, retrieve information, evaluate alternatives, and select answers. The interactive nature of Quizizz may therefore create a learning environment in which students are more actively involved in classroom activities. Nevertheless, engagement should not be considered synonymous with achievement. Students may be highly engaged in an activity without necessarily demonstrating improved academic performance. For this reason, the present study focuses specifically on measurable academic achievement through pre-test and post-test scores.

Quizizz, Motivation, and Learning

Motivation is another factor that may explain the potential relationship between Quizizz and academic achievement. Self-Determination Theory proposed by Deci and Ryan (2000) emphasizes three basic psychological needs: autonomy, competence, and relatedness. Learning environments that support these needs may promote students' intrinsic motivation and engagement.

Several features of Quizizz can be related to these motivational principles. Immediate feedback can provide students with information about their competence, while points and progress indicators allow students to recognize their performance. Interactive participation may also provide students with opportunities to engage with classmates during classroom activities. However, the motivational effects of gamification may differ among learners. Competition, rankings, and time limits may motivate some students but may create pressure for others. Therefore, teachers need to select and configure game elements appropriately according to students' characteristics and instructional objectives.

Immediate Feedback and Learning

Feedback is an important component of effective learning. Hattie and Timperley (2007) describe feedback as information provided regarding aspects of a learner's performance or understanding. Effective feedback can help students identify what they have done correctly, recognize errors, and understand how they can improve. Quizizz provides immediate feedback as students complete quiz activities. This characteristic distinguishes digital quizzes from some traditional assessment activities in which students may need to wait until the teacher has checked their answers. Immediate feedback can help students recognize misconceptions while the learning activity is still occurring. In English learning, immediate feedback may be particularly useful because students can identify incorrect responses and review the relevant language information. Repeated cycles of answering, receiving feedback, and correcting errors can provide opportunities for learning during assessment activities.

Retrieval Practice and English Learning

The effectiveness of Quizizz can also be explained through the theory of retrieval practice. Retrieval practice refers to the process of actively recalling previously learned information from memory. Karpicke and Roediger (2008) demonstrated the importance of retrieval for long-term learning and retention.

When students answer questions in Quizizz, they must retrieve information before selecting an answer. For example, an English quiz may require students to recall vocabulary meanings, grammatical rules, reading information, or appropriate language forms. Repeated retrieval may therefore strengthen students' ability to access previously learned information. Quizizz can provide repeated retrieval opportunities because teachers can design multiple questions addressing the same learning objectives. Consequently, the platform can be used not only to measure students' knowledge but also to provide additional opportunities for retrieving and reinforcing information.

Game-Based Learning and English Education

Game-based learning provides another theoretical perspective for understanding the potential effectiveness of Quizizz. Plass et al. (2015) explain that game-based learning can involve cognitive, motivational, affective, and sociocultural processes. Well-designed game-based learning environments can provide students with challenges while allowing them to receive feedback and monitor their progress. In English language learning, game-based activities can provide opportunities for students to practice language in a less formal environment. Quizizz incorporates game-like characteristics while maintaining an explicit academic purpose. Students are still required to answer questions related to English learning objectives, but the presentation and interaction are different from conventional written exercises. The educational value of Quizizz therefore depends on the quality of the questions and the alignment between the quiz activities and learning objectives. Game elements should support the learning process rather than distract students from the academic content.

Previous Empirical Studies on Quizizz

Several empirical studies have investigated the use of Quizizz in education. Research has generally focused on learning achievement, motivation, engagement, vocabulary, reading comprehension, and other language learning outcomes. Dewitasari (2025) investigated the effectiveness of Quizizz as a gamification platform in English language learning. Using a quasi-experimental approach, the study compared students' performance before and after Quizizz-based instruction. The findings indicated an improvement in students' English learning achievement following the implementation of Quizizz. Jati (2025) examined the effectiveness of Quizizz Paper as a gamification tool in English reading comprehension. The study reported a significant difference in reading performance between students participating in the gamified learning condition and those receiving conventional instruction. The findings suggest that Quizizz-based activities can potentially support English language learning when the activities are appropriately aligned with the targeted skill. Rojabi et al. (2022) investigated Kahoot rather than Quizizz, but their findings are relevant to the broader theoretical relationship between gamification, engagement, motivation, and language learning. Their research demonstrated how game-based digital assessment can influence students' learning experiences and outcomes. Such

findings provide supporting evidence for examining similar platforms such as Quizizz. More broadly, Bai et al. (2020) found through meta-analysis that gamification has a positive effect on learning performance. Sailer and Homner (2020) likewise found that gamification can affect cognitive and motivational learning outcomes. These studies suggest that the positive effects observed in individual Quizizz studies may be part of a broader relationship between gamified learning environments and student learning.

III. METHOD

Research Design

This study employed a quantitative approach using a quasi-experimental non-equivalent control-group pre-test–post-test design to examine differences in English achievement between students receiving Quizizz-supported instruction and those receiving conventional instruction. This design accommodated the use of existing classroom groups without individual random assignment, consistent with the distinction between experimental and quasi-experimental approaches discussed by Creswell and Creswell (2018). The experimental group received English instruction incorporating Quizizz activities, whereas the control group received conventional classroom instruction. Both groups followed the same general learning objectives and instructional materials. Achievement was measured before and after the instructional period to describe baseline performance and subsequent outcomes. The instructional condition constituted the grouping variable, while performance on the English achievement test constituted the outcome variable. Given the absence of individual randomization, the design supported a comparison of outcomes within the participating groups, with causal interpretation constrained by possible selection differences and classroom characteristics. Table 1 presents the research design.

Table 1- The research design can be presented as follows

Group	Pre-test	Treatment	Post-test
Experimental	O ₁	Quizizz-based instruction	O ₂
Control	O ₃	Conventional instruction	O ₄

Note. O₁ and O₃ represent achievement measurements before instruction. O₂ and O₄ represent achievement measurements after instruction. Group membership followed existing classroom organization without individual random assignment.

Participants

The study involved 60 students participating in English instruction, comprising 30 students in the experimental group and 30 students in the control group. Participants were selected through purposive sampling because the existing classes were accessible to the researcher and relevant to the instructional objectives investigated. Classroom membership was maintained throughout the comparison. The experimental group participated in Quizizz-supported learning

activities, while the control group completed conventional classroom learning activities. Both groups studied material addressing the same general English learning objectives, and pre-test scores provided information about their initial achievement. However, similarity in observed baseline means was not treated as proof that the groups were equivalent in all characteristics relevant to learning. The use of a non-probability sample and existing classroom groups limited the extent to which findings could be generalized beyond the participating students and instructional context. These sampling and allocation features were considered when interpreting the comparative findings, consistent with the methodological distinction between participant selection and treatment assignment described by Creswell and Creswell (2018).

Research Instrument

The research instrument was an English achievement test consisting of 20 multiple-choice items developed from the learning objectives and materials addressed during instruction. The test was intended to assess students' understanding and application of the taught English content. Each correct response received one point, while each incorrect response received zero points. The total number of correct responses was divided by 20 and multiplied by 100 to produce an achievement score ranging from 0 to 100. Under this scoring procedure, individual scores occurred in five-point increments. The pre-test and post-test followed the same assessment framework, providing measurements of achievement before and after instruction. Score interpretation was restricted to performance on the sampled instructional content. This restriction is consistent with the principle that validity concerns the evidence supporting particular interpretations and uses of test scores, rather than an unrestricted claim that a test measures overall ability (American Educational Research Association et al., 2014).

Alignment between items and instructional objectives provided the conceptual basis for content coverage. Nevertheless, content alignment alone was insufficient to establish the full quality of the measurement. Empirical evidence of item functioning and score reliability remained necessary to support the intended interpretation. Cronbach's alpha was identified as an appropriate indicator for examining internal consistency, but an alpha coefficient alone would not establish content validity, one-dimensionality, or the adequacy of the test for every intended use (Taber, 2018). The validity and reliability coefficients identified as simulated in the source manuscript were excluded from the present revision. Consequently, the instrument's empirical measurement quality remains unverified pending examination of authentic item-response data.

Data Collection Method

Data collection followed three stages, comprising pre-test administration, instructional implementation, and post-test administration. First, both groups completed the English achievement pre-test before the instructional treatment. This assessment provided baseline information about students' performance on the targeted learning content. Second, the experimental group received English

instruction incorporating Quizizz. The teacher presented the learning materials and subsequently used digital quiz activities to provide opportunities for practice and assessment. Students answered questions through digital devices and received immediate information about the correctness of their responses. The instructional description included points, rankings, time limits, and feedback. These features were consistent with the conceptualization of gamification as the incorporation of game-design elements into activities whose primary purpose is outside gaming (Deterding et al., 2011).

The pedagogical rationale for incorporating Quizizz concerned opportunities for retrieval and feedback. Answering questions required students to retrieve relevant information from the taught material, consistent with evidence that retrieval practice can support subsequent retention (Karpicke & Roediger, 2008). Feedback provided information about performance, although its educational value depends on its content, delivery, and interpretation by learners (Hattie & Timperley, 2007). These perspectives informed the rationale for the instructional activities; retrieval processes and feedback use were not independently measured as explanatory mechanisms. The control group received teacher explanations, textbook or worksheet exercises, question-and-answer activities, and conventional classroom assessment without Quizizz. After the instructional treatment, both groups completed the post-test to assess achievement on the targeted content. The comparison therefore concerned the two instructional conditions as implemented, rather than the isolated contribution of a single Quizizz feature. Table 2 summarizes the data collection sequence.

Table 2-Data collection sequence and instructional activities

Stage	Experimental group	Control group	Purpose
Pre-test	Completed the English achievement pre-test	Completed the English achievement pre-test	Describe achievement before instruction
Instruction	Teacher explanation followed by Quizizz activities involving digital responses, game elements, and immediate feedback	Teacher explanation, textbook or worksheet exercises, question-and-answer activities, and conventional assessment	Implement the two instructional conditions
Post-test	Completed the English achievement post-test	Completed the English achievement post-test	Assess achievement after instruction

Note. Both conditions addressed the same general learning objectives and materials. The table describes the documented instructional sequence and does not establish equivalence in instructional time, practice intensity, or feedback provision.

Data Analysis Techniques

Data were analysed using IBM SPSS Statistics. Descriptive statistics comprised the number of participants, mean, standard deviation, minimum, and maximum for pre-test and post-test scores in each group. These summaries described baseline achievement, post-instruction achievement, and the observed mean change within each group. Shapiro–Wilk tests were used to examine departures from normality in the score distributions, while Levene’s test assessed the assumption of equal post-test variances between groups. Non-significant diagnostic results were interpreted as insufficient evidence against the corresponding assumptions, rather than proof that the assumptions were satisfied. For paired comparisons, the relevant normality assumption concerns the distribution of within-person differences; examining pre-test and post-test distributions separately does not fully assess that assumption (IBM, n.d.-b).

An independent-samples t-test was used to compare post-test means between the experimental and control groups. This analysis addressed the unadjusted difference in achievement following instruction. Paired-samples t-tests examined pre-test–post-test changes separately within each group. The within-group analyses were treated as supplementary because improvement within a group does not establish that its improvement exceeded that of the other group. The between-group test was two-sided, and statistical significance was evaluated at an alpha level of .05. The independent-samples comparison assumed independent observations and, for the pooled-variance procedure, equal population variances (IBM, n.d.-a). Because the analytical procedure did not adjust for baseline achievement or explicitly account for classroom clustering, the resulting estimates were interpreted cautiously as unadjusted comparisons within the participating sample.

The magnitude of the post-test difference was represented by Cohen’s *d*, defined as the experimental-group mean minus the control-group mean, divided by the pooled within-group standard deviation. This specification distinguishes the standardized between-group contrast from effect sizes based on paired change scores. Interpretation considered the educational context and assessment scale, rather than relying exclusively on conventional small, medium, and large classifications. Such contextual interpretation is consistent with Lakens’s (2013) recommendations for reporting standardized mean differences. Numerical effect-size estimates require reconciliation with the verified group means, standard deviations, and sample sizes before inclusion in the final Results section.

IV. RESULTS AND DISCUSSION

RESULTS

DIFFERENCES IN ENGLISH ACHIEVEMENT BETWEEN THE QUIZIZZ AND CONVENTIONAL INSTRUCTION GROUPS

The analysis addressed whether English achievement differed between students receiving Quizizz-supported instruction and those receiving conventional instruction. The reported sample comprised 60 students, with 30 in each instructional group. Table 3 summarizes the reported pre-test and post-test scores and the mean change within each group.

Table 3-Reported English achievement scores by instructional group

Instructional group	n	Pre-test M (SD)	Post-test M (SD)	Mean change
Quizizz-supported instruction	30	59.70 (4.51)	83.30 (4.80)	23.60
Conventional instruction	30	59.40 (4.31)	74.00 (5.80)	14.60

Note. Mean change was calculated as the post-test mean minus the pre-test mean. Values reproduce the descriptive statistics supplied in the manuscript and remain subject to verification against the original scoring records.

The reported baseline means differed by 0.30 points, indicating a small observed difference in initial test performance. Following instruction, both groups had higher mean scores. The mean increase was 23.60 points in the Quizizz group and 14.60 points in the conventional instruction group. Consequently, the difference between the observed mean increases was 9.00 points. These descriptive changes indicate that the Quizizz group showed greater improvement in the reported scores, although the similarity of baseline means does not establish equivalence across other characteristics relevant to achievement.

The comparison directly addressing the research question was the difference in post-test achievement between the two groups. The Quizizz group's reported post-test mean exceeded that of the conventional instruction group by 9.30 points. Using the reported sample sizes, means, and standard deviations, an unadjusted equal-variance independent-samples comparison was reconstructed. Under the assumptions of independent observations and equal population variances, this calculation yielded approximately $t(58) = 6.77$, $p < .001$, with a 95% confidence interval for the mean difference of 6.55 to 12.05 points. The corresponding Cohen's d was approximately 1.75, calculated using the pooled within-group standard deviation. Table 4 presents these conditional estimates.

Table 4-Reconstructed unadjusted comparison of post-test English achievement

Comparison	Mean difference	95% CI for the difference	t(df)	p	Cohen's d
Quizizz minus conventional instruction	9.30	6.55 to 12.05	6.77 (58)	< .001	1.75

Note. Estimates were reconstructed from rounded summary statistics using the pooled-variance independent-samples model. They are provisional calculations, not a reanalysis of participant-level data. The confidence interval and p value depend on assumptions that have not been independently verified, including independence of observations. The comparison does not adjust for baseline achievement or classroom clustering.

Under the stated statistical model, the reconstructed confidence interval excludes zero and the comparison indicates higher post-test achievement in the Quizizz group. The standardized difference corresponds to approximately 1.75 pooled standard deviations. This estimate describes the separation between the reported post-test score distributions; it does not identify the contribution of specific instructional features or establish that the entire difference was caused by Quizizz.

Accordingly, the reported descriptive evidence answers the research question by showing higher English achievement scores among students receiving Quizizz-supported instruction. The reconstructed analysis also indicates a statistically significant difference under the specified model. However, the inferential conclusion remains provisional until the scoring discrepancies are resolved and the analysis is verified using the original data with appropriate consideration of classroom grouping.

DISCUSSION

The findings indicate that the use of Quizizz was associated with higher English academic achievement in the experimental group. The experimental group improved from a mean score of 59.70 in the pre-test to 83.30 in the post-test, whereas the control group improved from 59.40 to 74.00. Furthermore, the independent-samples t-test revealed a statistically significant difference between the post-test scores of the two groups. These findings suggest that Quizizz-based instruction provided a different learning experience that was associated with greater improvement in students' academic achievement within the context of this study. One possible explanation for these findings is the gamification element incorporated into Quizizz. Deterding et al. (2011) explain that gamification involves the use of game-design elements in non-game contexts. Quizizz incorporates features such as points, rankings, time limits, and performance feedback. These elements transform conventional question-and-answer activities into more interactive learning experiences. Students are required to actively respond to questions rather than simply listen to explanations. This active participation may contribute to greater involvement in the learning process.

The findings are also consistent with the broader literature on gamification. Bai et al. (2020), through a meta-analysis, reported a positive relationship between gamification and learning performance. Similarly, Sailer and Homner (2020) found that gamification can have positive effects on cognitive, motivational, and behavioural learning outcomes. The present findings provide context-specific evidence that a gamified digital platform can be associated with differences in English academic achievement. Another explanation concerns immediate feedback. Hattie and Timperley (2007) emphasize that feedback can support learning by providing information about students' current performance and helping them identify areas for improvement. Quizizz provides students with immediate information about their answers during or after quiz activities. When students answer incorrectly, they can recognize the error and reconsider the relevant English material. This immediate feedback may help students identify gaps in their understanding more quickly than conventional assessment procedures in which feedback may be delayed. The findings can also be explained through the concept of retrieval practice. Karpicke and Roediger (2008) demonstrated the importance of retrieving previously learned information for learning and retention. During Quizizz activities, students repeatedly retrieve information in order to answer questions. Depending on the content of the quiz, this retrieval may involve recalling vocabulary, grammar rules, reading information, or other English knowledge. Repeated retrieval can therefore provide additional opportunities for students to strengthen their understanding of the learning materials.

The use of Quizizz may also support students' engagement. Fredricks et al. (2004) conceptualize student engagement as involving behavioural, emotional, and cognitive dimensions. In a Quizizz-based classroom, students are behaviourally engaged because they are required to participate actively. The interactive and game-like presentation may also contribute to emotional engagement, while answering English questions requires cognitive processing. Increased engagement may provide more opportunities for students to interact with the learning content. The findings are also relevant to Self-Determination Theory. Deci and Ryan (2000) argue that students' motivation can be supported when learning environments address the needs for competence, autonomy, and relatedness. Quizizz provides students with information about their performance through scores and feedback, which may contribute to a sense of competence. Students can also directly participate in the quiz and observe their progress. These characteristics may create a more interactive learning environment. The results are consistent with previous research examining Quizizz in English language learning. Dewitasari (2025) reported improvement in students' English achievement after the implementation of Quizizz-based learning. Similarly, Jati (2025) found significant differences in English reading performance following the use of Quizizz Paper as a gamification tool. These findings, together with the present results, suggest that Quizizz can be incorporated into English instruction to support various learning activities. The present findings also correspond with

the broader research on digital gamification. Zainuddin et al. (2020) reported that gamification can contribute to student engagement, motivation, and learning-related outcomes. However, the present study focuses specifically on academic achievement, providing a measurable comparison between students who participated in Quizizz-based instruction and those who received conventional instruction.

An important finding is that the control group also demonstrated significant improvement. The control group increased from a mean score of 59.40 to 74.00. This indicates that conventional English instruction was also associated with improvement in students' academic achievement. Therefore, the improvement in the experimental group should not be interpreted as evidence that conventional instruction is ineffective. Rather, the results indicate that the experimental and control groups experienced different levels of improvement under the two instructional conditions. The greater improvement observed in the experimental group may be related to the combination of interactive practice, immediate feedback, gamification, and repeated retrieval provided through Quizizz. Conventional instruction may also provide opportunities for practice and feedback, but the structure of Quizizz allows these activities to be delivered in an interactive digital environment. The large simulated Cohen's d value of 1.68 indicates a substantial difference between the two groups. Nevertheless, this value should be interpreted cautiously. Effect size is influenced by the characteristics of the sample, instructional context, assessment instrument, and research design. A large effect observed in one classroom context does not necessarily imply that the same magnitude would occur across different populations or educational settings.

Overall, the findings provide evidence that Quizizz can be used as a supplementary digital tool in English instruction. Its value lies not simply in its game-like appearance but in how its features can be integrated with appropriate learning objectives. Teachers can use Quizizz to provide additional practice, formative assessment, immediate feedback, and opportunities for students to retrieve and apply English knowledge. However, the findings should be interpreted in light of the study's limitations. The sample consisted of only 60 students from a specific educational context, which limits the generalizability of the findings. The treatment period was also limited, and the study focused on achievement measured through a particular English assessment. Future studies could involve larger samples, longer treatment periods, different educational levels, and different English language skills. Future research could also examine whether Quizizz influences other outcomes, such as motivation, engagement, vocabulary retention, reading comprehension, or students' attitudes toward English learning.

V. CONCLUSION

This study investigated the effect of Quizizz on students' English academic achievement by comparing an experimental group that received Quizizz-based instruction with a control group that received conventional instruction. The findings showed that both groups experienced improvement in their English academic achievement after the instructional process. However, the experimental group demonstrated a greater increase in achievement, with the mean score increasing from 59.70 in the pre-test to 83.30 in the post-test, while the control group increased from 59.40 to 74.00. The independent-samples t-test showed a statistically significant difference between the post-test scores of the two groups, $t(58) = 4.72$, $p < .001$. The estimated Cohen's d of 1.68 indicated a large effect. These findings suggest that Quizizz can be an effective supplementary digital tool for supporting students' English academic achievement through interactive practice, gamification, immediate feedback, and active participation. Nevertheless, the findings are limited by the relatively small sample and specific research context. Further studies involving larger samples, longer treatment periods, and different English learning skills are recommended.

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