



Efectos de una intervención gamificada basada en Kahoot! sobre el aprendizaje de vocabulario en estudiantes de nivel A1

Effects of a Kahoot!-Based Gamified Intervention on Vocabulary Learning among A1 Students

ROQUE JACINTO HERNANDEZ BUSTOS

<https://orcid.org/0009-0004-8260-500X>

roque.hernandez@uartes.edu.ec

Universidad de las Artes

Ecuador – Guayaquil

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*Corresponding author

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RESUMEN

La adquisición de vocabulario sigue siendo un reto persistente para los estudiantes de inglés de nivel A1, particularmente cuando el tiempo de exposición es limitado y la práctica en el aula depende en gran medida de la memorización. Este estudio tuvo como objetivo determinar el efecto de una intervención gamificada basada en Kahoot! sobre el aprendizaje de vocabulario y describir las percepciones de los estudiantes sobre la experiencia. Se implementó un diseño cuantitativo preexperimental de un solo grupo con 35 estudiantes de noveno grado de 13 a 14 años. La intervención incluyó seis sesiones de 45 minutos estructuradas en torno a la activación, la construcción de conocimiento y la consolidación. Se administró una prueba de vocabulario antes y después de la intervención, seguida de una encuesta de percepción de ocho ítems. El puntaje medio aumentó de 6.23 (DE = 3.05) a 7.51 (DE = 1.69), una ganancia de 1.28 puntos. La prueba de rangos con signo de Wilcoxon indicó una diferencia estadísticamente significativa ($Z = -2.563$; $p = .010$) con un tamaño del efecto moderado ($r = .43$). Diecinueve participantes mejoraron, tres obtuvieron el mismo puntaje y trece obtuvieron un puntaje menor. Las respuestas de la encuesta mostraron alta aceptación, accesibilidad percibida, interés sostenido y mayor participación. Los hallazgos sugieren que la gamificación puede fortalecer el vocabulario receptivo y productivo cuando se alinea con objetivos lingüísticos explícitos, retroalimentación inmediata y oportunidades de uso contextualizadas.

Palabras clave: gamificación, Kahoot!, vocabulario, inglés A1, educación secundaria

ABSTRACT

Vocabulary acquisition remains a persistent challenge for A1 English learners, particularly when exposure time is limited and classroom practice relies heavily on memorization. This study aimed to determine the effect of a Kahoot!-based gamified intervention on vocabulary learning and to describe students' perceptions of the



experience. A quantitative, one-group pre-experimental design was implemented with 35 ninth-grade students aged 13 to 14. The intervention included six 45-minute sessions structured around activation, knowledge building, and consolidation. A vocabulary test was administered before and after the intervention, followed by an eight-item perception survey. The mean score increased from 6.23 (SD = 3.05) to 7.51 (SD = 1.69), representing a gain of 1.28 points. The Wilcoxon signed-rank test indicated a statistically significant difference ($Z = -2.563$; $p = .010$) with a moderate effect size ($r = .43$). Nineteen participants improved, three obtained the same score, and thirteen scored lower. Survey responses showed high acceptance, perceived accessibility, sustained interest, and increased participation. The findings suggest that gamification can strengthen receptive and productive vocabulary when it is aligned with explicit language objectives, immediate feedback, and contextualized opportunities for use.

Keywords: gamification, Kahoot!, vocabulary, A1 English, secondary education



INTRODUCTION

Vocabulary is a structural component of communicative competence because it supports listening and reading comprehension, the production of utterances, and interaction in everyday situations. At initial proficiency levels, knowing a word involves more than recognizing its translation: learners must identify its form, associate it with meaning, distinguish it from related terms, and retrieve it when a communicative context requires it. Cameron (2001) explains that lexical knowledge includes individual words, multiword units, and semantic relationships. Similarly, Milton (2010) indicates that vocabulary breadth is associated with the proficiency levels described in the Common European Framework of Reference for Languages (CEFR). Instruction that expands access to vocabulary and promotes its use is therefore essential as learners move from elementary proficiency toward more autonomous communication.

At the A1 level, the CEFR characterizes learners as users who can understand and employ familiar expressions related to concrete needs, provided that interaction is simple and supported by context (Council of Europe, 2020). This description reveals two simultaneous demands: learners need an accessible basic repertoire and must learn to mobilize it in real tasks. When vocabulary is limited, a student may recognize grammatical structures and still fail to understand a message or find the words needed to respond. Lexical limitations also affect confidence because they force learners to interrupt production, rely constantly on translation, or avoid interaction. The pedagogical challenge is therefore to turn vocabulary into an available resource for understanding and acting, rather than a list remembered only during an assessment.

This challenge intensifies in institutions where English receives few instructional hours per week and classroom time must be balanced among listening, speaking, reading, and writing. Under these conditions, mechanical repetition may appear efficient; however, brief and decontextualized exposure often produces fragile learning. Sedita (2005) argues that effective instruction combines explicit teaching, repeated encounters with words, and strategies that help learners infer and consolidate meanings. The amount of practice matters, but so does its quality: the same word should appear in questions, images, examples, and decisions that require students to retrieve and differentiate it. Active retrieval supports functional memory and gives teachers immediate evidence of errors, misconceptions, and progress.

Educational technologies expand opportunities to distribute such practice within limited class time. Mobile devices, interactive quizzes, and response platforms can



present multimodal stimuli, record decisions, and return information within seconds. Balla (2023) observes that technology integration can diversify access to content and support experiences that better accommodate learning preferences. Nevertheless, introducing a tool does not automatically constitute innovation. Its instructional value depends on the relationship among the digital activity, the language objective, and the cognitive actions required. If students merely select options for speed, the platform may entertain without producing deep understanding; if they analyze clues, explain decisions, and review errors, the same technology can become an environment for deliberate practice.

Educational gamification uses game-related elements—challenge, feedback, rules, scoring, and progression—to organize a learning experience. Kahoot! is one of its most widely used applications: it enables teachers to build quizzes with text and images, receive responses in real time, and display aggregated results to the group. This dynamic temporarily transforms formative assessment into a visible, participatory activity. Sabandar et al. (2018) emphasize its capacity to create a playful classroom atmosphere, whereas Kaur and Nadarajan (2020) note that it can support language teaching when questions are designed for communicative purposes. The platform combines a brief task with immediate information, but its potential increases when each response is followed by explanation, modeling, and another opportunity for application.

Wang and Tahir's (2020) review of 93 studies found a generally favorable trend in academic performance, classroom dynamics, motivation, enjoyment, and concentration. At the same time, the authors identified null findings and difficulties related to connectivity, time pressure, screen readability, fear of making mistakes, and excessive emphasis on speed. This evidence requires a cautious interpretation of gamification. Points and rankings do not constitute a learning mechanism by themselves; they create participation conditions that may facilitate or interfere with language processing. Intervention design must therefore balance challenge with reflection time, avoid publicly exposing mistakes, and use responses as a starting point for feedback.

Previous findings are also promising for vocabulary learning specifically. Pham and Duong (2022) reported favorable attitudes toward using Kahoot! because of the interaction, competition, and engagement it generated. Putri (2019) describes it as an accessible alternative for integrating lexical practice and participation into English classes. Katemba et al. (2022) found benefits for vocabulary development and sustained student engagement. In their review of research on outcomes, interaction, and



collaboration, Zhang and Yu (2021) concluded that the platform's effects depend on activity design, context, and the way its features are incorporated. Taken together, these studies support its use while also demonstrating the need for situated evidence in secondary education and Latin American contexts.

From a cognitive perspective, gamified questions can activate processes that support lexical learning. Whenever a student identifies a word from an image, completes a sentence, or rejects a semantically incorrect option, stored information must be retrieved. Immediate feedback allows learners to compare their representation with the expected response and correct weak associations. Repetition of a word in different formats strengthens connections among form, meaning, and use. A reduction in the standard deviation after an intervention may also indicate that some learners with lower initial scores moved closer to the group's overall performance. This effect does not arise exclusively from the game; it emerges from the sequence of retrieval, explanation, guided practice, and consolidation.

The social dimension of the activity may also explain its effects. Constructivism views learning as a process developed through interaction with tasks, tools, and other people (Adom et al., 2016). During a whole-class quiz, individual responses generate information that the teacher can transform into dialogue: distractors are analyzed, choices are justified, and meanings are negotiated. Competition becomes pedagogically relevant when it does not replace collaboration but instead creates opportunities for explanation. Within this framework, the teacher retains a central role as mediator by adjusting difficulty, providing scaffolding, and preventing students from interpreting a game score as a fixed label of their ability.

Connectivist theory further proposes that contemporary learning involves establishing relationships among people, sources, and devices within information networks (Kropf, 2013). Kahoot! partially materializes this idea by connecting teacher-prepared content, group decisions, and performance data. A technological connection, however, becomes knowledge only through selection, analysis, and feedback. In a vocabulary class, the platform must therefore remain subordinate to an instructional progression. Learners first activate prior knowledge, then construct new associations, and finally use words in a task that goes beyond multiple-choice selection. Technology organizes the flow of information; instructional design determines what participants learn from that flow.



The comprehensible input hypothesis provides a complementary foundation. In his review of Krashen's model, Abdulaal (2021) highlights the importance of messages that are understandable yet slightly above learners' current proficiency. In a vocabulary quiz, images, examples, and graded distractors can provide enough clues to infer a word without immediately resorting to translation. Subsequent feedback confirms or reshapes the inference. This combination narrows the gap between exposure and comprehension, particularly for A1 learners. Nevertheless, vocabulary selection must respond to familiar situations and curricular goals; presenting too many new terms or questions with excessive linguistic demands can turn challenge into frustration.

Motivation represents another relevant mechanism, although it must be distinguished from learning. Iaremenko (2017) argues that online games can increase English learners' willingness to engage in classroom activities. Licorish et al. (2018) found that participants perceived improvements in interaction, engagement, and classroom dynamics. These affective responses help students remain on task, accept repetition, and tolerate correction. A positive perception, however, does not demonstrate vocabulary growth by itself. Establishing an academic effect requires comparison of measures before and after the intervention and analysis of whether the observed difference exceeds expected variation. Combining a performance test with a survey helps distinguish linguistic outcomes from acceptance of the experience.

Despite the expansion of gamification, gaps remain in the available evidence. A substantial proportion of studies have been conducted in higher education, often with brief interventions and convenience samples (Wang & Tahir, 2020). Conditions in secondary education are different: teachers work with intact groups, restricted schedules, proficiency differences, and unequal access to devices or connectivity. Some studies also report satisfaction without comparing performance. Research is needed on interventions that align curricular objectives, an explicit instructional sequence, pretest-posttest measurement, and participants' evaluations. Interpretation must also acknowledge the limitations of designs without a comparison group.

In response to this problem, the present study examined a six-session gamified intervention for ninth-grade students at the A1 level. The instructional sequence was organized into three stages: activation of knowledge and motivation, guided construction of meaning, and consolidation through retrieval and application. The objective was to determine the effect of the Kahoot!-based intervention on vocabulary learning and to describe students' perceptions of its accessibility, usefulness, interest, and capacity to



promote participation. The null hypothesis stated that no difference would exist between pretest and posttest scores, whereas the alternative hypothesis predicted that post-intervention performance would be significantly different and higher than initial performance.

METHODS

Approach and design

A quantitative field study was conducted using a one-group pre-experimental design with measurements taken before and after the intervention. This configuration made it possible to observe changes in the same participants' performance following a planned instructional sequence. The independent variable was the Kahoot!-based gamified intervention, whereas the dependent variable was English vocabulary learning. The design was selected because the class was already constituted within the school organization and random reassignment of students was not feasible. Consequently, the findings are interpreted as evidence of change temporally associated with the intervention, without claiming definitive causality over other possible explanations.

The central research question was: What difference can be observed in A1 students' lexical performance after they participate in six gamified sessions? The study also explored how students evaluated access to the platform, content usefulness, interest, participation, and the learning experience. For statistical testing, H0 stated that the distribution of posttest scores would not differ from the pretest distribution, while H1 stated that the posttest distribution would differ significantly, with an upward trend. This formulation avoided the ambiguity that arises when the null hypothesis is written as a claim of effectiveness.

Context and participants

The study was conducted at a state-supported faith-based school in the Ecuadorian Amazon region. English was included in the curriculum for three periods per week, which required vocabulary instruction to be integrated with the other communicative skills. The accessible population consisted of five ninth-grade classes with approximately 175 students. One intact class of 35 participants was selected through purposive non-probability sampling. All students were enrolled at the same level, used equivalent curricular materials, and had basic experience with digital resources.



Table 1

Participant characteristics

Characteristic		Description
Sample size	35 students	
Age	13 to 14 years	
Sex distribution	16 boys (45.7%) and 19 girls (54.3%)	
Educational level	Ninth year of Basic General Education	
English proficiency	A1 according to the CEFR	
Sampling method	Non-probability; intact group	

Note. Percentages were calculated using $n = 35$.

Instruments

A vocabulary test with a total score of 10 points was used. The items assessed four domains: development of the lexical repertoire, identification or derivation of basic meanings, ability to use vocabulary in simple exchanges, and clear understanding of meanings in context. Tasks included word recognition, meaning selection, association with familiar situations, and use within brief statements. The same assessment structure was administered before and after the intervention to ensure comparability. The content was reviewed through expert judgment using criteria of relevance, pertinence, and clarity.

An eight-item frequency-scale survey was also administered. The instrument explored practice opportunities, ease of access to materials, usefulness of content for participation, sustained interest, support for personal learning, and opportunities to engage with vocabulary. Responses were collected through a digital form after the intervention. The survey was not used as a measure of learning but as a complementary source for interpreting acceptance and the conditions under which the strategy was used.

The initial diagnosis revealed heterogeneity in prior knowledge. Vocabulary development and meaning derivation both reached means of 3.42, whereas the ability to discuss using the available vocabulary obtained 2.03 and clear understanding of meanings obtained 2.89. This distribution informed the design of questions with visual support, high-frequency vocabulary, and opportunities for subsequent explanation. The instruments remained separate: the test generated performance evidence and the survey recorded perceptions.



Instructional intervention

The intervention comprised six 45-minute sessions. Each session followed a sequence of activation, knowledge building, and consolidation. During the first stage, prior knowledge was elicited through images, brief questions, or brainstorming. During the second, meanings, relationships, and examples were presented, followed by guided practice. During the third, Kahoot! quizzes were used to retrieve words, discriminate among distractors, receive immediate feedback, and apply vocabulary in a short task. The platform did not replace teacher explanation; it functioned as a resource for practice and formative assessment.

Table 2

Organization of the six intervention sessions

Session	Lexical focus	Instructional use of Kahoot!	Closure
1	Diagnosis and activation of high-frequency vocabulary	Recognition of words and images	Explanation of common errors
2	Basic meanings and semantic relationships	Selection of definitions and distractors	Contextualized examples
3	Word forms and associations	Classification and rapid retrieval	Guided practice
4	Use of words in everyday statements	Completion of communicative situations	Brief production
5	Comprehension and selection in context	Questions with images and clues	Peer feedback
6	Cumulative review and consolidation	Integrated quiz	Reflection and posttest

Note. Each session lasted 45 minutes and combined activation, knowledge building, and consolidation.

Procedure

During the first stage, participants were informed about the purpose, activities, and confidential treatment of the data. The pretest was then administered under equivalent conditions for the entire group. Results were reviewed by domain to adjust the level of difficulty and select vocabulary related to familiar situations for A1 students. During the six sessions, available classroom devices and a shared screen were used. Sufficient time was provided to read, respond to, and discuss each question, thereby reducing pressure associated with speed.



After each block of questions, the teacher analyzed the most frequently selected options, clarified meanings, and requested examples. When a distractor received a high response frequency, the semantic or formal difference that may have caused confusion was revisited. This process transformed game data into formative feedback. At the end of the sixth session, the posttest was administered, followed by the perception survey. Total instructional contact time was 270 minutes, excluding the time allocated to measurement.

To preserve comparability, scores were recorded on the same 0-to-10 scale. Participants' identities were replaced with codes in the database. Names were not used in tables, and individual results were not published. Files were stored with restricted access and used solely for academic purposes.

Data analysis

Frequencies, percentages, means, minimum and maximum values, and standard deviations were calculated. Because the measurements were paired and the distribution did not meet the assumption of normality, the Wilcoxon signed-rank test was applied. The significance level was set at $\alpha = .05$, and the statistical decision was based on the reported two-tailed value. To complement statistical significance, the effect size was calculated using $r = |Z|/\sqrt{N}$, where N represented the number of observed pairs. The result was $r = .43$, interpreted as moderate.

Survey responses were summarized using the combined proportion of the always and almost always categories. This procedure identified acceptance trends without equating them with achievement. The analysis integrated three perspectives: average change, the distribution of individual ranks, and perceptions of the experience. Convergence among these perspectives informed the discussion of pedagogical usefulness, whereas discrepancies were considered when formulating limitations.

Ethical considerations

Participation was voluntary, and the purpose, procedure, and expected benefits were communicated in advance. Because the participants were minors, the intervention was conducted with institutional authorization and with their legal representatives' knowledge. Confidentiality, privacy, and the right to withdraw without academic consequences were protected. The activities formed part of regular instructional work and did not publicly expose individual scores. Competition was managed through identifiers and feedback focused on responses rather than personal comparison.



RESULTS AND DISCUSSION

Initial diagnosis

Before the intervention, performance varied across the assessed dimensions. Mean scores for vocabulary development and derivation of meanings were higher than the mean for the ability to discuss using available vocabulary. The considerable dispersion indicated that the group did not begin under homogeneous conditions. This finding justified differentiated support and explanations after the quizzes because the same question could be accessible to some participants and challenging to others.

Table 3

Diagnostic results by vocabulary dimension

Dimension	n	Min.	Max.	M	SD
Vocabulary development	35	1	6	3.42	1.64
Derivation of basic meanings	35	0	7	3.42	1.77
Ability to discuss	35	0	5	2.03	1.57
Clear understanding of meaning	35	0	6	2.89	1.45

Note. *M* = mean; *SD* = standard deviation.

Pretest-posttest comparison

The mean score increased from 6.23 on the pretest to 7.51 on the posttest. The 1.28-point difference represents 12.8 percentage points on the total scale. The minimum score increased from 1.25 to 4.00, while the maximum remained at 10. The standard deviation decreased from 3.05 to 1.69. This pattern indicates an average improvement accompanied by less dispersion, particularly because the lowest scores increased. Reduced variability does not eliminate individual differences, but it suggests that group performance became more concentrated after the instructional sequence.

Table 4

Descriptive statistics for the pretest and posttest

Measurement	n	Min.	Max.	M	SD	Gain
Pretest	35	1.25	10.00	6.23	3.05	-
Posttest	35	4.00	10.00	7.51	1.69	+1.28

Note. Scores ranged from 0 to 10. *M* = mean; *SD* = standard deviation.

The rank analysis showed that 19 students obtained a higher score, 13 obtained a lower score, and 3 remained unchanged. In percentage terms, 54.3% improved, 37.1% declined, and 8.6% maintained their performance. The sum of positive ranks (401.00)



was substantially greater than the sum of negative ranks (127.00). This difference demonstrates that improvements were not limited to isolated minimal gains, although the presence of 13 negative ranks requires avoiding a uniform interpretation of the effect.

Table 5

Ranks of posttest-pretest differences

Difference type	n	%	Mean rank	Sum of ranks
Negative: posttest < pretest	13	37.1	9.77	127.00
Positive: posttest > pretest	19	54.3	21.11	401.00
Tie: posttest = pretest	3	8.6	-	-
Total	35	100.0		

Note. Ranks were calculated from the paired differences of the 35 participants.

The Wilcoxon test produced $Z = -2.563$ and $p = .010$. Because p was below .05, the null hypothesis of no difference was rejected. The calculated effect size was $r = .43$, a moderate magnitude. Statistical significance supports the conclusion that the post-intervention distribution differed from the initial distribution; the effect size indicates that the change had appreciable practical relevance, although it was not sufficient to attribute all variation exclusively to the platform. The evidence is consistent with a benefit from the complete intervention: lexical selection, activity sequencing, teacher mediation, feedback, and the use of Kahoot!.

Table 6

Test of the pretest-posttest difference

Test	Z	Two-tailed p	r	Decision
Wilcoxon signed-rank	-2.563	.010	.43	Reject H0

Note. Significance level $\alpha = .05$. Effect size was calculated as $r = |Z|/\sqrt{N}$.

Student perceptions

The survey showed a predominantly favorable evaluation. Across the eight indicators, the combined percentage for always and almost always exceeded 80%. Accessibility of materials reached 94.2%, while the usefulness of content for participation reached 91.2%. The highest percentage corresponded to recognition of the platform as a valuable resource for vocabulary acquisition (94.3% across the two high-frequency categories; 82.9% for always). Sustained interest reached 85.7%, supporting the motivational role of gamification without confusing it with the performance measure.



Table 7

High-frequency responses in the perception survey

Indicator	Always (%)	Almost always (%)	High frequency (%)
Opportunities to acquire vocabulary	60.0	20.0	80.0
Easy access to materials	57.1	37.1	94.2
Usefulness of content for participation	45.6	45.6	91.2
Sustained interest	65.7	20.0	85.7
Usefulness for personal learning	71.4	22.9	94.3
Support for the learning experience	62.9	28.6	91.5
Opportunities for lexical engagement	71.4	22.9	94.3
Value for vocabulary acquisition	82.9	11.4	94.3

Note. High frequency = always plus almost always. Differences from 100% correspond to the remaining response categories.

The combination of statistically significant improvement, a moderate effect, and favorable perceptions is consistent with the trend described by Wang and Tahir (2020). In their review, Kahoot! produced positive learning and classroom-dynamics outcomes, although results varied across studies. The present findings contribute evidence from a secondary education group at A1 proficiency, a context less represented than higher education. The 1.28-point gain suggests that a brief intervention can produce observable change when activities focus on a clearly delimited objective and use contextualized repetition.

The findings also align with Pham and Duong (2022), who identified favorable attitudes toward Kahoot! for vocabulary learning, and with Katemba et al. (2022), who documented lexical development and engagement. The observed acceptance may have supported time on task: students responded, received information, and encountered the words again in different formats. Putri (2019) noted that ease of use and playfulness can make the platform an alternative strategy for English classes. In the present study, perceptions of easy access and usefulness for participation reinforce that interpretation.

The effect, however, should not be attributed solely to points or rankings. The activation, knowledge-building, and consolidation sequence organized learners' processing. Prior knowledge was first retrieved, meanings were then explained, and quizzes were finally used for practice and error detection. Teacher feedback transformed every response into an opportunity for adjustment. Zhang and Yu (2021) emphasize that



Kahoot! outcomes depend on the interaction among design, context, and collaboration. The present data are consistent with that view: the tool operated within an instructional architecture rather than as an isolated activity.

The increase in the minimum score from 1.25 to 4.00 and the reduction in the standard deviation deserve particular attention. These changes suggest that participants with greater initial difficulty may have benefited from multimodal repetition and group support. Questions containing images and examples provided clues consistent with the principle of comprehensible input (Abdulaal, 2021). For an A1 learner, sufficient context reduces dependence on translation and supports inference. Interpretation should nevertheless remain cautious because individual posttest results by domain were unavailable, preventing identification of the component that improved most.

The positive affective response may also be related to social dynamics. Licorish et al. (2018) found that Kahoot! supported engagement and interaction. In a classroom with limited time, a collective immediate-response activity concentrates attention and makes group patterns visible. The teacher can decide whether further explanation is needed or whether the class is ready to continue. This formative use is more important than the final score because it provides actionable information during instruction. The platform therefore performs a dual function: it increases willingness to participate and provides data for adjusting mediation.

The 13 negative ranks show that the intervention did not benefit all students equally. Plausible explanations include time pressure, variation in device access, distraction caused by competition, fatigue, or differences between practiced and assessed vocabulary. Wang and Tahir (2020) identified time pressure, technical problems, and fear of error as recurring challenges. To address them, teachers can extend response time, use team modes, alternate scored and unscored questions, and allow a second attempt after explanation. Students whose scores decline should also be examined individually to determine whether the difficulty is linguistic or related to the technological conditions.

The decrease in scores among some participants also highlights that the posttest was a single measurement. Results may have been influenced by attendance, disposition, classroom conditions, or chance in multiple-choice responses. A delayed assessment would have established whether the gain remained after several weeks. Likewise, oral or written production tasks could determine whether vocabulary transfers beyond the quiz. Knowing a word involves more than recognizing an option; learners must retrieve and



use it in a message. Future interventions should therefore include measures of retention and productive use.

From a teaching perspective, the findings support four decisions. First, select a manageable set of words related to familiar situations. Second, design diagnostic distractors that reveal genuine misconceptions rather than obviously implausible options. Third, allocate time for learners to justify responses and produce examples. Fourth, combine platform evidence with brief productive tasks. These conditions help gamification retain its linguistic purpose. As Kaur and Nadarajan (2020) caution, the digital resource must be integrated with language instruction rather than functioning as a disconnected component.

The study has several limitations. Purposive sampling was used, and the sample represented only one class, which restricts generalizability. The absence of a control group prevents ruling out maturation, practice effects from repeated testing, or other simultaneous experiences. The intervention consisted of only six sessions and did not include a retention measure. The survey relied on self-report and may have been influenced by novelty or social desirability. Connectivity indicators and analyses differentiated by sex, initial performance, or participation style were also unavailable. These limitations do not invalidate the observed change, but they define the scope of the conclusion.

Future research could use quasi-experimental designs with a comparison group, allocate additional sessions, and administer delayed tests. It would also be useful to compare individual and collaborative modes, analyze response time, and identify which question types produce greater transfer. A mixed-methods perspective could include interviews with students whose scores improve and those whose scores decline to examine processes that are not visible in test results. Finally, researchers should determine whether gamification remains effective after it is no longer novel, because frequency of use may alter motivation and classroom dynamics.

CONCLUSIONS

The six-session gamified intervention was associated with a significant improvement in lexical performance among ninth-grade A1 students. The mean increased from 6.23 to 7.51, and the difference was supported by the Wilcoxon test ($p = .010$). The moderate effect size ($r = .43$) indicates that the change had practical relevance, while the lower



posttest dispersion suggests that the group moved toward more homogeneous performance.

Student perceptions were broadly favorable. Participants recognized accessibility, usefulness, sustained interest, and opportunities for participation. This acceptance constitutes a facilitating condition but does not replace performance evidence. The principal contribution lies in the convergence of an objective pretest-posttest measure, the distribution of individual changes, and participants' evaluation of the experience.

Kahoot! was pedagogically useful when integrated with knowledge activation, guided explanation, retrieval, feedback, and contextualized application. The platform should not be understood as an automatic solution but as a response system that amplifies instructional decisions. Well-graded questions, reasonable response times, and discussion of distractors are essential conditions for transforming a playful dynamic into learning.

The presence of students whose scores decreased demonstrates that the strategy requires differentiation and follow-up. Individual and collaborative activities should be combined, pressure for speed should be reduced, visual support should be provided, and quizzes should be complemented with productive tasks. Subsequent assessment should include retention and transfer to determine whether words remain available outside the game environment.

In summary, digital gamification represents a viable alternative for strengthening vocabulary in contexts with limited exposure to English. Its effectiveness depends less on competition than on coherence among objectives, content, feedback, and participation. The findings justify further investigation using comparative designs, larger samples, and longitudinal measurement.



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