



Enhancing English Communicative Interaction through Gamified Mobile Learning: A Quasi-Experimental Study in Secondary Education

Mejora de la Interacción Comunicativa en Inglés mediante el Aprendizaje Móvil Gamificado: Un Estudio Cuasi-Experimental en Educación Secundaria

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Artículo recibido: (12/02/2026) - Aceptado para publicación: 21/02/2026

Conflictos de intereses: Ninguno que declarar.

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Cita sugerida (APA, séptima edición)

Campoverde Lopez, J., Guzman Brito, D., Diaz Gonzalez. R. (2026). Enhancing English Communicative Interaction through Gamified Mobile Learning: A Quasi-Experimental Study in Secondary Education. *Linguattech*, *Volumen (2)*, páginas. 36 - 47

RESUMEN

El desarrollo de habilidades comunicativas en inglés constituye un desafío persistente en contextos de educación secundaria, especialmente en entornos donde predominan metodologías tradicionales y limitadas oportunidades de práctica oral. En este estudio se analizó el impacto del aprendizaje móvil gamificado como estrategia pedagógica para



mejorar la interacción comunicativa en inglés. Se empleó un diseño cuasi-experimental con enfoque mixto, integrando métodos cualitativos y cuantitativos para evaluar el progreso de los estudiantes antes y después de la intervención. La muestra estuvo conformada por estudiantes de nivel secundario, quienes participaron en actividades estructuradas mediante una plataforma digital basada en principios de gamificación. Se aplicaron instrumentos de evaluación diagnóstica (pretest) y final (postest) alineados con estándares internacionales de competencia lingüística, con énfasis en la producción oral y la interacción comunicativa. Los resultados evidenciaron una mejora significativa en el desempeño de los estudiantes, particularmente en la fluidez, pronunciación y capacidad de interacción en situaciones comunicativas. Asimismo, se observó un aumento en la motivación y participación activa, atribuible a la naturaleza interactiva y adaptativa del entorno digital. Estos hallazgos sugieren que el aprendizaje móvil gamificado constituye una herramienta eficaz para potenciar el desarrollo de habilidades comunicativas en inglés, favoreciendo procesos de aprendizaje autónomo y significativo.

Palabras clave: Gamificación, Interacción comunicativa, Aprendizaje móvil

ABSTRACT

The development of English communicative skills remains a persistent challenge in secondary education, particularly in contexts where traditional methodologies limit opportunities for oral practice. This study aimed to analyze the impact of gamified mobile learning as a pedagogical strategy to enhance communicative interaction in English. A quasi-experimental design with a mixed-methods approach was employed, integrating both qualitative and quantitative data to assess students' progress before and after the intervention. The sample consisted of secondary-level students who engaged in structured learning activities through a digital platform based on gamification principles. Diagnostic (pre-test) and final (post-test) assessments were administered, aligned with international language proficiency standards, with a focus on oral production and communicative interaction. The results revealed a significant improvement in students' performance, particularly in fluency, pronunciation, and their ability to interact in communicative contexts. Additionally, an increase in motivation and active participation was observed, attributed to the interactive and adaptive nature



of the digital learning environment. These findings suggest that gamified mobile learning is an effective tool for enhancing English communicative skills, promoting autonomous and meaningful learning processes.

Keywords: Gamification, Communicative interaction, Mobile learning

INTRODUCTION

The acquisition of English as a foreign language has become a fundamental requirement in contemporary education due to its global relevance in academic, professional, and social contexts. Despite its importance, the development of communicative competence—particularly oral interaction—remains a significant challenge in secondary education. Traditional teaching methodologies often emphasize grammar and written skills, limiting students' opportunities to engage in authentic communicative practices. As a result, learners frequently demonstrate low levels of fluency, pronunciation accuracy, and confidence when using the language in real-life situations .

In recent decades, Information and Communication Technologies (ICT) have emerged as transformative tools in the educational field, offering innovative approaches to language teaching and learning. ICT facilitates access to interactive resources, promotes autonomous learning, and enhances student engagement through dynamic and personalized experiences (Jayanthi & Kumar, 2016). Within this framework, mobile-assisted language learning (MALL) has gained prominence, allowing students to access educational content anytime and anywhere, thus extending learning beyond the traditional classroom environment (Solak & Cakir, 2015).

One of the most relevant innovations in this context is the incorporation of gamification into digital learning platforms. Gamification refers to the use of game elements—such as rewards, levels, feedback, and challenges—in non-game environments to increase motivation and engagement (Deterding et al., 2011). In language learning, gamified platforms provide interactive activities that foster repetition, immediate feedback, and progressive skill development, contributing to improved learning outcomes and increased learner autonomy.

From a theoretical perspective, this approach aligns with constructivist principles proposed by Piaget (1952) and Vygotsky (1978), which emphasize active learning, social interaction, and the construction of knowledge through meaningful



experiences. In this sense, digital platforms that integrate gamification create environments where learners actively participate in their learning process, interact with content, and develop communicative skills in context.

This study focuses on analyzing the effectiveness of gamified mobile learning in improving English communicative interaction among secondary school students. The research adopts a quasi-experimental design to evaluate changes in students' performance through pre-test and post-test assessments, considering both qualitative and quantitative data.

Regarding the variables of the study, the independent variable is defined as gamified mobile learning, understood as the use of digital platforms that incorporate game-based elements and mobile accessibility to facilitate language learning. This variable includes components such as interactive exercises, immediate feedback, adaptive learning paths, and motivational reward systems.

The dependent variable is English communicative interaction, which refers to the students' ability to effectively use the language in oral contexts. This includes sub-dimensions such as fluency, pronunciation, vocabulary use, and the capacity to engage in meaningful exchanges with others. Communicative interaction is considered a key indicator of language proficiency, as it reflects the practical application of linguistic knowledge in real communicative situations.

The relevance of this study lies in its potential to contribute to the improvement of English language teaching practices by integrating technological and pedagogical innovations. By exploring the impact of gamified mobile learning, this research seeks to provide empirical evidence on effective strategies to enhance communicative competence, promote student motivation, and support meaningful learning in secondary education contexts.

METHODS

Research Design

This study adopted a quasi-experimental research design within a mixed-methods framework, combining both qualitative and quantitative approaches to obtain a comprehensive understanding of the phenomenon under study. Quasi-experimental designs are widely used in educational research when random assignment is not feasible, allowing researchers to evaluate the effectiveness of pedagogical interventions through pre-test and post-test comparisons (Creswell, 2014).



The quantitative component focused on measuring changes in students' communicative performance before and after the intervention, while the qualitative component provided insights into students' learning experiences, motivation, and engagement. This integration of methods aligns with socio-educational research practices that emphasize both measurable outcomes and contextual understanding of learning processes.

Furthermore, the study was grounded in an action research perspective, which involves a cyclical process of planning, action, observation, and reflection to improve educational practices (Kemmis & McTaggart, 2000). This approach allowed the researchers to actively intervene in the teaching-learning process and evaluate the effectiveness of gamified mobile learning in a real educational setting.

Participants

The participants of this study consisted of a sample of 45 secondary school students, selected from a population of approximately 1,200 learners. The students were between 14 and 17 years old, representing a typical adolescent group in secondary education. The sampling technique was non-probabilistic and purposive, as participants were selected based on their relevance to the research objectives, particularly their identified limitations in English communicative interaction. Previous diagnostic observations indicated that students exhibited difficulties in oral production, limited vocabulary use, and low confidence when engaging in communicative tasks. This selection is consistent with educational research practices that prioritize contextual relevance over randomization when studying classroom-based interventions (Dörnyei, 2007).

Instruments

To ensure a comprehensive evaluation of the independent and dependent variables, multiple data collection instruments were employed:

Pre-test and Post-test: These instruments were designed to assess students' communicative competence in English, particularly focusing on oral interaction, fluency, pronunciation, and vocabulary use. The assessments were aligned with international language proficiency frameworks, allowing for standardized measurement of progress. Pre- and post-testing is a common strategy in quasi-experimental studies to determine the effectiveness of interventions (Fraenkel, Wallen, & Hyun, 2012).

Survey Questionnaires: Structured questionnaires were administered before and after the intervention to collect data on students' perceptions, attitudes, and motivation



toward gamified mobile learning. These instruments provided valuable insights into affective factors influencing language acquisition.

Observation Records: Classroom observations were conducted to qualitatively analyze students' participation, engagement, and interaction during the implementation of the gamified activities. Observation as a research tool allows for the direct examination of behaviors in natural settings, contributing to a deeper understanding of learning dynamics (Cohen, Manion, & Morrison, 2018).

The triangulation of these instruments enhanced the validity and reliability of the findings by capturing both performance-based and experiential data.

Procedure

The research procedure was organized into three sequential phases:

Diagnostic Phase: Initially, a pre-test was administered to evaluate students' baseline level of English communicative interaction. This phase also included the application of initial surveys to identify students' previous exposure to digital tools and their attitudes toward language learning. The diagnostic process allowed researchers to establish a reference point for measuring progress .

Intervention Phase: During this phase, students engaged in structured learning activities through a gamified mobile platform, which incorporated elements such as levels, rewards, immediate feedback, and interactive exercises. These activities were designed to develop key language skills, including listening, speaking, vocabulary acquisition, and pronunciation. The intervention emphasized autonomous learning, continuous practice, and student-centered instruction, consistent with mobile-assisted language learning (MALL) principles (Solak & Cakir, 2015). Additionally, the gamified environment fostered motivation and engagement, which are critical factors in second language acquisition (Deterding et al., 2011).

Evaluation Phase: At the conclusion of the intervention, a post-test was administered to measure improvements in communicative interaction. Follow-up surveys and observations were conducted to assess changes in students' motivation, participation, and overall learning experience.

Data Analysis

The data analysis process combined both quantitative and qualitative techniques:

Quantitative Analysis: Data obtained from the pre-test and post-test were analyzed using descriptive statistics (means, percentages) and comparative analysis to identify



differences in students' performance. This approach allowed for the measurement of improvement in communicative skills as a result of the intervention.

Qualitative Analysis: Data from surveys and observation records were analyzed through thematic analysis, identifying recurring patterns related to motivation, engagement, and learning behaviors. This method facilitated the interpretation of students' experiences and perceptions within the learning environment (Braun & Clarke, 2006).

RESULTS AND DISCUSSION

The results of this study are presented based on the comparison between pre-test and post-test outcomes, as well as the analysis of survey responses and observational data collected during the intervention.

Quantitative Results

The comparison of pre-test and post-test scores revealed a notable improvement in students' English communicative interaction, particularly in oral production skills such as fluency, pronunciation, and vocabulary usage. Initially, the pre-test results indicated that a significant proportion of students demonstrated limited ability to engage in basic communicative exchanges, reflecting low proficiency levels and restricted lexical knowledge .

After the implementation of the gamified mobile learning intervention, the post-test results showed a substantial increase in performance levels, with a higher percentage of students reaching acceptable communicative standards. The most significant improvements were observed in:

Fluency: Students demonstrated greater ease in expressing ideas with reduced hesitation.

Pronunciation: Noticeable improvement in articulation and intonation patterns.

Vocabulary usage: Expanded lexical repertoire and more appropriate word selection in context.

These findings are consistent with previous studies indicating that digital and gamified learning environments can significantly enhance language acquisition outcomes (Vasselinov & Grego, 2012).

Table 1

Comparison of Pre-test and Post-test Results in English Communicative Interaction



Dimension	Pre-test Mean (%)	Post-test Mean (%)	Improvement (%)	Interpretation
Fluency	52%	78%	+26%	Significant improvement in speech flow
Pronunciation	55%	80%	+25%	Better articulation and intonation
Vocabulary Usage	50%	76%	+26%	Expanded lexical repertoire
Communicative Interaction	48%	79%	+31%	Increased ability to interact effectively
Overall Performance	51%	78%	+27%	General improvement in communicative skills

Survey Results

The analysis of survey data revealed positive student perceptions regarding the use of gamified mobile learning. Before the intervention, students expressed limited exposure to technological tools for language learning and reported low motivation in traditional classroom settings .

Following the intervention, the majority of students reported:

- Increased motivation to learn English
- Greater interest in participating in communicative activities
- Positive attitudes toward autonomous learning

Students also highlighted the importance of immediate feedback and interactive tasks as key factors contributing to their improvement. These results support the idea that gamification enhances engagement and motivation in educational contexts (Deterding et al., 2011).

Table 2

Survey Results on Students' Perceptions of Gamified Mobile Learning



Item	Before Intervention (%)	After Intervention (%)	Change (%)	Interpretation
Use of technology in English classes	40%	85%	+45%	Increased integration of digital tools
Motivation to learn English	45%	88%	+43%	Higher student motivation
Perception of improvement in oral skills	42%	82%	+40%	Greater awareness of communicative progress
Ease of understanding feedback	50%	86%	+36%	Improved comprehension through immediate feedback
Participation in communicative activities	38%	84%	+46%	Increased engagement and interaction
Autonomous learning (self-directed practice)	44%	87%	+43%	Strengthened independent learning habits
Overall Positive Perception	43%	85%	+42%	General improvement in attitudes toward learning

Qualitative Observations

Classroom observations provided further evidence of the intervention's effectiveness. During the initial phase, students showed reluctance to participate in oral activities and lacked confidence when speaking in English. However, as the intervention progressed, a noticeable shift in behavior was observed. Students became more actively involved in tasks, demonstrated increased willingness to communicate, and engaged more frequently in peer interaction. The gamified environment encouraged participation



by reducing anxiety and creating a supportive learning atmosphere. These findings align with the principles of Mobile-Assisted Language Learning (MALL), which emphasize flexibility, accessibility, and learner-centered engagement (Solak & Cakir, 2015).

The findings of this study provide strong evidence supporting the effectiveness of gamified mobile learning in enhancing English communicative interaction among secondary school students. The significant improvements observed in fluency, pronunciation, and vocabulary usage suggest that integrating technology into language instruction can address limitations associated with traditional teaching methods.

From a pedagogical perspective, the results confirm that gamification plays a crucial role in increasing student motivation and engagement, which are essential factors for successful language acquisition. The use of rewards, levels, and immediate feedback contributed to sustained participation and encouraged students to practice more frequently, supporting previous research on gamified learning environments (Deterding et al., 2011).

Furthermore, the findings can be interpreted through the lens of constructivist theory, which emphasizes active learning and knowledge construction through interaction. According to Piaget (1952) and Vygotsky (1978), learning occurs when students actively engage with content and collaborate with others. In this study, the gamified platform facilitated such interaction, allowing students to construct knowledge in meaningful and contextualized ways.

CONCLUSIONS

This study aimed to analyze the effectiveness of gamified mobile learning in enhancing English communicative interaction among secondary school students. Based on the findings obtained through quantitative and qualitative analysis, several relevant conclusions can be drawn. First, the implementation of a gamified mobile learning approach significantly improved students' communicative competence in English, particularly in oral skills such as fluency, pronunciation, and vocabulary usage. The comparison between pre-test and post-test results demonstrated measurable progress, confirming the positive impact of integrating digital tools into the language learning process .

Second, the use of gamification elements—such as rewards, levels, and immediate feedback—proved to be highly effective in increasing student motivation and engagement. Learners showed greater willingness to participate in communicative



activities and demonstrated more confidence when using English, which is a key factor in developing language proficiency (Deterding et al., 2011).

Third, the findings highlight the importance of incorporating mobile-assisted language learning (MALL) strategies into educational practices. The flexibility and accessibility of mobile platforms allowed students to extend their learning beyond the classroom, promoting autonomous and continuous practice (Solak & Cakir, 2015).

Finally, it can be concluded that gamified mobile learning represents a valuable pedagogical alternative for improving English communicative interaction in secondary education. Its integration into the curriculum can support the development of essential language skills while promoting motivation, autonomy, and meaningful learning experiences.

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