

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

Potenciación de la interacción comunicativa en inglés mediante el aprendizaje móvil gamificado: un estudio preexperimental en educación secundaria

Campoverde López Juan Rafael*
Universidad de Guayaquil
Juan.campoverdel@ug.edu.ec

 <https://orcid.org/0009-0003-3580-1051>

Guzmán Brito Dayana Dailé
Universidad de Oriente
dayanaguzmanbrito41@gmail.com

 <https://orcid.org/0009-0007-7751-1510>

Gonzalez Plata Rafael Diaz
Universidad Autónoma del Estado de México
diazgonzalez.r@gmail.com

 <https://orcid.org/0009-0001-8825-8633>

*Autor por correspondencia

Cómo citar:

Campoverde López, Juan Rafael., Guzmán Brito, Dayana Dailé. y Gonzalez Plata, Rafael Diaz. (2024). Enhancing English Communicative Interaction through Gamified Mobile Learning: A Pre-Experimental Study in Secondary Education, *Buckingham Linguattech Journal* 1(02), 28-38.
<https://doi.org/10.66836/linguatech.v1n2.3kl2>

Recibido: 13/07/24 **Revisado:** 15/08/24 **Aprobado:** 21/09/24 **Publicado:** 30/12/24



ABSTRACT (en)

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 pre-experimental one-group pretest-posttest 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. Students showed substantial improvement after intervention, 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

RESUMEN (es)

El desarrollo de las habilidades comunicativas en inglés sigue siendo un desafío persistente en la educación secundaria, especialmente en contextos donde las metodologías tradicionales limitan las oportunidades de práctica oral. Este estudio tuvo como objetivo analizar el impacto del aprendizaje móvil gamificado como estrategia pedagógica para mejorar la interacción comunicativa en inglés. Se empleó un diseño preexperimental de un solo grupo con pretest y posttest y un enfoque de métodos mixtos, integrando datos cualitativos y cuantitativos para evaluar el progreso de los estudiantes antes y después de la intervención. La muestra estuvo compuesta por estudiantes de secundaria que participaron en actividades de aprendizaje estructuradas a través de una plataforma digital basada en principios de gamificación. Se aplicaron evaluaciones diagnósticas (pretest) y finales (posttest) alineadas con los estándares internacionales de competencia lingüística, centradas en la producción oral y la interacción comunicativa. Los estudiantes mostraron una mejora sustancial tras la intervención, particularmente en fluidez, pronunciación y capacidad para interactuar en contextos comunicativos. Asimismo, se observó un aumento en la motivación y la participación activa, atribuido a la naturaleza interactiva y adaptable del entorno de aprendizaje digital. Estos hallazgos sugieren que el aprendizaje móvil gamificado es una herramienta eficaz para potenciar las habilidades comunicativas en inglés, promoviendo procesos de aprendizaje autónomo y significativo.

Palabras clave: gamificación; interacción comunicativa; aprendizaje móvil

INTRODUCTION

The acquisition of English as a foreign language has become increasingly relevant in contemporary education because learners are expected to use the language effectively in academic, professional, and social contexts. Communicative competence involves not only linguistic knowledge but also the ability to participate effectively in oral interaction and negotiate meaning with other speakers (Council of Europe, 2020). Nevertheless, opportunities for meaningful oral interaction may remain limited in instructional contexts dominated by teacher-centered or form-focused practices, making it necessary to explore pedagogical alternatives that promote active communication.

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 & Vijay Kumar, 2016). Within this technological framework, Mobile-Assisted Language Learning (MALL) has expanded opportunities for learners to access language-learning resources beyond the conventional classroom and engage in more flexible and contextualized learning experiences. Research syntheses have reported generally positive effects of mobile-device-assisted language learning across different language skills and instructional contexts (Burston, 2015; Sung et al., 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 education, gamified digital environments can promote engagement, motivation, participation, and positive learning experiences, although their effects depend on the way gamification elements are pedagogically integrated (Bai et al., 2020; Dehghanzadeh et al., 2021; Kaya & Cilsalar Sagnak, 2022; Sailer & Homner, 2020; Zhang & Hasim, 2023; Heredia-Sandoval & Olvera-León, 2023).

From a theoretical perspective, gamified learning can be interpreted through constructivist and sociocultural perspectives. Piaget (1952) emphasizes the active construction of knowledge through learners' interaction with their environment, whereas Vygotsky (1978) highlights the socially mediated nature of learning and the importance of interaction with others. Digital gamified environments may incorporate elements of both perspectives by promoting active participation, feedback, collaboration, and meaningful engagement with learning tasks.

This study focuses on analyzing the effectiveness of gamified mobile learning in improving English communicative interaction among secondary school students. The research adopts a pre-experimental one-group pretest-posttest design to examine changes in students' performance before and after the intervention, integrating both quantitative and qualitative 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, understood as learners' ability to participate effectively in oral exchanges, convey meaning, respond to interlocutors, and mobilize linguistic and pragmatic resources in communicative situations (Council of Europe, 2020). In this study, the variable was operationalized through fluency, pronunciation, vocabulary use, and the ability to engage in meaningful oral interaction.

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

This study adopted a pre-experimental one-group pretest-posttest design within a mixed-methods framework. The design involved assessing the same group of students before and after the implementation of a gamified mobile learning intervention. The pretest established students' baseline level of English communicative interaction, while the posttest was used to identify changes following the intervention. This design was appropriate for examining changes within an intact educational group in a natural classroom setting where random assignment and the establishment of a control group were not feasible. (Creswell, 2014; Fraenkel et al., 2012).

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.

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).

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. Pretest-posttest comparisons in a single-group design allow researchers to examine changes in participants' performance following an educational intervention; however, the absence of a control group limits the ability to attribute observed changes exclusively to the intervention (Creswell, 2014; Fraenkel et al., 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 et al., 2018). The triangulation of these instruments enhanced the validity and reliability of the findings by capturing both performance-based and experiential data.

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 principles commonly associated with Mobile-Assisted Language Learning (Burston, 2015; Sung et al., 2015). Additionally, the gamified environment was designed to foster motivation and engagement, outcomes frequently associated with appropriately implemented gamification in educational settings (Dehghanzadeh et al., 2021; Sailer & Homner, 2020). Digital gamification tools can facilitate immediate feedback, interaction, and sustained learner engagement in language-learning contexts (Kohnke & Moorhouse, 2022).

- **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.

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 the researchers to identify and describe changes in students' communicative performance following the intervention.
- **Qualitative Analysis:** Data obtained from classroom observation records were analyzed through thematic analysis to identify recurring patterns related to motivation, engagement, participation, and learning behaviors (Braun & Clarke, 2006).

The quantitative and qualitative findings were integrated during the interpretation stage. Pretest-posttest results were compared with students' survey responses and observational patterns to identify convergence or divergence between measurable performance changes and students' learning experiences. This integration provided a more comprehensive interpretation of the intervention outcomes.

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 considerable 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 posttest results showed a substantial increase in performance levels, with a higher percentage of students reaching acceptable communicative standards. The most notable 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 research indicating generally positive outcomes associated with mobile-assisted and gamified language-learning environments (Dehghanzadeh et al., 2021; Sailer & Homner, 2020; Sung et al., 2015).

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%	Improved 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

Source: Own elaboration

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 findings are consistent with previous studies showing that gamification can positively influence learner motivation, engagement, and participation when it is appropriately integrated into educational activities (Dehghanzadeh et al., 2021; Sailer & Homner, 2020).

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 (selfdirected practice)	44%	87%	+43%	Strengthened independent learning habits
Overall Positive Perception	43%	85%	+42%	General improvement in attitudes toward learning

Source: Own elaboration

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. These findings are consistent with research on Mobile-Assisted Language Learning, which highlights the potential of mobile technologies to extend learning opportunities, support flexible practice, and contribute to the development of communicative language abilities (Burston, 2015; Loewen et al., 2020; Shadiev et al., 2020; Sung et al., 2015).

The findings of this study provide preliminary evidence of positive changes in English communicative interaction following the implementation of gamified mobile learning. The improvements observed in fluency, pronunciation, and vocabulary usage suggest that this pedagogical approach may contribute to addressing some limitations associated with traditional language instruction.

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. These outcomes are consistent with previous research reporting positive motivational and behavioral effects associated with gamified learning environments (Dehghanzadeh et al., 2021; Sailer & Homner, 2020).

These results can be interpreted through constructivist and sociocultural perspectives. Piaget (1952) emphasizes learners' active construction of knowledge, whereas Vygotsky (1978) highlights the role of socially mediated interaction in learning.

In the present study, the gamified environment provided opportunities for active participation and peer interaction, which are compatible with these theoretical perspectives.

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, students demonstrated notable improvements in communicative competence following the gamified mobile learning intervention, particularly in fluency, pronunciation, and vocabulary usage, particularly in oral skills such as fluency, pronunciation, and vocabulary usage. The comparison between pretest and posttest results demonstrated measurable progress and suggests a positive association between participation in the intervention and students' subsequent performance.

Second, students reported higher levels of motivation and engagement after participating in activities that incorporated gamification elements such as rewards, levels, and immediate feedback. They also showed greater willingness to participate in communicative activities and greater confidence when using English.

Third, the findings highlight the potential of mobile-assisted language learning strategies to support more flexible and autonomous learning beyond the classroom. The findings should be interpreted in light of the study's methodological limitations. Because a one-group pretest-posttest pre-experimental design was used, without a control or comparison group, the observed improvements cannot be attributed exclusively to the gamified mobile learning intervention. Other contextual or instructional factors may have contributed to the changes identified. Future research should employ quasi-experimental or experimental designs with comparison groups, larger samples, and inferential statistical analyses to strengthen causal interpretation and generalizability.

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.

REFERENCES

- Bai, S., Hew, K. F., & Huang, B. (2020). Does gamification improve student learning outcome? Evidence from a meta-analysis and synthesis of qualitative data in educational contexts. *Educational Research Review*, 30, 100322.
<https://doi.org/10.1016/j.edurev.2020.100322>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
<https://doi.org/10.1191/1478088706qp0630a>
- Burston, J. (2015). Twenty years of MALL project implementation: A meta-analysis of learning outcomes. *ReCALL*, 27(1), 4–20.
<https://doi.org/10.1017/S0958344014000159>
- Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). Routledge. <https://doi.org/10.4324/9781315456539>



- Council of Europe. (2020). *Common European Framework of Reference for Languages: Learning, teaching, assessment—Companion volume*. Council of Europe Publishing. <https://www.coe.int/en/web/common-european-framework-reference-languages/cefr-companion-volume-and-its-language-versions>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications. <https://study.sagepub.com/creswellrd4e>
- Dehghanzadeh, H., Fardanesh, H., Hatami, J., Talaei, E., & Noroozi, O. (2021). Using gamification to support learning English as a second language: A systematic review. *Computer Assisted Language Learning*, 34(7), 934–957. <https://doi.org/10.1080/09588221.2019.1648298>
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining “gamification.” In *Proceedings of the 15th International Academic MindTrek Conference: Envisioning future media environments* (pp. 9–15). Association for Computing Machinery. <https://doi.org/10.1145/2181037.2181040>
- Dörnyei, Z. (2007). *Research methods in applied linguistics: Quantitative, qualitative, and mixed methodologies*. Oxford University Press. <https://books.google.com/books?id=R4dNAQAAMAAJ>
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education* (8th ed.). McGraw-Hill. <https://books.google.com/books?id=21w3YqEACAAJ>
- Heredia-Sandoval, M. J., & Olvera-León, L. E. (2023). Motivation to the behavior of use and exchange of digital educational resources by rural teachers. *YUYAY: Estrategias, Metodologías & Didácticas Educativas*, 1(2), 89–109. <https://doi.org/10.59343/yuyay.v1i2.20>
- Jayanthi, N. S., & Vijay Kumar, R. (2016). Use of ICT in English language teaching and learning. *Veda's Journal of English Language and Literature*, 3(Special Issue 2), 34–38. <https://joell.in/wp-content/uploads/2016/03/34-38Use-of-ICT-in-English-Language-Teaching.pdf>
- Kaya, G., & Cilsalar Sagnak, H. (2022). Gamification in English as second language learning in secondary education aged between 11–18: A systematic review between 2013–2020. *International Journal of Game-Based Learning*, 12(1), 1–14. <https://doi.org/10.4018/IJGBL.294010>
- Kohnke, L., & Moorhouse, B. L. (2022). Using Kahoot! to gamify learning in the language classroom. *RELC Journal*, 53(3), 769–775. <https://doi.org/10.1177/00336882211040270>
- Loewen, S., Isbell, D. R., & Sporn, Z. (2020). The effectiveness of app-based language instruction for developing receptive linguistic knowledge and oral communicative ability. *Foreign Language Annals*, 53(2), 209–233. <https://doi.org/10.1111/flan.12454>
- Piaget, J. (1952). *The origins of intelligence in children* (M. Cook, Trans.; 2nd ed.). International Universities Press. https://books.google.com/books?id=Lwl_AAAAMAAJ
- Sailer, M., & Homner, L. (2020). The gamification of learning: A meta-analysis. *Educational Psychology Review*, 32, 77–112. <https://doi.org/10.1007/s10648-019-09498-w>
- Shadiev, R., Liu, T., & Hwang, W.-Y. (2020). Review of research on mobile-assisted language learning in familiar, authentic environments. *British Journal of Educational Technology*, 51(3), 709–720. <https://doi.org/10.1111/bjet.12839>

- Sung, Y.-T., Chang, K.-E., & Yang, J.-M. (2015). How effective are mobile devices for language learning? A meta-analysis. *Educational Research Review*, 16, 68–84. <https://doi.org/10.1016/j.edurev.2015.09.001>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Harvard University Press. <https://doi.org/10.2307/j.ctvjf9vz4>
- Zhang, S., & Hasim, Z. (2023). Gamification in EFL/ESL instruction: A systematic review of empirical research. *Frontiers in Psychology*, 13, 1030790. <https://doi.org/10.3389/fpsyg.2022.1030790>