

THE USE OF INTERACTIVE GAMES AND THE IMPACT ON AUTONOMOUS LEARNING

EL USO DE JUEGOS INTERACTIVOS Y SU IMPACTO EN EL APRENDIZAJE AUTÓNOMO

Jonathan Paul Cárdenas Coello ^{1*}

¹ Docente de la Carrera Pedagogía de los Idiomas Nacionales y Extranjeros, Facultad de Ciencias Sociales, Humanísticas y de la Educación; Universidad Estatal del Sur de Manabí; Jipijapa, Ecuador. ORCID: <https://orcid.org/0000-0002-4986-9730>. Correo: jonathan-cardenas@unesum.edu.ec

Victoria Sariach Martínez Parrales ²

² Estudiante de la Carrera Pedagogía de los Idiomas Nacionales y Extranjeros, Facultad de Ciencias Sociales, Humanísticas y de la Educación; Universidad Estatal del Sur de Manabí; Jipijapa, Ecuador. ORCID: <https://orcid.org/0009-0006-4969-982X>. Correo: martinez-victoria9661@unesum.edu.ec

Zoyla Dayana Castaño Pihuave ³

³ Estudiante de la Carrera Pedagogía de los Idiomas Nacionales y Extranjeros, Facultad de Ciencias Sociales, Humanísticas y de la Educación; Universidad Estatal del Sur de Manabí; Jipijapa, Ecuador. ORCID: <https://orcid.org/0009-0009-0744-9680>. Correo: castano-zoyla8878@unesum.edu.ec

Katty Jennifer Cuenca Vicente ⁴

⁴ Estudiante de la Carrera Pedagogía de los Idiomas Nacionales y Extranjeros, Facultad de Ciencias Sociales, Humanísticas y de la Educación; Universidad Estatal del Sur de Manabí; Jipijapa, Ecuador. ORCID: <https://orcid.org/0009-0005-0644-4280>. Correo: cuenca-katty4174@unesum.edu.ec

* Autor para correspondencia: jonathan.cardenas@unesum.edu.ec

Abstract

To delve deeper into this topic, the research was proposed with the aim of developing intrinsic motivation through gamification strategies, evidencing its impact on the academic performance of eighth grade "A" students of the República del Ecuador High School. A quantitative approach was used to evaluate the impact of interactive games on students' motivation and academic performance. The sample consisted of 21 students, who were surveyed to gather information about the frequency of use, perception, and effectiveness of



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interactive games in the learning process. The results showed that, although most students showed a marked preference for online games, differences were observed in terms of their impact on content comprehension, suggesting the need to adapt gamification strategies to individual learning characteristics. The study provides evidence of the potential of interactive games to foster autonomy, increase motivation, and moderately improve academic performance in English language teaching, constituting a promising strategy to transform traditional teaching methods.

Keywords: autonomy; gamification; interactive; learning; technology

Resumen

Para profundizar en este tema se planteó la investigación con el objetivo de desarrollar la motivación intrínseca a través de estrategias de gamificación, evidenciando su incidencia en el rendimiento académico de estudiantes de octavo grado "A" de la Unidad Educativa Integral República del Ecuador. Se utilizó un enfoque cuantitativo para evaluar el impacto de los juegos interactivos en la motivación y el rendimiento académico de los estudiantes. La muestra estuvo conformada por 21 estudiantes, a quienes se les aplicaron encuestas para recabar información sobre la frecuencia de uso, percepción y eficacia de los juegos interactivos en el proceso de aprendizaje. Los resultados evidenciaron que, si bien la mayoría de los alumnos mostró una marcada preferencia por los juegos en línea, se observaron diferencias en cuanto a su impacto en la comprensión del contenido, lo que sugiere la necesidad de adaptar las estrategias de gamificación a las características individuales de aprendizaje. El estudio aporta evidencia sobre el potencial de los juegos interactivos para fomentar la autonomía, incrementar la motivación y mejorar, de forma moderada, el desempeño académico en la enseñanza del inglés, constituyéndose como una estrategia prometedora para transformar los métodos tradicionales de enseñanza.

Palabras clave: autonomía; gamificación; interactivo; aprendizaje; tecnología

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Introduction

In a constantly evolving world, education faces the challenge of effectively integrating learning with technology. The use of interactive games fosters autonomy in learning by allowing students to take a more active role in their training and develop critical skills such as self-assessment, decision-making, and problem-solving. This approach increases motivation and commitment while promoting responsibility for one's educational progress, transforming learning into a more engaging and dynamic experience.



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By implementing these strategies, a proactive attitude towards learning is promoted, key to success in a world increasingly focused on self-discipline and adaptability. In this project we focus on the use of interactive games and their impact on the autonomous learning of eighth grade "A" students of the Republica del Ecuador High School.

This type of learning suggests a more practical, more active, more participatory approach that involves the student, the teacher, their classmates and parents where topics that may seem complex at first glance are transformed thanks to the game into something tangible making information more comprehensible and memorable (Chávez, 2023, pág. 10)

The analysis will focus on the use of interactive games and how these tools foster autonomous learning, exploring their potential to enhance the educational experience. Various aspects will also be addressed, such as academic content and pedagogical objectives. In addition, it will investigate how these interactive games impact the learning process of students, considering both the cognitive benefits and the possible difficulties that may arise when integrating them into educational environments.

Theoretical framework

Gamification as a means of facilitating vocabulary learning

The idea of providing some materials to be used in training learners is not entirely novel. In the 1980s, early researchers argued that successful learners' strategies could be codified and taught to low-performing learners, resulting in increased learning efficiency. It was suggested that implementation was effective through facilitating learners' training in target language features, as low-performing learners could apply the strategies multiple times while completing lesson exercises, the current study seeks to broaden the educational method by incorporating a gamification app into students' vocabulary learning outside of the classroom. The underlying premise is the same, which is to provide students with supplementary vocabulary learning materials as part of their preparation for in-class vocabulary tests (Waluyo B. P., 2022).

The proposal to integrate supplementary learning materials, based on the strategies used by high-performing students, is a methodology that has great potential to optimize the educational process. Incorporating gamification applications in vocabulary learning outside the classroom expands the opportunities for students to reinforce and consolidate their knowledge autonomously and constantly. This approach not only offers more complete preparation for assessments, but also encourages active learning and continuous student motivation.

Impact of interactive games on autonomous learning

Learner autonomy in language learning is a multifaceted concept that has been defined in different ways. Holec (1981) who has been considered a prominent figure in the field of autonomy refers to it as 'the ability to take charge of one's own directed learning' (p. 3). Holec's work on autonomy has laid the theoretical foundation for much later relevant research added to the literature, although the consensus on the definition of this term has not been so far reached (Benson & Voller, 1997; Nguyen, 2011). Cotterall (1995) elucidates learner autonomy by looking at the degree to which learners are able to use a set of tactics for taking control over their own learning. The tactics are comprised of the ability to identify goals, select materials and tasks, plan practice opportunities furthermore, the essence of learner autonomy is voluntary, proactive and reflective



participation in one's own learning (Little 1991, 2007). This view of learner autonomy involves the learner's sense of identity and the knowledge and experience that the learner has acquired outside the classroom. It also offers a solution to the perennial problem of learner motivation, since learners whose agency is engaged are, by definition, positively motivated.

According to (Zhonggen Yu, 2020) the impact of interactive games on autonomous learning is reflected in several aspects: Intrinsic motivation interactive games have the power to capture and hold students' attention by combining playful elements with clear educational goals. The fun, challenging, and immersive nature of games sparks students' intrinsic interest, and they are motivated to learn for the sheer pleasure of participating in the activity. In addition, games promote active learning, where students do not just passively receive information, but also interact with the content in a meaningful way. This combination reduces the boredom associated with traditional methods and fosters a positive attitude toward ongoing learning.

Accessibility and Personalization one of the greatest advantages of interactive games is their ability to adapt to the specific needs of each student. Thanks to intelligent algorithms and modular design, games can adjust the difficulty, content, and speed of activities based on individual knowledge level and preferences. This allows each student to progress at their own pace, avoiding the frustration or disinterest that could arise in a homogeneous learning environment. In addition, the availability of these games on mobile devices and online platforms makes them accessible to a wide variety of users, expanding learning opportunities outside the classroom.

Positive Reinforcement the reward and achievement systems built into interactive games act as powerful incentives for students. By overcoming challenges or completing tasks, students receive immediate feedback in the form of points, badges, or unlocking new levels, reinforcing their sense of accomplishment and competence. This positive reinforcement not only boosts a student's confidence, but also motivates them to continue participating and improving.

Interactive games represent a significant innovation in education, particularly in fostering autonomous learning. By integrating playful elements with educational objectives, these games not only increase student motivation but also provide them with the tools needed to manage their own learning process.

Types of interactive games and their effectiveness in autonomous learning

Autonomous learning has been one of the main trends in education during the last decades, allowing students to take an active role in constructing their knowledge. The incorporation of interactive games in the educational field has proven to be an effective strategy to strengthen this type of learning. Since the 1980s, with the popularization of Piaget and Vygotsky's constructivist learning theory, the importance of interaction and autonomy in the educational process has been emphasized. In this context, gamification and digital games have emerged as key tools to promote self-discipline and experience-based learning.

In the 90s, with the rise of digital technology and mass access to personal computers, the first educational programs based on games began to be developed. In 1993, the game Reader Rabbit introduced the idea of teaching reading through interactive challenges. Later, the arrival of the Internet and the expansion of online learning platforms such as Moodle and Blackboard allowed the integration of interactive games into teaching processes.



Interactive games in education can be classified into several categories, depending on their structure and educational purpose.

Simulation and role-playing games since the 2000s, simulation games that allow immersion in realistic scenarios have gained greater relevance in education. Tools such as SimCity EDU and Second Life have been used in language teaching and in other areas of knowledge. Its effectiveness lies in the ability to recreate real-world situations in a virtual environment, giving students the possibility of making autonomous decisions within a structured framework.

Question and answer games have been used since the 1980s in formal education, but with the advancement of technology they have been transformed into digital tools such as Kahoot! and Quizizz. These games allow students' knowledge to be assessed in real time and provide immediate feedback, which contributes to the improvement of autonomous learning (Gee J. P., 2021).

Materials and methods

This study employed a quantitative approach to explore the impact of interactive games on the development of autonomous learning skills in eighth-grade students. Quantitative data were obtained through a structured survey, previously validated by experts from the foreign languages program, allowing the collection of consistent, measurable responses. This survey included multiple-choice questions focused on the frequency of game use, perceived benefits, challenges encountered, and the role of games in promoting learner independence.

The research was carried out at Republica del Ecuador High School, where formal authorization was granted to involve a group of 47 eighth-grade students. From this population, a sample of 21 students from class 8th "B" was selected, based on accessibility, willingness to participate, and alignment with the research objectives. Data collection took place over a two-week period, student surveys were conducted during regular class hours to ensure participation. The results revealed that interactive games function as powerful tools for fostering autonomy, enabling students to investigate concepts independently, make decisions in a guided environment, and apply what they've learned in practical, real-world contexts. Furthermore, these games encouraged collaborative work, problem-solving, and creativity, offering learners the freedom to progress at their own pace.

Results and discussion

The results obtained from the structured surveys applied to eighth-grade students at Republica del Ecuador High School revealed significant findings regarding the impact of interactive games on the development of autonomous learning. The collected data were analyzed across four main dimensions: frequency of use, perceived benefits, reported challenges, and level of autonomy achieved. In terms of frequency, a notable portion of students indicated regular engagement with interactive games as part of their learning experience. Within the perceived benefits dimension, students reported increased motivation, greater interest in academic activities, and a stronger inclination to learn independently.

Regarding challenges, participants mentioned limited access to technological resources and the need for clearer guidance from teachers. Finally, in the autonomy dimension, findings showed that interactive games



effectively foster decision-making, self-regulated learning, and problem-solving skills in real-world contexts. This quantitative analysis provided a structured and measurable perspective on how gamification enhances student autonomy within the school environment.

1. Do you enjoy playing interactive games during English lessons?

Table 1. Interactive games in classes

Alternative	Frequency	Percentage
Very little	5	20%
Little	8	45%
Neutral	6	25%
Quite	1	5%
Much	1	5%
Total	21	100%

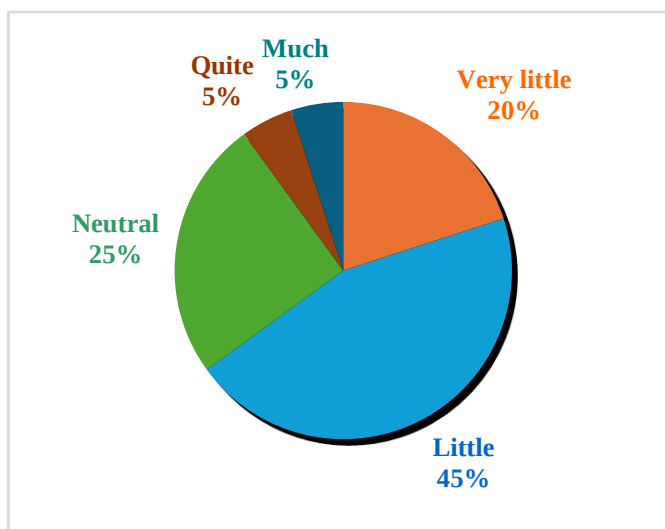


Figure 1. Interactive games in classes

2. Interactive games help to better understand the English content of the class:

Table 2. Better understanding with interactive games

Alternative	Frequency	Percentage
Totally agree	7	35%
Agreed	6	10%

Neutral	8	55%
Disagree	0	0%
Totally disagree	0	0%
Total	21	100%

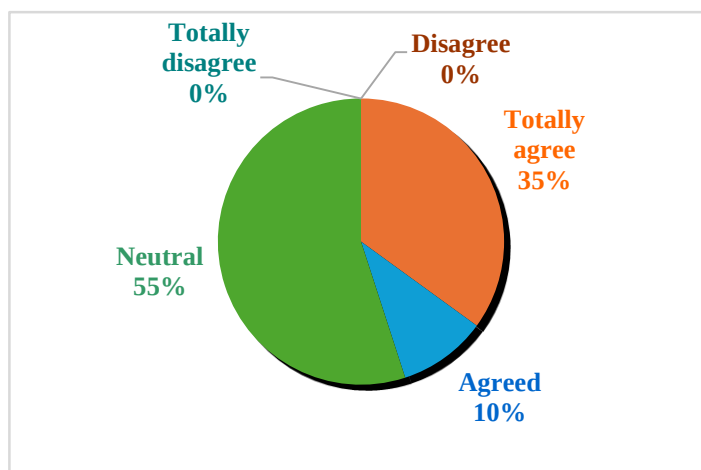


Figure 2. Better understanding with interactive games.

Discussion

The integration of interactive games in English language learning at Republica del Ecuador High School has shown significant potential to enhance students' autonomy, motivation, and participation. The study reveals that interactive games, particularly online games and digital tools, are highly effective in creating a dynamic and participatory learning environment. Students reported an increase in interest and enjoyment in English classes when using these games, reinforcing the idea that gamification can transform traditional teaching methods, as pointed out by (Gee J. P., 2024).

Furthermore, the majority preference of students for online games (80%) compared to traditional methods aligns with previous studies that highlight the ability of digital tools to offer immediate feedback and promote contextual learning (Prensky, 2021). On the other hand, although some students report neutral perceptions about the effectiveness of interactive games in understanding English content, these findings are consistent with research that warns that the design and adaptation of these tools must consider diverse learning needs and styles (Thorne, 2023).

It will also be observed that interactive games facilitate autonomous learning by allowing students to set their own goals, monitor their progress, and receive immediate feedback. This finding is consistent with the constructivist approach, which postulates that learning is optimized when the student assumes an active role in his or her own educational process (Waluyo B., 2022). In summary, the discussion of the results suggests



that, despite some limitations in understanding content, the use of interactive games constitutes a promising strategy to foster autonomy and motivation in learning English.

Conclusions

The integration of interactive games in learning English has proven to be an effective strategy to promote student autonomy, allowing them to develop self-management, motivation and critical thinking skills. Through gamification and immediate feedback, students not only acquire knowledge dynamically, but also strengthen their ability to self-regulate in their educational process.

The use of interactive games in teaching English represents a methodological innovation that transforms education into a more participatory and attractive experience. The results show that this strategy not only increases students' motivation, but also allows them to take a more active role in their learning, promoting self-evaluation and decision making. However, its implementation requires proper planning to maximize its benefits.

Research confirms that interactive games have a positive impact on autonomous learning, as they encourage active participation, motivation and personalization of the educational process. Furthermore, it has been identified that these games allow students to improve their academic performance by integrating fun with learning. However, its effective application depends on teacher training and an adequate pedagogical design

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