ISSN: 1692-7257 - Volume 1 – Issue 47 - 2026

ORIGINAL

RCTA
Revista Colombiana de Tecnologías de Avanzada
UNIPAMPLONA

Missions, points and rewards for teaching english in rural contexts

Misiones, puntos y recompensas para la enseñanza del inglés en contextos rurales

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Received: 23 September 2025. Revised: 21 November 2025. Accepted: 21 December 2025. Published: 18 February 2026.
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How to cite: J. A. Toca Figueredo, L. C. Hurtado Peña, F. H. Fernández Morales, C. M. Vergara Pareja, and J. A. Niño Vega, "Misiones, puntos y recompensas para la enseñanza del inglés en contextos rurales", *Revista Colombiana de Tecnologías de Avanzada (RCTA)*, vol. 1, no. 47, feb. 2026, art. no. 3833, doi: 10.24054/rcta.v1i47.3833

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Abstract:

A gamified teaching strategy is presented to strengthen English reading comprehension skills among eleventh-grade students at a rural educational institution. The experiment was conducted with five participants, utilizing a field diary, a questionnaire, and the GAMEX scale to assess their acceptance of the strategy. Most students improved at the inferential level, but not at the literal level. The GAMEX dimension with the highest acceptance was educational fun, with 72.9% of students, where high levels of enjoyment and satisfaction with the gamified strategy predominate. This implies that the integration of new technologies in the classroom and the use of active learning methodologies, such as gamification, do not necessarily guarantee the success of teaching strategies, since students' motivational aspects, among others, play a fundamental role in knowledge acquisition.

Keywords: reading comprehension, teaching strategy, english teaching, gamification.

Resumen:

Se presenta una estrategia didáctica gamificada para fortalecer la competencia de comprensión lectora en inglés, en estudiantes de grado once de una institución educativa rural. La experiencia se adelantó con cinco participantes, utilizando el diario de campo, un cuestionario y la escala GAMEX para determinar la aceptación de la estrategia. La mayoría de los estudiantes mejoró en el nivel inferencial pero no así en el nivel literal. La dimensión GAMEX con mayor aceptación fue la de diversión educativa con un 72.9%, donde predominan los niveles altos de disfrute y agrado frente a la estrategia gamificada. Lo anterior implica que la integración de nuevas tecnologías en el aula y el uso de metodologías activas de aprendizaje, como la gamificación, no garantizan necesariamente el éxito de las estrategias didácticas ya que el aspecto motivacional de los estudiantes, entre otros, juega un rol fundamental en cuanto a la apropiación del conocimiento.

Palabras clave: comprensión lectora, estrategia didáctica, enseñanza del inglés, gamificación.

INTRODUCTION

Inequality in basic education in Latin America, particularly in rural areas and among impoverished families, affects the equitable and sustainable development of the rural sector [1]. Under these conditions, education faces the challenge of adapting to the new realities imposed by the digital era [2]. Information and Communication Technologies (ICTs) have penetrated rural educational institutions, influencing the way students learn and relate to their environment [3]. However, ICT integration does not occur homogeneously across all areas; it is concentrated in those related to computer technology [4], leaving aside the acquisition of critical skills such as reading comprehension in a second language.

Reading comprehension is defined as a person's ability to analyze, understand, interpret, reflect on, evaluate and use written texts. This implies recognizing the structure, functions and elements of texts, with the aim of developing reading comprehension and acquiring new knowledge that enables active participation in society [5].

The initial level of reading comprehension is the literal level. At this level, the key words of the text are identified and explicit information is recognized, such as main ideas, the order of actions, characters, time and places[6]. The inferential level is based on the formulation of predictions, anticipations or hypotheses, which are combined with the reader's experience and knowledge of the content and textual elements. This allows a general understanding of the text and the construction of meaning, leading the reader to make assumptions and deductions in order to expand the information[7].

In Colombia, the teaching of a second language in public educational institutions has been strengthened through the National Bilingualism Plan (PNB) developed by the Ministry of National Education [8], which seeks to promote students capable of communicating in English. However, the MEN's strategies do not always align with the reality of educational institutions, especially in rural areas, due to the lack of an adequate methodology and the lack of linguistic diversification that reflects the country's cultural and social reality [9]. In other words, bilingual education depends on social or contextual factors, the pedagogical and didactic capacity of the educational institution, the location and the factors involved in language acquisition, but also on the level of commitment and dedication of the students [10]. The La Amistad Educational Institution, located in the municipality of San José de Pare, Colombia, is no stranger to this reality.

The foregoing suggests that teaching and learning conditions in the classroom can negatively affect academic performance and therefore students' reading comprehension in English[11]. In this regard, various methodologies have emerged that place the student at the center of the teaching-learning process, such as problem-based, project-based and challenge-based learning, together with gamification, to name a few[12]-[14].

Gamification, understood as the application of game principles and elements to the educational process, is presented as a promising teaching strategy, capable of transforming the learning process into a more dynamic, accessible, and attractive one[9]. Several researchers have established that gamified educational material can strengthen English reading and writing skills in basic education students[15]-[17]. That is, through game play and interaction with content, students acquire knowledge, skills, and abilities that allow them to strengthen their cognitive development[18].

This research sought to answer the following question: How can reading comprehension in English be strengthened in eleventh grade students of the Institución Educativa La Amistad de San José de Pare? To this end, a gamified teaching strategy was developed to strengthen reading comprehension in English, aimed at eleventh grade students. In this sense, it was necessary to identify the essential characteristics of these gamified teaching strategies, design a proposal adapted to the context of the educational institution, and implement said strategy to validate its effectiveness.

METHODOLOGY

This research used a mixed approach with a quantitative and qualitative contribution, since in this way the natural development of events is evaluated, the researcher enters into the experiences of the participants and constructs knowledge, always aware that he or she is part of the phenomenon studied, analyzing the data[19]. The sample consisted of the five eleventh grade students of the Institución Educativa La Amistad, located in the municipality of San José de Pare, Colombia. The students, 2 men and 3 women aged between 16 and 18 years, agreed to participate voluntarily in the study, with prior informed consent from their parents in the cases where it was required.

The dependent variable in this study is reading comprehension, which was addressed from two aspects: the literal level (A2) and the inferential level (B1). At the literal level, the ability to obtain explicit information from the text is evaluated, such as: main ideas, sequence of actions, characters, times, places, and explicit causes of events[6]. At the inferential level, the ability to understand and deduce implicit information through assumptions, predictions, and conjectures during reading is considered[7].

Reading comprehension was evaluated through a questionnaire applied before and after the gamified experience. The questionnaire consists of 22 items organized as follows: 12 items for the literal level and 10 items for the inferential level. This test was developed taking into account the area plan of the educational institution for the foreign language English. The

elaboration of the questionnaire took into account the test of the Instituto Colombiano para la Evaluación de la Educación[20], which is an instrument validated by the MEN and which evaluates, among other aspects, reading comprehension at the literal and inferential levels.

The gamified teaching strategy was implemented over 10 sessions, using teaching material designed specifically for this purpose. The observations were recorded in a field diary, which was analyzed with ATLAS.ti 7.4 to examine the emerging categories of the study[21]. The gamified experience was assessed through the questionnaire based on the GAMEX scale (Gameful Experience in Gamification), which was administered at the end of the classroom activity.

The GAMEX scale is structured into six dimensions: educational fun (6 items), which measures the student's degree of enjoyment of the gamified experience; balanced absorption (6 items), which evaluates the student's level of immersion and concentration, as well as their perception of the environment during the experience; creative thinking (4 items), which assesses the student's perception of the development of their thinking and imagination throughout the activity; activation (4 items), which measures the level of energy, dynamism, and active participation during the gamified process; absence of negative effect (3 items), which seeks to identify whether the strategy generated frustration or negative sensations in the student; dominance (4 items), which explores the student's perception of their understanding and control regarding the gamification dynamics[22].

In total, 27 items are evaluated with three possible rating ranges: high (74-100), medium (47-73), and low (20-46). The GAMEX scale was validated by[23]and has been used in various studies to determine the degree of acceptance and effectiveness of gamified teaching strategies[24]-[26].

RESULTS AND DISCUSSION

Gamified teaching strategy

The proposed teaching strategy is based on gamification, whose advantages include the promotion of intrinsic motivation, the student's active participation, and the personalization of learning [27]. Unlike traditional strategies, the development of reading comprehension through gamification includes the use of missions and contextual challenges, the integration of rewards and a points system, and the personalization and adaptation of content [28]. The use of missions and characters in a story makes it possible to engage users personally and create sensations of progress in the game [29].

Figure 1 presents the pathway of the gamified teaching strategy, grounded in Bloom's taxonomy and structured from a logical teaching-learning sequence, which favors more effective cognitive processes in students' knowledge acquisition. In this regard, within the teaching strategy, it was proposed to begin with the administration of a pretest, aimed at identifying prior knowledge related to reading comprehension in English. Subsequently, three sequential missions designed to strengthen reading competencies at the literal and inferential levels were established. Once the three missions are completed, the students are assessed through a posttest and through the GAMEX survey. If difficulties are identified in the learning process, feedback is provided with the purpose of supporting and reinforcing the development of reading competencies in English for each student.

Table 1 presents the characteristics of the learning missions integrated into the teaching strategy, as well as the activities and digital resources provided for the development of each one. The missions are organized into the dimensions of remembering, understanding, applying, analyzing, evaluating and creating, in order of increasing complexity according to Bloom's taxonomy[30].

In this regard, the first mission focuses on the remembering and understanding dimensions. To this end, an introduction to key concepts related to literal and inferential reading comprehension is proposed, along with exercises aimed at identifying linguistic structures in English.

The second mission addresses the applying and analyzing dimensions. In this mission, students carry out matching activities, reading analysis and textual inference exercises, with the purpose of applying the knowledge acquired to interpret textual structures in different verb tenses.

Finally, the third mission focuses on the evaluating and creating dimensions. At this stage, students strengthen their reading comprehension by identifying the type of text, the problem, its solution and causes. Likewise, the production of aids and texts that contribute to improving reading comprehension at the literal and inferential levels in English is encouraged.

Student motivation was guided by the awarding of points for completing missions, with 10 points assigned for each completed activity. This scoring system allowed each student's progress across the different missions to be tracked.

At the end of the process, the total number of points obtained in the activity was displayed on the website, where overall performance could be viewed, which motivated students to continue developing their reading competences autonomously. The digital resources were created with tools such as Kahoot, Google Forms, Blooket, Educandy, Quizizz, Educaplay and PowerPoint, and were integrated into the Wix platform due to its popularity for this type of application[31].

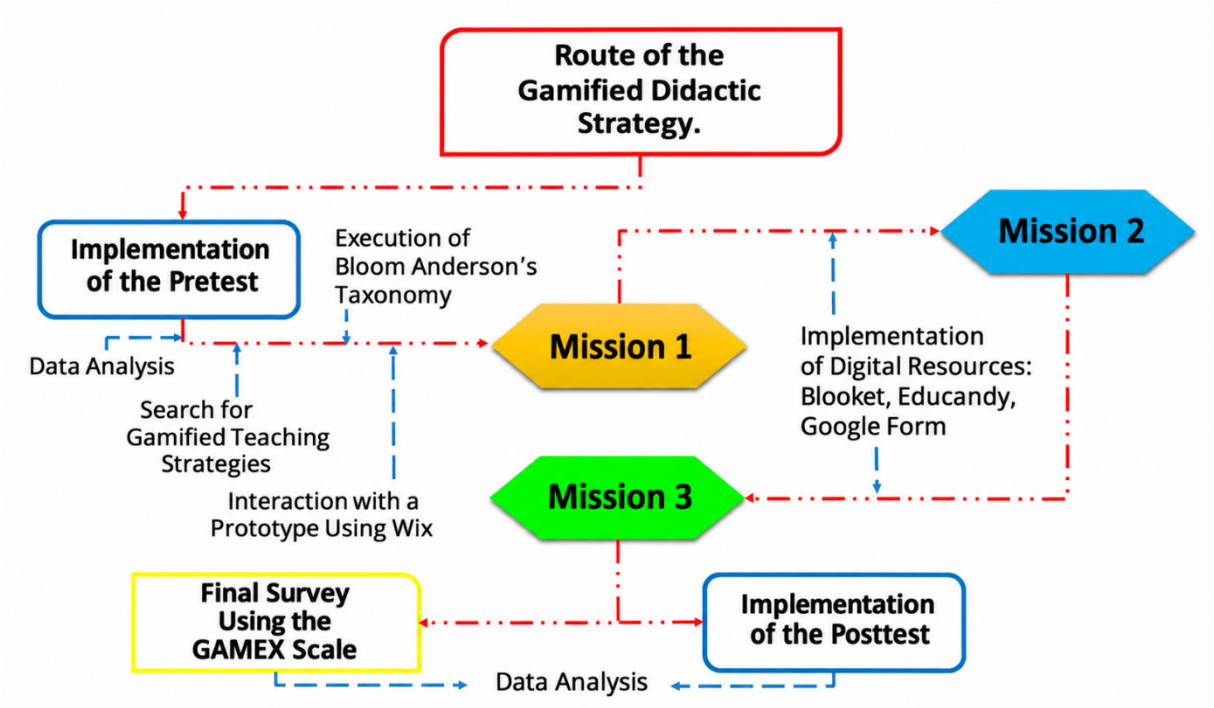

Fig. 1. *Pathway of the gamified teaching strategy.*
Source: Own elaboration

Table 1: Characteristics of the learning missions.

Mission	Dimensions	Activity carried out	Digital resources
Mission 1	Remembering	In this first phase, students were introduced to the key concepts of literal and inferential reading comprehension through interactive readings on Wix and Blooket	Wix and Blooket
	Understanding	Blooket was used to reinforce the recognition of nouns and verbs, facilitating the identification of linguistic structures within the texts.	Blooket
		Through Google Forms, reading comprehension exercises were administered in which students had to identify levels of comprehension in specific texts.	Google Forms
Mission 2	Apply	At this stage, students applied the knowledge acquired to interpret textual structures in different verb tenses.	Blooket
		With Blooket and Educandy, they carried out activities involving meaning association and the analysis of common errors in reading comprehension.	Educandy and Blooket
	Analyze	The Educandy platform facilitated textual inference exercises, in which students had to read between the lines to understand implicit ideas.	Educandy
		Distinguish literal and inferential reading comprehension levels by means of a text.	Google Forms
Mission 3	Evaluate	Determine whether the text is an autobiography, a biography, an informative text or a persuasive text.	Blooket
		Practice reading comprehension exercises at the literal and inferential levels.	Google Forms
	Create	Determine the structure of a text: problem-solution, cause-effect, compare-contrast, sequential or chronological order.	Blooket
		Create reading comprehension support tips at the literal and inferential levels and create a reading comprehension text using context as a basis.	PowerPoint and Google Forms

Source: Own elaboration

Table 2 presents the pretest and posttest results for the students who participated in the research, at the inferential and literal levels of reading comprehension.

Student performance

Table 2: Students' correct answers in the pretest and posttest

Student	Literal Level		Inferential Level	
	Pretest	Posttest	Pretest	Posttest
E1	10	8	2	5
E2	7	3	3	5
E3	6	11	3	8
E4	6	3	3	3
E5	2	4	3	2

Source: Own elaboration

The pretest shows that, at the literal level, E1 presents high performance since they answered 10 of the 12 items correctly, unlike E5, who answered only 2 correctly, while the others were at an intermediate level (see Table 2). In the posttest, E3

improved noticeably, going from 6 to 11 correct answers, as did E5, who went from 2 to 4 correct answers.

However, the other students reduced their performance at the literal level of reading comprehension, which may mean difficulties in adapting to the gamified teaching strategy and low motivation. Another aspect that may have affected the group's performance at the inferential level was the poor attitude of one of the students, which generated a negative environment, initially affecting the concentration and mood of their classmates.

At the inferential level, the pretest shows that all students presented low performance, since none exceeded 3 correct answers (see Table 2). This indicates difficulties in interpreting implicit meanings and establishing relationships within the text. That is, although students can recognize direct information, they present serious limitations when analyzing and reflecting on the content of the text in English.

However, in the posttest most students improved at the inferential level, with E3 being the most significant case since they reached 8 of the 10 possible correct answers, while only E5 decreased their performance. The above indicates that the gamified teaching strategy was more favorable for improving students' inferential level of reading comprehension in English, compared with the literal level.

In general, students maintained stable performance as far as reading comprehension is concerned. Nevertheless, it is interesting to observe that E3 improved significantly at the literal and inferential levels of reading comprehension in English, which indicates a high degree of motivation and commitment to their learning.

The above implies that the integration of new technologies in the classroom and the use of active learning methodologies, such as gamification, do not necessarily guarantee the success of teaching strategies, since students' motivational aspect, among others, plays a fundamental role in terms of knowledge acquisition[26]and[33].

Classroom experience and acceptance of the strategy

The classroom work was carried out over 10 sessions, using the didactic material prepared for this purpose. During the development of the missions, students successfully completed the proposed challenges, which were designed to achieve the learning objectives set out in each mission.

Through a cognitive conflict that promoted critical analysis, students were able to recognize the literal and inferential levels of reading comprehension in English. Each activity presented a challenge that required students to navigate the platform and work interactively, using the didactic resources hosted on Wix.

The field diary records showed that the gamified teaching strategy provided a dynamic and entertaining space, with comments such as: "Yes, teacher, give us more of these activities." Students achieved collaborative learning, explaining the activities to their classmates in detail.

Overall, the classroom atmosphere was good, and most participants took an active part, although one student appeared apathetic toward learning through the proposed teaching strategy.

Likewise, the development of communicative competences in English was observed: as the students consolidated their reading comprehension, their listening and speaking skills in the language also improved, as one student indicated: "Teacher, give us more activities like that, I want to learn vocabulary".

In the last session, it was confirmed that the students were able to express their opinions about the games used, sharing how they felt and what they learned during the process.

Table 3 presents the results of the GAMEX scale, which makes it possible to determine the degree of acceptance of the gamified teaching strategy by the students. The dimension with the highest acceptance was educational fun, at 72.9%, where high levels of enjoyment and satisfaction with the gamified strategy predominate. The items my experience with the game was pleasant and playing was fun, with 80% and 75%, respectively, were those with the highest acceptance by the students. However, low intrinsic motivation is evident, since few students expressed interest in playing on their own initiative.

Table 3: Results of the GAMEX scale by dimension and categories

Dimensions	Questions	Mean	%	Level
Educational fun	Playing was fun	4.0	75	High
	I enjoyed playing	3.8	70	Medium
	I really enjoyed playing	4.0	75	High
	My experience with the game was pleasant	4.2	80	High
	I think playing is very entertaining	3.8	70	Medium
	I would play this game on my own, not only when asked to	2.8	45	Low
Balanced absorption	Playing made me forget where I was.	3.2	55	Medium
	I forgot about my immediate surroundings while playing.	2.8	45	Low
	After playing I felt as if I were returning to the "real world" after a trip.	2.8	45	Low
	Playing "took me away from everything"	3.4	60	Mean
	While playing, I was completely oblivious to everything around me.	3.0	50	Mean

Dimensions	Questions	Mean	%	Level
	While playing, I lost track of time.	3.0	50	Mean
Creative thinking	Playing sparked my imagination.	3.2	55	Mean
	While playing, I felt creative.	4.0	75	High
	While playing, I felt I could explore things.	3.6	65	Mean
	While playing I felt adventurous.	3.2	55	Mean
Activation	While playing I felt active.	3.8	70	Mean
	While playing I felt nervous.	2.8	45	Low
	While playing I felt frantic.	3.0	50	Mean
	While playing I felt excited.	3.6	65	Mean
Absence of negative effect	While playing I felt annoyed.	3.8	76	High
	While playing, I felt hostile.	2.8	56	Medium
	While playing, I felt frustrated.	3.0	60	Medium
Dominance	While playing, I felt dominant / I had the feeling of being in charge.	2.6	52	Medium
	While playing, I felt influential.	3.0	60	Medium
	While playing, I felt autonomous.	3.2	64	Medium
	While playing the game, I felt confident.	3.2	64	Medium

Source: Own elaboration

The balanced absorption dimension showed a medium level of acceptance (64.8%). The items "I forgot about my surroundings" (45%) and "I lost track of time" (50%) indicate that, although the game captured some interest, it did not produce deep immersion or disconnection from the surroundings, which are key aspects of emotional involvement.

As for creative thinking (70%), the results show moderate stimulation: the perception of creativity stands out, but generalized levels of exploration or adventure were not reached.

The activation dimension reflects active participation without triggering intense emotions (70%), which suggests a balanced response to the game stimulus. In this dimension, some students indicated feeling a certain level of nervousness or frenzy when playing, while others did not experience these sensations.

This could be due to individual differences in how each student faces the challenges within gamification. For some, the competition or the pace of the game may have produced a sense of urgency or stress, while others may have perceived it as a manageable and fun challenge.

The absence of negative effects obtained a medium level of acceptance (64%), showing that most students did not experience emotions such as frustration or annoyance during the activity. The dominance dimension was the weakest (60%), and "I felt dominant" was the item with the lowest acceptance (52%), which indicates that students did not feel fully in control or autonomous within the game environment.

As for the gamified teaching strategy, most students perceived it as friendly and coherent. They felt comfortable using the Blooket platform, supported also by the website created and other digital resources, such as Educandy and Google Forms. This experience produced a pleasant working environment and a commitment on the part of the students, who participated actively in the process of acquiring new knowledge.

Overall, the results show that, although gamification was effective in generating enjoyment and positive experiences, more work is needed in designing activities that strengthen immersion, autonomous thinking and the student's sense of competence in order to consolidate its pedagogical impact.

DISCUSSION

The analysis of the field diary established that motivation is influenced by technological skills, so the use of technological tools may foster interest and commitment in learning. Motivation is part of reading comprehension, indicating that motivated students tend to engage more in reading, which facilitates their comprehension[15].

Motivation is also associated with collaborative learning and autonomous learning, which suggests that motivation influences the way students learn, both in group contexts and independently. A motivated student can therefore participate actively in collaborative activities and develop autonomy in their learning[17]and[29].

The results show that the gamified strategy generated a dynamic and participatory learning environment, which is consistent with Parra-González and Segura-Robles[23], who state that technology and digital resources can improve learning processes and student motivation. This enabled an improvement in the inferential level of the students' reading comprehension in English, thanks to a teaching strategy that uses digital educational resources adapted to the context[33].

However, despite the students' high participation and commitment, no significant improvements were achieved in the literal level of reading comprehension in English. In this regard, Ojeda-Lara and Zaldivar-Acosta[34]highlight that the success of gamified environments depends on aspects such as teacher training, adaptation to the school context, and adaptation of the nature of the subjects to the students' learning style, among others.

In this sense, educational conditions in rural areas may represent an obstacle to learning quality, which could explain the

persistence of low levels of reading comprehension among students[3].

Second language teaching must adapt to these conditions, integrating practices that reflect the students' daily experiences, such as writing texts in English related to their environment, strengthening their linguistic skills and connecting learning with their reality[9]and[14].

CONCLUSIONS

The implementation of the gamified teaching strategy to strengthen reading comprehension in English in eleventh grade students of a rural educational institution proved to be effective for the inferential reading comprehension level, although it did not have a significant effect on the literal reading comprehension level. This difference could be explained by the fact that students tended to focus more on deducing general meanings and establishing relationships between ideas, setting aside the detailed analysis of the literal meaning of sentences.

The use of gamification in this strategy increased the students' motivation, commitment and active participation. The integration of scores, rewards and progressive challenges encouraged autonomy in learning and promoted a more dynamic and meaningful experience. In addition, the Wix platform served as a structural axis for organizing the activities and allowed intuitive navigation through the missions, facilitating access to digital resources and providing constant feedback.

In conclusion, the implementation of a gamified teaching strategy in a rural context such as that of the Institución Educativa La Amistad presents both opportunities and challenges. The lack of reliable technological resources, the students' socioeconomic conditions and the deficit in reading comprehension skills are factors that must be taken into account when designing and implementing innovative pedagogical strategies.

Nevertheless, the arrival of digital tools shows that, with adequate resources and a deep understanding of the context, it is possible to create a dynamic and participatory learning environment that, despite barriers, can offer students new opportunities for academic and personal development.

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FUNDING

No financing

CONFLICT OF INTEREST

None

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