

DOI: 10.5281/zenodo.11425134

LIFE GAME: GAMIFIED TOOL FOR THE DEVELOPMENT OF SOFT SKILLS IN THE PRODUCTIVE SECTOR COLOMBIAN CARIBBEAN REGION

Viviana Cervantes Atia^{1*}, Laura Sandoval Gómez², Juan José García³, Karina De Castro Sequeda⁴, Carlos Acosta Villa⁵, Jorge Guadalupe Mendoza León⁶, Marco Antonio Hernández Aguirre⁷

¹PhD en Ciencias Administrativa. Profesor Investigador en la Universidad Simón Bolívar, sede Barranquilla, Colombia. Email: viviana.cervantes@unisimon.edu.co Orcid ID: <https://orcid.org/0000-0002-5214-0414>

²Magister en Gerencia del Talento Humano. Profesor Catedrático de posgrado en la Universidad de la Costa en la Especialización de Psicología Organizacional. Email: lsandova2@cuc.edu.co Orcid ID: <https://orcid.org/0009-0000-1003-021X>

³PhD Planeación Estratégica y Dirección de Tecnología Investigador candidato a SIN (Sistema Nacional de Investigadores), Adscrito en el Cuerpo Académico 186- Unisón del Programa de Ingeniería Industrial y de Sistemas, Facultad de Ciencias de Ingeniería. Universidad de Sonora- México. Correo institucional. Email: juan jose.garcia@unison.mx. Orcid ID: <https://orcid.org/0000-0002-0413-7341>

⁴Magister en Gerencia del Talento Humano Fundadora y CEO Grupo Kreativo. Email: kdecastro@syprotek.com. Orcid ID: <https://orcid.org/0009-0008-1055-5911>

⁵Magister en Administración de Empresas. Director Especialización en Desarrollo Humano y Organizacional de la Universidad Simón Bolívar, sede Barranquilla, Colombia. Email carlos.acostavi@unisimon.edu.co Orcid ID: <https://orcid.org/0000-0001-8666-7049>

⁶Doctor en Administración e Innovación Educativa Profesor titular en el Instituto tecnológico de Sonora (México) Email: Jorge.mendoza@itson.edu.mx Orcid ID: <https://orcid.org/0000-0001-9627-8370>

⁷PhD Doctor en Tecnologías de la Información y Análisis de Decisiones. Profesor titular en el Instituto Tecnológico de Sonora (México) Email: marco.hernandez@potros.itson.edu.mx Orcid ID: <https://orcid.org/0009-0002-8324-8476>

Received: 03/07/2025

Accepted: 29/10/2025

Corresponding Author: Viviana Cervantes Atia
(viviana.cervantes@unisimon.edu.co)

ABSTRACT

Strengthening soft skills is a strategic factor for the competitive and sustainable development of the productive sector. The challenges of the digital age and the emergence of new technologies promote the adoption of gamified tools that enhance meaningful employee learning. Within this framework, Life Game is presented as an innovative approach to developing communication, leadership, and problem-solving skills. The objective of this article was to analyze the effectiveness of Life Game as a gamified tool for developing soft skills in the productive sector of the Colombian Caribbean region, based on a comparison between initial and post-implementation performance levels. A quantitative approach was adopted with a quasi-experimental design,

employing pretest and posttest, as well as the Wilcoxon test for related samples. The results showed statistically significant improvements in communication ($p < 0.01$), negotiation ($p < 0.001$), and influence ($p < 0.05$) skills. While leadership and relationship building also showed improvements, these did not reach statistical significance. It is concluded that gamification is not only effective and relevant for the development of soft skills but also constitutes a driver of cultural and strategic transformation in the productive sector, with the potential for scalability to other sectors and organizational contexts.

KEYWORDS: Gamified Tools, Competencies, Communication, Game Mechanics, Technological Tools.

1. INTRODUCTION

In the digital age, network users recognize that the elements of play arouse interest in achieving their objectives; this environment has been taken advantage of by different areas, including business, the irruptions of new technologies, *management* and global competitiveness, have come to stay, which has brought with it countless challenges that organizations must face, especially in the development of marketing capabilities. relationships that promote competitiveness and sustainability in the market. In this sense, new divergent approaches have emerged which are aligned with the integration of game elements in non-playable environments, hence the appearance of gamified tools which facilitate the involvement and participation of various forms of learning for the development of competencies in a fun, competitive and challenging way through didactic games that exemplify the common dynamics of the work environment.

In this sense, it can be thought that gamified tools serve as a means to develop strategies that motivate and dispose people to perform certain actions, this tool leaves aside the orthodox view of learning turning it into an opportunity to create innovative experiences with great possibilities of success, as many companies have experienced. Along the same lines, the challenges to build these tools are great, since their dynamics must be aligned with the needs of the system, but at the same time, the game mechanics must be optimally structured so that they are compatible with the daily tasks that employees must develop, and in turn promote behavioral changes and the development of skills specific to their work.

The theoretical antecedents, related to the use of gamified tools by the business sector, have been the object of successes and failures, even more so when it comes to the development of generic competencies such as communication, given that among the positions of the authors, it is common for their use to be generalized to academic level processes. playful, leaving in the background, organizational processes and mainly those that involve people and their development; On the other hand, Camargo (2019) and Casado and Morell (2019) assert that, in most cases, organizations only focus on the processes of productivity and commercialization of goods and services, which exclusively point to the tangible aspects of the company; leaving aside efforts and resources for the training of competencies in human talent.

In recent years, adopting gamification in business processes has become a topic of global interest, the

literature and studies that have been developed demonstrate the importance of its application in non-playful contexts, in order to influence people's behaviors based on stimulus and motivation Trejo (2020); the purpose of this is to make the final product of its application more fun, attractive and motivating, all of which leads to changes in behavior being visualized through a meaningful and innovative experience Deterding et al (2011) and Marín I. & Hierro E., (2013).

In the business field, gamification can be considered a process of incremental innovation in which the application of specific software is used to promote the co-creation of value between customers and the company to obtain competitive advantages (Zambrano et al, 2020).

On the other hand, Prosperi et al. (2016), in their studies on the application of business gamification, show that this tool breaks with traditional qualification schemes and that it is possible to work on different types of competencies in employees; in the same year, Sánchez (2022) ratifies the above, complementing it with the ability of the game to motivate people to achieve extraordinary achievements that they would never have imagined from conventional practice.

For Heredia, et al (2020), gamification is a game supported by technological tools so that its attractiveness facilitates the participation and autonomy of the individual in solving problems through the development of generic skills and competencies, both individual and group, awakening in individuals the desire to achieve the proposed goals. However, according to Hidalgo (2018), the correct use of these tools results in the development of generic competencies related to teamwork and communication, impacting the improvement of the work environment, as well as employee engagement.

In view of the above, the objective of the article was to describe how the gamified tool *Life Game* develops communicative competence in employees in the productive sector. Consequently, based on the reviewed literature, the following hypothesis is proposed; performance levels in soft skills (communication, negotiation, influence, leadership and relationship building) are significantly higher after the application of the gamified tool *Life Game* compared to the levels prior to the intervention.

1.1. Gamified Tools

Gamification comes from the English *Game*, which means game. The tool has become a business strategy applied under the design of games to non-ludic

contexts, in this case to the business sector, its use leads to transforming user behaviors by involving and motivating them to achieve objectives (Chila, 2015). In this same sense, Burke (2014) shows how gamified tools generate commitment and motivation as well as behavioral changes that promote innovation and the development of new skills

The new digital environment in the business sector has led to the design of gamified tools, which promote the adoption of disruptive and innovative technologies, whose contribution lies in the development of transversal skills related to the way people are and act; these, in turn, cover aspects related to aptitudes and skills of knowing how to be, do and be (Marín-Zapata *et al.*, 2022); among these competencies we can mention communication, problem solving, and interpersonal relationships (Sánchez, 2019). Such competencies have become highly valuable for professional and organizational development and gamified tools have become a strategy that only focuses on the game, but also on achieving business objectives, thus reducing the lack of these skills in employees in favor of obtaining differentiating competitive advantages. (Mayanquer & Quintero, 2024)

Now, from the position of Londoño and Rojas (2020) and Faraons *et al.*, (2016), gamification according to these authors is considered as a technology, a method or a strategy, which promotes behavioral changes in people by involving and motivating them when solving problems related to their performance in a fun way. Holguin (2023), on the other hand, considers gamification as a technique, method, and strategy composed of creative elements that attract attention to develop a task or learning in non-gaming environments, all in order for people to adopt useful behaviors.

Looking at gamification from the workplace becomes an opportunity with great potential in the improvement of processes and activities of organizations; despite its viability in labor dynamics, it is essential that when designing such tools, thematic relevance is taken into account, which must be accompanied by measurable indicators. clear and concise and even with mechanisms that make it easier to see the progress made in the middle of the process. Another very important aspect that is implicit in the use of gamified tools is the development of interaction between the collaborators who participate in the game. Riquelme, 2023).

Software developers place special emphasis on how gamification can impact customers and create motivation in their collaborators Duggan & Shoup,

(2013). This statement is substantiated, given that gamified tools are focused on a "game-centered design", whose model is mainly based on incorporating objectivity into commercial applications in order to guarantee their success. In addition, creating this type of product maximizes the possibilities for companies to remain at the forefront of the constant evolution presented by the digitized era in today's world.

Along the same lines, Parra and Torres (2018) believe that the use of gamified tools requires mechanics inspired by leisure games in a way that is attractive and entertaining for participants. However, his creation stands out for its aesthetics in a way that not only attracts, but also positively affects the mood of the people who use it.

According to Gartner (2011); Londoño and Rojas (2020) agree that gamification uses game mechanisms, such as challenges, rules, opportunities, prizes and levels, to transform everyday tasks into fun activities, according to the same author, gamification uses game mechanics such as challenges, rules, chance, rewards and levels of achievement of objectives to transform daily tasks into playful activities. This methodology has been used in different areas, business in social initiatives, as well as in education, which has been including it for a few years (Contreras, 2016)

Despite the benefits that are projected to be achieved with gamified tools, at the business level according to the report "Maverick Research Motivation, momentum and meaning: how Gamification can inspire engagement" developed in 2011, it was projected that by 2015 more than 70% of the companies in the Forbes Global ranking would have applied gamification. However, Gartner (2011) warns that gamification would not reach the productivity plateau for another 5 to 10 years due to organizational culture issues.

From this perspective, Rodríguez (2016) justifies the use of gamified tools, pointing out that learning is enhanced when the subject assumes an active role and faces real situations, this process can be achieved in less time through play, since playful strategies facilitate the preparation and development of skills necessary to later face real-life activities. This methodology is understood as "*learning by doing*" thinking that is based on experiential pedagogy, which has as its main advantage the possibility of making decisions in a protected environment (Escutia, 2021) In this sense, gamification conceived as a recreational resource, not only favors the acquisition of new knowledge and values, but also promotes the development of essential skills such as

observation, probabilistic reasoning, speed, intuition, decision-making, and risk management.

1.2. Game Dynamics And Mechanics In Gamified Tools

The components of gamification include elements of games and their mechanisms, such as the challenge, obstacles or challenges, reward and rules (Jácome & Samaniego, 2023). In this sense, gamification, thanks to its interdisciplinary applicability, is inspired by game techniques and tools whose main components are dynamics and mechanics, designed to generate meaningful experiences in participants. To delve deeper into these two aspects, it is necessary to address their concepts and characteristics in greater detail.

In the case of dynamics, these are understood as emergent patterns of behavior that arise from the interaction of the players. Among them, the following stand out: the competition that seeks to motivate participants to achieve achievements by surpassing others, thus favoring the continuous improvement of their competencies; collaboration, which promotes interaction, communication and teamwork; exploration that maintains the interest of users by encouraging curiosity and discovery and finally, achievement, associated with the ability to complete tasks and achieve the proposed goals. (Antoñanza, 2018).

On the other hand, Díaz (2017) and Valencia *et al.* (2021), point out that the mechanics of the game comprise the rules that guide the actions of the players, among these are the points that allow the progress of the participants to be evidenced and can be associated with rewards; the badges, understood as visual recognitions that users obtain when they reach the proposed goals; the levels, which introduce new challenges while maintaining the motivation of the users; the missions, that propose specific objectives to encourage active participation and finally, the leaderboards, which make performance visible and demonstrate the acquisition of competence in relation to other players.

In addition to what has been described, for Marczewski (2018) in the construction of the mechanics it is pertinent to include elements such as loss aversion, progress accompanied by *feedback*, the narrative that allows the player to tell their experience, the time pressure that helps them focus on the problem, the strategies, which favor the autonomous planning of actions and the customization that provides the possibility of personalizing the experience. However, these components must be adapted to the needs of each

company, taking into consideration its culture and the technological resources and capabilities it has. (Sánchez et al, 2019).

It is noteworthy that gamification as a tool has been used for different cases at the business level, According to Krajger, I. et al, (2018), the game is designed to educate people in a domain of a specific topic, on the other hand, there are games aimed at leadership development, also for sales techniques and other businesses, As well as to apply in the field of health, in the same way, through the gamified tool it is possible to measure the level of satisfaction of the users of a company, whether internal or external. In general, gamification becomes an optimal scenario for collaborative work and communication as essential skills for the exchange, appropriation and generation of new knowledge (Palmquist & Jedel, 2022).

1.3. Development Of Soft Skills

In the last decade, as a result of the challenges of globalization and the accelerated adoption of Technology, Information and Communication (ICT), the development of soft skills has become an aspect of vital importance in the work environment. since these competencies strengthen interpersonal relationships, facilitate effective communication, and favor conflict resolution Ngo (2024). This new paradigm responds to the growing complexity of the work environment, digitalization, and the need to form collaborative and adaptable work teams (Ramírez & Aguilar 2022).

This importance merits defining the term; so Ginting et al. (2020) consider soft skills as a set of personality traits, abilities, and skills that define the way people relate to each other in their environment and affect their level of productivity. Along the same lines, and considering the relevance of these competencies, Pezer (2021) demonstrated in his studies that modern organizations direct their efforts to select personnel who possess them, these skills are desirable not in managerial positions, but also in the rest of the employees, since they provide them with greater independence and productivity, which, in turn, it increases their influence on the environment in which they work.

However, in their eagerness to obtain competitive advantages and in view of the deficiencies that many recent graduates present in the development of these competencies, companies have implemented special programs aimed at strengthening them, in order to achieve a more efficient performance in their collaborators (Tang, 2020); this interest is also highlighted by Rodríguez and Hernández (2020)

who highlight that in certain contexts, Soft skills can become even more relevant than technical skills, especially in sectors where work demands high levels of collaboration and creativity.

However, according to the Organization for Economic Cooperation and Development, OECD, (2023), competencies are understood as capacities that allow responding to individual and collective demands through the integrated use of practical, cognitive, social, and behavioral skills, with the purpose of obtaining effective results in the proposed plans. Thus, the use of gamification has currently favored the development of basic skills such as cooperative work, communication, and negotiation skills, generating spaces for joint construction among members of an organization (Álvarez *et al.*, 2019).

It is necessary to clarify that gamification is relevant for the development of communicative skills because they become tools that, through games, facilitate the exchange of information in a contextualized way to the needs of organizations; this is because the games are designed according to the work routines of each business unit Rojas (2019). In this sense, the challenge of gamification lies not only in the investment of time and resources, but also in the optimization of its use, which requires adequate preparation and the design of game mechanics that really attract and motivate employees.

2. METHODOLOGY

The methodology consisted of analyzing the effectiveness of *Life Game* as a gamified tool in the development of soft skills in companies in the productive sector of the Colombian Caribbean region based on the comparison between the initial performance levels and those obtained after application. To respond to this objective, a quantitative approach was adopted with an explanatory scope and a quasi-experimental-longitudinal design, this design was justified to the extent that the participants were assigned to the groups according to certain predetermined ones, which facilitated the generalization of the results to similar situations in real contexts. Likewise, the observation and collection of data was carried out at multiple times on the same unit of analysis (collaborators of the companies), thus evidencing the development of communication skills.

The population was made up of 20 administrative collaborators of middle management belonging to the company under study with a presence in the three main cities of the Caribbean region of Colombia: Barranquilla, Santa Marta and Cartagena;

where the company under study has branches. The selection of the collaborators was made intentionally, considering their strategic role in the measurement between management and operational personnel. a key aspect given the nature of the organization; The sample size allowed a controlled implementation of the intervention and the systematic collection of quantitative pre-post intervention measures, ensuring reliable data for analysis. The procedure had three phases; The first corresponded to an initial diagnosis of the level of communication competence in the employees.

To this end, an instrument validated by Arribas and Pereña (2009) called the *CompeTEA* test was applied with 170 Likert-type items.

This test evaluated 20 competencies grouped into five (5) areas:

- Intrapersonal area (Self-control and emotional stability, Self-confidence and resistance to adversity)
- Interpersonal area (Communication, Relationship Building, Negotiation, Influence and Teamwork).
- Area of task development (Initiative, Results orientation, Analytical and Decision-making skills).
- Environment area (Knowledge of the company, Vision and anticipation, Customer orientation, Openness and Identification with the company).
- Management area (Management, Leadership and Planning and organization).

According to the criteria defined by the researchers in conjunction with the personnel department of the company under study, the following assessment scales were established for the results of the *CompeTEA* test:

- NC 4: Strong point
- NC 3: Mid-high
- NC 2: Weak point
- NC 1: Low point

In this sense, employees with scores between NC 1 and NC 2 were classified as non-competency holders, while those located between NC 3 and NC 4 were considered as competency holders.

In the second phase, the *Gamified Life Game* tool designed by the company Grupo Kreativo (2020) was implemented to respond to the specific needs of the organization under study. The intervention was developed in four (4) training cycles, each one aimed at strengthening soft skills (communication and relationships).

- First cycle: self-knowledge and management of emotions, using dynamics based on the game

of conventional cards

- Second cycle: continuation of the work on self-knowledge and emotions through dynamics of concentration and roulettes
- Third cycle: training in negotiation and influence, through island role-playing.
- Fourth cycle: relationship and leadership, integrating in a global way the competencies initially planned with the Life Game tool.

Each session lasted two hours, taking place on a weekly basis in the company's 20 administrative collaborators, located in the cities of Barranquilla, Santa Marta and Cartagena-Tolú (Colombia). In total, the intervention lasted for five weeks (one month and one week).

Finally, in the third phase, the CompeTEA test was applied again, following the same procedure as phase 1, the purpose was to verify whether, after the implementation of the gamified tool, the shortcomings previously identified in the first application of the psychometric test had been improved or enhanced. For statistical processing, descriptive statistical methods were used, taking as a reference the results obtained in phase 1 and phase 3 (application of the CompeTEA 170 questions test). The information was processed using Microsoft Excel, complemented with the TEA-ediciones online application (E-teaediciones evaluation ON-LIVE); in order to systematize and obtain the results of the questionnaire applied.

Regarding the inferential statistics methods, different items from phases 1 and 3 of the CompeTEA test were comparatively analyzed. This procedure was performed in the Minitab software¹⁷, using the Bloxpot statistical technique, in order to identify patterns and data that were not evident in the test responses.

3. RESULTS

First, the demographic data of the participants will be presented and, subsequently, the results of the competencies evaluated in the first stage. This analysis made it possible to identify the characteristics of the sample and establish a reference framework that served to contrast the results obtained after the implementation of the gamified tool. The study involved 20 employees belonging to the organization's middle management line in the Caribbean section, of which 80% were male and 20% female. As presented in Table 5, the participants ranged in age from 29 to 51 years. The average age of the employees was 38 years. Regarding the level of education, 40% correspond to professionals (n=8), followed by technicians with 35% (n=7) and technologist with 20% (n=4). Likewise, a large part of the sample (70%) has a minimum work experience of 11 years, which shows an adequate level of trajectory for the study.

According to the criteria of the researchers and the human talent department, a classification of the participants into two groups was established in each of the competencies evaluated. On the one hand, those located in levels 3 and 4 were categorized as collaborators who possess competencies (group 1); while those who were placed in levels 1 and 2 were classified as collaborators who do not have the competencies (group 2).

In this sense, from the perspective of group 1 (employees who possess the competencies), the following skills stand out as strengths: planning and organization (n=19), decision-making (n=18), results orientation (n=17), knowledge of the company (n=17), identification with the company (n=16), teamwork (n=15), leadership (n=15), direction (n=15); on the contrary, the competencies with the lowest representation were communication (n=5) and negotiation (n=3) (see Figure 7).

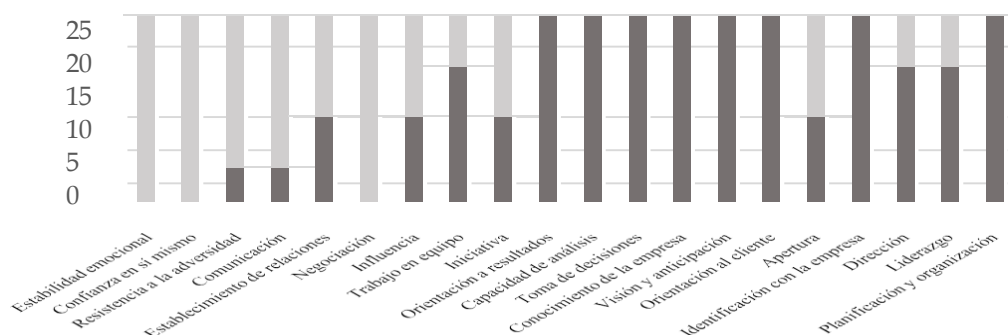


Figure 1: Competencies Of The Competea According To The Group Of Collaborators – Phase 1.

Source: Prepared By The Authors. In Original Spanish Language.

The results of phase 1 (diagnostic) showed that 70% of the 20 employees of the company under study

had a medium level in the development of communicative competence. This finding is

consistent with the study by García and Ríos (2019) who, when evaluating this competence in business leaders, reported that 72% perceived it at a medium level. Similarly, Delgado and López (2018) in their research on soft skills in middle management, placed communication competence at a medium level with 41%. These results reflect that, although communication competence in the business environment has shown progress, although it has achieved significant advances, there are still important challenges to be consolidated, especially in the face of the dynamic and complex contexts in which organizations must operate.

Phase 2. Based on the results obtained in the diagnostic phase, the second stage focused on the

training of five specific competencies evaluated by the CompeTEA test: negotiation, leadership, relationship building, influence and communication. To this end, various gamified dynamics were implemented, including the use of conventional cards, designed to generate visual stimuli or pose questions that promote meaningful conversations, both of a consultative nature and feedback. In general terms, each participant selected a card and had to answer the corresponding question, linking it to a personal or work situation in their life. This process was repeated successively until the set of cards was exhausted, favoring reflective analysis and the exchange of experiences. (See Figure 2).

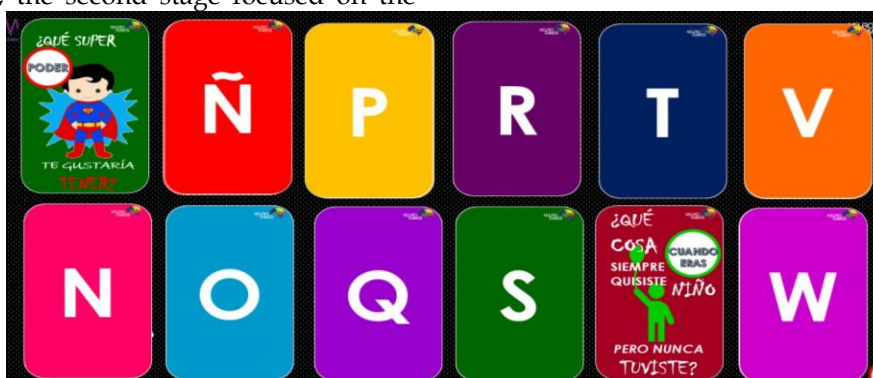


Figure 2: Conventional Cards Gamified Life Game Tool.

Source: Own Elaboration Taken From Life Game Gamified Tool. In Original Spanish Language.

This technique sought to strengthen communication and the establishment of interpersonal relationships, motivating participants to learn by playing through rewards and challenges. Likewise, the dynamics of concentration adapted to promote mental ability and memory were used to encourage conversation about emotions thanks to the presentation of visual media. The mechanics consisted of selecting tiles in turn, obtaining points when finding equal pairs, which allowed them to work on self-knowledge and the management of emotions. In line with what was proposed by Valencia *et al.* (2021), the importance of establishing

rules in game mechanics to guide the behavior of participants was highlighted.

Roulette was another of the visual dynamics implemented with the purpose of developing emotional management. Through this activity, the participants were able to recognize both their own emotions and those of the rest of the members, this through verbal and non-verbal manifestations. This type of learning strengthens the retention of what has been learned, as well as the development of skills by involving participants in interactive experiences (Ulloa & Carcausto, 2024).

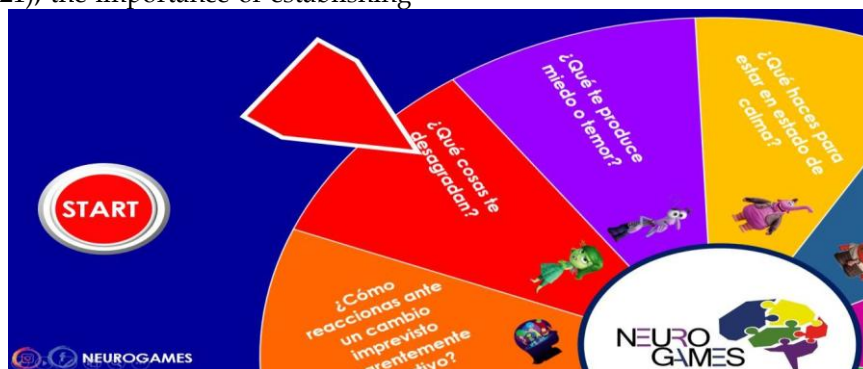


Figure 3: Roulette Visual Game Life Game.

Source: Own Elaboration Taken From Life Game Gamified Tool. In Original Spanish Language.

The role-playing game posed a shipwreck situation on an island, in which the participants had to make decisions and choose the necessary elements to guarantee survival. This dynamic integrated various gamification principles pointed out by Marczewski (2018), such as loss aversion, progress

through feedback, narrative that allows the player to relate their experience, time pressure focused on problem solving, the design of strategies to plan actions, and customization understood as the possibility of personalizing the learning experience.



Figure 4: Conventional Worksheets Of The Life Game Gamified Tool.

Source: Own Elaboration Taken From Life Game Gamified Tool. In Original Spanish Language

In this cycle, the aim was to strengthen the competence of negotiation and influence, understood as the ability to mediate in different situations and reach satisfactory agreements for all parties. Finally, the Life Game tool was implemented, a resource that allowed the creation and personalization of both the sessions and the contents, which favored the design of activities adjusted to the required themes. In this case, the questions were edited in order to guide the training towards communication skills, leadership and relationship building. This approach supports

what Holguin (2023) points out, who argues that gamification, in addition to capturing attention and promoting action, must integrate contextualized creative elements into the application environment.

In general, this tool corresponds to an online game that simulates virtual board games, incorporating multiple elements such as voice chat, varied scenarios, camera control and time management, among others, which allows the business reality to be dynamically represented.



Figure 5: Conventional Life Game Elements.

Source: Own Elaboration Taken from Life Game Gamified Tool. In Original Spanish Language.

When the game starts, each participant selects and customizes an avatar; once all the members are ready, the game begins. The mechanics consist of each player rolling a die and advancing the squares according to the number obtained. When stopping in space, you must answer a challenge or question,

related to communication, leadership and interpersonal skills. *Life Game* provides challenges that stimulate excitement and motivation through a point reward system. Which increases the feeling of fun, when the intensity of the challenge is adequate, the participants enter a state of comfort and fluidity

that favors learning. In this sense, the elements of challenges, rules, chance, rewards, and levels of achievement transform everyday tasks into playful experiences (Gartner, 2011; Londoño & Rojas, 2020). Beyond the achievement of objectives, the tool also facilitates interaction between collaborators, strengthening teamwork (Riquelme, 2023).

Phase 3. Comparison of the results of the test applied in the first phase after training gamified with *Life Game*.

In this order of ideas, the results of the second application of the *CompeTEA test*, after the use of the gamified tool, were compared with those obtained in the first phase. The analysis showed a general increase in the scores of the competencies,

highlighting: planning and organization (n=19), Leadership (n=19), Knowledge of the company (n=19), Decision making (n=19), Teamwork (n=19), Results orientation (n=18), Vision and anticipation (n=17), Customer orientation (n=17), Identification with the company (n=17), Influence (n=16). On the contrary, the competencies with the lowest level of development were resistance to adversity (n=12) and Relationship establishment (n=13).

For a better understanding of the progress achieved, Table 1 presents the comparison between the results obtained in the diagnostic phase and those achieved after the intervention with the gamified tool.

Table 1: Pre Vs Post Competition Comparison.

	Competition	NC_3_4_Pre	NC_3_4_Post	Difference
1	Emotional stability	9	15	6
2	Self-confidence	11	14	3
3	Resistance to adversity	8	12	4
4	Communication	5	14	9
5	Relationship Building	10	13	3
6	Negotiation	3	14	11
7	Influence	10	16	6
8	Teamwork	15	19	4
9	Initiative	10	15	5
10	Results-oriented	17	18	1
11	Analytical Capacity	14	14	0
12	Decision-making	18	19	1
13	Company Knowledge	17	19	2
14	Vision and anticipation	12	17	5
15	Customer Orientation	14	17	3
16	Openness	10	14	4
17	Identification with the company	16	17	1
18	Address	15	15	0
19	Leadership	15	19	4
20	Planning and organization	19	19	0

Source: Own Elaboration Obtained From The Results Of The Test.

These results are represented in the comparative figure of competencies (levels 3 and 4) in which the number of participants who reached these levels in

each competency is contrasted, before and after the intervention with the gamified *tool Life Game*.

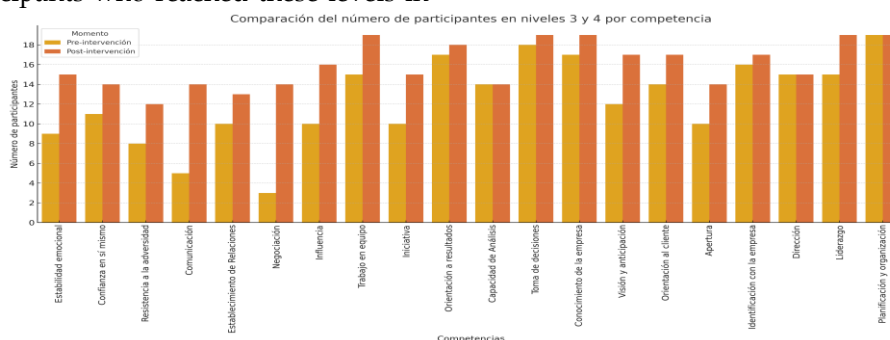


Figure 6: Competency Comparison.

Source: Own Elaboration Obtained from The Results. In Original Spanish Language.

In this way, the statistical results on the percentage of employees located in levels 3 and 4 before and after the intervention are distributed in

the different competencies evaluated, as presented in Table 2.

Table 2: Statistical Results of Collaborators Before and After Intervention.

Competition	% Level 3-4 Pre	% Level 3-4 Post	Difference	p-Valor Wilcoxon
Communication	25% (5/20)	70% (14/20)	+45%	P<0.01
Negotiation	15% (3/20)	70% (14/20)	+55%	P<0.001
Influence	50% (10/20)	80% (16/20)	+30%	P<0.05
Relationship Building	50% (10/20)	65% (13/20)	+15%	In the significant
Leadership	75% (15/20)	95% (19/20)	+20%	In the significant

Source: Own Elaboration Data Obtained From The Wilcoxon Test

A statistical analysis was carried out in order to compare the levels of competence before and after the implementation of the gamified tool, using the Wilcoxon test for related samples. The results showed statistically significant improvements in communication ($p < 0.01$), negotiation ($p < 0.001$) and influence ($p < 0.05$) skills. In contrast, although leadership and relationship-building competencies also showed increases in their levels, these advances were not statistically significant.

These results suggest that the intervention had a positive impact, especially on those skills that were initially weaker, such as communication and negotiation; the behavior observed in the performance of these two competencies coincides with what was reported by López, et al, (2025) who point out that the use of gamified tools is effective in the development of soft competencies. However, Azab & Ab-Hashima (2024) warn that the statistical significance of post-intervention progress depends, to a large extent, on the starting level of the participants and the intensity of the strategy implemented. In this way, the consistency of the tool in different scenarios is evident, particularly in those competencies with low initial levels.

Consequently, the results obtained confirm the research hypothesis, rejecting the null hypothesis, since significant statistical differences were evidenced in the performance of soft skills post-intervention. Along the same lines, the results ratify the effectiveness of the use of the gamified tool, which reinforces its relevance for the Human Talent area, especially in the development of soft skills. In this way, the weaknesses identified can be transformed into strengths, favoring the optimization of staff development and contributing to the generation of sustainable competitive advantages (Abuladze, 2023).

4. CONCLUSIONS

The results of this study show that the gamified tool *Life Game* is an effective strategy for

strengthening soft skills in the productive sector of the Colombian Caribbean region. Statistical analyses demonstrated significant improvements in communication and negotiation, both critical for business competitiveness in highly technological and digital environments. Although the Relationship Establishment and Leadership competencies did not reach statistical significance, their increases suggest a potential consolidation effect in the medium and long term, which reaffirms the value of gamification as a formative result in organizational development.

A relevant contribution of the study is the comparison of the results obtained with recent studies, in which a consistent trend is evidenced that demonstrates the sustainability and relevance in the impact of the intervention, this finding becomes essential if one considers that, while the literature on gamification focuses mainly on educational contexts, the evidence in the business environment is still limited. In this sense, this article provides solid empirical evidence on the applicability of these tools in the productive sector, constituting a reference for the incorporation of innovative methodologies contextualized to cultural and organizational realities. It also opens spaces for discussion towards a paradigm shift in the strategic development of human talent within organizations, with a possible indirect effect on the strengthening of organizational capacities.

The small size of the sample and the fact that it has only been applied to middle managers in a specific sector are recognized as a limitation. However, this restriction opens the possibilities of developing future research where coverage is extended to different hierarchical levels and sectors. In general, the *Life Game* tool is projected as a transferable and scalable model at different hierarchical levels and academic sectors, contributing to the construction of more participatory and collaborative work environments aligned with the challenges of the digital age, which makes it a strategic resource capable of boosting business competitiveness and sustainability in the 21st century.

REFERENCES

Abuladze, L (2023). Use of gamification in employee training and development. In LÜLEYOVÁ, A.

- (ed.). *EDAMBA 2022: Conference Proceedings*. Bratislava: Bratislava University of Economics, 2023. ISBN 978-80-225-5042-0, pp. 1-10.
- Antoñanzas Lorente, S (2018). Study on the most relevant aspects of Gamification, through its incorporation into an Annual Programme. Undergraduate work]. University of Valladolid.
- Arribas, D & Pereña, J (2015). *CompeTEA, competency assessment*. Third edition. TEA editions Spain.
- Azab, M. & Ab-Hashima, M. (2024). Gamification of training and learning soft skills for leadership development. *International Journal of Education on the Internet*, 1-6. doi: 10.21608/ijie.2024.281221.1025
- Burke, B. (2014). *Gamify: How gamification motivates people to do extraordinary things*. Bibliomotion.
- Camargo-Reyes, E (2019) Gamification as a learning strategy and tool for prevention of occupational risks in UNIMINUTO-CRG. Undergraduate project at Minuto de Dios University
- Casado, Ma & Morell, M (2019). Impact of training on graduates of the Diploma in Human Capital Management System. *Administrative Techniques* 18(78), <https://dialnet.unirioja.es/servlet/articulo?codigo=6984159>
- Chila, A. (2015). *Video Game Development*. Colombia: Universidad Nacional de Colombia
- Contreras, E. R. S. (2016). Presentation. Digital games and gamification applied in the field of education. ITEN: Ibero-American Journal of Distance Education, 19(2), 27-33
- De Castro, K (2020). Life Game Gamified Tool. Creative Group. <https://www.grupokreativo.com.co/portafolio/clientes.html>
- Delgado, P., & López, I. (2018). Assessment of soft skills in middle management: an approach to communication. *Revista Iberoamericana de Gestión*, 12(3), 77-92. <https://doi.org/10.9876/rig.v12i3.2018>
- Deterding, S., Khaled, R., Nacke, L., & Dixon, D. (2011). Gamification: toward a definition. *Chi* 2011, 12-15.
- Díaz, J. (2017). The potential of gamification applied to the educational field. Seville: University of Seville.
- Duggan, K., & Shoup, K. (2013). *Business gamification for dummies*. John Wiley & Sons. Edwar, Eickhoff, C., Harris, C. G., de Vries, A. P.
- Escutia, B (2021). Teaching psychology at the upper secondary level through the STEAM project approach. [Master's Project University] National Autonomous University of Mexico <https://ru.dgb.unam.mx/bitstream/20.500.14330/TES01000820592/3/0820592.pdf>
- Faraón, F., Gallego, C., Villagrà, P., Satorre, R., & Molina, R. (2016). Gamification of the learning process: Lessons learned. *RUA*, 4(1), 25-32.
- García, M., & Ríos, L. (2019). Communication Competencies in Colombian Business Leaders. *Journal of Organizational Studies*, 15(2), 55-70. <https://doi.org/10.1234/reo.v15i2.2019>
- Gartner (2011). *Maverick Research: Motivation, momentum and meaning: How Gamification can inspire engagement*. United Kingdom: Gartner Research
- Ginting, H., Mahiranissa, A., Bektı, R., y Febriansyah, H. (2020). The effect of outing Team Building training on soft skills among MBA students. *The International Journal of Management Education*, 18(3), 100423.
- Heredia-Sánchez, B. D. C., Pérez-Cruz, D., Cocón-Juárez, J. F., & Zavaleta-Carrillo, P. (2020). Gamification as a Technological Tool for Learning in Higher Education. *Revista Docentes 2.0*, 9(2), 49-58. <https://doi.org/10.37843/rted.v9i2.144>
- Hidalgo, O (2018). The use of gamification as a tool to implement internal marketing strategies based on the level of valuation of the workplace given by employees, men and women between 18 and 25 years old, who work in fast food establishments in Metropolitan Lima. [Peruvian University of Applied Sciences (UPC)]. Lima, Peru. <https://doi.org/10.19083/tesis/624901>
- Holguín Mendoza, V. F. (2023). Gamification in the teaching-learning process in the area of Natural Sciences with high school students (Doctoral dissertation, Master in Innovation in Education).
- Jácome, K., & Samaniego, B. (2023). Gamification as a strategy for brand positioning and customer acquisition. [Bachelor's degree work] in Marketing, Technical University of Ambato, Ambato.
- Krajger, I. Lattacher, W. Schwarz, E.J. (2018) *Creating and Testing a GameBased Entrepreneur ship Education Approach*.
- Londoño, L. & Rojas, M. (2020). From games to gamification: proposal for an integrated model. *Education and Educators*, 23(3), 493-512. <https://doi.org/10.5294/edu.2020.23.3.7>
- Londoño, L.M. & Rojas, M.D. (2020). From games to gamification: a proposal for an integrated model. *Education and Educators*, 23(3), 493-512. <https://doi.org/10.5294/edu.2020.23.3.7>
- López, Serrano, A , McGoman, N; Moreno, P & Burgos, D (2025). Teaching soft skills in higher education through serious games: validation of Compete gamification! (49), 2-21

- <https://doi.org/10.1186/s40561-025-00401-5>
- Marczewski, A. (2018). *Even ninja monkeys like to play: Unicorn edition*. Gamified UK.
- Marín, I., & Hierro, E. (2013). Gamification: the power of play in business management and connecting with customers. Active Company. Barcelona- Spain: Active Company.
- Marín-Zapata, SI, Román-Calderón, J. P., Robledo-Ardila, C., & Jaramillo-Serna, MA (2022). Soft skills: do we know what we are talking about? Review of Managerial Sciences, 16(4), 969-100. <https://link.springer.com/article/10.1007/s11846-021-00474-9>
- Mayanquer, M & Quintana, G (2024). Innovation of human talent. Gamification in the development of soft skills in the workplace. DOXA ITQ Journal, 1(2). 1-5. https://itq.edu.ec/wp-content/uploads/2024/01/2023-09-17_doxa_1-2-4-.pdf
- Ngo, T. (2024). The importance of soft skills for academic performance and professional development from the perspective of university students. International Journal of Engineering Pedagogy (ijEP), 14(3), 53-68. <https://doi.org/10.3991/ijep.v14i3.45425>
- OECD et al. (2023), Latin America Economic Outlook 2023: Investing for Sustainable Development, OECD Publishing, Paris, <https://doi.org/10.1787/5cf30f87-es>.
- Palmquist, A., & Jedel, I. (2022). "I Think It's Quite Subtle, So It Doesn't Disturb Me": Employee Perceptions of Levels, Points and Badges in Corporate Training. *Lecture Notes in Networks and Systems*, 319, 44-52. https://doi.org/10.1007/978-3-030-85540-6_6
- Parra, E., & Torres, M. (2018). Gamification as a didactic resource in design teaching. *Educación Artística Revista de Investigación*, (9), 160-173. <https://doi.org/10.7203/eari.9.11473>
- Pezzer, D. (2021). Significance of soft skills in educational process during the pandemic caused by the coronavirus COVID-19. *Technium Social Sciences Journal*, 20, 61.
- Prosperi, C; Sabarots, G and Villa, M (2016), Use of Gamification to achieve Integrated Business Management. *Perspectives* 6(2):83-97. Retrieved from <https://cerac.unlpam.edu.ar/index.php/perspectivas/article/view/1666>
- Ramírez, E, & Aguilar, R (2022). Digital work as a transition to new work environments. *Denarius. Journal of Economics and Administration*, 2(43), 141-167. <https://www.redalyc.org/journal/6956/695676058005/html/>
- Riquelme Benítez, C. R. (2023). Business gamification as a dynamic tool for motivation and goal achievement. *Scientific Journal in Social Sciences*, 5(2), 87-91.
- Rodríguez Lago, G (2016). Development of a didactic game for learning lean tools. [Master's degree project] University of Valladolid.
- Rodríguez, K., & Hernández, T. (2020). The future of work and the importance of soft skills. Future Editions
- Rojas, C (2019). Gamified learning environment, mediated by ICT for the strengthening and development of integrative citizenship competencies in fifth grade students master's degree in education Icesi University
- Sánchez Páez, K. O (2022). Gamification is a technique to motivate and enhance learning. *Strategic Training*, 4(01), 125-140. Retrieved from <https://formacionestrategica.com/index.php/foes/article/view/60>
- Sánchez, P., Menéndez, A., & Saura, J. (2019). Models for the adoption of information technologies and Cloud Computing in organizations. *Información Tecnológica La Serena*, 30(3), 3-12. https://www.scielo.cl/scielo.php?pid=S0718-076420190003000003&script=sci_abstract
- Tang, K. N. (2020). The importance of soft skills acquisition by teachers in higher education institutions. *Kasetsart Journal of Social Sciences*, 41(1), 22-27.
- Trejo-González, H. (2020). Gamification experience for teaching a second language. *Education and Educators*, 23(4), 611-633. 10.5294/edu2020.23.44
- Ulloa, D, & Carcausto, W (2024). Effect of gamification on active learning: Systemic review <https://revistahorizontes.org/index.php/revistahorizontes/article/view/1435/2639es> a. Horizonte Journal of Research in Education Sciences 8 (33), 931 - 944. <https://revistahorizontes.org/index.php/revistahorizontes/article/view/1435/2639>
- Valencia, L., Montilla, H., Arias, M., & Guzmán, A. (2021). *Tools and methodologies for educational and organizational gamification*. University Corporation of Asturias.
- Zambrano, A; Luke, K; Lucas, M.A. & Lucas, A (2020). Gamification: innovative tools to promote self-regulated learning. *Sun. One hundred* 6(3), 349-369 DOI: <http://dx.doi.org/10.23857/dc.v6i3.1402>.