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GAMIFICATION AND BUSINESS FORESIGHT: Design and Impact of an Immersive Escape Room in the Real Estate Sector

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Future Thinking
Foresight
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Transmedia Experience

ABSTRACT

In an uncertain business environment, foresight thinking has become an essential strategic skill. This study presents an escape room designed to raise awareness within a real estate company about the importance of anticipating disruptive changes. Employing both digital and analogue tools, such as WhatsApp, YouTube, and physical objects, an immersive experience was created that encouraged reflection on emerging trends in the sector. Gamification and collaborative learning facilitated the transfer of abstract concepts into practical scenarios. The document discusses the methodological design, the tools used, and the results achieved, proposing this experience as a model for other organisations in their strategic planning.

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1. Introduction

Prospective or Forward Thinking

Previously, uncertainty did not exist, that is, for our grandparents it was likely not a concern that kept them awake at night or greeted them each morning; there was no distinction between the past, present, and future, as it was assumed the future would merely extend the present, and the present mirrored the past. Consequently, society was programmed to follow rules and replicate the past to ensure daily life was as good as possible. Our anticipation of what the future held did not breed uncertainty; it was easy to predict by looking at the past, and when the hazy future offered no clues, guidance was sought from elders and those who had lived longer and more than we had. However, this shifted as society began integrating more technology into its activities, general knowledge among the population grew, and educational and communication processes became more volatile and intermittent, rendering the continuity of the present less stable and the future more uncertain. As described by PNUD Argentina (2022), "The rapid development of technology, alongside the consolidation of the fourth industrial revolution, networked social movements, and the growing effects of climate change, among other factors, have accelerated changes. We are immersed in what are termed *volatile, uncertain, complex*, and *ambiguous* (VUCA) environments". (p. 8)

Changes no longer linger; they occur more frequently and impact all levels of life. The interval between one invention and the next shortened, forcing people to adapt to change as a new way of living and to accept uncertainty as an inherent part of the present, since predicting solely based on the past was no longer feasible. This replaced the notion of "a single future path" with "a thousand possible futures", which, while displacing many old customs, established new, stronger, and more hopeful ones for society, opening up a range of future possibilities (Dator, 2017).

It is within this context that future thinking gains significant relevance—not as a predictor of futures but as a tool that aids in forecasting which futures are possible or desirable to build, and through strategies and actions undertaken in the present, projecting plausible future scenarios (Merello, 1973). These are some of the initial steps of "foresight" or "future studies", an approach that seeks to establish the present actions necessary to achieve desired future scenarios (Cross et al., 1982). Thus, the future transitions from an uncertain state to one constructed through present actions, which gain meaning when aligned with the future, as action without objectives is futile.

At this juncture, it is important to differentiate between three interconnected, yet distinct concepts based on their specific focus: planning, which seeks to understand the desired future and the means to achieve it; strategy, which employs anticipation and innovation to attain a goal; and foresight, which demands anticipation and proactivity. In essence, discussions of strategy and foresight often reveal many similarities, leading to the term "strategic foresight", blending a foresight approach with strategic ambitions and objectives (Godet, 2006).

Various definitions or interpretations of foresight and its approaches abound, yet there is a widespread consensus that "foresight is more concerned with providing future alternatives than answering the question: what will happen? (…) the future images crafted are not judged by their precision or the fulfilment of specified events, but by the participation, creativity, and integrative vision they embody" (Miklos & Tello, 2007, p. 21). The construction of future alternatives is the most recurring element in future studies; it involves modelling future scenarios—desired or undesired—that may come to pass. As the aforementioned authors suggest, foresight studies encapsulate a shared societal vision that, through designing the future, enhances our understanding of the present and the significance of our actions within it. Our attitude towards the future is shaped by creativity and proactivity, not the passivity of adaptive waiting.

2. Gamification and Strategies for Teaching through the Use of Social Media

Gamification, a teaching method that has gained prominence in recent years, has been employed across various domains and levels of knowledge. Escape rooms represent a methodology in which players, typically in teams, attempt to solve a series of puzzles or challenges within an enclosed space with the objective of successfully negotiating the tests and exiting the room within the shortest possible time (Martínez & Chivite, 2020). Concurrent research has examined the efficacy of this format as a pedagogical and knowledge acquisition instrument in STEAM domains, as well as in the cultivation of cognitive abilities (Palta-Valladares et al., 2022). The extant literature documents outcomes such as

heightened motivation to complete tasks, increased teamwork and collaboration among participants, the development of problem-solving skills, the enhancement of soft skills, increased logical thinking, hypothesis posing and testing, and its usefulness for autonomous learning and the attainment of long-term knowledge (Tort & Lorente, 2024).

Gamification resources have a wide field of application and have been used in different fields, such as medicine (Dogu et al., 2025). One case study used escape rooms and storytelling in nursing students as academic didactics, and it was highlighted that these teaching strategies helped to promote work under pressure. Furthermore, an increase in student satisfaction with learning and greater memorability of the knowledge transmitted through this didactic and active learning tool was observed (Dogu et al., 2025).

On the other hand, in this type of methodology, it is crucial to consider strategies for the design, implementation, and execution of the dynamics, as these have a direct effect on the participants' final knowledge and experience. One of the most influential elements within an escape room is immersion, which produces a dual effect on players: on one hand, a disconnection and a sense of losing track of time, and on the other, complete focus on the activity being performed; this effect is known as Flow or Flow Theory (Csikszentmihalyi, 1996). Similarly, through components such as hybrid escape boxes, which combine physical and digital elements, an engaging and player-focused experience is offered, helping participants concentrate on the task at hand and reducing environmental distractions. The design of the immersive experience also includes aspects such as sensory stimulation, which enhances perception and the sensory experience (e.g., aromas, sounds, visual, motor, or gustatory stimuli, among others) (Palencia, 2023).

Immersion based on challenges, puzzles, and tasks contributes to generating interest, enjoyment, and a sense of fun in learning among players. Additionally, the context constructed and accompanying the game's development increases participation interest and players' intrinsic motivation (Pérez et al., 2019). The narrative that is built and ties together each test or challenge enables the addressing of serious, abstract, or complex issues without losing the playful component of the game. Likewise, the debriefing or reflection session, conducted at the end of the escape room, is an essential element in learning, as it seeks to consolidate the knowledge acquired and establish connections with the real world by clarifying concepts, resolving doubts, correcting inaccuracies, and addressing misconceptions that may have arisen during the activities, while encouraging analysis of the experience within the escape room (Veldkamp et al., 2022).

In applying these strategies, innovations have been introduced into their design, planning, and execution, incorporating a wide range of artefacts and contextual, technical, and technological elements for their development; however, the use of social media for their implementation is less common, largely because the secrecy of the answers or the non-dissemination of solutions is a cornerstone of the game, since prior knowledge of the answers to challenges or puzzles reduces curiosity and genuine motivation to participate. For this reason, the use of social media in the design or operation of escape rooms is infrequent.

The effect of social media on individual and social behaviours and psyche is well recognised. Conversely, it has been demonstrated that with appropriate attention and guidance from educators and moderators (parents, trainers, regulators), the use of social media can be seen as an aid in learning and in developing innovative formats for training and education across various social sectors. Ramos & Berrocoso (2024) highlight some strategies that can be implemented in the classroom, involving the responsible use of social media for teaching. An example is the use of social media to enhance collaborative learning, where players learn from and teach others, fostering cooperation among participants.

The use of social media and the technology they enable—integrating, linking, or viralising content—facilitates the mass dissemination of information, sharing images, videos, audios, texts, and links instantly, enabling easy access to content and integrating the technological devices available to students. This becomes an advantage in gamified educational processes, facilitating the creation of elements, content, or pieces for immersion without requiring the moderator or participants to be in the same physical location (Hughes, 2003). The benefits of using technological tools in learning are also notable; motivation increases when gamification strategies centred on emotions are implemented, enhancing player participation, and creating interactive, creative, and immersive educational environments that

facilitate learning, developing skills such as discussion, reflection, decision-making, and critical thinking, where all participants can interact through the inclusion fostered by integrating individuals with functional diversity into the activities (Matas, 2020, Ramos & Berrocoso, 2024).

Designing tools and methodologies that ensure a high degree of effectiveness in learning requires significant effort in planning and verifying the results achieved or desired across different population groups. In this regard, it is worth highlighting the efforts of interactive museums, which have distinguished themselves by creating innovative strategies for designing their learning experiences, incorporating both digital and analogue devices into their exhibitions or rooms (Palencia, 2024). One tool that enables the planning, expansion of content, and creation of intentional interactions for learning is the so-called Matrix for the Design of Memorable Learning Experiences (DEMA) (Palencia, 2023), which considers three categories on which all types of experiences can be built (Content, Formats, and Mediations); this tool helps identify aspects to emphasise in creating interactions. The latter is one of the main focuses of this matrix: the construction of human interactions, which may be mediated by physical devices, the creation of mental interactions, and, finally, cultural interaction (Table 1).

Table 1. Matrix for the Design of Memorable Learning Experiences - MLEs

Designing Memorable Learning Experiences-DEMA					
Contents	**Formats**	**Mediations (Stimuli)**			
		Physical (Manual Interaction) - The configuration of space and its objects.	**Mental** (Mental Interaction)		**Sociocultural** (Cultural Interaction)
Thematic interest or need for exploration of information	**Digital**	**Tactiles**	**Purpose of exploration**	**Stimulated Memory**	Affective experiences
		Sound	Curiosity	Semantics	Identities (collective/individual)
	Physical/ Analogues	**Gustative**	Contemplation	Episodic	Reflection (dialogue in the mind)
		Visuals	Reflection	Operational or Working	Conversation (dialogue with the other)
		Olfactory	Joy of learning	Procedural	Tertulia (all speak and participate)
	Objects/ Objects	**Motor**	Understanding ideas		Empathy
					Human connection

Source**:** Palencia, 2023

3. Methodology

The research, adopting a qualitative approach, explored through a case study how the promotion of prospective or future thinking within a business community in the real estate sector in Medellín, Colombia, could be encouraged through the design of a learning and awareness-raising experience. This experience utilised gamification strategies, alongside various social networks and similar resources.

Based on the above, a pedagogical learning strategy was developed, incorporating the use of an Escape Room that integrated specific knowledge of innovation, technologies applied to communication, and prospective thinking. To this end, the pedagogical proposal included the following stages:

a) Planning Stage: In this stage, the work team was established to identify the company's needs, as well as opportunities for innovation and creativity in designing the learning experience. During this phase, several meetings with the community of interest were planned and conducted,

alongside the design of the immersive experience. Additionally, the Matrix for the *Design of Memorable Learning Experiences (DEMA)* was employed (Palencia, 2023).

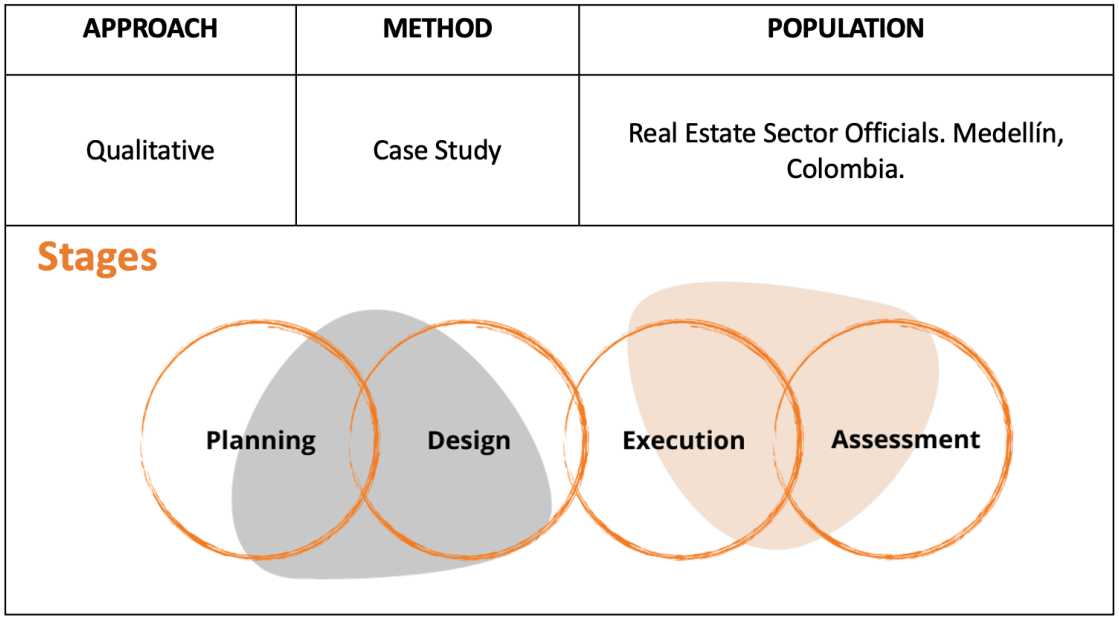
b) Escape Room Design Stage: For this stage, the challenge to be tackled by participants was crafted, encompassing three scenarios or universes to be navigated to complete the entire challenge. The anticipated time to overcome the test was determined, as were the tools facilitating interaction between participants and the team moderating the activity.

c) Escape Room Execution Stage: During this stage, participant groups were organised, along with the time allocations for solving the challenge and the various types of assistance available to the teams.

d) Evaluation Stage: In this stage, data was gathered regarding the activity and its outcomes, encompassing both academic results, knowledge gained, and the fostering of creative thinking among participants and the activity design team.

As indicated in the previous section, the research focused on the creative work and use of new pedagogical tools for team learning, as well as on the use and appropriation of technology by a business community, with the aim of raising awareness of prospective thinking and innovation, for the development of training activities within the company and the implementation of new ways of stimulating learning.

Figure 1. Methodological Design of the Research Paper



Source: Own elaboration, 2025.

4. Result

From the different stages proposed and the execution of each one of them, it is possible to establish the importance of creativity as a fundamental element to face the challenges of the 21st century, which goes beyond the exercise of transmitting complex and abstract concepts, but rather the generation of various key skills in human relations and the working environment, such as: teamwork, appropriation and use of technology, critical thinking and specifically thinking about the future, among other skills that the business sector requires in its collaborators to face the changing and complex challenges to which they are exposed. In this sense, the aspects to be highlighted and which describe the different stages carried out in the research, as well as its results, are the following:

4.1. Stage 1. Planning:

In this stage, the need to design an innovative learning experience that would allow the appropriation, use, and subsequent reflection on emerging trends and hypothetical scenarios of the human and some of the activities related to the habitat was considered. Key aspects of this stage include: the narrative, the pedagogical and learning objectives, the physical and digital space, the time, the rules or conditions of the immersive experience, the digital and/or analogue objects for interaction. In this respect, the Matrix for the *Design of Memorable Learning Experiences-DEMA* (Palencia, 2023) was used as a base element for the design of the immersive learning experience of the *Escape Room* (Table 1).

Table 2. Matrix for the Design of Memorable Learning Experiences-DEMA, applied to the Escape Room.

Designing Memorable Learning Experiences-DEMA

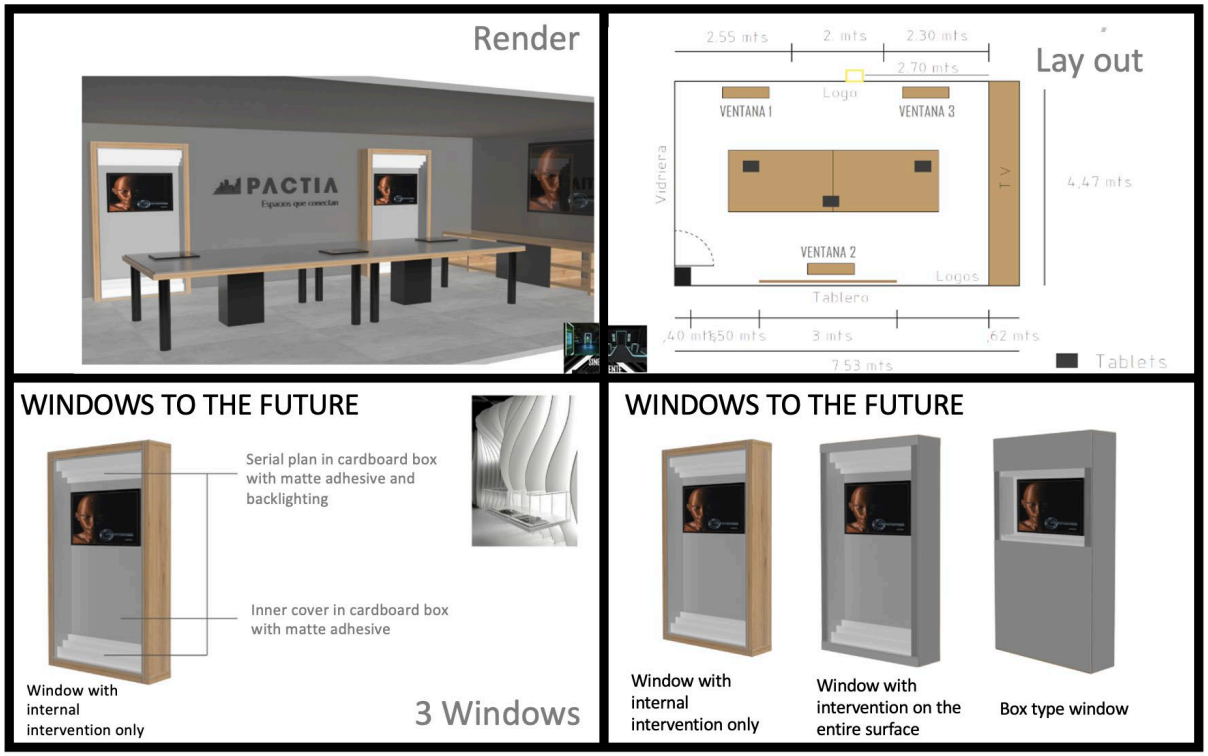
Contents	**Formats**	**Mediations (Stimuli)**			
		Physical (Manual Interaction	**Mental** (Mental Interaction)		**Sociocultural** (Cultural Interaction)
			Purpose of exploration	**Stimulated Memory**	
Thematic focus or need: Sensitisation of employees of a real estate company to emerging trends and openness to adaptation and change by promoting forward thinking and innovation.	**Digital:** Use of social networks and digital platforms for interaction such as: WhatsApp, Youtube and AI tools (for drawing, creating pictures and translating riddles).	**Tactile:** interaction with mobile phones, tablets and puzzles in the room is requested.	Understanding abstract concepts of futures thinking, effects of uncertainty in changing environments and problem solving.	**Semantics:** Knowledge of forward thinking, innovation.	Affective and group work experiences of team members. Individual and group reflection on the use of AI for different daily activities and new challenges for the 21st century. Human connection to the extent that reflections are generated from the immersive narrative in a 2035 scenario in aspects such as: love, leisure and cities
		Audio: Interaction with the narrator, videos of the narrative and challenges to be solved.		**Episodic:** placing participants in scenarios of love, leisure and cities of the future.	
	Physical/ Analogues: Room designed for immersion, with screens to display challenges, table with maze, mobile phones for each team member.	**Gustative:** Release of the prize corresponding to chocolates for the team.		**Operational or Working:** solving challenges and challenges of the escape room, through dialogue, analysis and reflection with their peers.	
		Visuals: videos with narratives and interaction with AI.		**Procedural:** with the aim that the company's employees maintain and incorporate the lessons learned from the escape room and apply them in the future	
		Olfactory: The space was previously scented in such a way as to allow the groups to move olfactorily to a different space.			

	Objects/ Objects: Block for hologram projection and puzzle to unlock prize.	**Motor:** The participating team is asked to interact as a group with the objects in the space at different times, including going through the table maze and the block for the hologram projection.	as strategic skills in their personal and work environment.

Source**:** Palencia, 2023

Likewise, the space was designed in such a way that each of the challenges and riddles to be solved could be seen in the narrative and that the immersive environment could be created. In this aspect, there were three televisions, connected to three tablets that were unlocked when the key words were available as an answer to each of the challenges, as well as an additional screen that allowed the participants and the design team to interact by simulating an AI that came from the dystopian future and is one of the characters in the narrative (Image 2).

Figure 2. Physical and digital space interaction variables



Source: Own elaboration, 2024.

On the other hand, in relation to the design aspects of the escape room, the elements that were integrated for the design of the gamification strategy contemplate the conditions presented in the following table.

Table 3. Elements of Escape Room Design

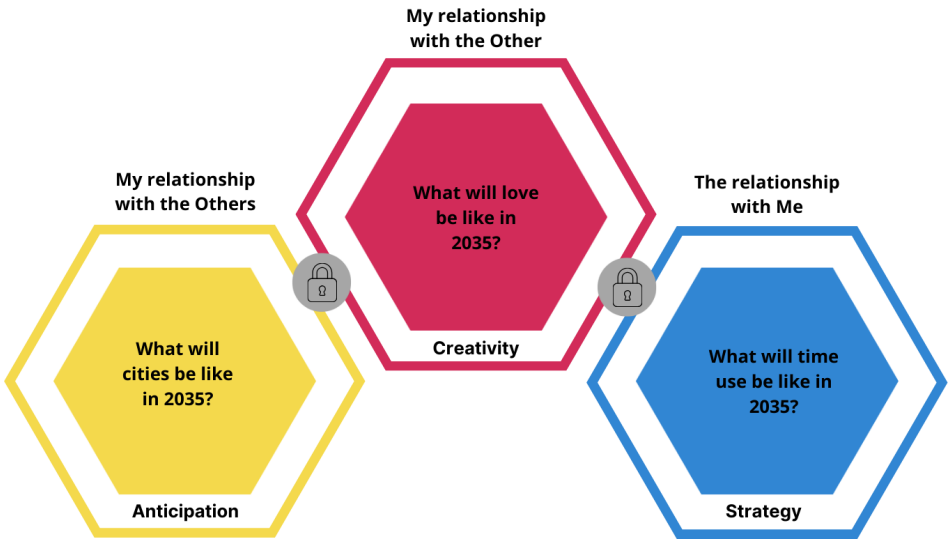
Elements of the Escape Room	Aspects
Narrative (The Challenge)	The challenge of the escape room is for participants to escape from the unwanted future, in which a super intelligence creates a dystopian universe. To do this, participants will peer into the future through three-time windows in the year 2035, which will allow them to gain information about the future. In order to solve the challenges, participants use three skills: creativity, strategy and anticipation.
Pedagogical and Learning Objectives	Identifying changing and uncertain environments, as well as coping skills such as creative thinking, foresight and strategy as cross-cutting problem-solving tools.
Physical space	Two rooms: one in which the gamification is executed, the second from which the activity is controlled and monitored.
Digital spaces	It envisages the construction of different contents that are distributed with the help of social networks.
Weather	45 minutes for the complete execution of the activity
Rules	As part of the design, the use of each participant's mobile phone was considered as a main tool, as a device that allows the solution of different challenges and integration with the external space.
Digital objects	Videos that give an account of the narrative, presentations with challenges, audios for the puzzles and applications for interaction from social networks (WhatsApp and YouTube), in addition to the use of videos and a device for hologram projection.
Analogue objects	Puzzles and mazes.

Source: Own elaboration, 2025.

4.2. Stage 2. Design of the Escape Room:

The narrative is the central axis of this gamification tool; therefore, each of the challenges and tasks that are contemplated must be related and also respond as a whole to the proposed learning objectives. For this specific case, a dystopian universe in the year 2035 was proposed, in which the suggested narrative is that of a superintelligence that creates an undesirable future for humanity. Consequently, participants must solve a set of challenges and decipher the clues that enable them to modify the programming of the superintelligence and prevent the dystopian future. To achieve this, it is essential to use three human skills (Creativity, Strategy, and Anticipatory/Prospective Thinking) to be applied in three different scenarios (Cities, Love, and the use of time/leisure), which correspond to three additional ethical purposes, such as: my relationship with others, my relationship with the other, and my relationship with myself.

Image 3. Escape Room Structure



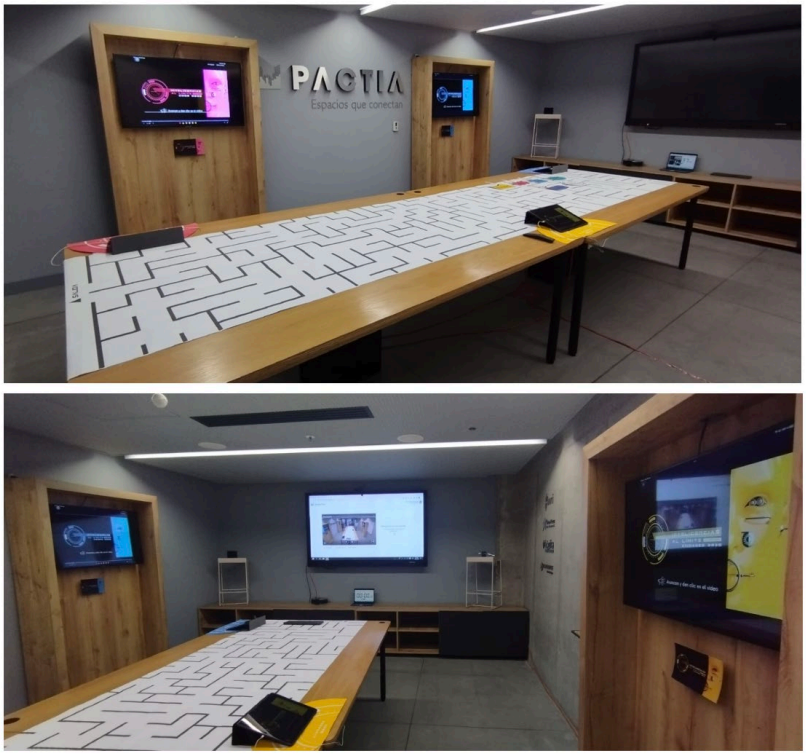
Source: Own elaboration, 2024.

Each of the three scenarios involved the use of different tools, both digital and analogue, for interaction. In this aspect, the global narrative began with a video that showed the challenge and the urgency for the participants to understand the scenarios. The design of the experience is linear in nature, as solving each puzzle unlocked the next scenario or escape room. This design implied that it was not possible to advance to a subsequent scenario without solving the previous one, and each of the proposed challenges was directly related to one of the learning objectives and thinking skills to be stimulated, combining learning activities with others of a ludic-technological nature.

4.3. Stage 3. Execution of the Escape Room:

After the design of the Escape Room, its implementation was carried out. Due to the didactic and special characteristics of this type of immersive experience, it is ideal to work in small groups of between 5 and 7 people; therefore, the groups were divided and invited to participate at different times. In total, 47 people took part in the session. It is common for participants to get stuck while solving a clue or riddle, so contact was always maintained via WhatsApp. Through this account, hints, recommendations, or suggestions were sent to aid in resolving the challenges. Likewise, participants submitted their answers to the challenges via the same platform. Similarly, links or content were sent through WhatsApp messages to enable them to solve subsequent challenges; these were previously hosted on YouTube or other networks and websites, which in turn allowed participants to generate knowledge that might not be pre-existing or familiar. With this new information, they could then apply it to tackle the next challenge. The experience combined knowledge-based actions and playful activities, which strengthened the bonds between participants and also facilitated the acquisition of new knowledge from any of the memories stimulated during the challenge, considering that the challenges incorporated physical-perceptual or sensory-perceptual variables.

Image 4. Physical implementation space and creative-educational elements



Source: Own elaboration, 2024.

In order to recreate an atmosphere of well-being in the game space, some elements were considered, such as lighting, ambient temperature, the aroma of the room, the sound with which it interacts, and the distribution of objects in the space. The purpose of this was to generate a memorable experience and increase the willingness of the teams to enter into states of creativity, the generation of ideas, and the assimilation of concepts.

4.4. Stage 4. Evaluation of the Escape Room:

After the escape room, a set of qualitative actions were contemplated for the evaluation of the experience, including direct observation and analysis of behaviour, analysis of time and difficulty in solving the riddles and tests of the escape room, in addition to post-game reflection, which together provide an account of the experience and the way in which the participants experienced and valued the gamification activity on prospective thinking. In this respect, it was possible to establish some aspects of participants' experiences and perceptions through the use of more dynamic and observational methods, such as those described in the table below.

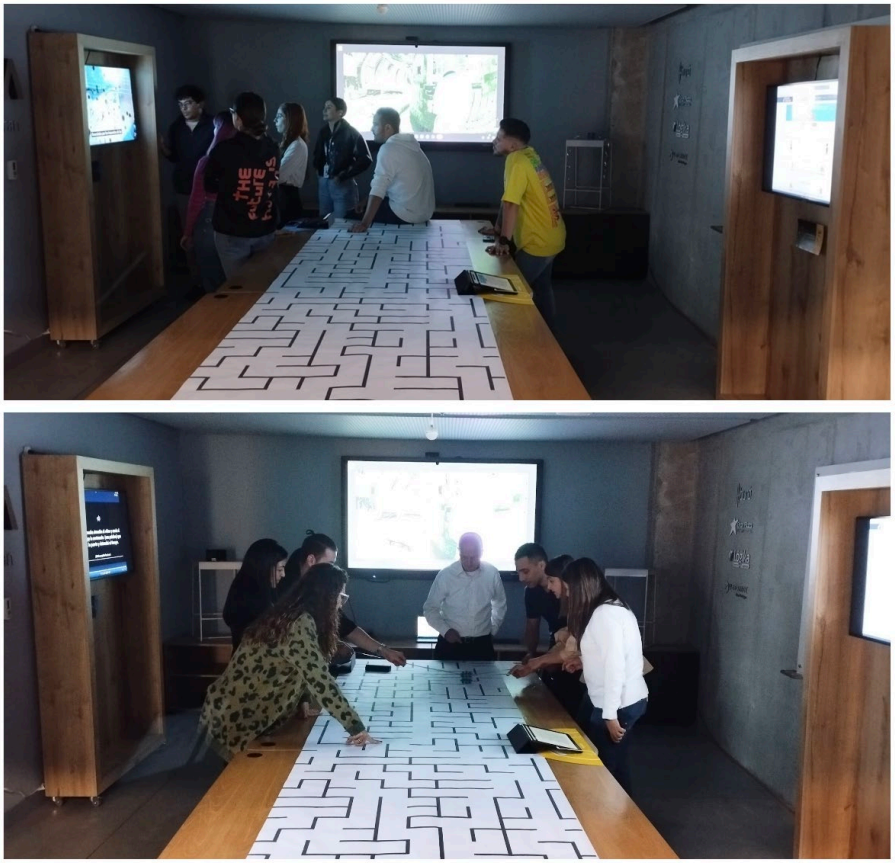
Table 4. Assessed Elements of the Escape Room

Criterion	Description	Valuation
Direct observation and behavioural analysis	Interactions, cooperation within the teams and the way in which decisions are made by the group during the game are recorded. Likewise, we evaluate how they face the challenges and maintain immersion in the narrative of the game, actively participating or distancing themselves from the dynamics and story of the escape room. Similarly, body language, expressions of frustration, emotion or enjoyment of the activity are observed.	In relation to the interactions, it could be seen that the participants generated multiple actions, conversations and cooperation activities among all the members, in the same way one of the specific tests involved agreeing among the team members on a moral dilemma that can have different interpretations or perspectives of resolution. In relation to the level of involvement of the participants, in all groups it was possible to establish the active participation of all members. This aspect is consistent with the expressions and body language of enjoyment and involvement in the activity.
Time and difficulty analysis	The total time taken by each team to solve the escape room challenge is recorded and this data is related to the participants' perception of the difficulty of the challenge.	A total of 7 teams participated in this case study, which in total had a maximum time of 45 minutes to complete the challenges. The team that took the longest to complete the entire test took 37:32 min and the team that took the least took 28:40 min. In general, the participants agreed that the test related to the second scenario was the most complex, which was called the Moral Machine, as it involved participants agreeing on different moral dilemmas involving different positions and negotiations within the team, which meant that some teams took more time than others.
Post-game Reflection	Participants' perceptions and spontaneous comments on the experience are collected.	The generalised perceptions and comments from several of the participants were about the novelty of the activity, the concepts and implications of forward thinking that were worked on in the escape room, as well as the perception of time, in that it seemed less time than the experience was actually lived.

Source: Own elaboration, 2024.

The aspects previously presented in the evaluation were ascertained by the participation, level of involvement in the challenges, feedback and comments made by the participants post-game, some images of the level of involvement of the teams are projected in the following images

Image 5. Interaction and level of



Source: Own elaboration, 2024.

The design of the didactic experience efficiently integrated digital elements (social media applications and AI-based applications) and analogue elements to create a memorable learning experience, positively influencing the motivation and attitudes of the participants. The escape room, as a gamification strategy for the business sector, is highly valued as an active learning methodology that enables the development of a culture of innovation, openness to change, and a willingness to tackle challenges as a team among employees in the business sector.

5. Conclusions

The implementation of an escape room as a tool for raising awareness about prospective thinking proved to be an effective strategy for fostering reflection and learning in business environments. Through the combination of digital and analogue resources, participants faced challenges framed within emerging trends in the real estate sector, while also developing key skills such as collaboration, problem-solving, and strategic decision-making in an environment defined by the pressure of completing a task within a limited timeframe. The methodology employed allowed the experience to be structured clearly, ensuring its impact both on the understanding of future scenarios and on strengthening creative thinking within the real estate sector organisation in Medellín, Colombia.

This study demonstrates that gamification, applied through an escape room with a transmedia approach, can be an innovative and effective methodology for generating meaningful learning in business contexts. While there is extensive documentation on the use of escape room-style gamification strategies in the educational sector, there are few documented experiences of their implementation in the productive and business sectors. Similarly, the integration of digital platforms such as WhatsApp and YouTube, alongside physical and immersive elements in the design of escape room gamification experiences, is rare and not widely documented; thus, this systematisation contributes to this purpose.

It is significant for the business sector to promote internal spaces to enhance employee participation and engagement in developing prospective skills.

Furthermore, the methodological structure implemented not only enabled the design of an effective immersive experience but also allowed for the evaluation of its impact, highlighting the potential of these strategies to be replicated in other sectors. Equally relevant is the fact that this methodology has the potential to drive innovation in organisational training by using immersive experiences like the escape room, transforming learning into an interactive and stimulating dynamic. This research demonstrated how transmedia storytelling, and the design of structured challenges can facilitate the understanding of complex concepts, such as future-oriented thinking. The results obtained underscore the importance of user-experience-focused methodologies, as well as the role of creativity and technology in constructing memorable and effective learning scenarios.

Among the most significant contributions to knowledge generated by this case study is the finding that escape rooms remain underutilised across a broad sector of society and hold great potential as an innovative tool for raising awareness among companies about the importance of anticipating disruptive changes, while strengthening participants' strategic skills. The use of transmedia storytelling as an integrating element in organisational training is also noteworthy, owing to the strategies combining digital platforms and physical elements in the learning experience.

Another aspect worth highlighting is that structuring the escape room based on the *Matrix for the Design of Memorable Learning Experiences-DEMA* (Palencia, 2023) establishes a replicable model for future training initiatives across different sectors and with various educational purposes.

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