Curriculum Gamification in a Business School: Experience at CEIPA University – Colombia

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ABSTRACT

Trying to disguise a tedious and rigid instruction to make it appear like fun and modern education would be less than cynical – or at least unrealistic and disrespectful with learners' intelligence. Considering the psychological resistance of adults to get involved in "unserious" situations when they are inserted in work environments and academia, we reasoned that gamification could offer a solid, educationally and emotionally graspable, alternative to bridge the training needs of adults and educational objectives of universities or companies.
In this vein, we have created a group at CEIPA Business School (Colombia) – The CEIPA Learning Studio-Technology Development Center - to design and produce educational gamified learning tools for internal and external use. We also aimed to take direct part in the curricular implementation.
This paper sought to explain the theoretical corpus of our work, and to analyze two years of experience, using some of the products created at the Learning Studio – as well as the recent curricular improvement in the face of coming international accreditation – as case study.
Keywords
Gamification, Curriculum, Business School, Higher Education

INTRODUCTION

WHY IS LEARNING NOT FUN?

Despite the common, true notion of Colombian people as festive relaxed individuals, academic and labor environments are usually circumspect. These environs are regarded as *work,* which is already understood as an onerous activity regardless of the contemporary economic theory. This collective belief leads to social practices characterized by vertical relations, strict manners, and rigid schedules. Anything out of this organization is considered lighthearted – particularly if it denies the formal shape related to work. To illustrate this point, let us look at the word used in Spanish language to express all the activities related to business and trade: *negocio.* This word is composed by two Latin voices: *nec*: without - not, and *otium*: spare time – leisure. Albeit this word was originally used to designate actions carried out of one's spare time, i.e. not for free, the word ocio (*otium*) acquired a negative connotation during the Spanish conquest and colony. This term entailed laziness or time for vicious or destructive actions. Thus, business or work in general is seen as a virtue that can ward you off from ominous thoughts and acts. From this point of view, there is no room for anything that could compromise this logic. Thus, game, joyfulness, and laughter are incompatible with "serious" activities. In addition, the more transcendental a matter is considered, the less open it is to free expressions. In his research about the use of games in mathematics teaching, Muniz (2010) found that the interviewees had a "representation clearly marked by a dichotomy: math learning is tied to work and gaming is not considered as a space for mathematics."

Although recent times have become more flexible and foreign practices have permeated our traditional system with fresher approaches, there still remains a generalized idea that fun and work are opposites, and that school is on the "work" side. When talking about dynamic teaching or learning strategies, it is common to hear teachers saying that they are not "going to jump as a clown" to attract students' attention, or to see Human Relations managers hiring a training process but "without those childish little games".

Paradoxically, Homo Ludens (Huizinga, 1968) – one of the first and most accurate treatises on the play element of culture[1] - the author suggests that playing is one of the most serious activities accomplished by humans. Play results in a new order circumscribed to its independent rules, as it requires a sporadic suspension of the disbelief principle and a total mental and body immersion into play activities. While playing, individuals are their true personas – they do not pretend to be somebody else. The evidence presented to support this position are, firstly, no referee is needed when a group is playing in order to mediate in the game, as all the players agree to follow the rules and cooperate and observe them. Second, individuals are not allowed to go back to "reality", as nobody thinks that they are pretending. Trying to do this is considered cheating, which could be punished with expulsion – a moderated version of exile.

Identically, pedagogy and neurology deny this notion of

[1] Translated into English as "The study of the play-element in culture" here we use the preposition of as the author originally preferred. We do not intend to start a discussion about the best preposition in this case but it would be an interesting conversation.

game as triviality and idleness. In this regard, Caine, G.; Caine, R. N.; McClintic, & Klimer (2005) underscore the educational value of mental and emotional stimulation, as well as the inhibitory power that anything perceived by the brain as a threat has on learning. Along these lines of thought, Given (2002) points out that it is imperative for education to feed the spirit (in a non-religious sense) with the same emphasis put on data storage or physical education. From his research, Given states that negative emotions significantly interfere with learning, whereas positive stimuli favor acquisition of new knowledge and skills. The body of research carried out to date – Caine et al., (2005), Caine, (2000) Caulfield, Kidd, & Kocher (2000); D'Arcangelo, (2000); Slavkin (2004) Wagmeister & Shifrin, (2000); Wolfe, (2010) - ratify that threat, routine and rigidity go against a process of healthy learning, while a mentally and emotionally stimulating environment captures the students' attention for a longer period, increases human performance in various tasks and enhances individual and collective learning. However, this is not new. From the psychological stance, games are also valued as mediators of learning. For Freud (1900, 1908, 1920) the game allows us to both evoke pleasurable events and elaborate traumatic or painful situations by controlling them. Likewise, it would allow us to freely express certain socially unacceptable impulses, thereby making our lives easier. The game could also be a simple way to achieve what we desire by creating our own world, thus bringing the game experience into a poetic activity. At the same time, games could serve as a propaedeutic activity, preparing us to confront what we are going to face later in real life. In this regard, Piaget (1961) asserts that game facilitates the processes of assimilation and accommodation of ideas, skills and rules that we regularly achieve when we interact with the environment and our peers, but in more pleasant and controllably terms - whether they be physical, temporal or emotional, adjusting them to our cognitive development. Finally, considering learning by social modeling as proposed by Bandura (1977), games would allow the human being to acquire new patterns of response by observing and imitating the behavior, attitudes and emotional reactions of other individuals or symbolic characters represented in games and toys.

WHEN GAMES ARE NOT ALWAYS FUN OR EDUCATIONAL

In the movie "The sound of music" (Wise, 1965) there is an interesting scene: Baroness Schraeder takes the kids out to the veranda to teach them a game consisting in throwing a ball at each other while naming a number assigned to everyone. Although the lady finds it very amusing and edifying, it is evident that the kids are tremendously bored.

With this simple image, the director contrasts the relationship between the von Trapp kids and the two ladies close to them (The Baroness and Maria Rainer)

We will not discuss here whether it was or not the director's intention to make a statement about education. Nevertheless, we can certainly identify even in those days (50 years ago) the difference that stimulating, loving tutoring can make in students' engagement and progression. However, what it is relevant to this paper is how the film evinces a common risk in which teachers can fall once accepting the didactic worth of games: believing that any game is edifying just because it is fun, or that every time you are having fun, you are learning. This probably occurs because "games are often used to camouflage problems of the educational process which, however, are not resolved by the game itself." (Muniz, 2010) It might also happen that what is presented as a game, it is not actually such a thing, since obeying to an obligation and a layout imposed by the adult contravenes what Huizinga (1968) and Callois (2001) see as game: a free and unproductive activity. The same could be said of toys and educational technologies. While there seems to exist a consensus in the pedagogical possibilities of toys, there is no direct commitment to their inherent educational value, to the point that in the attempts to build a definition of them it is hardly mentioned the didactic purpose. This arises because education is recognized as an event of social nature. Thus, Smirnova (2001) argues that the odds that the toy becomes a psychological tool "are determined by children's abilities to vitalize and animate toys, and turn them into active creatures. This ability – like the ability to play – can be communicated only by an adult or an older child who knows how to play and who can involve children in play." In the same vein, Francis (2010) states that toys may eventually inspire and prolong certain knowledge or preferences and patterns of believes and behavior, even if they do not communicate them directly. Similarly, they can convey ideologies or even particular moralities, but not necessarily do they manifest a didactic aim. Consequently, when there is no explicit purpose of educating, toys are strictly recreational instruments. Thus, the author differences educational content, didactic content and entertainment resources. To this end, the researcher introduces the term *didactic information* (p. 328), understood as that one which is explicitly intentioned for

FIGURE 1
PHOTOGRAM OF THE SOUND OF MUSIC (WISE, 1965) BALL GAME AT THE VERANDA

instructional purposes, and potentially connected with the school curriculum. Finally, Veraksa (2011) states, along the lines of the work conducted by Vygotsky, that patterns of perception, and learning strategies - even patterns of thought including creative thinking skills - are processes organized by the laws of human culture and the use of specific cultural instruments. In other words, they are mediated by culture and can in fact be intentionally developed by the appropriate cognitive tools.

Thus, we conclude that toys and other related instructional resources could only become educational under the intentioned mediation of a third party who fills them with meanings oriented to achieving previously established cognitive, psychological or social objectives. Without the intervention of the latter, there only occurs a recreational time – or at best a fortuitous elucidation achieved by the coincidence of contingent paths. We will not advocate for a direct relationship with a curriculum, but we do need the cohesive intention of educational and didactic content structured by a stakeholder acting as a socializer and culture integrator, as in Piaget and Vygotsky´s perspectives. Accordingly, when somebody plays to learn, there arises a full awareness of the educational process that s/he is living, although s/he is not always learning while playing.

BEYOND GAMIFICATION

Transcending the early definition of the term, Deterding, Dixon, Khaled and Nacke (2011) state that gamification refers to:

The use (rather than the extension) of design (rather than game-based technology or other game related practices) elements (rather than full-fledged games) characteristic for games (rather than play or playfulness) in non-game contexts (regardless of specific usage intentions, contexts, or media of implementation). (p.13)

This definition stresses the fact that in its most simplistic practice, *gamification* is to mechanically apply game elements to other activities such as, for example, promoting competition between teams, awarding prizes, assigning scores and pennants or contextualizing an activity in a symbolic framework that can even be fantastic. However, in a deeper sense, an understanding of the roots and the psychological, neural and sociological dynamics of the disciplines involved in it is also required in order to combine them in a balance that could enhance its contents and methods for better use by the participant. Therefore, gamification is not only making learning fun or inciting students to jump in order to lighten education, as asserted by some critics of the strategy, nor is it designing games or toys. We put together symbolic culture, psychology, pedagogy and arts to facilitate learning. Thus, we believe that we honor play and didactics; the toymaker and the pedagogue.

PROBLEM POSING CORES: A POTENTIAL GAMIFICATION SCENARIO

CEIPA University's educational model is characterized by its structural and methodological approaches away from traditional classrooms.

The curriculum is organized by intensive two-month thematic blocks which the student is dedicated exclusively to. Each block is expected to be structured methodologically from the learning-by-doing approach, following the *practice-theory-practice-reflection* rationale. Similarly, though there are thematic escalations, these blocks must be organically linked with the rest of the curriculum and aim not only to deepen a specific subject, but also to develop the human and professional skills offered by the institution. The methodology is based on challenges and problems; due to the internal curricular organization (which would be organized by topics or lessons elsewhere) we have a problem-posing core at CEIPA, defined as follows:

... A basic and dynamic unit of analysis, planning, integration and permanent and improved construction of management skills related to solving organizational problems; it is also the articulation of diverse knowledges to provide integrated solutions to social and business problems from different perspectives. (...) The problem-posing core in CEIPA is a methodological alternative option to a subject's based curriculum, since it is planned and developed within the societal

FIGURE 2
PHOTOGRAM OF THE SOUND OF MUSIC (WISE, 1965)
THE KIDS HAVING FUN WITH MARIA RAINER

and economic reality framework in the field of professional intervention and presents the following components: it is thematic, problem-oriented, relational, entrepreneurial, research -based and digital (CEIPA, 2011, p. 23)

Thus, the problem-posing core starts from a challenging situation that must be resolved through by gathering, processing and applying interdisciplinary knowledge. This situation is called the *problem*; it is characterized by being a trigger of inquisitiveness, pedagogy and context created (or selected) from a reality, and presented in technical language. The problem must have the following characteristics:

1. **Must be rigorous**: although it starts from the business reality, its content should be presented with disciplinary and / or scientific rigor.
2. **Should Relate discipline(s) with professional reality**: From business situations that require intervention.
3. **It is contextualized (time, space),** so it must be contemporary and reflect actual situations that may arise in organizations where our future graduates could work.
4. **It must describe the situation with a captivating narrative**.
5. **Concrete** (according to level-public): the *problem* should reflect an understandable situation from a business perspective, it should refer to dynamics that can be approached from the administration or management of organizations; its structure and content should highlight specific challenges that warrant administrative intervention from the mastery of certain skills of professional performance.
6. **Conduct concerns**. The didactic form of the *problem* and the narrative should relate to concerns, problems, questions that take into account the challenges which confront and requires certain predetermined training.

In addition to these prerequisites, the team that designs a problem-posing core can unleash their creativity by choosing and defining both the format (video, case study, project, etc.) and the literary devices (tone and style) that the *problem* will feature. Similarly, a *problem* can be enriched with teaching aids, tables, concept maps, visual aids and other resources that can aid in its clear and attractive presentation.

Evidently, in the spirit of the problem-posing core there lies a gamification intention which is accomplished in the *problem´s* practice and resources.

GAMIFICATION EXPERIENCES WITHIN PROBLEM-POSING CORES

MATH SIMULATOR

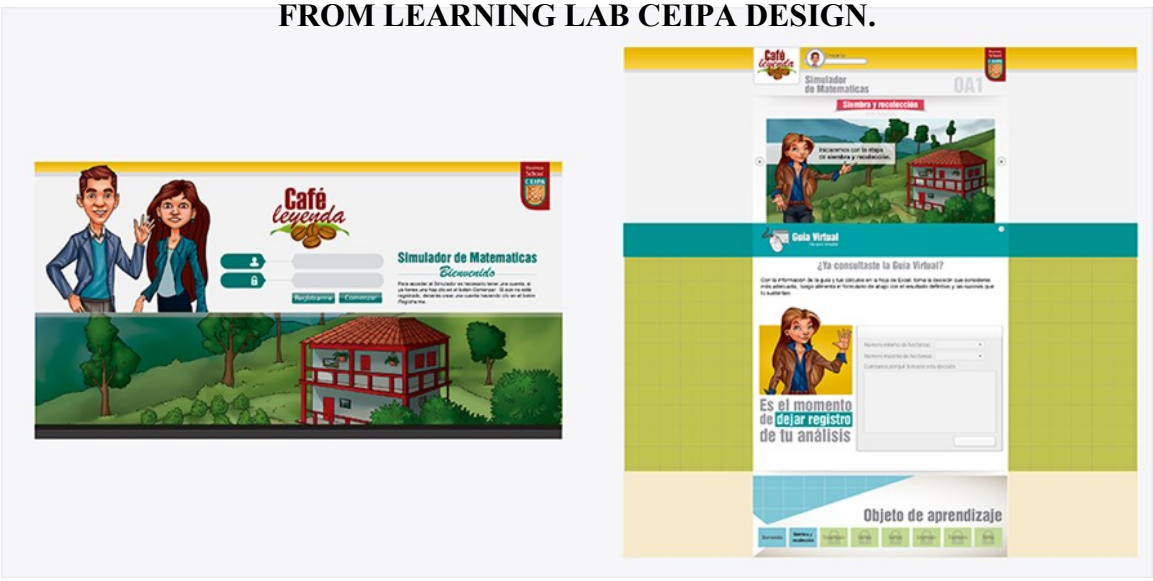
Simulators are mechanical or computer devices intended to reproduce a system so that the learners could be exposed to feelings, situations and experiences they will come across in their professional practice. Having mastered the core competencies to perform the desired action, students are expected to not only have the knowledge, but also the confidence to do their work in a real environment.

This computer simulator main scenario is a company that collects, depulps, roasts, packages and distributes Colombian coffee. There is also a number of sub scenarios; students use the concepts, mathematical and thinking skills (like abilities of deduction, reasoning, decision making and ethical values) that they need in order to solve the different challenges that the program is presenting. The participants advance in teams or on their own, by a story in which they are general managers preparing a business plan for the main board. In a parallel way, the simulator presents a cultural environment close to Latin American reality – depicting ethnical diversity, traditional Colombian architecture and the typical coffee landscape – in order to preserve and promote cultural values amongst learners, as a response to foreign simulators which describe distant cultures.

MISSION IDEAVENTURA

Mission Ideaventura is a gamification strategy that immerses the participant in a deliberated metaphor for the appropriation of concepts and methodologies using game

FIGURE 3
SCREENS CAPTURE OF MATHEMATICS SIMULATOR. FROM LEARNING LAB CEIPA DESIGN.



mechanics in order to enhance motivation, concentration, effort, loyalty and other common positive values in all games, seeking to promote the culture of innovation.

From this perspective, Ideaventura is an educational technology to gamify the ideation process. This game also seeks to facilitate the participants' understanding of the technique leading to the capture of opportunities and generation of ideas, which will be later the seedbed for innovation and entrepreneurship in their exercise of creating projects, products or companies. Due to the nature of the mission, it is very useful to develop the skills of development and creativity.

This purpose is achieved with the help of a board game-shaped resource. It symbolizes a space travel, in order to bring innovative ideas to other planets that have been colonized by Earthlings. To this end, the participants during their trip must cross the steps of ideation and overcome their difficulties and impediments, to reach the formulation of an innovative idea. There is a second version (called "The Conquest of Valhalla", which represents a Viking trip.

***JUNTOS* (TOGETHER)**

It is an application for mobile platforms that serves to boost knowledge collaboratively among participants.

The game consists of a series of multiple-choice questions. The participant makes points by providing the correct answer. The questions are categorized and certain number of questions per category are made. As the participant progresses, s/he reaches a level between 5 possible (*Apprentice, Junior, Master, Senior, Organizational Guru*). As a bonus, a last level is granted (*Perk*) which is accessed only by collecting unlimited flags)

If the participant does not know the answer to any question, they can ask for help (Red Flag). For each group of questions (i.e., 5) the player is permitted to ask for help from someone in the group. If the participant who is asked for help answers correctly, they obtain the flag and the questioner participant has a point. Otherwise, no points are lost, but the questioner does lose the flag of that group of questions. To move from one level to another, it is required to help several fellow participants, thereby accumulating red flags, such as: 1 for the first level; 2 for the second; etc. 5 flags are required in order to earn the last 5 points before reaching the maximum. The ultimate goal is to reach the entire *Organizational Guru* level.

The game is accompanied by informative and motivational emails to keep the players motivated, updating their level and the organization's progress. Positive messages are sent, and a message is delivered at the end of the game with the participant and the group's final achievements, as well as a motivation to improve the performance in the following game.

CONCLUSIONS

Game plays an important cultural and psychological role, particularly in the educational world where both children and adults benefit from it. For this reason, it is a vital tool in training at any level and in multiple scenarios.

It is important to differentiate between play for educational purposes and gamification of educational processes. Although both are related, the first excerpts lessons from the act of playing and the second uses its own components extracted from games to facilitate learning.

In both cases (game and gamification for educational processes), the full compliance of the edifying purpose can only be ensured when there is a clear pedagogical intention leading

FIGURE 4
BOARD, MATERIAL AND USE OF MISSION IDEAVENTURA. FROM LEARNING LAB CEIPA DESIGN.

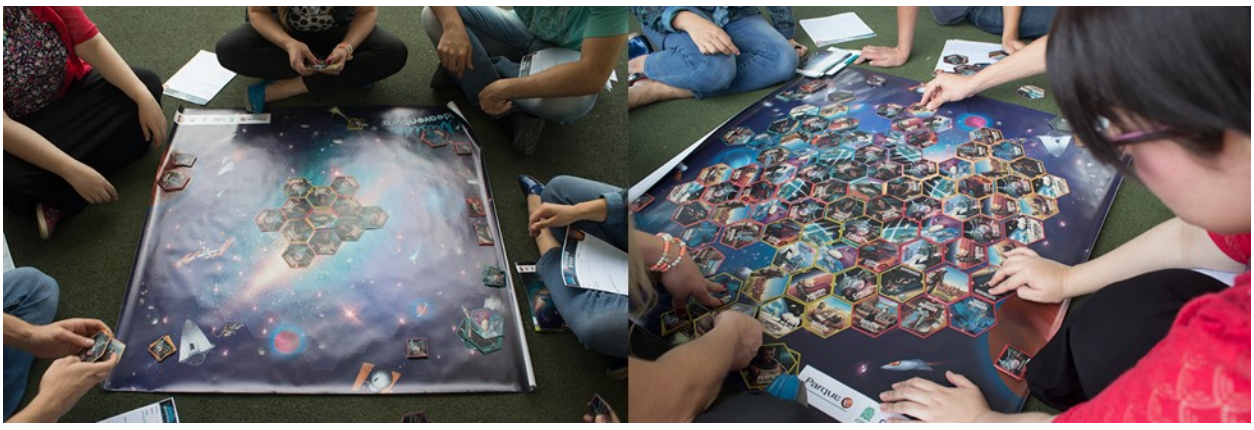
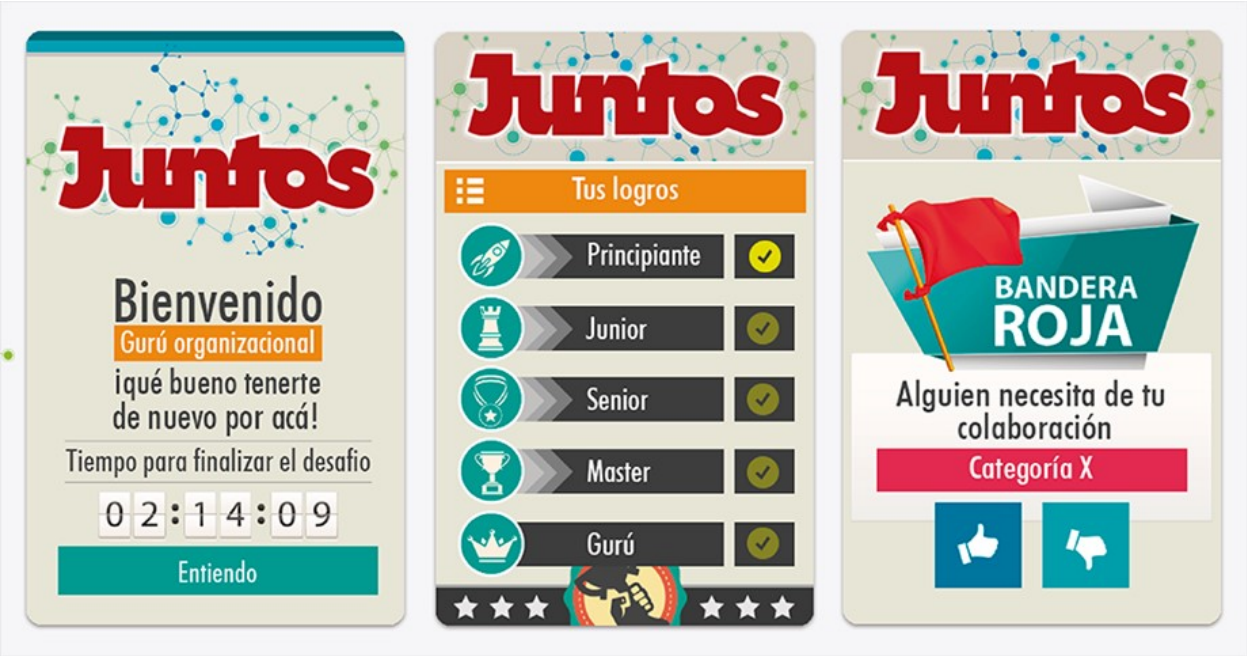


FIGURE 5
SCREEN CAPTURE APP JUNTOS. FROM LEARNING LAB CEIPA DESIGN



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