

2. Related Work

In the next subsections will be presented differences between Serious Games and Gamification. Also described the elements used in Gamification.

2.1 Gamification (Gamification X Serious Games)

To reduce the effects of stressful daily tasks and make them less tedious and frustrating, professionals from various fields are using the same techniques that game developers use for their products become more attractive.

Gamification is the use of techniques and elements of games, along with the 'game thinking' (reasoning used in games) and game design in a context outside of games (applications in everyday life) [Deterding, et al. 2011]. Its goal is to make a common activity more fun, engaging and interesting as well as causing the user a positive experience, reaching the end proposed by the application area (marketing, education, manufacturing, finance, etc.).

According to Deterding et al. 2011a and Deterding et al. 2011b by being very recent, gamification retains few academic studies about it, the term and its practices began to become popular around 2010, although it is already highly valued by vendors and professionals who want to innovate their products.

It is common for researchers have a confusion between gamification and other existing concepts. One of them are serious games, games that are, digital, and designed with a definite purpose, which is not mere entertainment, and makes possible the experience in tasks that are unable for reasons of safety, cost or time [Susi et al. 2007].

Differently from the gamification Serious games are games, complete with purpose: to teach, simulate, among others. While the second is the gamification of a task that turns any activity in the real world, into something more interesting using elements of games (score, reward, and achievements etc..) Outside the context of games. It is noteworthy that as the gamification is used outside of gaming, an activity gamified cannot be considered a full game [Deterding, et al. 2011a].

With the right knowledge and if handled correctly, these elements can model and define the user's actions, persuading them to behave in a way that predefined by the designer of the system [Deterding et al. 2011b; Lockton et al. 2010].

2.2 Elements of games in Gamification

The great advantage of games is given why people do not play for financial incentive or social reasons, they play for pure entertainment, they want to have fun [Ahn and Dabbish 2008]. As is done in games when we gamified an activity, it must be projected to have the desired effect, there should be an application design, much like what the game designer does in games, with the same tools, but in real life.

These tools, called elements of games, are numerous, and each has its advantage and particularity. But according to [Deterding, et al. 2011a] we can classify them into five layers according to their main features, these being about:

Game interface design patterns:

Standard components for a good visual interaction and to address known issues in a particular context, including the implementation of prototypes. We have the example of the badges (medals or stamps given to users to complete a task) used in the foursquare, among others. Ranking widely used in facebook's applications, increasing popularization and application interaction, encouraging permanence (duration) of the same users. Level: measuring progress in implementation, and status. Helping to set the right challenge.

- Game design patterns and mechanics [Hunicke et al 2004]: Reserved area of game design is commonly concerned with the gameplay. Timeout, resource limit, rounds. Many applications use for example a check-in mechanical with a limit of time or place as may be seen in the application get glue where you need to check in during the broadcast of a TV show.
- Game designs principles and heuristics [Isbister and Shafer 2008.]: Orientations on the evaluative approach problems of design or analysis and solution. Example: Game duration, clear purpose.
- Game Models [Brathwaite and Schreiber 2008; Eduardo et al. 2010; Fullerton , 2008; Hunicke et al. 2004]: Conceptual models of components of games or gaming experience. Example: MDA, challenge, fantasy, curiosity.
- Game Design methods [Belman and Flanagan 2010; Fullerton , 2008]: Practices and specific processes to game design. example: Playtesting, playcentric design, value conscious game design.

Some elements stand out for being more common in gamified existing applications, as the reward system is widely used in marketing or encouragement of

education, as in the promotion of coca-cola, "join five bottle caps (mission) + \$ 3.00 and replace the super special ball of world's cup soccer (reward) "or the proposal of a teacher," delivered the revision and solved exercises of test (mission) and earn an extra point (reward)."

In the Spotlight it's also the customization, widely used in gamified sites, as well as we can give our face in games (personalizing an avatar) sites like mercadolibre.com (show the possible products that you would please) or even Google New Badges (which brings into prominence the issues that interest you in accordance with the badges, that you have) and use your characteristics to model itself according to your taste.

Progress bars, ranking, scoring with a reputation for helping to create a more interactive and engagement activity while increasing loyalty to the brand or server in general and also increases the time spent on the gamified application.

Some of them are more abstract and subtle, but make all the difference, such as the goal, the challenge, fun, experience, interaction between users and many others.

3. Characteristics of the Professional in Game development

Each professional in the field of electronic games has its role in creating a game, building a quality soundtrack, a nice design and true to the game, a perfect, flawless mechanics, well done animations, all this to the game is presentable to the client, which involves a team quite extensively with

Programmers: which are too busy working in the best implementation, using the best algorithms and optimization, for a full time result, abusing of A.I. and extracting the best of the hardwares, being responsible for the proper execution of the game, so they are very technical [Clua and Bittencourt 2005].

Artists, animators: Their main job is to generate the highest immersion as possible in the game, making it beautiful and pleasant their knowledge is limited to creating a good esthetics. [Clua and Bittencourt 2005].

Sound engineers: their goal also is to generate the best immersion and are attempt to details in the game who make a big difference [Clua and Bittencourt 2005]. Such as other positions.

Differently of those professionals the game designer has a general overview of the process knowing how to explore the mechanic, the art and

sound, and mainly all the game elements, and how to affect the public with those.

It is not just any professional who must be relieved for apply propely the gamification.

According to [Deterding, et al. 2011a] the use of gamification will be more useful if it is reserved for the use of game design, not technology or practices of comprehensive ecology of games. The one more advice for working with gamification is the game designer because are the elements of game design that makes up the gamification. The game designer is the most specific position in the professional area of games, there are not many other options for fields where he can work. Independent of the gamified area the techniques of game designer will always be common between them making it indispensable, what makes gamification a new alternative profession where the game designer can apply their knowledge.

4. Professionals in Gamification

As the gamification can be applied in countless fields, the required knowledge of the gamified area is crucial for the adaptation of the application. The game designer, alone, may not be enough to bring the desired experience, since we have to take much into consideration such as style, way of thinking and public taste. A professional who knows the area intimately and know how to impact their targets correctly will be necessary to make that important "details" not to be forgotten or treated wrongly in the application gamified. However, this same work must also know methods of game design so that there is symmetry during development.

The combination of knowledge is extremely important, the target audience responds differently to each element of game design applied. The game designer should be fully aware of the public that he handles and also be aware of which elements apply, and many times without a professional in marketing, commerce, education or communication to explain the expected reaction in the audience can make the application ineffective.

The professionals who can work with gamification are, for example, the game designers with a specialization in the area (education, communication, production) or the marketer, production engineer, educator, economist if adds up the knowledge of techniques used in game design .

4.1 Game Design and Gamification

The work of producing experiences not before seen in the common media makes the professional in gamification a new type of game designer. The knowledge of the reactions produced by the application gamified on the public is extremely important, since the target audience is usually very large, know how to

please the greatest number of them decides the success of this.

In the area of gamification the application is never complete, correct and improve mechanical, constantly generate new content will attract more people leaving these tasks even more challenging. Observe the responses of users will require the team to increase the complexity of the application as often the answer is simplicity, is the job of game designer to identify these situations and respond in a way that pleases everyone.

5. Conclusion

The gamification is a current theme and without a definitive academic definition, but their use is increasingly present in our daily lives, making it impossible to be ignored. It's definitely a practice that has a future and without a specific professional responsible for its implementation.

As demanded a vast knowledge of the elements of games, the game designer is a strong candidate for the area, if and only if, the same choose to specialize in an area where they can apply their knowledge (be it marketing, education, manufacturing, finance among others).

More important than knowing about the tools that you can use is to know the effect it generates, what reaction people have to do and which tool is best for the purpose proposed. That is, the professional gamification is indicated for the one who has the knowledge of the game designer and is also aware of where and how to apply them, which will vary from area to area.

The most recommended is arising gamification professionals in marketing, gamification professionals in education, gamification professional in production and so on.

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References

AHN, L. AND DABBISH, L. 2008 *Designing games with a purpose*. Communications of the ACM 51, 8, 58-67.

BELMAN, J., and FLANAGAN, M., 2010. *Exploring the Creative Potential of Values Conscious Game Design: Students' Experiences with the VAP Curriculum*. Eludamos 4, 1, n.p.

BJÖRK, S. and HOLOPAINEN, J., 2005. *Patterns in Game Design*. Charles River Media, Boston, MA.

BRATHWAITE, B., and SCHREIBER, I., 2008. *Challenges for GameDesigners*. Charles River Media, Boston, Ma.

EDUARDO H., CAIRNS, P., COX, L., 2010. *Assessing the Core Elements of the Gaming Experience*. In R. Bernhaupt, ed., *Evaluating User Experience in Games*. Springer London, London, 47-71.

CRUMLISH, C. and MALONE, E., 2009. *Designing Social Interfaces: Principles, Patterns, and Practices for Improving the User Experience*. O'Reilly, Sebastopol.

CLUA E., BITENCOURT J. 2005. *Desenvolvimento de Jogos 3D: Concepção, Design e Programação*. In XXV Congresso da Sociedade Brasileira de Computação, July 2005 São Leopoldo. Rio Grande do Sul: UNISINOS.

DETERDING, S., DIXON, D., KHALED, R., NACKE, L.E., 2011.. *From Game Design Elements to Gamefulness: Defining "Gamification"*. In CHI Gamification Workshop Proceedings, Vancouver, BC, Canada.

DETERDING, S., KHALED, R., NACKE, L.E., DIXON, D., 2011. *Gamification: Toward a Definition*. In CHI 2011 Gamification Workshop Proceedings, Vancouver, BC, Canada.

DETERDING, S., SICART, M., NACKE, L., O'HARA, K., AND DIXON, D., 2011. *Gamification: Using game-design elements in nongaming contexts*. Proc. CHI EA '11, ACM Press.

FULLERTON, T., 2008. *Game Design Workshop: A Playcentric Approach to Creating Innovative Games*. Morgan Kaufmann, Amsterdam.

HUNICKE, R., LEBLANC, M., AND ZUBEK, R., 2004. *MDA: A Formal Approach to Game Design and Game Research*. Proc. AAAI workshop on Challenges in Game, AAAI Press (2004).

LOCKTON, D., HARRISON, D., AND STANTON, N.A., 2010. *The Design with Intent Method: A design tool for influencing user behaviour*. *Applied Ergonomics* 41, 3, 382-392.

SUSI, T., JOHANNESON, M., BACKLUND, P., 2007. *Serious Games – An Overview*, Technical Report HS- IKI -TR-07-001, University of Skövde, Suécia.

ISBISTER, K., SHAFER, N., 2008. *Game Usability: Advice from the experts for advancing the player experience*. United States of America: Elsevier.