

## Gamification with gifts and emotional presence

Fernando Bacelar Saraiva

fsaraiva@lead.uab.pt  
Laboratório de Educação a Distância e eLearning  
Universidade Aberta

**Abstract** - The study wants to see the impact of gamification on emotional presence of a community of inquiry, of teachers and students. A social platform based on elgg will be developed, with gamification elements like virtual currency and gifts. The platform will have tools to support the co-creation of content with the “affinity space” perspective in mind. We will use a mixed-methods approach, gathering data from the analytics of the platform, such posts, messages and logs and from a survey. This last will be based on an already validated instrument for emotional presence, which we will adapt for our context. We hope to use the results for elaborating a set of guidelines to use in future, using gamification for empowering users and enhance emotional presence, avoiding extrinsic rewards.

Keywords: Gamification, Social Platforms, Virtual Gifts.

### Introduction

The Internet can link and gather people around the world in different ways and topologies (Dron & Anderson, 2014). From very small to huge groups, people can join virtual spaces to learn together, forming learning communities (Ilera, 2016). “Learning communities are groups of people involved in the process of learning, have some cohesion and are identifiable as different identities” (Dron & Anderson, 2014, p.76).

Knowledge inside a learning community is co-created by their members (Dron & Anderson, 2014). The boundaries of formal and informal learning are also diffuse. The relationships of people inside a learning community are established by the need of members to create useful information for them, often in a spontaneous way (Dron & Anderson, 2014). People use a number of different tools and platforms to link communities of similar interests, but not necessarily equivalent. This way boundaries are the context of the interaction (Downes, 2017).

The virtual places where these communities gather are *affinity spaces* where people socialize and learn together, creating and sharing knowledge (Gee, 2005; Gee, 2017). To build a Digital Affinity Space (DAS) we must take in consideration: users must find meaning inside learning communities; we should have diverse digital tools to foster participation and socialization; must encourage knowledge creation; make users feel connected around common ideas; create and maintain distributed knowledge (Gee, 2005; Gee, 2017).

The Community of Inquiry (CoI) is a framework for online learning communities in higher education: the place where students develop and foster critical thinking and collaborate with each

other to create a meaningful learning experience (Garrison, Anderson & Archer, 2000). The Col can be used to study learning communities in various digital configurations (Williams, 2017), like MOOCS or closed LMS (Siemens, 2002). A Col is built around three presences: cognitive, teaching and social. Cognitive presence is the way students construct meaning, social presence the way students feel connected to the others and teaching presence the design and facilitation of the learning experience (Garrison, Anderson & Archer, 2000).

Cleveland-Innes and Campbell (2012) proposed to complement the Col with a new presence, emotional presence: the way learners feel and disclose emotions as they interact with the technology, peers and instructors (Rienties & Rivers, 2014).

Emotions are iterative constructions that help individuals to reach objectives, in any given context (Mesquita, Boiger & Leersnyder, 2016). They are inter-related to various components like cognition, motivation or physical activity (Boiger & Mesquita, 2012). Emotions are present in the process of learning and on the motivation to learn (Garrison, Anderson & Archer, 1999). The emotional presence is responsible for the creation and sustenance of inquisitive dialogue of students inside a Col (Rienties & Rivers, 2014). A positive emotional state and a design that can keep that state, can lead to better learning on the long term. In fact a starting emotional positive state can predict good learning results (Park, Knörzer, Plass & Brünken, 2015).

Gamification deals with positive emotions and motivation. In a simple definition, gamification is the use of game elements in non-game contexts (Deterding, Dixon, Khaled & Nacke, 2011). As McGonigal (2011) said, games are addictive and “play is another word for learning”. This way, using elements from games can make learning fun and promote autonomy, sense of belonging and resilience around a set of activities (Marczewsky, 2015). Gamification can help students foster social relations, be more positive with studying (Kim, Song, Lockee & Burton, 2018; Sillaots, 2014) and cope better with failure (Lee & Hammer, 2011). Can even help to promote awareness and responsible health habits for coping with pandemics (Robinson, Turner & Sweet, 2018) like the Covid-19.

Gamification is criticized for the excessive use of extrinsic rewards, like points, badges and leaderboards (PBL) or competitive behavior (Cheng & Vassileva, 2005).

But Ma and Chan (2014) have demonstrated that emotions like altruism can lead to good learning results, as long as there are mechanisms to promote and maintain them. Tondello, Mora, Marcewsky and Nacke (2019) also showed that there is a positive correlation between age and intrinsic motivation like altruism for users of games and game-like experiences, being the older ones more intrinsically motivated. There are also characteristics of games and gamification that can lead users to be intrinsically motivated with the tasks at hand (Banfield & Wilkerson, 2014).

This way, we think there are opportunities to use gamification in higher education (mature learners) using elements that can promote positive emotions and altruism. This can be expected to foster interaction and commitment in students, and have positive results on learning.

## **Description**

For our project we are constructing an online social platform for higher education students, mostly

teachers, from Open University post-grads (n≈100). We want to see the impact of Virtual Gifts on emotional presence: indicators like expression of positive emotions, friendly and open discourse and connection (Cleveland-Innes & Campbell, 2012).

We will use a Design Based Research Methodology, which is pragmatic, oriented for designing and implementing solutions in a real and dynamic environment (Cobb, Jackson & Dunlap, 2016).

We will use a mixed-methods methodology gathering qualitative and quantitative data to complement each other and enrich the perspective on the phenomena studied (Creswell, 2009).

We are using the *elgg* open source social engine, with a variety of web 2.0 tools, fit for creating a DAS (Gee, 2005; Tung, 2013). They will be invited to join and explore the platform, and submit content related to the course. We expect them to use the various tools available and form a Community of Inquiry. We will implement gamification elements, like gifts that users can give to each other if they reach some milestones (like a certain number of interactions or connections). We will avoid points, leaderboards and badges. The interaction will be “rewarded” with a kind of virtual currency that students can use to trade for gifts.

We will deploy a survey using the Google Forms service. We will use the instrument created by Cleveland-Innes and Campbell (2012) for the CoI emotional presence, adapted for our particular gamification context. We will use a Likert scale and some open-ended questions, to enrich the data on the self-reported attitudes and opinions of students (Creswell, 2009).

We will use Google Analytics to gather quantitative data, like user logs, came-back ratio and time using the platform (Cutroni, 2010). We will also gather qualitative data, like the texts published on the platform, with the exception of private messages/chats. The texts are going to be analyzed with the help of Leximancer software. Leximancer is a Computer Assisted Qualitative Data Analysis Software (CAQDAS) with text mining capability that helps understand context and concepts automatically, and visually display the data (Smith, 2003) to determine the relevance of the semantic networks (Crofts and Bisman, 2010). The software can be used fast for huge amounts of text with almost no interaction with the user, or fine-tuned for all concepts and themes at any given moment of the analysis (Sotiriadou & Brouwers, 2014).

We will use descriptive statistics and triangulate all data for a more robust explanation of findings (Cohen, Manion & Morrison, 2013). Ethical considerations such as anonymity and explaining the object of study to participants will be taken in consideration (McKerman et al., 2015).

## **Conclusions**

Our project will implement gamification in a social platform for higher education students, to study its impact on emotional presence and learning inside a community of inquiry. We want to avoid extrinsic rewards and will use virtual gifts, that students can give to each other when they reach certain milestones (work submitted or posts, for example). The work will have distinct stages: The creation of a social platform based on *elgg*. After, the auscultation of students’ opinions about the platform from the perspective of an *affinity space*. We then will make the implementation of gamification elements such as gifts and *virtual currency*. We will collect, analyze and make a triangulation and explanation of data. Finally we want to summarize a list of implications for future

interventions both for social platforms and gamification.

## References

- Arbaugh, J. B., Cleveland-Innes, M., Diaz, S. R., Garrison, D. R., Ice, P., Richardson, J. C., & Swan, K. P. (2008). Developing a community of inquiry instrument: Testing a measure of the community of inquiry framework using a multi-institutional sample. *The internet and higher education*, 11(3-4), 133-136.
- Banfield, J., & Wilkerson, B. (2014). Increasing student intrinsic motivation and self-efficacy through gamification pedagogy. *Contemporary Issues in Education Research (CIER)*, 7(4), 291-298.
- Bannan, B. (2009). The integrative learning design framework: An illustrated example from the domain of instructional technology. *An introduction to educational design research*, 53-73.
- Cheng, R., & Vassileva, J. (2005, May). Adaptive Reward Mechanism for Sustainable Online Learning Community. In *AIED* (pp. 152-159).
- Cleveland-Innes, M., & Campbell, P. (2012). Emotional presence, learning, and the online learning environment. *The International Review of Research in Open and Distributed Learning*, 13(4), 269-292.
- Cohen, L., Manion, L., & Morrison, K. (2013). *Research Methods in Education*. Routledge.
- Cobb, P., Jackson, K., & Dunlap, C. (2016). Design research: An analysis and critique. *Handbook of international research in mathematics education*, 3, 481-503.
- Creswel, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. Los Angeles: University of Nebraska–Lincoln.
- Crofts K and Bisman J (2010) Interrogating accountability: An illustration of the use of Leximancer software for qualitative data analysis. *Qualitative Research in Accounting and Management* 7(2): 180-207.
- Downes, S. (2017). New models of open and distributed learning. In *Open Education: from OERs to MOOCs* (pp. 1-22). Springer, Berlin, Heidelberg.
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011, September). From game design elements to gamefulness: defining gamification. In *Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments* (pp. 9-15). ACM.
- Cutroni, J. (2010). *Google Analytics: Understanding Visitor Behavior*. " O'Reilly Media, Inc."
- Garrison, D. R., Anderson, T., & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The internet and higher education*, 2(2-3), 87-105.
- Gee, J. P. (2005). Semiotic social spaces and affinity spaces. *Beyond communities of practice language power and social context*, 214232.
- Gee, J. P. (2017). Affinity spaces and 21st century learning. *Educational Technology*, 27-31.
- Illera, J. L. R. (2016). Como as comunidades virtuais de prática e de aprendizagem podem transformar a nossa concepção de educação. *Sisifo*, (3), 117-124.
- Kim, S., Song, K., Lockee, B., & Burton, J. (2018). What is gamification in learning and

- education?. In *Gamification in learning and education* (pp. 25-38). Springer, Cham.
- Kiesler, S., Kraut, R. E., Koedinger, K. R., Alevan, V., & McLaren, B. M. (2011). Gamification in education: What, how, why bother?. *Academic exchange quarterly*, 15(2), 1-5.
- Ma, W. W., & Chan, A. (2014). Knowledge sharing and social media: Altruism, perceived online attachment motivation, and perceived online relationship commitment. *Computers in Human Behavior*, 39, 51-58.
- Majeski, R. A., Stover, M., & Valais, T. (2018). The community of inquiry and emotional presence. *Adult Learning*, 29(2), 53-61.
- Marczewski, A. (2015). *Even Ninja Monkeys like to play*. London: Blurb Inc.
- McGonigal, J. (2011). *Reality is broken: Why games make us better and how they can change the world*. Penguin.
- Mesquita, B., Boiger, M., & De Leersnyder, J. (2016). The cultural construction of emotions. *Current Opinion in Psychology*, 8, 31-36.
- Robinson, L. A., Turner, I. J., & Sweet, M. J. (2018). The use of gamification in the teaching of disease epidemics and pandemics. *FEMS microbiology letters*, 365(11), fny111.
- Siemens, G. (2004). *Connectivism: a learning theory for the digital age* (2004). Retirado de: <http://www.elearnspace.org/Articles/connectivism.htm> (acedido em setembro de 2019).
- Sillaots, M. (2014). Gamification of higher education by the example of course of research methods. In *International Conference on Web-Based Learning* (pp. 106-115). Springer, Cham.
- Skågeby, J. (2010). Gift-giving as a conceptual framework: framing social behavior in online networks. *Journal of Information Technology*, 25(2), 170-177.
- Tondello, G. F., Mora, A., Marczewski, A., & Nacke, L. E. (2019). Empirical validation of the gamification user types hexad scale in English and Spanish. *International Journal of Human-Computer Studies*, 127, 95-111.
- Tung, L. C. (2013). Improving Students' Educational Experience by Harnessing Digital Technology: elgg in the ODL Environment. *Contemporary Educational Technology*, 4(4), 236-248.
- Williams, L. S. (2017). The Managed Heart: Adult Learners and Emotional Presence Online. *The Journal of Continuing Higher Education*, 65(2), 124-131.