MOVING TOWARDS RELEASE CANDIDATE OF GAMIFICATION 3.0. BUG FIXES, CHANGES AND PERFORMANCE IMPROVEMENTS
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ABSTRACT
Games have reached a point in our culture that almost everyone nowadays accepts the fact they are a big deal and that, day after day, are becoming an ever more ubiquitous element of daily life. Gamification, even though not a new concept, has become a buzzword since 2010 and almost every business domain seems to urge the need to associate their name with this promising term. Meanwhile, over the last decade, we witness one of the most profound changes of our educational philosophy through the explosion of Massive Open Online Courses (MOOCs). Nevertheless, now that we have the technology to teach thousands of students online we are facing the next big challenge: student’s engagement in online settings. Despite the high enrollment rates in most MOOCs students often never reach their first assignment which leads to a high drop-out rate.

In this article gamification is not perceived as a deus ex machina providing a solution to the roadblock of students' engagement; instead we are stressing the need to move towards a more meaningful and human centered gamification design framework. Research related to gamification implementation in education demonstrates that gamification can be effective and produce behavior change, but on the other hand it may affect the internal motivation and alter the overall student experience inside or outside the online setting. These assumptions are forcing a rethinking of how gamification in education was applied. In this paper we will investigate the potentials of gamification tapping into the sacred Trinity of intrinsic motivation which according to Daniel Pink is Autonomy, Mastery, and Purpose. Self-Determination Theory (SED) is a good starting point but along the way we will be focusing on other key concept of our gamification framework as well. We strongly believe that one of the missing pieces of gamification design that has the potential to bring valuable insights into student’s motivation in a MOOC is meaning.

KEYWORDS: Engagement, Game Design Elements, Gamification In Education, Gamification Of Learning Meaningful Gamification, MOOC, Motivation.

INTRODUCTION
Rather than taking as a starting point the fact that we are already living in a gameful world, given the current popularity that surrounds gamification, we suggest start drawing our attention on a series of meaningful questions. Maybe this would be the most straightforward approach which will lead us to a better understanding of our gameful present and our ludic future. Few years ago, at the Games Learning Society conference, Eric Zimmerman (2013), writing his ‘Manifesto for a Ludic Century’, eloquently inquired whether the twentieth-century information age, might be followed by a ludic age. We therefore start by posing ourselves a set of meaningful questions: Is there a way to delimit this cultural swift? Why the idea of gamification has gained such popularity
now? What is missing variable of the gamification equation?
Our attention will not revolve around why gamification is compelling and amazing, since the
term per se excites curiosity, nor is it about how gamification will change our future in a more
positive and engaging way, not even what exactly does the gamification industry struggles to
achieve day after day. Our approach is rather about understanding and implementing a more
user centered, or better said a more student centered, motivational science perspective in order
to fulfill one of the hardest gamification quests of all, the lack of empirical evidence. In other
words, even though gamification is widely spread and has already become accepted from the
vast majority, it’s diffusion of innovation is moving to “late majority”; nevertheless poor design
applications and gamification approaches threaten its sustainability in the long run.
We believe that this may occurs because of a paradox. On the one hand, game field has known
more practitioners than theoreticians but on the other hand, academia lacks empirical evidence
that does not support the theory that surrounds the term gamification. As a result, many
"professionals" of the fast-growing field of gamification tend to embrace the term's increasing
ambiguity to their advantage as Bogost (2015) expressively argues under a provocative but truly
persuasive position statement in *Gamification is Bullshit*.

**Reshaping the Identity of Games in Modern Society**

History has taught us that historical events are rather scattered and periods inevitably overlap.
Therefore, perceiving the shift from a period to another is a rather arduous task because change
occurs like the earth's spin. We don't feel any of this motion because change is constant and
the fact that we are all moving with it at the same constant speed makes us more spectators
rather than participants in the action. Nevertheless, we have all felt an earthquake once in a
while; no matter how small it is, because of its waves shaking everything up causing tiny scars
in the surface changing the landscape. This is what actually happened with games; they were
changing our cultural landscape over the last decades without even noticing it, until something
came up and triggered a tremendous change regarding the way we used to experience games
and our behavior towards them.

Games have reached a point in our culture that almost everyone nowadays accepts the fact they
are a big deal and that, day after day, are becoming an ever more ubiquitous element of daily life
as Tadsen (2016) states. According to him, taking a closer look to this phenomenon reveals that
video games are increasingly being converted into a cultural currency for an increasing area of
purposes; they are played, referenced, politicized or monetized. Culture nourishes both game
designers and players. For the designers it is a resource that can be incorporated into games,
and for the others local gaming practices and specific social contexts can affect their playing
experiences (Tadsen, 2016). In other words, game's components and players’ performance do
matter as a whole.

Even if games appear in almost every digital device, there are still some people that perceive
the future in terms of the past. They greet the change described above with skepticism or, even
worse, they are amazingly indifferent about the potential of games. For them, games are a waste
of time or loss of real life. Meanwhile, the Entertainment’s Software Association (ESA) annual
report reminds us that the revenue of gaming industry is approximately 22.40 billion in 2015 and that in every U.S household there is an average of two gamers. In other words, almost 155 million Americans play video games.

This generation is hard wired to games to that point that Raessens (2012) anticipates a ludic turn and argues that gamification could be understood as an example of a greater process denominated ludification of culture or ludofication of society (Walz, 2006) or the rise of a ludic society (Stentros Montola, Mäyrä, 2007). In the end, the essence of these assumptions point to the conclusion that we are living in a world of games and gamers, and gamification has become the prism through which we can see and understand changes in contemporary culture.

And if Raessens (2012) underlines a ludic turn Deterding (2015) speaks of its counterpart, the cultivation of ludus, arguing that games and play have slowly migrated from the periphery to the center of our culture again but with slight differences. To better understand this process of transformation we will support our point of view by expanding a theory extracted from the field of social anthropology and Victor Turner’s conception of liminality, (as cited in Deterding 2015). Turner (1982) perceived culture as a dynamic process and expanding Arnold Van Gennep’s point of view, regarding the shift from one social status to another, introduced the concept of liminality. Van Gennep’s model consisted in a triadic structure which in short can be described as three consecutive phases: the pre-liminal, the liminal and the post-liminal phase. In the pre-liminal phase the individual leaves behind his “old self” or identity to proceed to the next stage, the liminal phase of transition where everything is turned upside down, readjusting meanings and behaviors in order to finally access the post-liminal phase where our “new self” is reintegrated to society under a new status. The liminal stage of this structure is crucial in Turner’s work. For Turner (1987) liminal is a phase where individuals are somewhere “betwixt and between”, neither here nor there, due to the fact that they are not yet incorporated into the society. Therefore, applying Turner’s vision in our field of investigation we believe that we are, at the present time, in a short of a ludic limbo.

Drawing from the above contributions we have come to the following observation regarding gamification. First of all, that it is rather difficult to adumbrate the identity of gamification enclosing all the aspects that gamification carries within. We believe that everyone tries to claim something from gamification’s glow, adapting the term according to their end. Therefore, the term is in a constant change, gamification, exploitation or “playbor” among others, defined and redefined in order to include or exclude elements from different fields struggling to find a new identity and leave behind its liminal phase in order to be reintegrated in our collective conscious again.

Given that, we believe that at this liminal point of our gaming culture it is quite difficult to perceive the changes that are taking place, therefore we are only capable of describing and not defining what is and what is not gamification, and the lack of empirical evidence amplifies this point of view. That’s why in this article we have not taken part in the gamification war debate regarding its definition. We strongly believe that gamification as a term is not yet in the post-liminal phase, due to the fact that the knowledge that surrounds the term is still soft. Gamification is changing rapidly and constantly thus it doesn’t have time to harden and amend paraphrasing Siemens’ (2016) point of view about knowledge. Nevertheless, in order to facilitate and encompass the reader with a broader definition we took into consideration two points of view. On the one hand, Suits (2014) states that playing a game is the voluntary attempt to overcome unnecessary
obstacles. On the other hand, Deterding (2015) defines gamification as the use of game design elements in non-game contexts. Both definitions are useful being the second one the most prevailing to this date.

According to Turner, liminal occurs in pre-modern and specifically in ritual society where everything is compulsory and collective. But to answer what is happening in more complex post-modern societies, where behaviors are selective and replace the pre-modern obligatory performances, Turner coins a new term in order to give meaning to the successor of the liminal called liminoid. These liminoid behaviors are individual choices that are taken without any specific purpose but just because they are fun. Turner underlines the following difference: while in pre-modern societies play and work is part of the ritual and there is no distinction between them, in post-modern societies play is autotelic. But how do the aforementioned concepts align with our debate? Seen through Turner’s lens serious games and gamification approaches present a return to liminality. Games are again integrated into the total social process (Turner, 1982), playing an active and protagonist role in social and everyday life to such grade that those who deem games us unworthy they will have a great disadvantage in the future. As McGonigal (2011) puts it, these will be less prepared to shape the future and therefore will miss some of the most promising opportunities to create new experiences. As the old identities are pushed into the background, new ones appear in the foreground. Foremost, it is the ludic dimension in which gamification experimentation contributes and brings variation to old structural themes being education one of these.

**Science is Pushed in the Background and Gamification Comes into Foreground**

Having articulated the liminal spaces of gamification the concept now comes in this section into foreground. Our starting point is the foursquare application which in this article acts as the “earthquake” according to the metaphor used earlier. Foursquare is a location-based application providing its users with meaningful recommendations of the places to visit based on their location by “checking-in”. To motivate check-ins foursquare introduced a set of gamified elements like points, badges, leaderboards and rewards. Even though back in 2009 the idea of implementing gamification design in foursquare was a tremendous hit, nevertheless when the foursquare community grew from 50,000 people to 50,000,000 the game mechanics started to crash, just like our computer does when there is a software malfunction. The reason why this malfunction took place will occupy us shortly below.

The foursquare gamification blueprint may hold a valuable and significant truth. Gamification can’t drive long-term behavioral change and all these game mechanics, known as the PBL triad (points, badges, leaderboards) can only drive user’s behavior in the short term, something that foursquare proved by engaging millions of users. Furthermore, the popularity of foursquare had as a result to perceive the use of these game elements as the basis for gamification design in other systems as well. Nevertheless, if the design lacks any intrinsic value then game mechanics start to fade and so does the retention and the engagement of the user. In other words, this reward-based gamification blueprint is only suitable for some settings and, above all, for short
term improvements because once you start giving a reward you have to keep that reward loop forever (Zichermann, Cunningham, 2011). Nicholson (2015) draws as an example for the case of reward-based gamification one’s goal to learn a skill with real-world value, such as using a hammer. Even if this approach can be effective, nevertheless when the individual masters the skill the reward-loop comes to an end because the subject will continue to use the skill in real life, taking advantage of the real world benefits instead of the gamified ones (Nicholson, 2015). By implementing this kind of gamification we have to be aware of the fact that participants in this type of reward cycle will expect an increase in the rewards as their performance increases, something that can be a never-ending process. Our goal is to implement gamification design in education and especially in online settings, which means we seek to sustain engagement. Thus reward-based gamification maybe is not suitable in the long run because it is pretty possible that will crash our system.

Foursquare went sky-high during its initial phase, let’s name this phase gamification 2.0, or liminal phase of gamification, given the fact that no one really understood the power that gamification held. After foursquare “crashed”, developers start coding an upgrade, an absolutely necessary procedure because once the software crashes we start elaborating an update, a gamification 3.0 update.

Let’s suppose now that societies too have operating systems as Pink (2011) upholds and that much of our societal operating system consists of a set of assumptions about human behavior. In the very beginning the assumption is clear: survival is the goal and instinct drives our behavior. This assumption, that Pink (2011) defines as Motivation 1.0 worked for a long time until it didn’t because we formed something more complex crashing the system as shown earlier, because software was inversely proportional to hardware. So what we did was replacing the existing version with a more compatible one that was more adequate to our new form of living that Pink (2011) defines as Motivation 2.0. We started seeking reward and avoid punishment in a broader sense and this system endured for a very long period of time configuring our lives around a fundamental premise: in order to increase performance and productivity reward the good and punish the bad. Even though this reward system lacks insight it did work well until, once again, it didn’t. Why? Because we stopped being as functional as we were earlier during Motivation 1.0 phase. Jesse Schell (2010) reflected that we leave behind a life that was all about survival and efficiency to access a new era where design is largely about what’s pleasurable and fun; even though it is quite difficult to define what is and what is not fun we stress out that it is a fundamental part of gamification because it leads to engagement.

In order to bypass this reward-based gamification in education, given the fact that there is a better way to promote engagement and build qualitative intrinsic motivation we will take a closer look at a theory that provides the individuals to find their own reasons for engaging. This theory is known as Self-determination Theory (SDT) by Deci and Ryan (2004).
**Self-Determination Theory and Gamification 2.0**

Self-Determination Theory (Deci, Ryan, 2000) is a theory on motivation that ascertains our natural or intrinsic tendencies to behave better. According to SDT, on the one hand, we have activities that are perceived intrinsically motivating when they are made for their inborn satisfaction. On the other hand, we also have activities that are perceived as extrinsically motivating, or controlling, when they are being taken in order to accomplish something. So people can be intrinsically motivated to do something just to feel the enjoyment while doing so, an assumption that is closely related when someone is playing a videogame. By implementing game elements in non-game contexts, having in the back of our mind the reward-based gamification framework, we foster extrinsic motivation. In general, the focus on rewards and intrinsic motivation are largely studied through SDT making it a good starting point.

Rigby (2015) resting in SDT sustains that in order to apply successful gamification techniques we need to gain better understanding of the energy that fuels our behavior, the forms such energy can take and the ways in which we can apply this knowledge in the development of a framework. Understanding these factors we unlock the optimal quality of gamification given the fact that motivational quality in Self-determination theory is much more crucial than its strength (Deci, Ryan, 1985; 2000). The energy that motivates us flow from our psychological drives (Motivation 1.0 software), from our emotional states and finally from our psychological needs that are universal and operate without any external prompts (Rigby, 2015).

Organismic Integration Theory (OIT) is a sub theory of SDT. This theory makes further distinction within different parts of motivation, trying to explain the mechanisms that regulate motivation. Depending on the perceived *locus of casuality* appear six different types of regulations that very in the amount of autonomy and the amount of internalization of the motivation. Internalization is perceived as how much an individual values the activity. The continuum that is illustrated in the figure below ranges from less self determined to more self determined.

![Figure 1. Continuum from less to more self-determined behavior](image-url)
In the first position of the continuum, starting from left to right, we are in a state of Amotivation, a state where individuals don’t value the activity, don’t feel competent and don’t expect desired outcomes. For example, someone that signed up in an online course in the university even though he owns a business and the skill needed to run it. Probably this learner will drop out given the fact that in this state there is no confidence and he does not expect to do well to pass and get a certificate. Moving along the continuum we see external regulation, a part of extrinsic motivation. Here the motivation is to satisfy an external demand, a pure Skinnerian behaviorism. An example would be the typical student who does an assignment to avoid parental confrontation. In a gamified approach if the designer implements achievements, in order to foster motivation, users will perceive it us more controlling so in the long run the drop out will me more favorable.

Another type of extrinsic motivation is introjected regulation. The individual here starts to internalize by valuing the activity and taking in regulation but doesn’t accept it as his own, instead he does it to avoid guilt or anxiety or to attain ego enhancements which means that he does it for the sake of his pride. An example would be a student who chooses to study Medicine just to prove himself that he can do it. Regarding gamification, using a leaderboards or other competitive game mechanics may result in an implicit competition through the users just to satisfy their ego. The next regulation is identified regulation. Here the person values a goal and the action is accepted or it is personally important. So it is more internalize because it is more highly valued in the prior regulations described earlier. An example would be a student who takes extra language acquisition course because he wants to gain a deeper understanding of language and how it relates to her degree.

The most integrated form of extrinsic motivation is integrated regulation. Here the person is identified with the importance of the behavior, but also integrates those identifications with other aspects of the self. It’s not intrinsic motivation where the person is so engrossed in the activity that he loses time, but share lots of the same qualities. Nevertheless it forms a part of the extrinsic regulation because it is still considered as such as actions are done to attain a separate outcome (Deci, Ryan, 2000). In fact for identified regulation a person may not be interested in the activity. An example would be students who take courses even though not required just because they are consistent with their life goal. Finally we have intrinsic regulation where the activities are enjoyable per se. It is different from integrated regulation where the person didn’t have to be interested in. The activity is based on interest in comparison with integrated. Here a person is so engaged in the activity that she may lose the track of time like a student who plays video games for long periods of time.

Up today gamification industries and professionals focus in the PBL triad and the reward-based approach searching for a miracle. The majority of sites or industries that have implemented gamification today seek numbers and statistics neglecting the user’s behavior. Moreover, as we have seen all these approaches promote extrinsic motivation. So instead of implementing the PBL triad in our setting we could also promote greater engagement and motivation through three innate needs as described, once again, by Deci and Ryan (1985).

Even though rewards do work, people are not utterly motivated through rewards and punishment but actually through three other core elements that are tightly connected with intrinsic motivation: Autonomy, Competence and Relatedness. These three innate psychological needs comprise the SDT.
This theory influences also Pink (2011) who adds Purpose as a fourth component and changes the term Competence to a more appealing one, Mastery. The intersection of these three elements represents the SDT motive:

![Figure 2: Three Innate Psychological Needs that comprise SDT](image)

Pink (2011) explains that autonomy is far more important than giving a raise to employees. For him, allowing them to have full autonomy over their action, what or how they work or even with how they work with becomes a powerful motivator. Autonomy is our fundamental need to feel volitional in what we do. Autonomy is about choices, the choices we make carving our own learning path feeling that we are taking control instead of doing or fulfilling someone else's desire. The more choices and alternatives we have as users the more increased will the autonomy be and more intrinsically motivated we become.

To understand Competence, or Mastery, we have to think about the fact that the majority of people need to feel challenged something that has to do with our fundamental need to feel effective, successful and confident regarding our abilities. Competence is a powerful trigger of engagement, given the fact that the feeling of mastery of a skill can drive engagement in such levels that rewards will no longer be needed. That’s why it is a very close component to the flow mental state which is characterized by complete absorption in what one does (Csikszentmihályi, 1990). Challenge and flow are close relatives and their relationship has to be taken under serious consideration in gamified settings. To promote flow, challenge is needed. But challenge levels have to be appropriate for one’s skill. If we have very difficult challenges it is more favorable that the user will drop-out and, on the other hand, if the challenge is too easy boredom will emerge. This point of view is supported by an enlightening behavior model (Fogg, 2009) which complements our investigation and underlines three factors, relative to our research, that must converge for a behavior to occur: Motivation, Ability, and Trigger. According to him when at least
one of those three elements is missing a behavior does not occur. Finally, relatedness describes a powerful motivator too, because of our innate need not to feel alone. We need to interact with each other and experience support from others and feel that we matter feel connected without ulterior motive. One interesting aspect of these three elements is how much all of them are related not to extrinsic motivations but intrinsic ones, and more specifically to finding meaning.

**Conclusion of a Meaningful Gamification 3.0**

Through this article we underlined the fact that the field of games for learning is now mature and, moreover we have discovered various reasons why and what to implement when we once decide to go for gamification. Nevertheless we made clear that no matter how willing one is to start gamifying his classroom theory differs from practice. This procedure requires time, careful design, practice and passion. As shown earlier Autonomy, Competence and Mastery are essential to better understand and implement gamification, but, in this gamification equation a fourth variable is needed in order to have a more positive outcome. Even though through the prism of Mastery autonomous students present high levels of motivation, there are other students also who in the name of a greater purpose achieve even more. Meaning is maybe our missing variable. One of the most powerful motivators that if we tight it carefully with our gamification framework we will obtain positive results.

Earlier we stressed out that we are still in the liminal phase of gamification due to the cultural shift provoked and amplified by the generation of gamers. This shift is not only perceivable in games but in the entire society. Paraphrasing Pink, we have to inquire ourselves how our operating system has updated from a society of “takers”, being the “stick and carrot” approach the fundamental premise, to a society of “givers”. Meaning is changing the landscape and Wikipedia maybe is the best example that encloses the very definition of Meaning as an orientation to something bigger than the self. The fact that in order to experience it we do not have to contribute something of real value amplifies its significance. Good games have all good stories with such narratives that can guide action and organize everything from characters, rewards and group action in a blink of an eye. We are humans and we are actually hard wired to generate meaning. With a story running in the background our brain does the rest processing the information provided by the designer and keeping us engaged to the story and the activity. Narrative is very important and should be used for gamification to engage and provoke a mass call to action boosting even more collaboration, engagement and Relatedness.

As instructors we could use narrative in a MOOC in order to keep our students engaged providing them a learning path with clear objectives. This way we can assist our students to understand their learning path towards mastery. We strongly believe that SDT’s elements, as Relatedness, are linked closely with game narratives. Game mechanics as PBL provide completion while inside a classroom, virtual or not, but as instructors our goal is to provide meaning and cooperation as well. To accomplish that we need that the context provided to be collective and not individual in order to attach more users with our cause making the experience more collective. Secondly we have to make personal achievements (Mastery) feel like a service that benefits in the long-
term the community. By providing choices to our students they are granted the opportunity to contribute.
Furthermore, MOOCs percentage drop-out rate over the last years is relatively preoccupying, we believe that implementing a meaningful gamification framework, with strong narratives, can have positive outcomes, deeper student engagement helping our students to see how their personal efforts tie in to our educational goals.
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