A Qualitative Investigation of Gamification:
Motivational Factors in Online Gamified Services and Applications

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ABSTRACT

Gamification is commonly employed in designing interactive systems to enhance user engagement and motivations, or to trigger behavior change processes. Although some quantitative studies have been recently conducted aiming at measuring the effects of gamification on users' behaviors and motivations, there is a shortage of qualitative studies able to capture the subjective experiences of users, when using gamified systems. The authors propose to investigate how users are engaged by the most common gamification techniques, by conducting a diary study followed by a series of six focus groups. From the findings gathered, they conclude the paper identifying some implications for the design of interactive systems that aim at supporting intrinsic motivations to engage their users.

Keywords: *Design Issues, Diary Study, Game Elements, Gamification, Motivation*

INTRODUCTION

Huizinga (1949) in Homo Ludens stressed that "Play is not "ordinary" or "real" life. […] It is played out within certain limits of time and space. It contains its own course and meaning" (Huizing, 1949, pp. 8-9). Roger Caillois's (1962) defined play in a way similar to Huizinga's, as a voluntary activity that is different from ordinary affairs and is delimited by times, places, and cultural boundaries.

However, this difference between the world of ordinary life and the world of play is now gradually fading. Game elements have invaded areas traditionally characterized by the seriousness of everyday activities. Looking at some recent phenomena, we can find a variety of clues of this trend. Pervasive games merge with the everyday life world in which they take place (Montola, Stenros & Waeren, 2009). Serious games combine fun and serious aims for educational purposes (Michael & Chen, 2005). Alternate reality games are addressed to improve people's real life situations, by introducing game aspects in them (McGonigal, 2011).

In the field of Human-Computer Interaction (HCI) this phenomenon is even more visible, since an increasing number of tools are incorporating elements coming from the videogame world to make user experience more engaging and motivating. This is gamification, defined as "the use of game design elements in non-game

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contexts" (Deterding, Dixon, Khaled & Nacke, 2011), which is more and more employed in the design of digital services, interfaces and interactive systems.

By and large, the idea of merging the game world and the interactive system design is not a new subject in HCI research. Malone (1980) searched for heuristics in videogames to guide the design of interactive learning environments, making them interesting and enjoyable by leveraging users' intrinsic motivation. Funology (Blythe, Overbeeke, Monk & Wright, 2003) aimed at designing enjoyable and pleasurable user experience by taking inspiration from game design. Also Persuasive Technology (Fogg, 2003) looked for years at game elements to find suggestions for designing incentive systems, which could influence and change people's behaviors.

Despite these previous attempts to blend HCI and games, the idea of using precise design techniques taken directly from the world of game design, to make serious tools more engaging and pleasurable, is still a very recent phenomenon. Gamification does not require the development of a full-fledged game, but can count on a set of design elements that can be applied through different contexts. These elements can be ascribed mainly to the use of reward systems (e.g. points in *Yahoo Answers*), status recognition (e.g. badges in *Foursquare*) and mechanics to push user competition (e.g. leaderboards in *Samsung Nation*). The so called PBL triad (Points, Badges, Leaderboards) is nowadays used in the majority of commercial gamified applications (Werbach & Hunter, 2012) and academic works (Hamari, Koivisto & Sarsa, 2014), defining a shared language that indeed facilitates the widespread adoption of these techniques (Rapp, 2014).

Even with the current hype on gamification both in industry and academy, there is a shortage of studies that investigate how game elements employed in current online gamified services and applications are perceived by users and which kind of engagement they trigger. Researchers have focused mainly on the effects of gamification on users' behaviors, using quantitative methods for discovering whether different game elements are able to increase users' performances and participation. We argue that the users' subjective experiences, as well as the users' meanings, perceptions and feelings, still need to be clarified and are paramount to discover the motivational factors that attract and motivate participation, engagement and loyalty in current gamified systems.

For these reasons, we propose to adopt a qualitative approach to find how the most common gamification techniques impact the user's subjective experiences and how the game elements employed motivate and sustain the user engagement. From the data gathered we will proceed to extract some implications for design, to help researchers and developers in creating more engaging tools. Up to now, in fact, there is a lack of design guidelines grounded on users' needs, capable of driving and focusing the development of novel gamified tools.

To resume, the main expected contributions to the current gamification literature of our research are to:

1. Capture the subjective experiences of the users dealing with the current gamified tools, despite the external effects they may have on their performances and behaviors;
2. Investigate how the game elements employed in current gamified systems motivate and sustain the user engagement;
3. Outline a series of implications for design which could allow researchers to design more engaging gamified systems.

RELATED WORKS

Gamification is commonly employed in designing interactive systems to enhance user engagement and motivations, or to trigger processes of behavior change. Recently, HCI researchers have provided successful examples of gamified systems. Hamari et al. (2014), in a large review of empirical works, highlight how gamification has positive effects on user motivation and engagement, as well as on her performances and

participation. Barata et al. (2013a) state that experience points, badges, levels, challenges and leaderboards can increase students' online participation, engagement and proactivity in a course in Information Systems. Cechanowicz et al. (2013) point out how game elements can have an additive effect. In fact, effects on users' motivations can be increased, by combining a chore game mechanic with additional game elements. Thom et al. (2012) show how the removal of a point-based incentive system from a social network has a significant negative impact on user activities, reducing their contributions and decreasing their participation.

Even if these studies have shown its efficacy on users' attitudes and behaviors, HCI researchers have not obtained unambiguous results on the gamification effects yet. Several failures can be found in enhancing user motivations and performances by employing game elements. Hamari et al. (2014) themselves identify plenty of shortcomings in the studies they examined, such as lack of control groups, small sample sizes and limited time spans, which might have biased the participants' experiences and the results gathered. Montola et al. (2009), employing a game achievement system in a photo sharing service, find that users' reacted mildly to gamification, as achievements were deemed somewhat irrelevant. Fitz-Walter et al. (2011) in the evaluation study of Orientation Passport, a gamified mobile application to orient students during events, show that despite the added gamified achievements are welcomed by participants, once they have been unlocked users stopped using the application features. Li et al. (2012), evaluating GamiCAD, a gamified tutorial for AutoCAD beginners, highlight that levels, points and feedback improve users' engagement and performances, but while certain users have the willingness to challenge themselves to gain higher scores, others do not appreciate the pressure of the competition. Farzan et al. (2008), during the evaluation of a reward system embedded in a social network site, find that, even though participants are initially motivated to be more active, the effects of rewards quickly decay in a while.

These studies highlight how gamification is a varied phenomenon, in which some underlying factors may exist. Although some quantitative studies have been recently conducted aiming at measuring the effects of gamification on users' behaviors, there is a shortage of qualitative studies that strive to identify perceptions and meanings associated by users with the most common gamification techniques. As noted by Hamari (2013), it is insufficient to evaluate the success of gamification by taking in consideration only the metrics that measure the frequency of users' behaviors. This leads to ignore users' subjective experiences, the meanings they attribute to the gamified features and the sense of enjoyment and fun that they may feel. Up to now, to our knowledge, no qualitative study has been carried out to evaluate how gamification techniques employed in common commercial applications available on the market are received by users. To this purpose, we conducted a diary study to investigate how the game elements employed in online gamified services and applications sustain and motivate the user engagement and participation.

METHOD

Current literature on gamification lacks data and insights about the subjective experiences that may arise when using a gamified system. A gamification implementation is commonly tied into the consequential utilitarian activities of the service (Hamari, 2013) and is evaluated through numbers and statistics, which aim at discovering whether the user participation has increased after the intervention. Metrics, such as performance, success and retention rates, can highlight, through objective data, that gamification has enhanced or reduced the usage activities. However, they do not necessarily gain an understanding of the quality of the user experience or how the participants are engaged by the system under evaluation.

In HCI, we are now aware that the focus on performances and rates alone is not enough to design an effective interactive system. Nowadays, an increasing need to understand how

design issues are subjectively experienced and perceived by users is spreading among the HCI community. Identifying the users' emotional drives, along with their perspectives, motivations and expectations, is becoming essential in HCI research (Adams, Lunt & Cairns 2008). In addition, studying the use of technology "in the wild" (Rogers, 2011), leaving users free to use a system without constraints and for their own situated purposes, is also becoming important in understanding how people integrate technologies in their everyday activities.

HCI researchers are therefore turning to more qualitative methods (e.g. Rode, Blythe & Nardi, 2012). With qualitative research, the emphasis is not on measuring and producing numbers, but instead on understanding the qualities of a particular technology and how people use it in their lives, how they think about it and how they feel about it (Adams et al., 2008). Although the sample size is smaller than that of the quantitative studies, the validity of this approach relies on the richness and the deepness of the data gathered, allowing the researcher to discover subjective experiences and answer to *how* and *why* questions (Marshall, 1996).

A qualitative approach applied to the study of gamification can find aspects that are currently not addressed by quantitative investigations: are the current game design elements used in non-game contexts really able to create "gameful and playful experiences" (Deterding et al., 2013) and increase the joy of use? Apart from the effects they may have on the users' performances, how do the users see these design strategies and how are they engaged by them? Is the perceived enjoyment (van der Heijden, 2008) provided by gamification techniques comparable with that experienced by players in games? Are there different ways to bolster the power of games, apart from the well-known design techniques used in the current gamified systems? As all these research questions are unanswered in the current gamification literature, we decided to conduct a qualitative investigation focused on the most common gamification systems available on the market to address them. Among the qualitative research methods, we elected to conduct a diary study.

Diary studies are a research technique employed to understand users' behaviors in the field: they differ from other field studies since they are aimed at reducing the effects of the researcher, giving participants the control over the aspects of the behavior to be recorded, the time of recording and the process of recording itself (Carter & Mankoff, 2005). Diary studies involve repeated self-reports that aim at capturing reflections, moods, events near the time they occur. A diary study commonly asks users to fill on a daily basis a paper diary or a notebook, where they have to record the time of an event, the context in which it happened, its significance for them and the feelings associated to it. Diaries can be employed to record negative and positive situations as they arise and related emotions and thoughts. In addition, such studies stimulate users' self-reflection asking them to focus on meanings and perceptions that characterize their subjective experience, leading to more personal accounts (Church & Smith, 2009).

Diary studies are widely used in psychological research, allowing investigators to capture daily experience in participants' own environments. Csikszentmihalyi et al. (1977) prepared the ground of this method, structuring reporting forms and response intervals to make the data gathered more systematic than those obtainable from free-form diaries. In HCI, this technique has been employed to investigate the usage of different technologies and applications, such as SMS (Grinter & Eldridge, 2003), tools to support multitasking in work environments (Czerwinski et al., 2004), mobile devices (Sohn, Li, Griswold & Hollan, 2008).

We are aware that some imperfections may arise through a diary study, due to e.g. the interruption of the natural flow of everyday activities requested by the act of recording, or data missing because of the selectiveness of participants' reporting. However, we thought that this technique would be the most effective methodology to gather users' needs and identify

issues during the usage of gamified tools in a real context of use.

In fact, diary studies can capture data in situations that would be difficult to observe directly by another person because of physical or social reasons. Participants can record their feelings and thoughts immediately after they occurred, throughout all day (even, for example, when they are in their bedroom at night, where no one would have access), by filling a diary. In addition, diary studies allow researchers to assess how the experiences vary over time, whether there are systematic changes across days and what processes underlie a person's changes (Iida, Shrout, Laurenceau & Bolger, 2012). We wanted to investigate all these factors to discover how the use of gamified features is carried out throughout the everyday activities and how the perceptions related to them can vary over time.

After the one-month diary study, we conducted six focus groups to discuss the data collected by participants. Diary studies alone do not allow the researcher to discuss with participants the implications of events and actions, as happens in contextual inquiries. Using the data captured by participants as prompts for discussion in focus groups we were able to overcome this issue. We prefer this method to the individual interviews to gather rich insights evolving from the group discussions, believing that, through the reciprocal confrontation, participants would better understand and therefore explain their own experiences.

Participants

We recruited 36 participants, 23 males and 13 females, through mailing lists and announcements (Table 1). The participants ranged in age between 18 and 40 with an average of 23. Twenty of them were students, ten were employed and six were unemployed. In a pre-questionnaire, participants were asked about their social networking, videogames and mobile phone use habits. All participants owned a smartphone and used regularly at least one social networking site (e.g. Facebook and/or Twitter). Eighteen participants regularly played videogames (more than 5 hours/week), fifteen played occasionally (less than 5 hours/week), and three did not play at all.

The sample size (36) was considered adequate to the purposes of the study and for the standards in qualitative research in HCI (Marshall, Cardon, Poddar & Fontenot, 2013). Other studies with similar design and purposes in HCI field have adopted a similar or smaller sample size: Grinter & Eldridge (2003), in investigating the practice of texting by teenagers, recruited 10 participants in a diary study; Czerwinski et al. (2004) conducted a diary study on the activities of information workers recruiting 11 participants; Sohn et al. (2008), studying the people's mobile information needs through diaries, recruited 20 participants.

Participants' engagement with the app assigned during the one-month period of the research was voluntary and they were not compensated both for the diary study and the one-hour focus group.

Table 1. Sample

Application	Tot Users	Sex		Videogame Usage			Work		
		M	F	High	Low	No	Stud.	Emp.	Unemp.
Foursquare	**12**	8	4	6	5	1	8	3	1
Nike+	**12**	7	5	6	5	1	4	6	2
Getglue	**12**	8	4	6	5	1	8	1	3

Procedure

We selected three gamified applications in three different fields (localization, sport and entertainment) among the most popular and typical available on the market: Foursquare, Nike+, and Getglue. They employed points, badges and leaderboards, commonly recognized as the most common game elements used in gamified systems (e.g. Werbach & Hunter, 2012; Hamari, 2014). The three applications were selected after a benchmark of over 30 gamified applications (32). We took into account different factors in the selection process. First, we wanted to choose the gamified apps that better represented the most common and widely accepted game elements in gamification practices. Selecting a typical/emblematic case as the subject of a qualitative study is essential to make a generalization of its results (Gobo, 2008). Second, we wanted to enhance the heterogeneity of the cases, in order to compare the results gathered from different applications. Finding similar results in different cases can ground better a qualitative research, giving robustness to the shared traits found (Platt, 1988). Foursquare is the most cited application when talking about badges (e.g. Laschke & Hassenzahl, 2011). Although, recently, it phased out the gamification elements, Foursquare, as it was at the time of the study (before the release of Swarm), represented the prototypical case of an app that employs badges, one of the most common gamification features. GetGlue (now tvtag) was chosen as an app similar to Foursquare, as it employs similar mechanics, but focused on a different topic (users can make check-ins to tv shows and movies)[1]. Nike+, instead, focuses on different game elements from those enforced by Foursquare, but, at the same time, it represents the empirical case closest to the "ideal type" (as Max Weber (1949) intended it) of a gamified app based on competition, points and leaderboards.

We divided participants into three groups of twelve: one had to use Foursquare (P1-P12), the second Nike+ (P13-P24), and the last one Getglue (P25-P36). Applications were assigned with the following criteria: i) interest of the participant in the specific app topic; ii) no previous experience with the app, as we wanted to investigate the process of engagement with the app assigned from the beginning, monitoring changes throughout all the user journey; iii) equal distribution among the groups of the participants that regularly played to videogames, as players could have a more critical gaze on the game elements leveraged by the apps.

Participants had to download the assigned app on their smartphones and were invited to use it in all its functionalities, also to regularly access the app's website, one or more times a day depending on their needs and desires. Furthermore, participants were asked to fill in a diary with all their needs, perceptions and issues related to the usage of the app, immediately after an important event has occurred, and in the evening, when they had to retrace their daily experience and write their personal thoughts and emotions. Researchers gave each participant written instructions and an electronic diary in the format of a Microsoft Word™ file, with tables representing each day of the experience, in which rows represented the aspects we want to be recorded. Rows were created for *daily engagement with the app*, *satisfaction for the rewards gained*, *emotions generated by the app usage, thoughts related with the usage of the app.*

Assigned tools had to be used for one month by each person. Participants showed to have a high compliance in the tasks assigned. Failures in filling the diary were equally distributed along all the period of study (with no peaks in the last phases of the research). Thus, the decreasing engagement that some users showed during the trial was likely to connect with a fading interest toward the app, and not toward the study itself (they continued to fill the diary even in those days in which they did not use the app assigned, noting thoughts about why they did not use the app in that day).

At the end of the study participants were invited to a focus group session where they discussed their experiences with the gamified apps. Data gathered during the diary study were used as prompts. We organized six focus

groups. Each focus group was composed by six participants that used the same app during the study. Focus groups lasted 65 min on average. Focus group sessions were recorded, transcribed and analyzed through a thematic analysis (Braun & Clarke, 2006).

RESULTS

As highlighted in Table 2, which resumes the results gathered from the diaries through the participants' own words, participants did not dislike the apps assigned at all, but showed a decreasing engagement toward them as long as the study proceeded. Negative thoughts, feelings and judgments were more frequent at the end of the study, showing that the apps assigned were unable to maintain the level of engagement at a certain stage.

Game elements, such as points, badges and leaderboards, didn't prove useful in providing participants with an involving experience. As their familiarity with the gamified features increased, participants characterized the usage of the apps under evaluation as repetitive, static and scarcely rewarding.

During the focus group sessions, they confirmed the issues emerged from the data gathered through the diaries. The confrontations enriched the diaries' data, allowing participants to comment and expand them, comparing each others and finding similarities and differences in their experiences.

In what follows we report extensively the results of the focus group discussions, integrated with the information gained from the diaries, dividing them in four main subsections.

Lack of Meaningful Rewards

Rewards provided were perceived as meaningless by the majority of participants that had to use Foursquare and Getglue. This lack of meaning relies mainly in the fact that rewards were not given in response to efforts that users considered important. Participants highlighted how, in games, rewards are provided for the endeavors players manifest in in-game activities, which often require a considerable amount of time to be accomplished and are always considered valuable by players. "In Guild Wars 2 – said P36 - I can't obtain something if I don't put effort into the game. And it's not like here, pressing a button, sharing an information… there I have to be a good player, it's completely different". In the gamified apps assigned, on the contrary, rewards were obtained by performing trivial tasks that did not require any particular endeavor. P27 stated that "I obtained badges almost for everything I did. Having so many reduces their value", while P8 highlighted that "I won the adventure badge… what matters? I only made check-ins in a lot of places" and P3 said that "everyone can make a lot of check-ins, why should I be rewarded?".

This results in voiding the user experience, pushing users to "game the system" and to ignore the services provided by the gamified apps. P7, for example, recounted that "I made a lot of check-ins everywhere during this month, but I wasn't interested at all to let my position know to the others… I only wanted to push the system and see how many badges I could gain".

Other participants pointed out a different problem. They highlighted how points and badges were useless, unless they could be exchanged with physical objects or monetary rewards. For example, The majority of Foursquare's users thought that transforming virtual points in monetary prizes could motivate them more. P3, who used Foursquare during a short trip in Berlin to get discounts in bars and restaurants, said that "Obtaining a discount is a good idea… it gives sense to using the app". Other participants, using Getglue, agreed that having tangible rewards would make things totally different, since "they would be used in some way, for example attached to other objects to be showed around", as said P35. P34 highlighted that having physical prizes, such as real stickers, would have been more motivating, giving a meaning to the badges provided. However, when asked why this kind of exchange is commonly not necessary in videogames, participants, like P32, responded that rewards are useful in the game system of meanings, as they allow him to do something, such as unlock new opportunities.

Table 2. Diary results (sample quotes from the participants' diaries in the cells)

Foursquare	First Week	Second Week	Third Week	Fourth Week
Engagement	"I used it five times today. I challenged some friends I invited. I want to get more points" P4. "Today 6 check-ins 18 points" P3	"One check-in today at my university. Not so motivated in doing anything else" P4. "I searched a restaurant. Useful tips" P3	"I forgot to use the app today. It doesn't seem useful to me anymore" P4. "I saw where my friends were. I didn't look at badges" P3	"5 days not using the app. I will cancel it tomorrow" P4. "Used the app two times, but ignored the game stuff" P3
Feelings	"I had fun today in discovering new badges" P7	"I'm not a narcissist, but I felt well when I became the mayor of my favorite bar. It's a matter of vanity" P1	"I felt a sense of automatism in the last few days" P2. "Bored. The game is repetitive and aimless" P9	"Boring app, no-sense in having badges" P8. "Annoyed by the whole thing. Game stuff is definitively useless" P6
Thoughts	"Interesting app for letting my friends know where I am" P5	"I like the service. It would be cool even without badges and points" P5	"I'd like to be rewarded with different prizes for different actions" P10	"I don't feel any advancement It's not like a game" P11
Rewards	"Cute badges they surprised me" P8. "Just gain Crunked badge. Cool!" P6.	"I made 6 check-ins, but only to get a badge. I weren't in those places" P7	"It would be better to have discounts and money prizes" P10	"Badges are all the same. They are only images" P11
Nike+	**First Week**	**Second Week**	**Third Week**	**Fourth Week**
Engagement	"It pushed me to run more today" P14	"This week I ran more than the previous. Maybe it's the app" P14	"A bit cumbersome to maintain the same level of the previous week" P14.	"I used the app only to see the km I ran. I didn't check the leaderboard" P14
Feelings	"I felt great in winning a challenge" P13	"I'm satisfied to better my performances each day" P23	"I'm frustrated that I'm always the last in the leaderboard. It's not fun" P20	"I'm feeling a bit anxious in showing all my performances to others" P19
Thoughts	"Why not adding some features that allow us to cooperate and not only compete?" P19	"It would be nice to advance through stages as in videogames" P17	"Too much competition is not a good thing. We already compete everywhere" P24.	"I won many races, but I don't know where I'm going. Where is the end?" P23
Rewards	"Points reflect how long I trained this week" P18	"I won against my friend. It's the best reward for me" P15	"It's not a position up that makes the difference, but the fact that I'm well-trained now" P18	"No more effects of leaderboards on me. I'm using the app 'cause it keeps track of my paths" P21
GetGlue	**First Week**	**Second Week**	**Third Week**	**Fourth Week**
Engagement	"I made check-ins for the two movies I've seen. Cute stickers, I want the others" P27	"I've done a check-in after two days without opening the app" P27.	"I'm not interested anymore in stickers" P27.	"I didn't open the app today just like yesterday and the day before" P27.
Feelings	"Sense of discovery in finding what my friends were watching" P31	"I felt a desire of collecting every sticker in the app this morning" P29	"I'm not involved in getting badges. They don't represent any value for me" P31	"I expected more fun" P26
Thoughts	"Good idea to give badges but games have much more to give" P32	"Varying tasks and possibilities can make the service more similar to games" P28	"Increasing the difficulties to obtain the stickers would make it more involving" P29	"It's static. It's not a game at all. No sense of wonder or possibilities. No goals" P28
Rewards	"Nice stickers. Very well designed" P29	"having physical stickers would be more motivating" P32	"It's not so important to have them in the end. They're all alike" P29	"No meanings in stickers obtained without efforts" P36

The participants who have used Nike+, on the other hand, appreciated more the rewards provided by the app. This is due to the fact that in Nike+ rewards are connected to the physical performance of users (i.e. kilometers run). Points (i.e. NikeFuel) and achievements of goals are linked to the efforts that participants accomplished during their trainings (e.g. run more, run faster, etc.). They were, however, perceived as mirroring the users' performance,

which could be retraced for monitoring their self-improvement, rather than as prizes for a game challenge.

Lack of Variety

Participants' opinions of the gamified experience were somehow unanimous. Participants associated it with the idea of repetitive actions, to be always performed in the same way. Users of Foursquare and Getglue highlighted that repetition can lead only to a boring experience, in which the gamified tasks are accomplished mechanically and unable to provide the magical magnetism of games. In fact, for P9 this experience is opposed to the one she had when playing videogames: "there is no sense of discovery... it's always the same, doing check-ins, getting points", while P28 stressed that "you can use this app one time or a thousand of times, but you are able to do only one thing to get a sticker". This sense or repetitiveness is felt along all the user journey as "In this gamification - said P16 - there is nothing of the variety of gameplay of the games I love most… changing when the game changes is fun".

This issue was even present in Nike+, where users could self-set their goals, engage in training programs, or challenge their friends. Nevertheless, the subjective experiences of participants were tied in a flat journey, where their possibilities of engagement in differentiated "game tasks" were limited at minimum. Several participants, then, did not appreciate the exclusive focus on competition among users that the app highlights. P24 reported that "I consider running a pleasure, why do I have to push myself to compete with others?" and P19 "Personally, competing for a position in a leaderboard is somehow stressful for me… and this app doesn't offer much more a part from these challenges". Anyway, almost half of the participants used the app to challenge their friends, reporting that competition sometimes made them run more. The other half noted, though, that this kind of mechanic could be motivating only for people who run at competitive level, or have some physical goal they want to reach, but not for those like P14 who "run to free my mind, not for working another hour".

Lack of Progression

Participants felt no sense of progression using the apps. The lack of barriers or increasing difficulties prevented participants to feel a sense of progression in their actions during the usage of the apps. Users of Nike+, for example, reported that they were unable to make progresses "in the game", as the app promoted only the competition among different players. In fact, as said by P22, "the app lacks in providing challenge against the game", while P21 highlighted that "I can face my friends, but what if I don't have friends that use it?... I can't challenge the system or encounter barriers to overcome… there is no advancement, it is monotone". These desires of experiencing growing obstacles and of overcoming increasing goals were shared among most of the participants, as a way to give more dynamism to the user experience. P11, for example, noted that "When I play I expect that the game becomes more difficult, more challenging as long as I keep on playing", but in Foursquare "all is frozen to the initial state", while P2 reported "I wasn't focused in reaching a goal, because there weren't real goals to reach at all".

The comparison between the gamified features and the world of videogames is one more time illuminating. P26, for example, stated that "as long as I proceed in videogames, the skills required change, the levels change, the game changes at all… but all is flat and boring here". Games provide a variety of game mechanics that make players feel a sense of progression. For example, participants reported that, in games, rewards allow them to make progress in the game world, making the character more powerful and advancing through the game stages. In the gamified apps, instead, the rewards provided don't allow users to "advance in the game" and no other mechanisms are provided to this aim. P11, for example, stated that "when I play, points make me progress in game, giving me more abilities, enabling me to face new and

more powerful monsters... there are no monsters and no levels here".

Lack of Engagement

The majority of participants showed to be engaged by the apps assigned during the first days of the study, but, as time went by, their involvement decreased progressively. This represented not only the result of a meaningless, repetitive and static experience with the gamified apps, but also by the fact that the game elements employed acted only on users' extrinsic motivations.

Using Foursquare, for example, P4 did a lot of check-ins in the first week, mainly pushed by the desire of discovering which kind of badges she could gain and collect. After ten days she started getting annoyed, and after three weeks she stopped using the app: "this gaming stuff can work to attract someone immediately, but if the contents of the app don't engage you, who cares?". P2, P6, P7, P8, P9, P10, P11 and P12 showed the same initial interest, which progressively decreased as the gamified activities were not accomplished only for the joy of doing them. These users perceived the game elements employed as extrinsic motivators able to engage them immediately, but not apt at promoting experiences carried out for their own sake. Participants highlighted that they were using the app distractedly and were scarcely involved, although at the beginning of the study they thought that gamified features would have a pull in the usage, as they were used to experience when playing a game, whishing that "all these points and game stuff were used to create something that glues me to the screen", as stated by P10.

P1, P3 and P5, instead, kept using the app for the whole period of the study, as they were interested in the service the app provided. However, game elements were not considered essential, and not even important, in motivating them in the usage. Instead, they were felt to be a superfluous add-on. P3, for example, stated that "I make a check-in only when I want to let my friends know a cool place where I am, not for the game sake" and P1 highlighted that "it's not for the game that I used it, but because I like to let my friends know where I am".

The same pattern was observed in the usage of the other two apps under evaluation. For participants who were not already intrinsically interested in the services provided, game elements did not sustain their engagement in time. For others, game elements did not enriched their experiences, as exemplified by the words of P33 who said that "if you like the app, you don't need badges". An exception is represented by P25 and P13 that thought that game elements made them use the apps more frequently than they expected for the whole period of the study, ascribing to gamification the feeling of being engaged.

DISCUSSION AND IMPLICATIONS FOR DESIGN

The current hype on gamification in industry and academia has triggered a variety of expectations that unlikely will be maintained if designers and researchers will not rethink some of its elements in the years to come. In 2012, Gartner predicted that "by 2014, 80 percent of current gamified applications will fail to meet business objectives primarily because of poor design" (Gartner, 2012). This risk is here now.

Findings of our research indicate that the most common game elements employed in commercial gamified apps can't improve the quality of the user experience. Gamified features were able to involve our participants only in superficial way. They created great expectations of engagement, but betrayed them very soon, due to the shortcomings we outlined.

The frequent references to "real game" experiences throughout all the user study, both in the data gathered through the diaries and in the focus groups, are used by participants to remark the differences that separate gamification from games, much more than the similarities that they can observe between them. This attitude expresses an appreciation of the idea of embedding game elements in non-game contexts, but

also a deep dissatisfaction for how this idea is actualized in the current applications.

Obviously, the validity of the services that these apps provide is not in question. All the apps evaluated have a large user base and have reached a huge popularity. The insights that come from our investigation point to the efficacy of the gamification techniques in providing a "gameful" or "playful" experience. Game elements should enhance the joy of use of a given application and engage even those users that are not immediately attracted by or interested in the services it provides. In fact, gamification platforms often push for amazing results, in terms of effects on users' behaviors and increased user participation. However, as things stand, those results are pursued by simply adding the same game elements to existing environments, in a form that reminds a prepackaged solution, instead of a design process aimed at satisfying different users' needs and desires.

Results gathered from our study show that these game elements motivate users only in the first stages of the user journey, exclusively leveraging extrinsic motivators, and that the lack of meaningful rewards, progression and variety impoverish the user experience, instead of providing a gameful one.

In what follows we try to point out the most interesting findings emerged in the previous sections and connect them with the implication they may have in designing gamified systems.

Support the development of intrinsic motivations. Self-Determination Theory (Deci & Ryan, 1985) conceptualizes motivation along a spectrum that goes from amotivation, a complete lack of purpose in doing an action, to extrinsic motivation, in which individuals are engaged to gain rewards that are external to the activity itself, to intrinsic motivation, in which individuals are moved to action by the inherent pleasure and satisfaction the activity can provide. Intrinsically motivated behaviors require, to be maintained, the satisfaction of the basic needs of competence, autonomy and relatedness and they are associated with better learning, performance, and well-being (Deci & Ryan, 2000). Gamification should not act exclusively on extrinsic motivators, if it is aimed at creating a long standing user engagement. Although Mekler (2013) showed that rewards do not reduce intrinsic motivation in non-game environments, many research highlighted that they could determine a detrimental effect on the users' intrinsic motivation (e.g. Deci et al., 1999).

In our study we found that current online gamified systems support only extrinsic motivation. As a result, participants that were already intrinsically interested in the usage of the services provided considered the game elements employed in the gamified apps as superfluous add-ons, non influential in their experience. The others expressed an initial appreciation for badges, points and leaderboards, perceiving them as fun and fancy elements, but after a short time their perception changed and their engagement started to fade away, as these game elements were unable to elicit their intrinsic motivations.

These findings stress that extrinsicc motivators alone are not enough to maintain the level of engagement at a certain stage. Extrinsic motivators should be employed to quickly draw in users in the activities of the system. However, as long as their experience proceeds, gamification should promote the development of intrinsic motivations, by employing gamified activities that are able to move users to experiences that are carried on for the spontaneous pleasure they elicit. Otherwise, as our study highlighted, the user engagement is doomed to fade away.

Support the creation of meaningful rewards. Rewards, such as badges and points, are symbols that represent something else. What is rewarding, and what has meaning, is not the representation itself, but what can be exchanged with it (Miltenberger, 2008). Gamification often not only confounds the creation of a pleasurable experience with the implementation of a reward system, but also provides rewards that fail their goals, resulting in not being gratifying for users.

Participants showed how the rewards given by the current gamified systems lack of meaning. Points and badges were perceived as useless virtual objects. Rewards acquired a

sense only if exchanged with objects external to the system, as they were considered worthless for the aims pursued within the apps. This explains the participants' wish of having their points and badges converted to monetary prizes or physical objects. In games, on the other hand, as stressed by our participants, rewards have meaning in the game system. Rewards should then be designed for meaningful in-system purposes, enabling users, for example, to unlock contents, opportunities or privileges.

To make them more meaningful, participants also suggested that rewards should be obtained not from trivial actions, but from tasks that require some kind of effort from the users. In fact, when they are provided for trivial actions, they become void shells that can, at best, foster automatic behaviors for gaming the system. Gamification should investigate and recognize what is really rewarding for users, creating representations that have sense within the system designed and gratify users for their efforts.

Support the sense of advancement. Flow theory describes a psychological state defined as flow, in which "people are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it" (Csikszentmihalyi, 1990, p. 4). Flow is experienced when there is a perfect balance between challenge and skill in executing a task. In games it can be represented by a narrow way that lies between frustration, when challenges are too high, and boredom, when challenge is too low for the skills of the player.

Participants reported a shortage of goals and barriers that made their experience with the gamified systems boring. They reported the desire of feeling a sense of progression, while the game elements employed were only apt at conveying a sense of static nature, tying them in a flat and frozen journey. As long as they kept using the apps, they would have liked to find new barriers to overcome and develop new skills for facing more challenges.

As participants highlighted, game elements should foster the sense of advancement by providing new barriers as long as the users' skills increase. Gamification should calibrate the gamified experience it provides to the abilities of its users, giving them the opportunity of experiencing challenges of increasing difficulty. At the same time it should make them feel they are actually progressing towards defined goals, which gradually become harder to achieve.

Support cooperation along competition. Individuals differ for their interpersonal orientation, i.e. in the degree to which they are naturally collaborative (extroverted) and trusting (agreeable). Research found that teams with extroverted and agreeable members perform better under a cooperative reward structure, while teams low on these attitudes perform better under a competitive reward structure (Beersma, et al., 2002). Siu et al. (2014) showed that players, when given the choice, tend to play either collaboratively or competitively but rarely use both strategies: this resolves to distinctly collaborative or distinctly competitive play styles, suggesting that different mechanics may be used with different players.

Our participants expressed the need of a design that does not focus only on competition among users. If some enjoyed the opportunity to challenge and overcome other users, others were stressed by a competitive environment. These different attitudes suggest to adopt strategies that foster not only the competition among users, but also their cooperation, offering an engaging experience also to those that are naturally extroverted and agreeable.

By focusing exclusively on competition, through e.g. points and leaderboards, gamification risks to motivate and engage only the individuals oriented to struggle, discouraging those more inclined to collaborate. Gamification should take into account the individual differences and preferences of users, offering a varied experience to maximize their satisfaction.

With these four implications for design we completed our contribution to the current gamification literature. First, we highlighted the users' subjective experiences when using a gamified system, through a qualitative approach, investigating the users' emotions,

perceptions and thoughts, which commonly remain hidden when using a quantitative approach (first contribution). Then, we pointed out the motivational factors that rely behind the usage of the online gamified services and applications, stressing that the needs of having a diversified experience, of feeling a sense of progression, of being gratified by meaningful rewards and engaged by intrinsically motivated activities were not satisfied by the current gamified apps (second contribution). Finally, we extracted four implications for design that are aimed at supporting the user engagement and favoring the creation of a gameful experience (third contribution).

These implications could be exploited by designers and researchers to create more engaging tools, by going beyond the most common elementary game elements employed today. They could also be used as a basis for further studies. Our results pointed out that games have a lot of insights to offer to HCI researchers. From this point of view, the design suggestions outlined represent a starting point for further investigations that should address the players' in-game experiences. Exploring real videogame environments, and how players are engaged, immersed and committed by them, is a way to identify new game elements suitable to be employed in non-game contexts (Rapp, 2013). This could lead to expand the design suggestions we proposed, articulating them more and finding new ones.

How would it be possible to recall even in serious contexts the same sense of fascination, challenge and absorption that players feel when they are playing? How to replicate the motivational and behavioral dynamics that lie behind the video game world even in non-game contexts? To answer these questions we have to move away from what we now call gamification and start observing how players play. From their point of view, new insights will bloom for the gamification design. This will be the topic for a future work.

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ENDNOTES

1 Differently from Foursquare, GetGlue allowed users to request a physical version of the stickers (badges) they earned online. Although this feature is no more present in tvtag, users were aware of its existence.

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