Motivational, Ethical and Gamification Issues in Crowdsourcing

Liam Murray[1], Marta Giralt[2]
School of Modern Languages & Applied Languages
University of Limerick
liam.murray[1], marta.giralt[2]{@ul.ie}

Abstract

This paper investigates a number of important issues related to ethics, motivation and gamification. Gamification has previously been presented and identified as an area containing high potential for learning (Perry, 2015), and may therefore be judged worthy of investigation when applying crowdsourcing techniques. In addition, this paper will cover issues related to learner retention and motivation. We will further pursue this area by including major points on ethical and motivational considerations, drawing upon our previous research on gamification (Buckley, et al. 2018) and aim to relate them to crowdsourcing.

Keywords: Gamification, Crowdsourcing, Gaming, Motivation

1. Introduction

Gamification has been defined as the use of game design elements in non-game contexts, and has proven to be highly effective in motivating behavioural change. It must be pointed out that this does not necessarily mean making everything into a game. By interpreting game elements as "motivational affordances" (Deterding, 2011; Jung, Schneider, & Valacich, 2010; Zhang, 2008), and formalising the relationship between these identified elements and motivational affordances, it is our conviction that gamification can be effectively used to improve software systems across many different and distinct application domains.

The research reported here seeks to illustrate the direct relationship between game elements and motivation, and proposes the more systematic employment of a strictly defined type of gamification.

We will show a previously developed framework which linked the most commonly-present game elements with the components of a psychological motivational model known as Self-Determination Theory. The ongoing goal is to inform system designers who would seek to leverage the gamification of such game elements what they would need to employ as motivational affordances. In order to do this, we will show comparisons of game elements and a recently established framework, known as GaMDeF - "Gamification–Motivation Design Framework" (Buckley, DeWille, Exton, Exton, & Murray, 2018). Furthermore, we will reveal the various interrelationships that exist within game elements.

However, gamification is not without its critics, as it is currently practised in the world of marketing and customer loyalty. Zichermann (2011) believes that he only needs to provide users with rewards and status, in order to encourage them to participate in a system. This reductivist approach to presenting the powerful influence of games as nothing more than rewards exasperates games critics such as Bogost (Bogost, 2011, 2014), and Deterding (2011b), who sees Zichermann's approach as allowing customers to be "(fleeced) to the benefit of the company", rather than games that enhance or improve the gaming experience. Deterding (2011b) goes on to claim that Zichermann lauds those game designers that "dupe customers", manipulating them to undertake tasks they would not otherwise do, and Bogost (2011) characterises the resultant systems as "exploitationware" and worse. As regards motivation, this may be described in its simplest form as the sense of being "moved to do something" (Ryan & Deci, 2000, p. 54), however, it may also be about the "choice" of an action and the "effort" expended on it (Dörnyei, 2001, p. 7). Whilst other researchers believe that more importantly than 'effort', a player's in-game behaviour is driven more by individual volition than by external factors (Fenouillet, Kaplan & Yennek, 2009, p. 49). Therein lies the rub between ethics, motivation and gamification. In this paper, we will explore and discuss the important implications of these three aspects and how they relate to each other and to crowdsourcing.

2. Background

Offering as a background to the different aspects that are going to be discussed in this paper, we will present the outline of the different sections that are covered and developed in it. With gamification being one of the main concepts and ideas that we are discussing, some definitions need to be considered and briefly examined to set the ground for one of the main questions: "how much gamification is required?" As we are also exploring motivational and ethical issues, it should be noted at the outset that when employing gamification we are attempting to change or modify a behaviour or behaviours

After reviewing various pertinent theories and terminologies related to game elements within the gaming literature, we chose 3 main sources (Fitz-Walter, 2015; Seaborn & Fels, 2015; Werbach & Hunter, 2012) to build the GaMDeF (Gamification-Motivation Design Framework) model which is presented, extended and localised here. This consolidated and evaluated framework brings together 19 game elements with 3 of the main components of motivation. Finally, we will discuss the use of gamification and games to collect data generated by users as implicit crowdsourcing technique and ethical considerations will be debated.

2.1 Definitions

At its most basic, we can define gaming as the '*willing acceptance of a challenge*'. Ferrara (2013) has convincingly shown that games "are able to communicate persuasive messages" (p. 294). While this can be seen as a negative phenomenon, where innocent game players are exploited by gamification designers, Gee (2016) has long argued that persuasion can be used for positive behavioural change. Accordingly, Ramirez and Squire (2014) suggest that gamification (the use of game design elements in non-game contexts) should be an item in an educator's

motivational toolbox. The inevitable caveat comes from Iacovides et al, (2013) who show how games are increasingly incorporated into online citizen science (CS) projects as a way of crowdsourcing data; yet the influence of gamification on volunteer motivations and engagement in CS projects is still unknown. They found that game elements are not necessary for attracting new volunteers to a project; however, they may help to sustain engagement over time, by allowing volunteers to participate in a range of social interactions and through enabling meaningful recognition of achievements. Their findings have also been strongly supported by evidence from Fort *et al.* (2017).

2.2 Motivation and self-Determination theory

There are "over twenty internationally recognized theories of motivation" (Dörnyei, 2001, p.12), but it is way beyond our scope to cover them all. Instead, we concentrate on SDT, a theory proposed by Ryan and Deci (2000) which suggests that Competence (mastery e.g. boss fights), Autonomy (choice e.g. DownLoadable Content) and Relatedness (social connection e.g. *World of Warcraft* or *Fortnite*) are the constructs that drive motivation. SDT extends Constructivism (individual constructing their own meaning), with the individual being afforded the chance to experience Autonomy.

Game element	Werbach & Hunter, 2012	Fitz-Walter, 2015	Seaborn & Fels, 2015	Alternative names across articles
Achievements	X	X	X	
Avatars	X	X	X	
Badges	X	X	X	
Gifting	X	X	X	
Leaderboards	X	X	X	
Points	X	X	X	
Levels	X	X	X	Status/ Progression
Quests	X	X	X	Narrative
Teams	X	X		
Virtual goods				
Boss fights	X	X	X	Competition/goals/ mini games
Combat	X	X	X	Challenges
Collections	X	X	X	Feedback/ tangible rewards
Content-unlocking	X	X	X	Feedback/ tangible rewards
Social graphs	X	X	X	Feedback/ tangible rewards

Table 1: Comparison of Game Elements Mentioned in Three Major Sources.

GAME ELEMENT	COMPETENCE	AUTONOMY	RELATEDNESS
Achievements	§	§	
Audio-effects	§	§	§
Avatars		§	§
Badges	§		
Boss-flights	§	§	
Collections	§	§	§
Combat	§	§	§
Content-unlocking	§	§	§
Discussion forums			§
Gifting		§	§
Leaderboards	§		§
Levels	§	§	§
Points	§	§	
Quests	§	§	§
Realistic graphics	§		§
Social graphs	§		§
Teams	§	§	§
Virtual goods	§	§	
Downloadable Content (DLC)	§	§	§
TOTALS	16/19 compete.	14/19 autono.	14/19 related.

Table 2: The consolidated, evaluated GaMDeF (Gamification–Motivation Design Framework)

When these mental models allow for feelings of competence, autonomy and relatedness, then the learner is more heavily involved in their own learning. Games, as described by Prensky (2003) enable players to build on their existing knowledge and extend the limits of their competences. This concept of creating additional knowledge by repeating previously learned tasks is, of course, an important part of constructivist learning theory, where constructivists argue that we bring prior knowledge to everything that we learn, and it is how this previous understanding is enveloped into new material which defines its appropriation.

2.3 Key question: how much gamification is required?

There is therefore an established direct relationship between game elements and motivation. A previously developed framework linked the most commonly present game elements with the components of a psychological motivational model known as the Self-Determination Theory. Our aim was to inform system designers seeking to use gamification about those game elements they would

need to employ as motivational affordances. We made comparisons of game elements and established a framework, known as GaMDeF - "Gamification–Motivation Design Framework" (Buckley et al, 2018). Here, we will show the various inter-relationships that exist in game elements and those which carry most relevance to our Working Group 3 area whilst attempting to quantify gamification for our purposes.

Table 1 reveals the sources upon which was built the initial framework.

Table 2 describes the consolidated, evaluated GaMDeF (*ibid*.) but it has also been updated and extended to include another factor known as DownLoadable Content (DLC). This recent development in gaming generates high profits for game developers; it may also affect motivation, for good or bad (McDaniel, 2016). Quantifying the level of gamification in a learning or crowdsourcing task is ultimately a fungible activity. Each 'gamified' activity may be interchangeable with another activity. In the end, there may be only two factors which count: effort and reward. Figure 1 attempts an overview of efforts and rewards in showing the inter-relationships between game elements. One may expect this Figure to be updated with more developments in gaming design, but for the moment it reveals the most salient features in the quantification argument for gamifying 'effort' and 'rewards'.

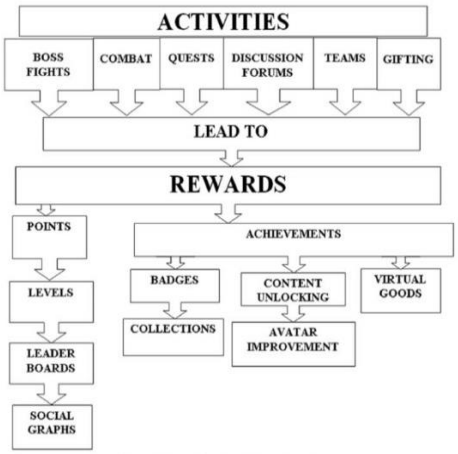

Figure 1: Inter-relationships of game elements

3. Gamification Issues and Ethical Concerns

As already mentioned, motivation is described as being "moved to do something" (Ryan & Deci, 2000), but it also involves the innate willingness of "choice" to perform an action and the amount of "effort" expended on it (Dörnyei, 2001) and required by it. For the effort to be genuine, the task itself must first be authentic, genuine whilst engaging the learner or practitioner in the ethical acquisition of knowledge. When gamifying, one is intending to change behaviours and changing behaviours may equate to persuading someone to engage whilst offering the player a return or reward on the time invested in playing (Lafourcade & Le Brun, 2014). Dörnyei (*ibid*), amongst others, has written about extrinsic and intrinsic motivation, and the question of how much extrinsic motivation is sufficient. Tuite (2014) has also asked the question of how to bring together successfully in-game motivation and real-world motivation in order to create better, more complex and collaborative games for crowdsourcing solutions to problems. With gamification providing extrinsic motivation in our context, we must recognise that games can become inherently addictive for some people. The question then becomes one of changing from reward to disruption in one's personal and professional life. Therein lie the contradiction and controversy between ethics, motivation and gamification.

4. Conclusions & Questions

The GaMDeF model is intended to inform us primarily about game elements which may be important when gamifying types of crowdsourcing tasks. The framework is not meant to be prescriptive and should be 'localised' by any Working Group wishing to explore gamifying crowdsourcing tasks. We would end by asking the faux-naïf question of whether it is possible to gamify everything within our crowdsourcing tasks. In truth, we do not know the answer to this. Our tentative proposal would be to engage effectively with the end-user during the first initial minutes of exposure with heavily gamified elements. Following this short period, further lightly gamified activities may be added throughout the process. We cannot ignore the influence and attraction of gamification, yet we cannot simply accept its design and implementation uncritically and untested.

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