

From Gamification to Funification of Exercise: Case *Zombie Run Pori 2015*

Usva Friman, Riikka Turtiainen
University of Turku
Finland
usva.friman@utu.fi, riikka.turtiainen@utu.fi

Abstract: In this paper, we approach the topic of gamification of exercise in the context of sporting events, using a gamified running event *Zombie Run Pori 2015* as our example case. We analyse the participant feedback from the event, defining its gameful and playful elements and categorising them as design-based, participant-based, or both. Our analysis shows that user experience does not directly follow from design: gameful design does not necessarily lead to gameful experiences, and gameful experiences can form without gameful design. Gamification also does not automatically guarantee more fun, motivating, or otherwise enjoyable experience. As our conclusion, we suggest that in gamification of exercise, the design process could rather be thought as *funification* of exercise, setting the individual user experiences and motivations as its main focus.

Keywords: Gamification, Funification, Exercise, *Zombie Run*

1. Introduction

Within the past few years, there has been a lot of discussion about the ever-lowering level of physical activity throughout all age groups. For example, the physical activity of Finnish children and youth stays below national recommendations (LIKES 2016; Kokko et al. 2016). One suggested answer to this issue has been the gamification of exercise in various forms (e.g. Kamel Boulos & Yang 2013; Hamari & Koivisto 2015; Tanskanen 2016, 59). The concept of gamification generally refers to the use of gameful elements – in other words, elements typical to games – outside of games (Stenros 2015a, 195). Sebastian Deterding and colleagues (2011) have defined gamification as using game design elements in non-game contexts. Kai Huotari and Juho Hamari (2016) on the other hand have approached gamification from the perspective of service marketing, defining gamification as a process in which a service is enhanced with affordances for gameful experiences in order to support users' overall value creation. While Deterding and colleagues emphasise the gameful elements and their use outside games, Huotari and Hamari set the gamification process and its goal in the enhanced user experience as the centre of their definition for gamification. Tuomas Kari and colleagues (2016) also emphasise the distinction between the design process and the user experience of gamification.

In the context of physical exercise, gamification has been studied especially in relation to so called exergames (e.g. Francombe-Webb 2016; Kiili & Perttula 2013; King et al. 2013; see also Matallaoui et al. 2017) – digital games that involve physical exercise. Console exergames require physical activity or moving one's body to play the game while GPS exergames are location-based games that are played outdoors with mobile devices (Kamel Boulos & Yang 2013). The global phenomenon *Pokémon GO* (Niantic 2016; see e.g. Mäyrä 2016) can also be considered as an augmented reality exergame. On the other hand, different self-tracking applications related to exercise and health have also been studied as gamification (Whitson 2013; Hamari & Koivisto 2015; Kari et al. 2016).

In this paper, we approach the topic of gamification of exercise in the context of sporting events, using a running event *Zombie Run Pori 2015* as our example case. *Zombie Run Pori 2015*, subtitled as "Urban survival adventure", was a running event organised in April 2015 in the city centre of Pori by a group of students of Digital Culture studies at the University of Turku. It was organised as a part of a course called "Production of digital culture" (which the authors taught) and also linked to the consortium research project "Ludification and the Emergence of Playful Culture", funded by the Academy of Finland. *Zombie Run Pori 2015* can be placed in the continuum of obstacle course races, running-based events (such as Tough Mudder, Color Obstacle Rush and ExtremeRun) incorporating a series of physical challenges along the race route (Obstacle Race World; see also Weedon 2015; Mullins 2012).

In addition to the organising team and event partners, there were over 100 people taking part in the event as either survivors or zombies. The survivors journeyed by foot, either by running or walking, through the approximately five kilometres long route towards the finish line, described as the “safe haven” free from zombies in the game’s story. At the same time, the players attending as zombies walked and ran alone and in packs, chasing the players attending as survivors, grunting and growling, aiming to scare them, but also reaching for the “life ribbons” hanging from the survivors’ belts. Along the way, there were different kinds of obstacles and additional tasks the survivor participants could choose to complete. For example, there was a “wounded” actor whom the survivors could stop to help in exchange for some extra lives. At another place, there was a bridge swarming with zombies, and the survivors could either try to run through it as fast as possible, hoping for the best, or they could disguise themselves as zombies using fake blood, and walk across slowly trying not to draw attention.

In this paper, we will analyse Zombie Run Pori 2015 as a gamified sporting event: a running event that contains gameful and playful elements. Originally presented by Jane McGonigal (2011), the concept of gamefulness refers to elements typical to games appearing outside games (Deterding et al. 2011). According to the constructionist-ludologist definition formulated by Jaakko Stenros (2015a, 77), the concept of playfulness refers to a voluntary and spontaneous activity wherein the activity itself is its primary goal. In health entertainment industry, it is often assumed that adding gameful elements to exercise increases the user’s motivation to exercise and makes the exercise more fun – even for ‘non-traditional’ gaming audiences (Millington 2016). In this paper, we question this assumption that we find problematic in multiple regards.

Firstly, we wish to remind that making something gameful does not necessarily make it more fun or motivating (see also Fizek 2014). Secondly, we wish to emphasise the importance of making a distinction between the design process and the user experience of gamification (Kari et al. 2016). In our analysis, we will show that the user experience indeed does not directly follow from the design, which in other words means that the gameful and playful user experience cannot be fully designed – especially in a way that guarantees enjoyment. Because of this, in our conclusion we will suggest that when designing gamification of exercise, the design process should take into consideration and make room for individual experiences and motivations of the user. If the goal is in using gamification to encourage people to exercise more, the primary focus of the process should be in making it fun and motivating on an individual level. Because, as Sonia Fizek (2014, 275) notes: “It seems that the most powerful driver for player’s engagement is not based on quantification methods artificially imposed onto every possible context, but indeed of fun.” In other words, we propose a change in approach from *gamification* of exercise to *funification* of exercise.

2. Data and Methods

The primary data used in this study consists of written feedback from the Zombie Run Pori 2015 participants (N = 76) and the course reports written by the students responsible for organising the event (N = 15). In their course reports, the students have documented and reflected on the design process and the nature of the event, and they also include all the design documents of the event. The participant feedback was collected in two parts: first with paper feedback forms (N = 56) collected at the finish line during the actual event, and later with an online feedback form (N = 20) sent to the participants after the event within the event newsletter. As such, it is possible that some participants filled both feedback forms.

Feedback was given by a total of 76 participants. Of the responding participants, 47 took part in the event as survivors and 28 as zombies (one respondent did not answer). 50 respondents (29 survivors and 21 zombies) identified themselves as women and 26 respondents (18 survivors, 7 zombies, and 1 unknown) as men. The respondents were 18–50 years old and they were mostly living in the Satakunta area (55 respondents in Pori).

Both feedback forms included background questions of the participants’ age, gender, and their current city of residence. Additionally, the participants were asked if they participated in the event as a survivor or a zombie. The paper form included three main questions: “1. What were your expectations concerning the event before the event? What kind of event did you think you were participating in?”, “2. How did the actualised event and its content answer to your expectations?”, and “3. What things in the event organisation went particularly well and what left room for improvement?”.

There were two versions of the online feedback form: one for survivor participants and one for zombie participants. The first question in the form was: “Tell your survivor (zombie) story!”. Some additional, clarifying advice was also given for this question: “You can tell, for example, of the feelings you experienced during the game, the highlights of the game, the tactics you used, and your encounters with other survivors (zombies), the zombies (survivors) and the audience. Tell also if your survivor (zombie) character had a story of some kind you immersed yourself in during the game.” The second question in the online form was: “How did the content of the actualised event answer to your expectations?” This question was a slightly modified version of the second question in the paper form, and it included some additional advice as well: “What were your expectations concerning the event before the event? Did you think you would be participating in, for example, sport event, game event, culture event, a combination of these, or something else?” Lastly, the form told the respondent: “You can also give feedback on how the event was organised.”

We used content analysis as our method in first defining and later categorising the gameful and playful elements in our data (Tuomi & Sarajärvi 2002). In a previous study (Friman, Rantala & Turtiainen 2017), we had already identified some of the gameful and playful elements of the event based on the participants’ feedback. For this study, we further elaborated this previous analysis, defining 15 gameful and playful elements in *Zombie Run Pori 2015*. After defining the gameful and playful elements in the event, we categorised them as either design-based, participant-based, or both. We used the students’ course reports (also containing the design documents related to the event) as well as our own experiences and memories from our time as teachers working as instructors for the students in charge of organising the event to support this categorisation.

3. Results

In our analysis, we categorised 6 elements as design-based, 6 elements as participant-based, and 3 elements as both. The design-based elements were gear and equipment, game mechanics, playing against each other, game goals and challenges, written rules, and narrative context. The participant-based elements were game tactics, team play, participant goals and challenges, unwritten rules, foolery, roleplaying. Finally, the elements categorised as both were playful dress-up, immersion, and performative play. The defined gameful and playful elements in *Zombie Run Pori 2015* as well as their categorisation as design-based, participant-based, or both can be seen in table 1 below.

Next, we will take a closer look at these elements and the reasons we placed them in certain categories during the analysis.

Gear and equipment (1) included the life ribbons hanging from the survivors’ belts that the zombies tried to catch, the zombie repellents (spray bottles filled with water) available for the survivors who managed to catch them first, and the fake blood that the survivors used to disguise themselves as zombies for one part along the route if they chose to do so. These were all included in the event by the organisers’ design. Game mechanics (2) were mostly related to the use of the gear and equipment, but also included zombie behaviour: there were different types of zombies that moved and behaved in different ways. Game strategies (3) included all the tactics and strategies used by the participants during the game.

Playing against each other (4) refers to how the zombie participants and the survivor participants were playing against each other in the event: the zombies were trying to catch the survivors’ life ribbons, while the survivors were trying to outsmart and outrun the zombies. In addition to playing against each other, some of the participants also took part in spontaneous and voluntary team play (5). This only concerned the survivor participants, since strategic team play was forbidden for zombies by the game rules.

Game goals and challenges (6) are a central part of games and gamefulness, so they were naturally present in the event. The game itself set goals for the participants: zombies were supposed to try to catch as many life ribbons as possible and survivors were supposed to reach the finish line with as many life ribbons left as possible. In addition to the goals and challenges set for the participants by the game design, there were also participant goals and challenges (7), in other words goals the participants set for themselves and the challenges related to them.

Like generally all games, the event had official written rules (8) that had to be followed by all the participants. In addition to the official, written rules, there were also some unwritten rules (9) concerning what the participants considered as “fair play”, such as maintaining the immersion of the survivor participants. While the written rules were placed by the event organisers, the unwritten rules arose from what the participants assumed and expected from themselves and each other.

Table 1. The gameful and playful elements in Zombie Run Pori 2015 categorised as design-based and participant-based.

Element	Description	Design-based	Participant-based
1. Gear and equipment	Life ribbons, zombie repellents, fake blood	x	
2. Game mechanics	Use of game equipment, zombie behaviour	x	
3. Game strategies	Strategies and tactics used by participants		x
4. Playing against each other	Playing to catch / not lose life ribbons	x	
5. Team play	Survivors teaming up spontaneously		x
6. Game goals and challenges	Catching / retaining life ribbons, reaching the finish line	x	
7. Participant goals and challenges	Individual, additional goals such as being the first to reach the finish line		x
8. Written rules	The official game rules	x	
9. Unwritten rules	Unwritten rules of “fair play”, such as maintaining immersion		x
10. Foolery	Various forms of foolery, such as playful teasing of opponents (both zombies and survivors) and scaring the survivors and the audience (zombies)		x
11. Playful dress-up	Dressing up as a zombie or a survivor	x	x
12. Roleplaying	Character background (both zombies and survivors) and behaviour (zombies)		x
13. Narrative context	Background story of the game (from marketing materials), actors in the event	x	
14. Immersion	Participants (especially survivors) immersing themselves in the narrative context of the game	x	x
15. Performative play	Participants performing to each other and to the audience, Zombie Walk	x	x

On the playful side, foolery (10) was an element present in the encounters between the participants as well as the participants and the audience. There was playful teasing between opposing participants, and especially zombies described their experience as liberating and wrote how they had enjoyed just chasing after survivors, grunting and growling and scaring – not only the survivors but also the audience. This kind of playfulness was not designed, but something that followed from the playful attitude of the participants and the way they threw themselves in the game.

The event also offered an opportunity – and an excuse – for playful dress-up (11). The zombie participants were required to dress for their role, but for the survivors dressing up was not a requirement, although it was encouraged. As such, the element was present in the event both by design and by participants’ choice. The zombie participants had put much effort into their costumes, and most of the survivor participants also took part in this playful dress-up voluntarily, many of their costumes inspired by various forms of zombie-themed popular culture.

Even though the event had not really been designed or marketed as a roleplaying event, it also allowed a certain level of roleplaying (12) for the participants who wished to do that. Roleplaying was present in the background stories some participants had created for their event “characters”. During the game, some zombie participants also assumed a certain role, according to which they moved, vocalised and behaved. This was not planned or directly encouraged by the event organisers. On the other hand, the opportunities for roleplaying were supported by the narrative context (13) given to the event in the marketing materials such as YouTube videos and Twitter messages published before the event. The narrative context was further enforced by the decorations and props placed along the game route, as

well as by the actors and other volunteers who played a role in keeping up the event's post-apocalyptic atmosphere. Related to the elements of roleplaying and narrative context, immersion (14) was also a significant element for the survivor participants, who described having experienced strong feelings during the game, mostly related to fear and horror and the experience of running for one's life. Even though the event's design supported participants' immersive experience, the experience itself could not be fully designed and it varied from one participant to another.

Finally, the element of performative play (15) was also present in the event, especially because the zombie participants took part in the event literally performing as zombies. This performance was not directed only at the survivor participants, but also at the photographers and audience that had gathered to watch and document the event. This performative element of the event culminated in the Zombie Walk formed by all the zombie participants after all the survivor participants had reached the finish line, slowly walking through the event route to the finish line. For the most part, the performative element was in the event by design. However, it was not forced but instead taken up voluntarily by the participants, who went to great lengths to play their part as zombies – even when there were not any survivor participants nearby – and pose for the cameras.

4. Conclusions and Limitations

Of the 15 gameful and playful elements we were able to identify in Zombie Run Pori 2015 based on the participants' feedback, an equal number (6) of elements was categorised as design-based and participant-based, and a few (3) elements were categorised as both. This result shows that the gameful and playful experience a participant gets from a gamified sporting event cannot be fully designed by the event organisers, but it is created in the combination of the organisers' design and the participants' actions. After all, playfulness is not located in a designed gamified system, but in the participant, and playfulness can only be performed for its own sake (Stenros 2015b, 203). Because of this, it is important to design gamification of sporting events in a way that creates room for individuality: for each participant to take part in their own way and to follow their own goals based on their own motivations (cf. obstacle course races Mullins 2012, 103–104; Rodriguez 2015, 88; see also Fizek 2014). In other words, well designed gamification of sporting events creates opportunities for the participants to experience gameful and playful exercise in their own way. We believe this conclusion can also be applied to the wider field of the gamification of exercise.

Furthermore, it is worth remembering that making something more gameful does not automatically make it more fun, motivating or even enjoyable for the participants or users. Because of this, the focus of a gamification process should not be in the process itself, but instead in the user experience (see also Kari et al. 2016, 402). And that is why – with the risk of encouraging the deployment of yet another “ification” term (Heljakka & Stenros 2015) – rather than gamification of exercise, we suggest that the process could rather be thought as the *funification* of exercise, when the goal of the process is to encourage participants or users to exercise more. Playful and gameful design can support this goal, as long as the final focus is in the user experience, not in the gamification process itself. Fun-driven gamification cannot be the result of a replication of the standard point-based structure in accordance with the one-size-fits-all rule (Fizek 2014, 285).

However, the conclusions from this individual case study cannot be generalised. The main limitation of the study is the small amount of data (feedback forms and course reports) collected during a single sporting event. Therefore, more research about the subject is needed to create a broader understanding of the topic. Furthermore, our categorisation of the event's gameful and playful elements as design-based, participant-based, or both, is not unequivocal, since even the elements categorised as participant-based appear in the designed game environment, and thus can be interpreted to follow from the organisers' design. One alternative way to categorise these elements would be, for example, to examine these elements as either direct or indirect results of the gamification process. However, this might not sufficiently emphasise the importance of the participants' actions we find to have an essential role in the formation of the gameful and playful experience. To conclude, there is a need for further research and theoretical discussion on this topic from both user-centered and design-focused perspectives.

Acknowledgements

We would like to thank the reviewers for their thoughtful comments, and offer our special thanks to the reviewer 1 for suggesting the alternative approach of evaluating the elements as “direct” and “indirect”. This paper has been funded by the Academy of Finland, and is a part of the research project Ludification and the Emergence of Playful Culture (276012).

References

- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From Game Design Elements to Gamefulness. Defining “Gamification”. In *Proceedings of the 15th International Academic MindTrek Conference* (pp. 9–15). ACM.
- Fizek, S. (2014). Why Fun Matters: In Search of Emergent Playful Experiences. In Fuchs, M., Fizek, S., Ruffino, P. & Schrape, N., *Rethinking Gamification*, (pp. 273–287). Meson Press.
- Francombe-Webb, J. (2016). Critically Encountering Exer-games and Young Femininity. *Television & New Media*, 17(5), 449–464.
- Friman, U., Rantala, M. & Turtiainen, R. (2017). Zombie Run Pori 2015 post-urheilullisena fyysisenä kulttuurina: suomalaisten juoksutapahtumien pelillistyminen ja leikillistyminen. *Ennen ja nyt* 1/2017.
- Hamari, J. & Koivisto, J. (2015). “Working out for likes”: An Empirical Study on Social Influence in Exercise Gamification. *Computers in Human Behavior* 50, 333–347.
- Heljakka, K. & Stenros, J. (2015). The Great Ification: A Think Piece on the Influences of Institutionalized Playfulness on Culture. Presentation at *Extending Play* conference April 18th 2015, Rutgers, New Jersey, USA.
- Huotari, K. & Hamari, J. (2016). A Definition for Gamification. Anchoring Gamification in the Service Marketing Literature. *Electronic Markets*, 1–11.
- Kamel Boulos, M. N. K. & Yang, S. P. (2013). Exergames for Health and Fitness: the Roles of GPS and Geosocial Apps. *International Journal of Health Geographics* 12(1), 18.
- Kari, T., Piippo, J., Frank, L. Makkonen, M. & Moilanen, P. (2016). To Gamify or Not to Gamify? Gamification in Exercise Applications and Its Role in Impacting Exercise Motivation. *Proceedings of the 29th Bled eConference*.
- Kiili, K., & Perttula, A. (2013). A Design Framework for Educational Exergames. In de Freitas, S., Ott, M., Popescu, M. & Stanescu, I., *New Pedagogical Approaches in Game Enhanced Learning: Curriculum Integration*, (pp. 136–158). IGI Global.
- King, D., Greaves, F., Exeter, C. & Darzi, Ara. (2013). ‘Gamification’: Influencing Health Behaviours with Games. *Journal of the Royal Society of Medicine* 106(3), 76–78.
- Kokko, S. Mehtälä, A., Husu, P., Jussila A., Villberg, J. & Vasankari, T. (2016). LIITU 2016 -tutkimus: Mitattu tieto tarkentaa itsearvioitua tietoa – kolmasosa suomalaislapsista ja nuorista liikkuu riittävästi. *Liikunta ja Tiede* 53(6), 24–28.
- LIKES-tutkimuskeskus (2016). *Tuloskortti 2016: lasten ja nuorten liikunta Suomessa*. Liikunnan ja kansanterveyden julkaisuja 318.
- Matallaoui, A., Koivisto, J., Hamari, J. & Zarnekow, R. (2017). How Effective is “Exergamification”? A Systematic Review on the Effectiveness of Gamification Features in Exergames. *Proceedings of the 50th Hawaii International Conference on System Sciences*.
- McGonigal, J. (2011). *Reality is Broken. Why Games Make Us Better and How They Can Change the World*. Jonathan Cape.

- Millington, B. (2016). Video Games and the Political and Cultural Economies of Health-entertainment. *Leisure Studies* 35(6), 739–757.
- Mullins, N. (2012). Obstacle Course Challenges: History, Popularity, Performance Demands, Effective Training, and Course Design. *Journal of Exercise Physiology* 15(2), 100–128.
- Mäyrä, F. (2016). Pokémon GO: Entering the Ludic Society. *Mobile Media & Communication* November 24th 2016, 1–4.
- Niantic (2016). *Pokémon Go*. Mobile game.
- Obstacle Race World*: Introduction. <http://www.obstacleraceworld.com/introduction>.
- Rodriguez, A. (2015). *Psychosocial Motivators for Obstacle Course Racing. A Qualitative Case Study*. Faculty of California Polytechnic State University.
- Stenros, J. (2015a). *Playfulness, Play, and Games. A Constructionist Ludology Approach*. University of Tampere.
- Stenros, J. (2015b). Behind Games. Playful Mindsets and Transformative Practices. In Walz, S. P. & Deterding, S., *The Gameful World: Approaches, Issues, Applications*, (pp. 201–222). The MIT Press.
- Tanskanen, M. (2016). GO Pokémon! *Liikunta & Tiede* 53(4), 57–59.
- Tuomi, J. & Sarajärvi, A. (2002). *Laadullinen tutkimus ja sisällönanalyysi*. Tammi.
- Weedon, G. (2015). Camaraderie Reincorporated: Tough Mudder and the Extended Distribution of the Social. *Journal of Sport and Social Issues* 39(6), 431–454.
- Whitson, J. R. (2013). Gaming the Quantified Self. *Surveillance & Society* 11(1/2), 163–176.