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Gamification Ethics

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Synonyms

[Dark side of gamification](#); [Ethical issues in gamification](#); [Ethics in gamification](#)

Definitions

Gamification ethics refers to the study and understanding of right and wrong conducts by or with gamified solutions. As gamification taps into the natural playfulness of human beings, ethical issues are prevalent and must be considered by the developers.

Introduction

The term “gamification” usually refers to applying game design elements into nongame contexts (Deterding et al. 2011). Typically, it is used to

improve the motivation and performance of the players to tasks like learning, well-being, rehabilitation, or work efficiency. For example, Hamari et al. (2014) show how gamification can improve the players’ motivation in possibly arduous and boring tasks.

The road to gamified solutions has often been paved with good intentions where designers, developers, and funders are aiming at improving the players’ quality of life. However, even projects that have been developed with good intentions may end up in creating ethically questionable or even clearly morally wrong solutions. This reminds of the statement attributed to Albert Einstein according to which if he would have known how atomic power was to be utilized, he would have preferred to become a watchmaker instead of a scientist.

As gamification touches the very basics of the playful nature of humanity, the designers and developers of gamified solutions can either through pure mistakes or with evil intentions create products and services which either endanger or worsen the condition of the players, the environment, or the society. Whereas it is hard to enlighten developers with bad intentions, it is crucial for the developers of gamified solutions with good intentions to understand the ethical challenges inherent in the used techniques.

The main things for a developer to keep in mind regarding ethics, on top of their own intention – which of course ought to be the good of the stakeholders of the application – are that the

applications are built in a just manner and that the consequences benefit the client, the users, and the targets of the systems being designed (Moor 1999). Even though most developers consider themselves to be good people, as Don Gotterbarn always reminds us, they should also be aware that if they do not actively look after their character traits related to their work in a virtuous manner, they do not always act as they ought.

Based on the theoretical ethical principles, applied ethics aims at tackling a certain area. The ethical questions raised by gamification techniques have only recently gained interest with the works of Bui et al. (2015), Hyrynsalmi et al. (2017a, b), Kim and Werbach (2016), and Sicart (2015). The field remains still largely unexplored, yet further studies are published with an increasing pace.

While our aim here is to provide a broad overview of ethical problems of gamification, this is not a comprehensive list of all possible issues. As both the field and the techniques are still evolving, new ethical questions are expected to pop up and some of the older topics will become outdated with the new systems.

Our intention in this entry is to give an introduction to the ethical problems present in gamification. In the subsequent sections, we divide gamification ethics into three broad groups: ethical problems related to the *design* of gamification, ethical problems related to the *technology* used in implementing gamified systems, and ethical problems related to the *data* utilized by gamified systems.

Issues on Gamification Design

The design phase includes activities typically carried out before and during the implementation of a gamified system. While gamification aims at improving the players' interests on virtuous issues and tasks, there are examples of using it for malevolent purposes such as stealing or damaging CCTV cameras or even prompting players to commit suicide (Hyrynsalmi et al. 2017b). Omitting such extreme examples, there are, however, solutions that are either legal but questionable or

that have been developed with good intentions whereas their consequences are ethically questionable. For an overly simplified example, a gamified solution for a nurse, paramedic, or firefighter could, in theory, improve their job satisfaction; however, every second spent on secondary purposes, such as gaining points in a gamified environment could, literally, endanger someone's life or property in these kinds of contexts. The basic design question one should always ask first is: does gamification work in this particular context?

From the perspective of gamification design, we can recognize two general groups considering the implications on an individual person and on the impacts on a society.

Personal

Gamification overloading is a rarely addressed topic in design. An average player is likely advance only in few different games at the same time. The average player does not play several massively multiplayer online games simultaneously due to the cognitive burden caused by keeping up several different tasks, stories, and game mechanisms. The same cognitive limits apply also to gamified solutions. Would an average gamification player be able to simultaneously keep up with gamified electricity saving, physical exercise, and educational solutions? Thus, designers should also ask whether gamification brings long-lasting value in the particular context or whether it would turn against its objective due to potential overload.

Individual players cannot be handled as a homogeneous group. For instance, let us consider the case of an individual who is a game addict. Should he or she be exposed at his or her workplace to a gamified system? If not, would he or she be in a different, possibly weaker position than others? A similar kind of thought experiment could be carried out with underaged pupils (e.g., educational gamification), elderly, or cognitively challenged users.

Societal

Employees can deliberately fake information on gamified system, for example, to use the

leaderboard to advance their position in salary negotiations (Callan et al. 2015). Cheating in general is a likely problem, if the gamified system has real-world benefits that can be gained. Moreover, tapping into the competitive drive of the players of a gamified system can have destructive consequences on the work environment as the competition leaks from gamification into the real world.

Technology-savvy younger players might have an advantage in using gamification because of their familiarity of game mechanics from entertainment games.

Putting the participants in an equal starting position is a hard problem to solve, which is tackled by game balancing in game design (Adams 2014, pp. 403–405). A balanced game is fair, meaning that all players have an equal chance of winning at the start, and it should be appropriately challenging (i.e., not too hard nor too easy) for the players. The skill in the actual task of the player, rather than in the game created on top of the tasks solved through gamification, should be the most important factor in determining the player's success.

Furthermore, it is possible that the setup or the story in a gamified system favors a majority of the players, ignoring the (gender or ethnic) minorities' interests or values. In a workplace situation, this might even enforce the existing and possibly hidden attitudes and prejudices.

The motivation behind gamification can be, in some cases, hidden from its players. For example, the design of the game *Ingress* – developed by Niantic, a company spun off from Google – is assumed to have originally been motivated to gather location information to improve Google's map services. From this commercially motivated example, we can draw a parallel to Sesame Credit – developed (via affiliates) by the Chinese on-line marketing conglomerate Alibaba and the Chinese government – where the design motivation is, at the same time, both commercial and political.

If gamification is used for political purposes, it opens the possibility for using it as a tool for propaganda and surveillance. The ethical implications of this are manifold: conventional values such as “harmony” in the society are typically

enforced, a lack of revolutionary and thus society-enhancing ideas can follow. And, of course, there are clear risks for the privacy of the players. Just think of Stasi (*Staatssicherheitsdienst*) or similar organization gamifying their surveillance of the citizens, or gamifying catching illegal immigrants entering the country – one can be of the opinion that illegal immigrants ought not to enter the country, but would it really be a good idea to make this kinds of consequences to actual living, breathing, and feeling human beings into a *game*?

Compromising the Underlying Technology

The technology used in gamification should protect the players' sensitive information and allow them to decide how the information is used (cf. Lahtiranta et al. 2017). Moreover, it should provide a fair playing field for players and prevent any kind of cheating. These attributes can be compromised by attacks utilizing either technical or social weaknesses. For example, passwords can be stolen by cracking them (technical attack) or pretending to be administrator and asking the players to give their passwords (social engineering attack).

The technical attacks can be directed to the clients, the servers, or the network connecting them (Smed and Hakonen 2017, pp. 290–291). An attack can take place over (e.g., reading pixel values from the user interface), under (e.g., hacking a driver), or in the client (e.g., altering the code in the memory). Apart from physical attacks (e.g., theft), servers are vulnerable to network attacks (e.g., IP spoofing or denial-of-service attacks). Network communication can be compromised by tampering the packets (e.g., intercepting or replicating them or forging their payload data).

The social engineering attacks can include, but are not limited, to blackmail, using the gullibility of the other users, gaining access through pretending to be a superuser – for some reason without superuser access – or bribing others either with joint sharing of results (cooperating against

others unfairly) or paying smaller amounts for greater gains (Mitnick and Simon 2003).

The motivation behind the attacks on games can stem from different sources (Consalvo 2007) but broadly speaking, we can recognize three areas:

- Enhancing the gameplay motivated by, for example, lack of skill or time or by boredom
- Playing with the game system to explore and experiment, extend the lifespan of the game, or creating new ways to play
- Extra-game factors such as money, fame, vandalism, or nonconformity

Although any breach of the information security can have severe repercussions to the player, the motivation plays an important role in discerning the possible ethical consequences. Players wanting to enhance their gameplay will, naturally, increase inequality among the other players. A similar situation may ensue even if the players are playing with the gamified system, although their motivation is not directed against the other participants. The biggest threat comes from the last group. When extra-game factors are included, the other participants will be become expandable and just means-to-an-end.

Use and Scope of the Gamified Data

Gamified solutions generate personal data from the players' personal interests, actions, and habits. Thus, the environment where the gamified solutions are used affects the ethical questions of gamification. In the following, we have identified five environments where intentions to gamify as well as ethical questions differ: healthcare, work life, government, school, and leisure systems.

Healthcare

The healthcare sector is actively looking for ways to improve people's health behavior using technology, and gamification is seen as a promising opportunity. It is possible to imagine a gamified healthcare system provided by public healthcare

that drives for a lifestyle change (e.g., to get rid of intoxicants, to get more exercise, or to lead a generally medically reasonable life). We are not criticizing gamification itself as it could be a good tool for many people to achieve these goals, but there are some risks we want to point out that are involved.

The primary concern is that health is an area of life where people can be highly vulnerable, because for many, it is not possible to choose the services they would want, for example, due to financial or geographical limitations. The secondary concerns relate to the data produced with these kinds of solutions: personal health records of any kind are extremely private.

There is a risk that the user could lose the control over the information gathered by the gamified system, if it is also used for larger healthcare purposes. There is a drive to collect medical information for research purposes, which is usually done in good faith. However, we know from examples that the genetic information of entire countries has become tradeable goods, in which individuals have lost control over their data.

Healthcare gamification drives towards a biomedically desirable lifestyle. The personal experience of health, however, is not a biomedical experience but rather an existential experience; what could be called homelike-being-in-the-world (Svenaeus 2001). Hence, what people experience as good health varies from person to person and depends on their personal goals and desires in life.

Work Life

The current work-life environment – riddled with financial crises, work automation, competition in employment – leaves many employees with no possibility to change their employer. Consequently, we are more and more attached to our current employment, and if the environment is gamified, a gamified system in the workplace could force us in an ever-increasing competition against one another. This would turn us into an exploitable “standing reserve” for corporate purposes that would take away considerable parts of our power over our own lives, creating new

“rules” and endangering the authentic (self-owned) being in the context of working life (Heidegger 1977).

Nevertheless, there are many employers who willingly take new technologies into work environments with the aim of helping employees to be empowered at work. Such solutions can, for example, be linked to job satisfaction, feedback, or suggestions for improvement. In such data-driven gamified solutions, particular care should be taken to keep hidden the unique characteristics that would help to identify individuals.

Government

Governmental information systems are the tools that are used by government and citizens forming a part of how our society is working and communicating. When thinking about the gamification of government systems, one has to understand that systems can be such that citizens are obligated to use them. Since the idea of gamification is to change people’s behavior through information collected through gamification, there is a risk that individuality will be lost and the demand for being an “average” citizen will increase. This should be avoided as it causes citizens to lose their individual life goals and only become statistics in a government plan; after all, we do have our own desires, hopes, and fears that should be valuable in and of themselves.

In addition, citizens are unlikely to have the ability to know – and even less to control – who uses their information and for what purposes. Another example of problems in gamification is that it could be used to “activate” unemployed citizens. It is often claimed that unemployed people should perform some activities to get their unemployment benefits. However, gamification does not create new jobs but easily becomes just one more duty for those weakest in our society; this does not help them but highlights the lack of power of the unemployed. Since our governmental systems are a vital part of our modern society, it is important to ensure that the privacy and liberties of citizens are secured by the government; otherwise, we risk the foundations and justification of democratic society.

School

For younger people, there is a risk that they may not have the capacity to claim or the will to demand different solutions. When thinking of gamification, pupils lack the power to choose what is used for teaching. This underlines the need to protect their privacy and other related rights, as they have no judicial or practical means to control how gamification and the information collected from them affect them now or later in life.

When we add gamification in education, there is a risk that the division between “good” and “bad” pupils will be emphasized and, as a consequence, the result may be that inequality between children grows. Since pupils do not yet have full rights or responsibilities as adults do, it is our responsibility to safeguard their right and govern their rights as long as they are considered to be equal members of the society. In the case of young people, this means that in adulthood they can decide that they do not want their personal and/or identifiable information to be used; they need to have the right to prevent the use of it and even to destroy information considering them, if they so decide.

Leisure

Gamified leisure is a different matter altogether. Although gamified systems may have an impact on who and what we are in our free time – unless there is a monopoly (or oligopoly) of systems to use – we can always opt out as long as we understand the changes to us the system can make. Nevertheless, we must at least be able to remove our data from the system we have used or tried out, which is a minimum of control requirement.

For instance, we could use sports applications such as heart rate monitors, which these days provided a wealth of additional applications from GPS to following our sleep and beyond. These applications use our data as well as the data of others and gamify the exercise experience. The “100 percent” is likely to be defined, at least in part, by utilizing aggregated user data. The user can, if they want, stop using the system. However, they still have no control over the data already

collected, and it can later be used by the application developers as they please.

Summary

This entry highlighted ethical issues embodied in the use of gamification tools and techniques. As gamification touches on the very basic nature of humans, it is important for the designers and developers of gamified solutions to understand the ethical ramifications of the decisions on design, technology, and data.

While our aim was to bring gamification ethics into public discussion and extent the awareness of possible pitfalls, we are not advocating avoiding gamified solutions altogether. Rather, we encourage designers, developers, and funders to actively utilize the best of gamification techniques for the best of humankind while still minding the ethical considerations.

Cross-References

- ▶ [Ethics](#)
- ▶ [Games for Change](#)
- ▶ [Games for Health](#)
- ▶ [Gamification](#)
- ▶ [Gamification Design](#)
- ▶ [Rehabilitation Games](#)
- ▶ [Serious Games](#)

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