Chapter 1
Ethical Issues of Gamification in Healthcare:
The Need to be Involved

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ABSTRACT

Gamification techniques have proven to be very effective in improving motivation and commitment, providing increased performance in both qualitative and quantitative terms. For this reason, it has been applied in more and more areas, with health and healthcare being no exception. The potential of this type of approach is enormous, and, on the one hand, it can motivate positive feelings; it can also foster deviant behaviors that fail to contribute to the individual and common good. This chapter aims to explore the relationship between the development of gamification systems and the ethical and moral aspects that are crucial elements when the target of the process becomes the human mind. The main questions and ethical dimensions that will allow us to constitute a reference framework for the development of gamification systems will be presented. Timely reflection and the inclusion of security mechanisms will allow us to develop better experiences for users, always combining improved motivation with the search for the good.

1. INTRODUCTION

The ubiquitous presence of digital technologies has been transforming many of the ways we interact socially and with the world. Many of our activities are frequently monitored and the raw information that everyone had access to can now be managed, giving it a customizable character but being able to contain

underlying objectives. The advancement of technology brings numerous improvements to people's daily lives, however, if it is not well planned and conceived, it can also bring some damage, be it of a social, economic or welfare nature.

Gamification introduces game elements in our daily lives as a motivation to achieve objectives. In (Mavroeidi et al., 2019) twenty two gamification components are identified and sorted by popularity being the most popular points, badges, leader boards and levels (in decreasing order). These elements, when properly integrated into a situation, can be quite powerful and lead to excellent results while providing a sense of fulfilment, a "mission accomplished" sensation (Mekler et al., 2017; Sailer et al., 2017).

Whenever health and healthcare are our focus of concern these effects can be particularly important because, when considering the main causes of death worldwide (Ritchie & Roser, 2018), it is observed that many pathologies could be avoided or that their effects could be drastically reduced if patients' had an active role towards prevention or a consistent adherence to therapies. Cardiovascular diseases or diabetes, for example, are most often caused by the recurrence of harmful behaviors such as poor diet, lack of exercise or chronic stress. In fact, the adoption of preventive measures such as physical activity, healthy eating habits, adherence to medication or even rehabilitative exercises, can lead to an increase in life expectancy and improve Quality-Adjusted Life Year (QALY) metrics (Corder et al., 2020; Schroeder, 2007).

In this context, while seeking a better modern digital world, the implementation of gamification strategies drives us to imagine complex computer systems, virtual realities, pervasive monitoring and intelligent machines. But who designs and develops such systems and games? How are they designed and engineered? Are there guidelines to follow or do they impose limits to previously defined parameters? In addition to the technical skills, gamification experience developers must be aware of the effects it will have on the participant. However, the gamification area involves a wide set of disciplines particularly psychology, sociology, neurosciences, and ethics, which not always receive the necessary attention. In fact, ethical questions or moral guidelines are often barely addressed and only a cultural or socially induced conduct supports decisions, which sometimes is far from what would be desirable. User experience design, interaction design, participatory design, co-design and user research, among others, are disciplines that can provide the required focus on the user and can introduce human-centered concerns during the development process. Nevertheless, an integrated set of guidelines and better-defined boundaries can lead to better processes and optimized results.

In this chapter a bioethical framework associated with a decision-making process will be presented, aiming to help professionals linked to the development of software-based gamification systems. A deliberation process that will imply that the most prudent decisions are the ones to be taken. Additionally, for these professionals, some varieties of goodness, namely moral, instrumental, technical, and functional goodness will be shown and clarified in the gamification context. Bioethics should not be a technique for repairing situations, but rather as a discussion that allows supported reflections on the progress of science, helping it to be developed based on solid ethical principles. Let us not forget yet that all bioethical discussions are temporally dated, and depend on social, cultural, and economic factors that live in each time and society. However, the circumstances do not change the quality of the action. The circumstances only change its dimension.

This is the time of technology so in the rest of the chapter the goal will be to anticipate and predict the main bioethics and moral issues associated with healthcare gamification and devise a reference framework that can help professionals to create better technologies and better healthcare.

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