

# Chapter 14

## Fun and Games: How to Actually Create a Gamified Approach to Health Education and Promotion

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### ABSTRACT

*Gamification is a relatively new approach that allows the use of videogame design techniques in contexts that are originally not game related, including for the promotion and education of health outcomes. Gamification has been used in many contexts, but healthcare practices, which include often boring, frustrating, or painful tasks, can especially benefit from the fun enjoyable games people play for entertainment purposes. Games can be helpful both promoting an increase in health knowledge and behaviors, as well as the positive emotions elicited by health-related contents and behaviors. This chapter begins by discussing the concept of gamification, the gamification toolbox, and gamer taxonomies and the different uses of gamification and game-based approaches in the healthcare context are explored, to figure out what the key success elements are and why this promising approach has yet to achieve its wide-spread potential use.*

### INTRODUCTION

Gamification is a relatively new concept that proposes the use of elements from video games in non-game applications (Deterding et al, 2011). Gamification's popularity has been increasing in the past years, drawing attention to different strategies, tools, and fields of implementation (Gentry et al, 2019). This approach aims at changing human behavior by engaging people and can be used in a myriad of possible areas of business and society. Although it has been explored primarily in the marketing area, the potential

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of gamification's application has been extended to other areas such as Environment, Government, Education, and of course, Health (Simões et al, 2012). This chapter aims at creating a practical framework for planning and designing gamified approaches for health purposes, providing the much-needed conceptual clarity and practical implications for successful gamified approaches in health education and promotion.

Engaging people in health education and promoting health behaviors may be challenging. Often these include repetitive, sometimes unpleasant behaviors, that may be boring at times, and whose consequences are not immediately felt. Fenerty and colleagues (2012), for example, report that 30% to 50% of patients have poor adherence to medication use. Lack of adherence is a major problem because the intended outcomes of the interventions – improved health outcomes - are not likely to be achieved. This means that the costs associated with providing health services - often founded on costly and scarce resources - are wasted (Fenerty et al., 2012). The issue is amplified when access to healthcare is delayed due to waiting lists, given to the possibility of further deterioration of patients' conditions and the additional costs involved in managing those ailments (Richards & Caldwell, 2016). Games, on the other hand have shown to be effective in the increased motivation and involvement of players in game tasks (Simões et al. 2012) and go so far as to determine the release of dopamine in users (Koepp et al, 1998). Games are defined here as voluntary activities structured by rules, with defined outcomes (e.g., winning/ losing) or other quantifiable feedback (e.g., points) that facilitates reliable comparisons of in-player performances (Thai et al, 2009) are becoming more relevant. We seem to be moving from a paradigm of survival and efficiency into a new era where people are mostly focused on what is pleasurable (Deterding et al, 2011).

Gamified education has the potential to provide a quality, cost-effective, novel approach that is flexible, portable, and enjoyable and allows interaction with tutors and peers (Gentry et al., 2019). Such an impactful transversal trend involves many opportunities and risks (Gartner, 2011), as well as ethical concerns (Stetina et al, 2012). Still, the pervasiveness of games and gamification in society cannot be ignored by the healthcare sector, whose systems benefit crucially from individual engagement and positive behaviors.

Health education as a tool for health promotion has a relevant role in the improvement of populations' health, individually and at the community level which can be key in individual well-being as well as society's health, as is the case of outbreaks and pandemics, like COVID-19. Many studies have shown that inadequate health education can have a significant impact on health outcomes, in the use of health care services and health costs. Different factors have limited the attention paid to this area and the success gathered by health education strategies, among them, the limited understanding of health education by those who work in this field; lack of consensus on many different theoretical frameworks and concepts; and the difficulty in demonstrating the efficiency of the actual practices (WHO, 2012). To face these challenges new tools and strategies are urgent to promote the engagement of the public (including healthy people, patients and relatives) and professionals in effective health education practices. Further, game-based and gamified approaches, especially when based on digital technologies and internet have the potential to reach developing countries and vulnerable populations where healthcare resources, especially professionals are missing and the populations' needs are most dire. Gamification can be useful to this endeavor, promoting health education core competencies, supported by leading practices. In general, gamification uses the potential developed by the video game technology to shape user behaviors or embed values in users (Deterding et al, 2011) and some authors go as far as to say that games can make us better (McGonnigal, 2011). All definitions seem to perspective gamification with the goal of user engagement (Xu, Hi & Honolulu, 2011), which is key in the healthcare sector.

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