Chapter 2
GAFRHE:
A Gamification Framework for Healthcare

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ABSTRACT

Gamification has been growing at a meteoric rate. Such growth is because this is a valid mechanism to add desirable behaviors in an organizational process or even in an educational process. In fact, these are the two major contexts where gamification has been applied. In organizations, gamification is applied in various business contexts from recruitment, through onboarding, training, talent retention, customer service, sales, and marketing. In education, gamification is used essentially in contexts of promoting student involvement in existing training offers. This chapter presents a gamification design framework called GAFRHE aimed to be used in all domains, but with extensive facets for the healthcare domain. Unlike other frameworks, it is a concrete framework that not only presents the basic concepts that must be followed by the gamified strategy, but also presents a system architecture that must be instantiated, and a set of components already coded and that can be used. The framework is mostly based on existing standards promoting reusability and interoperability.

INTRODUCTION

Gamification has been growing at a meteoric rate. Such growth is because this is a valid mechanism to add desirable behaviors in an organizational process or even in an educational process. In fact, these are the two major contexts where gamification has

been applied. In organizations, gamification is applied in various business contexts from recruitment, through onboarding, training, talent retention, customer service, sales, and marketing. In education, gamification is used essentially in contexts of promoting student involvement in existing training offers.

Regardless of the context, gamification, despite its very latent benefits, suffers from its youth and, consequently, its unregulated use where gamification strategies often involve the inclusion of the famous PBL (Points, Badges, and Leaderboards), without any previous study on the processes to be gamified, its target audience and the appropriate tools for its implementation. This negligence leads to a large part of gamified applications being built in an unbalanced way and, consequently, suffering from ephemeral success where users are captivated, in the short term, by prizes and distinctions, but in the midterm, they end up bored, frustrated and unwilling to continue using the application.

One of the keys to success is the formalization of the gamification design process using gamification design frameworks and dynamics/mechanics modeling to be applied in the respective context.

In recent years, several gamification design frameworks (Queirós, 2022) have emerged. Despite their quality and relevance, they are still abstract frameworks with concepts and best practices that the person responsible for the gamified strategy must follow. These good practices are essential, however, the choice of languages, specifications, tools, and methodologies to follow remains at the discretion of the person in charge. This lack of definition leads the person in charge, in the process of designing and implementing the gamified application, to use ad hoc solutions for its construction. This approach increases redundancy, and makes it difficult to maintain code, reuse components and interoperate with other systems (gamified or not). This is not to say that a gamified tower of babel should be created where only a formalism to follow prevails. However, nowadays, with the advent of the cloud, IoT and artificial intelligence (among others), it is crucial that those responsible for gamified strategies are sensitive to these issues and that they know the existing solutions. Another aspect to remember is that there are several contexts of applicability of gamification. One of them is healthcare, which has grown brutally in recent years (Phillips, 2019).

This chapter presents a gamification design framework called GAFRHE aimed to be used in all domains, but with extensive facets for the healthcare domain. Unlike other frameworks (Landsell, 2016), it is a concrete framework that not only presents the basic concepts that must be followed by the gamified strategy, but also presents a system architecture that must be instantiated, and a set of components already coded and that can be used. The framework is mostly based on existing standards promoting reusability and interoperability.

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