

## Chapter 2

# A Systematic Design Model for Gamified Learning Environments: GELD Model

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### ABSTRACT

*This formative research study is an attempt to develop a design model for gamified learning experiences situated in real-life educational contexts. This chapter reports on the overall gamification model with the emphasis on the contexts and their interactions. With this focus, this chapter aims to posit an alternative perspective to existing gamification design praxis in education which mainly focuses on separate game elements, by arguing that designing a gamified learning experience needs a systematic approach with considerations of the interrelated dimensions and their interplays. The study was conducted throughout the 2014-15 academic year, and the data were collected from two separate groups of pre-service teachers through observations and document collections (n=118) and four sets of interviews (n=42). The results showed that gamification design has intertwined components that form a fuzzy design model: GELD. The findings also support the complex and the dynamic nature of gamified learning design, and the need for a more systematic approach to design and development of such experiences.*

DOI: 10.4018/978-1-5225-6026-5.ch002

## **INTRODUCTION**

Advances in technology and the prevalence of information and knowledge networks have created new contexts that engage learners in different modalities, including online social networks, video games, and various connected learning opportunities. Games as one of these advancements have the potential of motivating learners (Reigeluth & Squire, 1998), providing a learner-centered, entertaining and captivating experience (Prensky, 2001). Due to their potential, there has been a great deal of interest in educational game design especially by companies who create thousands of games each year in search of new venues for profit maximization. However, the cost of the educational games (Cruikshank & Telfer, 1980) and integrating educational content into game-environments (Prensky, 2001) are considered to be some of the problems of the serious games. An alternative is gamification, which originated from the digital media industry in 2008 and became widely known in the second half of 2010 (Deterding, Sicart, Nacke, O'Hara, & Dixon, 2011). The basic idea of gamification is to provide motivating and engaging real-life activities using the game elements (Zichermann & Cunningham, 2011). Although there is no commonly accepted gamification definition (Seaborn & Fels, 2015), there are some definitions of gamification that are mainly accepted and practiced. For example, Kapp (2012) defined gamification as "...using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning, and solve problems" (p. 10). Among other gamification definitions in different fields of study, the most prevalent definition was provided by Deterding, Khaled, Nacke, and Dixon (2011) as "the use of game design elements in non-game contexts" (p. 2).

The potential of gamification in educational contexts has been recognized by several researchers (Dreyfus & Dreyfus, 1986; McGonigal, 2011; Kapp, 2012; Su, 2016; Yapıcı & Karakoyun, 2017; Yıldırım, 2017). While some researchers seek to develop new gamification models and frameworks (Werbach & Hunter, 2012; Urh, Vukovic, Jereb, & Pintar, 2015; Liu, Santhanam, & Webster, 2017), others have used game design models and frameworks to design gamified experience (Zichermann & Cunningham, 2011). The studies conducted on gamification provide both promising and disappointing results (Robertson, 2010; Bogost, 2011; Kelly, 2011; Berengueres, Alsuwairi, Zaki & Ng, 2013; Domínguez, et al., 2013; Duggan & Shoup, 2013). Successful examples of gamified learning experience such as Khan Academy and Quest to Learn show the potential advantages gamification can bring to educational contexts. On the other hand, it is also highly criticized for lacking the core game characteristics and trying to build fun by simply integrating some game elements such as points, badges and leaderboards in non-game occasions (Bogost, 2011; Robertson, 2010). Criticisms are raised by game designers such as Bogost (2011), Robertson (2010), and Kelly (2011), and focus mostly on how the

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