

# Chapter 89

## Gamification Research: Preliminary Insights Into Dominant Issues, Theories, Domains, and Methodologies

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### ABSTRACT

*Despite advances in information technology, studies suggest that there is little knowledge of how developing countries are applying gamification in agriculture, education, business, health, and other domains. Thus, from a systematic review, this chapter examines the extent of gamification research in the developing country context. In this chapter, 56 articles were reviewed, and the search was done in the Scopus database. This chapter explains the idea of game design elements in information systems and provides real-world examples of gamified systems outcomes from developing countries. The authors conclude with directions for future research to extend our knowledge of gamification and advance the existing methodologies, domains, and theories.*

### INTRODUCTION

Gamified systems make tasks more engaging for learners, customers, or employees (Liu, Santhanam & Webster, 2017). In simple terms, *Gamification* is the use of game design elements in a non-game context. It can also be defined as “the use of game-based elements such as mechanics, aesthetics, and game thinking in non-game contexts aimed at engaging people, motivating action, enhancing learning, and solving problems” (Borges et al. 2014, p. 216). Areas in which gamification has been applied include education (Nah et al., 2014), health (Jones et al., 2014) sustainable energy (Lee et al., 2013; Opong-Tawiah et al., 2018), crowdsourcing (Ipeiritis et al., 2014) enterprise resource planning (Alcivar & Abad, 2016), and tourism (Adukaite et al., 2017).

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## **Gamification Research**

Gamified systems or applications have several benefits to organisations and users; most importantly, it helps make monotonous activities or work more enjoyable and can result in performance improvement (Theibes et al., 2014; Burke & Hilbrand, 2011). For example, Microsoft gamified its information systems to include *Ribbon Hero* to train users on Office Suite. By completing challenges and gaining experience points, users learn to use Word, PowerPoint, OneNote and, Excel; the design provides immediate feedback, track user progress with relevant tasks that reinforce user engagement and interest. Additionally, DirecTv added gamification tools such as points, leaderboards, and social recognition to change the mindset of its 1000-person IT department to eliminate finger-pointing and ensure no repetition of mistakes in their new tech policies and procedures.

The use of gamification and the integration of game design elements in various spheres of lives and non-work activities continue to attract attention in the literature (Koivisto & Hamari, 2019; Morschheuser et al., 2017; Osatuyi et al., 2017; Nah et al., 2014). For instance, Oppong-Tawiah et al. (2018) argue that developing a gamified mobile application has a tendency of changing behaviours, engaging learners (Suh et al., 2017), encouraging and promoting sustainable use of energy in offices. These practices have been manifested in Canada, Finland, the United States of America (UK) and among other developed regions (see also Osatuyi et al., 2017). Despite these advantages, there is a lack of knowledge on how gamification is utilised in developing country context to motivate and engage users (see Omotosho, Tyoden, Ayegba & Ayoola, 2019; Appiahene et al., 2017). Hence the main research question:

RQ: What is the extent of gamification research in the developing country context?

This study, therefore, explores the preliminary insight into research issues, theories, concepts, and methodologies employed in gamification studies in the developing country context. This study is structured into seven sections. Section one focused on the introductory section of the study; section two looked at conceptualisation gamification, while section three highlight the methodology and search criteria for the gamification review. Section four emphasised the dominant issues, conceptual and methodological approaches and dominant domains in gamification from DC context. The last section focused on research gaps for future gamification research.

## **CONCEPTUALISING GAMIFICATION**

Nick Pelling in 2002 coined the term *gamification*; however, it became prominent in academic spheres in 2010. As stated earlier, the most popular and earliest definition is one coined by Deterding et al. (2011) as “the use of game design elements (means) in a non-game context (application context).” Other scholars have defined gamification to highlight the means and application contexts of game elements. For example, Zichermann and Cunningham (2011) defined it as “the process of game-thinking and game mechanics to engage users and solve problems.” Fitz-Walter et al. (2011) also defined it as “adding game elements to an application to motivate use and enhance user experience” while Borges et al. defined gamification as “the use of game-based elements such as mechanics, aesthetics, and game thinking in non-game contexts aimed at engaging people, motivating action, enhancing learning, and solving problems.” Moreover, it includes “the use of game design elements (such as points, badges, and leaderboards) in a non-game context to promote user engagement” (Mekler et al. 2013). The definitions postulate gamification to include user engagement, system motivation, and outcomes of game elements.

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