A Systematic Review of Gamification Research:
In Pursuit of Homo Ludens

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ABSTRACT
Gamification is an innovative approach that aims to increase users’ engagement and motivation and provide sustainable experiences. It has recently become widely known and is an approach that is being used in many fields. This article intends to identify and map trends and patterns in gamification research. For this purpose, this article employs a systematic review in which document and content analysis were used. Research findings have revealed that conceptual/descriptive papers outweigh other type of papers; however, quantitative and qualitative papers are showing an increasing trend. Lexical analysis demonstrated that education, teaching, and learning; engagement, motivation, and behavior change, and gamified designs, are emerging concepts. Keyword analysis revealed that gamification, engagement, and motivation are most frequently used keywords. Gamification articles are mostly related to the education field. Self-Determination Theory, Flow Theory, and MDA (Mechanics, Dynamics, and Aesthetic) Framework appeared to be the most beneficial lenses in gamification studies.

KEYWORDS
Gameful Design, Gamification, Gamified Learning, Research Trends, Systematic Review

INTRODUCTION
Gamification is defined as “the use of game design elements in non-game contexts” (Deterding, Dixon, Khaled & Nacke, 2011, p.10). Another definition described it as “the process of game-thinking and game mechanics to engage users and solve problems” (Zichermann & Cunningham, 2011, p.xiv). There are many other aligned terms of gamification, such as productivity games, surveillance entertainment, funware, playful design, behavioral games, game layer, and applied gaming; however, gamification is the term that is widely accepted in related literature. Though it was first used for marketing purposes, it has been used in many other fields, including education, health, business, and management. The basic purpose for using gamification is to increase users’ motivation to provide more effective, efficient, engaging, enduring and entertaining experiences. In other words, the main goal of the gamification is to keep the users, that is to say players, in the game.

Gamification was first introduced as a novel idea in 2008; however, its acceptance and popularity, from 2010 onwards, attracted much attention. Google Trend analysis for keywords ‘gamification,
gamify, and gamified” confirms this claim and also demonstrates how interest for gamification has increased since 2010 and continues steadily (Figure 1).

Gamification was also tracked in Gartner’s Hype Cycle of Emerging Technologies (Gartner, 2016). Gamification was first spotted in the Technology Trigger Cycle in 2011 and the Peak of Inflated Expectation Cycle in 2012 and 2013, and finally in the Trough of Disillusionment Cycle in 2014. It was seen in the Trough of Disillusionment Cycle in Gartner’s Hype Cycle of Digital Marketing in 2015 (Figure 2). It is thought that currently gamification has been maturing, so as to climb onto the Slope of Enlightenment Cycle, where gamification can benefit the enterprise, start to crystallize and become more widely understood, before it reaches the Plateau of Productivity Cycle where mainstream adoption occurs.

In an interview, Marczewski stated that “gamification is the process of improving systems and people’s experiences using lessons, techniques, and elements taken from games” and part of game-based solutions which can be defined as ‘game thinking’ (Bozkurt, 2017, para.3). In other words, game-based learning and gamification are two intertwined research areas and exploration of one

Figure 1. Google Trends for gamification

Figure 2. Gamification in Gartner’s Hype Cycle of Emerging Technologies
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