

Chapter 3

Design and Implementation of Gamified Course Contents

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ABSTRACT

This chapter sheds light on gamification aspects in a course content and how it can be implemented to enhance students' performance. The aim of this chapter is to give an overview of designing gamified content in the classroom by 'gamispire-wheel'. It also focuses on implementing existing tool such as ClassDojo. It is especially written for teachers, researchers, practitioners, educationists and students. To make the chapter self-explanatory for the readers, a case study has been illustrated that can be utilised in the classroom. In addition to that, key gamification elements have been mentioned. Moreover, this chapter provides step by step guidelines to design, develop and implement gamified course contents using the web or mobile phones.

INTRODUCTION

Gamification is a technique to implement game elements in a non-gaming environment. This term was first coined by Nick Pelling in 2003 (A brief history of gamification, 2013). However, gamification started to use commonly in teaching and learning until 2010 (Deterding, et al., 2011). The other related terms like 'game based learning' and 'educational games' are also used as like as gamification to enhance engagement for students. It has received enormous attention in recent days. This new terminology has harnessed its capacity in various domain. There are significant research works that clearly illustrate the gamified content's applicability in education (Bonde et al., Christy & Fox, 2014), government services (Bista, Nepal, Paris, & Colineau, 2014), gaming (e.g. FarmVille2, CityVille), fitness (Nike+ app for iOS and Android) and in military unit (e.g. game based training for US army). Technology and social networks play a vital role in education from early childhood to grown-up stages (Kayımbaşıoğlu, et al., 2016). Leah and Erin (2017) argued how gamification and digital games can be used in higher education. Joana (2017) explained the role of gamification in operations research. In her paper, the author distinguishes between gamified and non-gamified courses and demonstrates how gamified courses

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increase the engagement of students. Besides, gamification can help the children with intellectual disabilities (Colpani and Homem, 2015). In this research paper, authors showed how a set of cutting edge technologies such as augmented and virtual reality can be integrated with gamification model and its significance towards disabilities. David et al. (2016) proposed a platform called ICT-Flag funded by the Spanish government which can be used to benefit students, teachers, and academic contributors. Patrick and Elaine (2016) investigated different levels of expectation from the gamified environment based on personality. Here, authors used the National Tax Forecasting Project (NTFP) which is an Irish gamified learning intervention platform that helps to forecast the national budget by asking input from the students. Furthermore, a platform called Edutronics is introduced to teach electronics by doing various tasks (Assante et al., 2016). Lane, et al., (2016) prototyped an educational platform to teach geometry for children. Hence, we can draw a portrayal of how a gamification model could be productive in education sectors especially in teaching and learning.

Background

The key factor of gamification is obviously motivating the targeted audiences. In this section, a brief overview of using gamification tools is illustrated, which are commonly used in different scenarios. In addition, a motivation behind this chapter will also be discussed.

Typical features of gamification components include badges, achievements, quests collection, leaderboard, resources, virtual goods or currency, unlock new features, avatar, gifts, level boosters and so on. According to Marczewski's user type (2015), motivation works in different layers:

1. Base
2. Emotional
3. Trivial

These layers are also divided into several sub-layers:

1. Base: security, health, physiological, safety, needs
2. Emotional: relatedness, autonomy, mastery, purpose
3. Trivial: badges, points, leaderboard, bonus, gifts

The above list contains the big-picture of implementing gamification model.

There are several hormones, such as oxytocin, dopamine, serotonin, endorphins and so on, which are responsible for motivating human. In other words, hormones are responsible (the brain game, 2017) for changing emotional states, mood, behaviour, social attitudes, sleep, heart function, metabolism, focus and learning ability. And the common strategy of motivating students is rewarding them and guide them in a way that they feel comfortable as well as challenging.

There are many application in the market which are using gamification techniques. For example, Compettia (<http://www.compettia.com>) which is a mobile application that enhances employees and consumers to understand the products using gamification technique. Another interesting application called Bounden in iOS and Android platforms teaches dancing using two players including gamified features. Similarly, there are many popular games that use gamification aspects to engage users. For instance,

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