Chapter 81
Future Direction of Gamification Within Higher Education

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ABSTRACT

This chapter provides a critical pathway for the uses of Augmented Reality (AR) and Virtual Reality (VR) within Gamification. The chapter starts with an introduction to gamification, AR and VR. It follows with different explorations of AR and VR, on where different research is heading and the benefits they are having on the learner, educator and the learning environment itself. Finally, the chapter critically analyses future possible directions gamification can have within Higher Education.

INTRODUCTION

Traditional non-digital gaming environments offer physical interaction to real world objects, in which players would perceive a variety of information while observing social cues within the interaction process. These games would involve players learning ground rules for appropriate behaviours and modelling the behaviours of adults. Traditional board games and role-play games would act as a tool for formal learning. Ideally this principle of using gaming concepts from traditional board games and role playing games has been brought forward through the use of concepts and technology and applied to Higher Education through gamification. These concepts of gamification would support the learning process with minimum interference, while the technologies would be used for enhancing and enriching purposes. Currently these trends for enhancing and enriching the learner experience within the learning process are focusing on AR and VR. Through the development of AR and VR, Educators can bring interactive gaming concepts to learning activities that makes challenges more interesting through virtualization. The learning activities coupled with VR or AR would provide information that is relevant to the game at appropriate timing to influence the learner's decision, engagement and problem solving skills. In 2016 Pokémon Go was co-created by Niantic and Nintendo that enabled users to share stories and create communities based upon rewards.

DOI: 10.4018/978-1-5225-5469-1.ch081

As Stefan et al. (2016) and Lupton (2017) point out that using games/apps can assist in individuals tracking their own progress for health reasons, educational purposes, monitor physical activities, or for leisure. These Apps, like Pokémon Go according to Stefan et al. (2016) would enable educators to bring History, Health & Fitness, Architecture and Culture into the lessons when learners are set challenges. According to Glover (2013) and Gawley et al. (2016), FitBits can be used to challenge others within a community through gamification to monitor their achievements or keep them more engaged and motivated with their own desired results. These could be, depending on the challenge or assessment criteria set, based upon: Steps achieved, Miles Covered, Calories Burned. Please see Figure 1 FitBit App Analysis Screen.

Gamification and modern technology should be blended together within the learning activities to support actions, behaviours, and promote motivation. According to Jang et al. (2017) another area that is heavily influencing Higher Education (HE) at the moment is Virtual Reality that enables the learners to explore structures, see environments and experiments in 3D. Lee and Wong (2014) and Jang et al. (2017) suggests that VR is capable of allowing learners within Higher Education to explore anatomical structures to support them within their training courses. This can be applied to courses/modules whose students need to explore the "internal organs that would otherwise require cadaver dissection" (Jang et al., 2017).

Other researchers like Lee et al. (2010), and Merchant et al. (2014) believe that VR within HE can have the abilities to improve independent learning; accommodate learners with different learning needs; and problem solving skills. VR enables learners to test hypotheses in a simulated environment to see the effects of inputs against the desired outcomes over and over again, without the worry of costs and apparatus and can aid in promoting learning. Lee at al. (2010) suggests that adding gamifications to the VR activities would enable the learner to be motivated and challenged, and gain a sense of autonomy, identity, and interactivity. Jang et al. (2017), Koivisto et al. (2017) and Chapman and Rich (2017) in-

Figure 1. FitBit app analysis screen