

Chapter 2

Gamification Tools to Facilitate Student Learning Engagement in Higher Education: A Burden or Blessing?

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ABSTRACT

Gamification is a novel technology that can potentially motivate student learning. This chapter reflects on the implementation of a gamified application to support students' learning in terms of learning important facts concerning their study program. The scope of the chapter refers to two design features in which tests were conducted on the different configurations in a field experiment among UK university students. The initial feature identified was feedback, where it was anticipated that engagement would increase, with tailored feedback having a greater impact than generic feedback. The next feature identified was circumventing users from binge gaming through session limits, as this may potentially prevent deep learning. The findings suggest that tailored feedback was less effective than generic feedback, contradicting the initial anticipation. Session limits were found to not circumvent bingeing without a reduction in sessions. The findings suggest that gaming properties of gamified applications could impact sustaining and encouraging play.

INTRODUCTION

Novel technologies have paved the way for learners to have a more engaging and immersive learning experience, offering exciting opportunities to collaborate with their instructors and colleagues in new ways. Gamification is a novel technology that has the potential to motivate student learning. Deterding et al. (2011) define gamification as “the use of game-design elements in non-game contexts” (p.9). Though within the past decade, gamification has attracted much attention within various sectors, which has seen

DOI: 10.4018/978-1-7998-4846-2.ch002

successful outcomes such as rapid growth with a number of cases reporting that businesses, educators and web designers have applied gamification as a means to motivate and engage learners (Mollick & Rothbard, 2014; Subhash & Cudney, 2018). Despite the achievements of gamification, investigations into when and how gamification can be applied to achieve the most engaging learning experience in higher education settings have been overlooked.

The wider interest in gamification has prompted various studies across various topical areas aimed at certain audiences and disciplines. In 2012, an early literature review (around the time gamification started to take off) by Connolly and Boyle (Connolly et al., 2012) found over 100 empirical studies investigating the impact of gamification in various contexts. By contrast, Nah et al. (2014) conducted a more recent review which investigated gamification in the education context and only found 15 studies that discussed gamification in education settings. In addition, the latter review indicates that gamification has the potential to increase student engagement for improving their learning outcomes which are influenced by a number of situational factors such as the utilisation of tailored feedback (Burgers et al., 2015; Hatala et al., 2014; Lustria et al., 2013). For that reason, the scope of this chapter is to examine whether tailored feedback can reveal whether gamified learning tools can foster student engagement for higher education and whether this is a burden or a blessing for achieving learning outcomes.

In some contexts, players often binge games for prolonged periods of time as opposed to periodically spacing out play over a number of sessions. Several authors argue against the prolonged exposure to gamified tools, suggesting that distributed practice can enhance learning through learning a new skill or developing knowledge by effectively spreading learning across a number of short time intervals (Dunlosky et al., 2013; Heidt et al., 2016; Rohrer, 2015). However, gamification for learning engagement can only succeed when students game for prolonged periods of time in order to process a sufficient amount of new information to achieve their learning outcomes (Welbers et al., 2019). The dilemma here is that prolonged periods of gaming can potentially take away the learning element and becomes a mere leisure activity or a source of entertainment. So main objective of this chapter is to determine whether gamified learning tools for higher education learning is a burden or a blessing.

This chapter hypothesises whether learning engagement from persistent play would a) encourage enforce distributed learning or b) limit enforce distributed learning. Testing this hypothesis calls for the creation of experimental conditions where persistent play would either positively or negatively impact learning participation and engagement.

THEORETICAL BACKGROUND

Gamification

In spite of its inception, which dates back to 2008 and its current popularity, gamification is still in its infancy. Brett Terill (2008) is often the first to be credited for the inception of the term and discussed gamification in a blog to define the act of taking game mechanics and applying them to other web properties to increase engagement. Currently, gamification is not limited to the web, but it can also engage people, motivate action, promote learning, and solve problems through incorporating game design elements in contexts such as non-game environments (Aparicio et al., 2019; Deterding et al., 2011; Mollick & Rothbard, 2014). The scope of our paper was investigating the properties of gamification to stimulate learning in higher education contexts; however, gamification is related, but is not the same as game-based learning.

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