The Impact of Meaningful Gamification on Students’ Motivation: A Proposed Pilot Study

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Extended Abstract

Introduction and Background

At the frontier of new and intriguing pedagogical approaches is that of gamification, where digital games are used in an educational setting and as an aid to learning. Recent publications on gamification in the classroom investigate the concept of “meaningful gamification” where, in line with Ryan and Deci’s self-determination theory, competency, autonomy and relatedness are prioritised (Ryan & Deci, 2000, p. 68). The paradigm of meaningful gamification works well as a catalyst in motivating students to read background material and grasp key concepts that facilitate a flipped classroom, and this study aims to (a) measure the impact of this intervention by meaningful gaming on students’ motivation at a higher education level and (b) explore the role of the story arc within meaningful gamification on the same cohort of students.

Gaming and education have long been seen to be separated by a huge gulf, the former associated with a misspent youth and addiction, and the latter with a respectable acquisition of knowledge and skills needed in life. The idea that the twain shall meet, and that game-based learning is not an oxymoron but a reality is one that is appearing again and again in recent scholarly articles on gaming in education. Panelists at a Stanford discussion held at the Graduate School of Education declare that “using games as an educational tool provides opportunities for deeper learning” (Mackay, 2013) and a Pearson research report offers theoretical and empirical evidence behind five key claims about the use of digital games in education. The claims are that digital games: (1) are built on sound learning principles, (2) provide more engagement for the learner, (3) provide personalised learning opportunities, (4) teach 21st century skills and (5) provide an environment for authentic and relevant assessment (McClarty, 2012).

The use of gaming in an educational context was established with the “Serious Games Initiative” by the Woodrow Wilson Center for International Scholars in Washington, D.C. in 2002 (Michael & Chen, 2006). What differentiates “serious games” from other forms of gaming is that education is the primary goal, rather than entertainment (Yap, 2012, p. 7). More recent work on gamification in the...
classroom shifts the focus from the generic benefits of gaming, as claimed in the Stanford discussion and Pearson report, to the specific game design elements such as “reward-based gamification” techniques centred on points, levels, badges, achievements and leaderboards (Deterding, 2012).

Nicholson (2013) coined the term “meaningful gamification” as the antonym of “reward-based gamification”, where users are able to find “meaningful connections with the underlying non-game activities” and rewards are only used when “truly necessary”. With meaningful gamification, the emphasis is on elements of play rather than those of scoring. This bifurcation of the game design is one that is intimately tied to motivation, for with meaningful gamification external rewards are de-emphasised, and autonomy as well as relatedness are prioritised. Meaningful gamification has a user-centred approach which in turn expedites the three needs of successful learners in line with Self-Determination Theory as identified by Ryan and Deci (2000)—autonomy, competency, and relatedness. Self-Determination Theory is particularly relevant to this study on gamification and motivation as its focus is on innate psychological needs that are the basis for self-motivation, and the conditions that foster this positive process (Ryan & Deci, 2000, p. 68). Nicholson (2013) provides several examples of meaningful gamification, most of which stem from the integration of pure play elements or what he calls “playification”. The focus of this project is the class of examples that is the Alternate Reality Game (ARG), where game elements are used to tell a story that is based on a non-game setting. The significance of the story arc is one that is tinged with controversy. The narrative or story has a central place as the “hook” in games designed for entertainment, and it was highlighted by Zyda (2005) as an equally vital component of the “serious game”. Educators before Zyda, on the other hand, had privileged pedagogy over story (Yap, 2012, p. 9). Zyda’s claim sits well with meaningful gamification and self-determination theory in providing relatability. While some preliminary research has been conducted on the effect of meaningful gamification on motivation (Nicholson, 2013), the concept is a relatively new one and further studies are needed to establish a more direct link between the two. The importance of the story arc as a key element of the serious game in instilling motivation via relatability is also uncharted territory.

Proposed Research Project

This project aims to explore the relationship between motivation and game-based learning through the meaningful gamification of the module “Women in Film”. This module is part of the Ideas and Exposition Programme at the Centre for English Language Communication, National University of Singapore (NUS). It is one of 19 content-specific, rhetorically intensive modules that has been developed for students enrolled in the residential colleges that make up University Town at NUS. As such, students are required to read various journal articles or book chapters related to the content of their module in preparation for seminars. Student learning depends a great deal on the engagement with these various readings, not only facilitating class discussion, but also the understanding of concepts that are required in the expository essays and other assignments that are the mode of assessment. Research on pre-reading as essential to student performance has been tested more within the domain of English Language Teaching (Tudor, 1989). It is this section of the module—the engagement with reading material—that will be gamified. A digital game, also available as an app, will be created with a robust story arc that features the journey of a hero accompanied by a series of quests and challenges stemming from the 10 main readings of the module. The challenges will not only direct students to areas of focus and provide scaffolding for their comprehension of the material, but also allow for a flipped classroom where they will be empowered to contribute to discussions during the seminar. This will, accordingly, foster a growing sense of competency. In addition to Nicholson’s parameters for meaningful gamification, the three criteria proposed by Domínguez et al.
(2013) for successful gaming in education, that of the cognitive, emotional and social arenas, will also be employed. To assess their levels of motivation in engaging with the readings, qualitative data in the form of interviews and focus group reflections will be collected. Quantitative data that measures the synergy of students’ discussions during seminars will also form part of the findings. The findings will determine where the students fall in the spectrum of extrinsic (external, introjected, identified and integrated) and intrinsic motivation outlined by Ryan and Deci (2000).

**Implications of the Study**

As a response to the rapid rate of technological change in society and a greater attention to not only “what” students are learning but “how” and “when” they learn, this project seeks to extend research that places the student at the centre of the learning process, in particular research on students’ motivation. One of the expected key outcomes of this pilot project seeks to provide evidence for the use of gaming, specifically meaningful gamification, as a pedagogical tool that increases students’ motivation, targeted at a group of students pursuing the module on ‘Women in Film’ in a global, research-intensive university in Asia. Analogous studies can be conducted in higher education contexts outside of Asia in order to determine if cultural factors have an impact on this intervention by meaningful gamification.

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References


