Chapter 13
Facilitating Game Design in the Online Classroom:
Building Efficiencies in Teaching while Students Build Games for Learning

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ABSTRACT

Student game design and play represent a powerful means for encouraging advanced interactivity, development of critical thinking, and deeper learning in the classroom. Orchestrating the details, milestones, examples, and teams in the online setting can be challenging. Through clearly presented game models, tight integration with course content, and class coordination created specifically for design teams, the Game Design Methodology (GDM) provides a solid framework for teachers and learners to progress through the game making process and successfully achieve course outcomes. Through the use of case studies, this book chapter will outline the tools, techniques, and performance outcomes that instructors need to plan, implement, and facilitate the use of GDM in their online classes.

INTRODUCTION

Game Design Methodology (GDM) uses the idea of student built games in order to facilitate the teaching and learning process through the digital and physical construction of course concepts. In online environments the GDM utilizes a wide array of tools and technologies to deliver and facilitate the planning, development, and presentation of student built games (Jaurez, Fu, Uhlig, & Viswanathan, 2010). Faculty use discussion boards to allow students to share files and communication, DOI: 10.4018/978-1-5225-0347-7.ch013
coupled with wikis and assignment tools to edit, capture, and provide feedback to students through the GDM process. Through a clear plan of organization and facilitation, faculty can manage and build productivity in the use of GDM as a practicable teaching activity with clear benefits to the learning process.

The Game Design Methodology (GDM) focuses on deeper learning and increased engagement through gamification of course concepts and materials. The difference with game based education or gamification of courses is the creation of the student experience that places the game design in the learner’s hands (Kapp, 2012). By teaching the basics elements of traditional game design, students are empowered to choose themes, players, rules, procedures, and objectives that demonstrate actual course concepts in a highly interactive, detailed, relational, and engaged method (Fullerton, 2008).

Building blocks for GDM include the faculty member familiarizing themselves with game design concepts or gamification elements (Jaurez et al., 2010). Considering that game design is likely not the primary discipline of the instructor, the basic game building components can be understood through examining existing games and identifying the parts of these games. The same process of examining and playing existing games, while pointing out game design structures will work to teach students the game design process, without adding significant overhead to the course.

Although the process of student built games is straightforward and adds minimum overhead to the teaching process, faculty will require a framework for merging interactions, technology, and course materials into an orderly class experience (Altamirano & Jaurez, 2013). Students use the online tools such as discussion boards, wikis, assignments, and synchronous meeting tools to collaborate with peers and faculty while creating their games (Morrison & Preston, 2009). Setting the stage for the GDM activities of planning, designing, building, and presenting the student built games, faculty create an environment for creativity and building by providing traditional lectures, interactions, and assessment with the added context of how this content could be adapted into their own game constructions (Altamirano & Jaurez, 2013). The merging of technology tools, game design techniques, and course content gives the artist canvas and academy structure for relational connection to be made between the theoretical and practical use of the intended discipline.

This chapter provides the structure and examples that will allow the instructor, new to GDM, to navigate and implement the method in a productive and efficient manner. We discuss gaming and GDM in the literature next, and then expand GDM basic application steps. After this general approach, we present examples of how GDM is developed for sustainability and economics courses. Finally, we present our conclusions in the last section.

GAMING AND GDM LITERATURE REVIEW

Games and gamification have been growing more popular and prevalent in education. The concepts of increased engagement and motivation particularly in STEM (science, technology, engineering, and mathematics) along with extensions to art (STEAM) and derivative disciplines (STEM+) has led the game based learning movement in higher education (Horsley, 2010). Game based learning has been touted for its ability to promote fault tolerance, project friendly, rich feedback, practical simulation, persistence, pacing, and leverage prior knowledge (Sheldon, 2011).

Project based learning is rooted in the idea of creating learning experiences that provide practical application of course content (Lewis & Massingill, 2006). Project based learning also provides the op-