Chapter LX
Game Design as a Compelling Experience

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ABSTRACT

This study explored the nature and design of a compelling experience: game design. Thirty-six college juniors in the software engineering major participated in a semester-long project to design games for Chinese language learning. The project was designed to help engineering students understand educational and other issues in designing educational games. Results show that game design expanded students' perceptive capacity; enhanced their subject-matter understanding, problem-solving skills, meta-learning ability and motivation; and facilitated students' reflection on themselves as well as their environments. Factors are discussed to make a game design learning experience compelling.

GAME DESIGN AS A COMPELLING LEARNING EXPERIENCE

This chapter addresses the nature and design of a compelling experience: game design. Game design has been increasingly used to engage students in various subject matter learning such as math, science (Harel & Papert, 1990; Resnick, 1996), and software design (Cagiltay, 2007). There are many claims about the benefits of using games in education: games are a motivator to engage students in exploration and reflection (Gee, 2003); as the native language of the digital world, games can reach a younger generation (the digital natives)

more easily; design can help establish dialogues and break social and cultural boundaries inside and outside of classrooms (Pivec, 2007); and finally game design enables students to develop knowledge and skills that they need to succeed in the digital world (Cagiltay, 2007).

However, game design does not automatically lead to better learning. The educative values of game design can only be realized when it is appropriately developed according to the pedagogical goals and the characteristics of the learner. Thus, to more effectively use game design as an educational medium, we need to have a deeper understanding of the key components of effective game-design learning environments as well as the psychological and social conditions and processes triggered by game design.

The intention of this study was to answer three related questions: (1) what makes a game design learning environment effective; (2) what learning outcomes do students accomplish in the game design process, and (3) why game design makes such kind of learning happen. As an initial attempt, we created a game design learning experience for our students to achieve three goals: cognitive growth, emotional engagement, and self-discovery. We examined the learning outcomes that the students had made as well as the lessons that we had learned as learning experience designers. We discussed the implications of this design-for-learning experience for curriculum designers, teachers, and learners.

GAME DESIGN AS LEARNING EXPERIENCE

Mini Game Design Project

Mini Game Project

The Chinese Language Mini-Game project was to design simple and small-scale games for beginning Chinese Language learners. It was a pilot program of a large innovative Chinese language education program initiated by the Confucius Institute at Michigan State University[1]. The program began with a vision that games provide an immersive and natural environment where learners can learn Chinese and Chinese culture in a cohesive and engaging way[2]. The program was designed to run in a 3-D massive online game environment that consists of several levels of learning and thousands of mini-games with rich language and cultural content.

The goal of the mini game project was to create functional and engaging games for Chinese language and culture learning. This was no small challenge for the game designers. The designers had to create a game that was engaging in its design, content, and pedagogical approach. In our project, student designers were asked to design games around the idioms. The students chose an idiom from a pool of the most popular Chinese idioms, such as *as the old cock crows, so doth the young*. Most of the Chinese idioms were punch lines of historical events or folk tales widely known among Chinese society and community. Because of that, the idiom possesses rich cultural and linguistic information, and more importantly, provides open space for game narrative and interaction.

Thirty-six college juniors in the software engineering major from a Chinese university participated in the project, as a partial fulfillment for their practicum, a four-credit required course. The participants were interested in both games and cultural exchange. Most of the students considered this project/course as an entrance into game design, a field in which they were interested in building a career.

The students worked in small teams of 2 to 4 people. It took roughly 12 weeks to complete the entire design cycle from brainstorming to accomplishing the final products. The students and the instructor decided collaboratively on the team task and each team member's role. Every team made individualized design plans.

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