Chapter LVII
Conceptual Play Spaces

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ABSTRACT

In this chapter we provide a framework for designing play spaces to support learning academic content. Reflecting on our four years of design experience around developing conceptual play spaces, we provide guidelines for educators to think through what it would mean to design a game for supporting learning. Conceptual play is a state of engagement that involves (a) projection into the role of a character who, (b) engaged in a partly fantastical problem context, (c) must apply conceptual understandings to make sense of and, ultimately, transform the context. We provide four elements that one must balance when designing a conceptual play space to support the learning of disciplinary content; more specifically, ensuring the learning of academic content and supporting legitimate participation while, concurrently ensuring interaction with gaming rules and engagement with the framing narratives through which the play takes on meaning. Our goal is to communicate the potential value of play spaces and to provide an illuminative set of cases for others.

It is our belief that video games pedagogies and technologies bear considerable potential for transforming learning even in the context of schools. Though many academics have little first-hand experience with them (Frasca, 2002), two generations of adults have grown up with video games, and a multi-billion dollar industry has developed alongside these players (Herz, 1997; Jones, 2003). Indeed, considering how much time youth spend with video games (Jones, 2003; Roberts, Foehr,

& Rideout, 2005) coupled with research revealing the richness of the learning interactions and social networks that video games inspire (Gee, 2003; Shaffer, 2006; Squire, 2006), educators should be keen to command such a force. Game play has the potential to immerse the player in a rich network of interactions and unfolding story lines through which she solves problems and reflects on the workings of the design of the game world, and the design of both real and imagined social relationships and identities in the game- and non-game worlds.

According to Gee (2003), video games support a form of *empathetic embodiment* for a complex system, something that school curriculum should aspire to but has difficulty in achieving. Empathetic embodiment is a process of being immersed (experiencing a sense of "presence") within a virtual environment through which one comes to develop an understanding of or appreciation for one or more particular aspects (narratively, interactively, perceptually, and/or socially) of the context (Heeter, 1992). This sort of projective identification with an individual, a group, or even a system occurs in games as the player comes to identify with their game character and the larger system within which their character interacts.

So far in history, for most people, complex systems have not been the sorts of warm and fuzzy things with which most people could or wanted to sympathize, let alone empathize. But good games create a strong empathetic identification with the game world as a system. (Gee, 2004, p. 2)

Further, video game play and particularly multi-player gaming usually takes place as part of discourse communities that elicit complex cognitive and communicative practices, much the way participation in scientific communities has been shown to produce complex cognitive processes (Squire, 2006; Steinkuehler, 2006).

At one level, curriculum developers and instructional designers can only marvel at the diverse ways these games support complex learning, thinking, and social practices. Multiplayer role-playing games (MMOs) afford rich opportunities for achievement, communication, collaboration, fantasy engagement, problem solving, character development, hypothesis generation, and reflexivity, with the potential to enlist membership and identity in ways that occur only in the most advanced curricular designs. However, even if one did want to integrate the technologies and methodologies of video games into K-12 curriculum design, there is little understanding of the principles and tensions regarding how to develop a play space that shares common design features with these kinds of games while falling within societal norms and school-sanctioned behaviors. Doing so is a challenge, but one that we believe is possible, worthwhile, and necessary. In designing games for academic learning, it is easy to create a distinction between play and learning, setting up the game structure so that it is separate from the content to be learned. The goal of this manuscript is to offer a theoretical and design framework that facilitates academically meaningful collaborative play.

This argument is situated in the context of our Quest Atlantis Project. Quest Atlantis (QA) is a learning and teaching project that uses a 3-D multi-user environment to immerse children, ages 9-15, in educational tasks (http://questatlantis.org). Building on strategies from online role-playing games, QA combines strategies used in the commercial gaming environment with lessons from educational research on learning and motivation (Barab, Dodge, Thomas, Jackson, & Tuzun, 2007; Barab, Thomas, Dodge, Carteaux, & Tuzun, 2005; Barab, Zuiker, et al., in press). It allows learners to travel to virtual places to perform educational activities (known as Quests), talk with other users and mentors, and build virtual personae. While QA as a virtual environment consists of dozens of virtual worlds, each with their own themes and design priorities. The two examples presented here were chosen because they usefully contrast