Chapter 5.12

The Role of Narrative in Educational Games and Simulations

Jim Bizzocchi
Simon Fraser University, Canada

ABSTRACT

This chapter examines the relationship of story, interaction, and learning through a close view of the role of narrative in two *SAGE for Learning* projects: *Contagion* and *COMPS*. The combination of narrative with an interactive multi-mediated environment can enhance the learning experience. In interactive environments, the standard narrative arc has limited analytical utility; in its place, we use a framework of more focused and particular narrative components, with the following components: storyworld, character, emotion, narrativized interface, micro-narrative and narrative progression. This framework is used to analyze *Contagion* and *COMPS*, revealing the underlying narrative dynamics that drive the design, and support the learning experiences that they make possible.

INTRODUCTION AND BACKGROUND

The combination of narrative and well-constructed media-rich digital environments has the capacity to support learning in a variety of ways. Well-designed games and simulations do provide this opportunity for multi-mediated and engaging learning environments. Mayer and Chandler (2001) point out that multimedia presentations can support both retention and transfer. Malone and Lepper (1987) maintain that games tap into increased motivation through mechanisms such as challenge, fantasy, curiosity, and learner agency. The author's work with Brad Paras (Paras &

Bizzocchi, 2005) indicates that a key connection between games and learning is the powerful effect of Csikszentmihalyi's "flow state" on building the intrinsic motivation to maximize immersion within the learning experience (Csikszentmihalyi, 1990). Scholars such as James Gee (Gee, 2003) and Marc Prensky (Prensky, 2001) maintain that even existing commercial games have significant learning outcomes in their own right. The relationship between games and learning has been identified by scholars internationally as a significant opportunity to be explored and developed. Some of the many concentrations for research into games and learning include the MIT- University of Wisconsin *Education Arcade[1],* the *Serious Games[2]* conferences and websites, and the Canadian *Imagine[3]* and *SAGE*[4] research networks.

Narrative has a similar and well-recognized potential to support and enhance learning. Narrative is an extremely powerful personal, social, and cultural phenomenon. Donald Polkinghorne's (1988) extensive overview of the role of narrative in the social sciences relies on Barthes to remind us that narratives are everywhere, and that they have the power to shape us as individuals and as cultures. Polkinghorne (1988), Alvarez and Risko (1989) and Grady (2002) maintain that narrative helps provide learners with conceptual schema, which enable them to understand better and learn more. The unifying power of storytelling can support the juncture of new knowledge with old, and the connection that underlies constructivist learning experiences (Mott, Callaway, Zettlemoyer, Lee, & Lester, 1999). Narrative can also unify learner and content. Character and plot actions in stories increase learner commitment and involvement through identification, and can therefore facilitate transformative learning experiences (Rossiter, 2002). Laurillard (1998) holds that narrative structure is central to comprehension, and its absence can severely inhibit learning.

Media-rich narrative-based simulations and games can offer learners the richest of mediated experience – immersion. Immersion is a much-used and even overused term, but its utility as an analytical filter is enhanced by giving it more specificity. It is possible to recognize at least three quite different forms of user immersion. The oldest, and most closely tied to narrative, is Coleridge's, who describes the immersion of "suspension of disbelief" and the WILLING surrender to the pleasure of story (Coleridge, 1817). Csikszentmihalyi's (1990) is the immersion of active engagement with dynamic process— the immersion of "flow." Cinema, the dominant cultural medium of the 20th century, is the benchmark for Coleridge's immersion. Games are the current benchmark for Csikszentmihalyi's immersion, and may well develop into the dominant cultural medium of the early part of this century. Ermi and Mäyra (2007) parse immersion into distinct types that include the two immersions described above. Their "challenge-based immersion" corresponds to Csikszentmihalyi's flow, and they term the second type "imaginative immersion," which corresponds to Coleridge's "suspension of disbelief." They then go beyond this simple dualistic model, adding a third immersion, "sensory immersion," related to the sensory outputs of the game system. This third immersion may correspond to certain aspects of Gunning's "cinema of attractions," which he saw as one pole of an early and persistent cinematic dialectic between spectacle and narrative (Gunning, 1990). Educational games and simulations can give learners educational experiences complete with all three forms of immersive rewards: imaginative, sensory-rich, and challenging. This is indeed a compelling vision. Janet Murray argues that digital environments which combine immersion and agency have the additional potential of providing transformative experience – surely a heady goal for educators (Murray, 1997).

"Narrative": A Slippery Term

Eric Zimmerman (2004) maintains that "narrative," when considered in combination with

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