

Chapter 14

Stories, Games, and Learning through Play: The Affordances of Game Narrative for Education

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ABSTRACT

Stories are the mechanism through which humans construct reality and make sense of the world around them. Yet, literature on the effects of narrative in game-based and other learning environments is quite variable, and the relevance of narrative to the learning sciences is not well-researched. Identifying precisely how narrative intertwines with human experience of the lived-in world requires the application of a situated cognition framework to understand user-content-context interactions as dynamic and co-determined. This chapter uses examples drawn from a narrative-structured, game-based learning program to accomplish that goal, discussing in-context, on-the-fly dialogic interactions between narrative “producers” and “recipients.” While there is still much to learn, the leveraging of narrative to help recipients grapple with complex social, cultural, and intellectual issues may be one of the most important—and overlooked—means of inducing game-to-real world transfer.

INTRODUCTION

Stories may well be the primary mechanism through which humans construct reality and make sense of the world (Bruner, 2004). Yet, research aimed at reviewing and analyzing the influence of narrative in formal and informal learning environments is quite variable, and despite thousands of years of oral storytelling tradition across many world cultures, the relevance of narrative to theories of learning is not well understood or researched. Taking into account Clark, Tanner-Smith, and Killingsworth’s (2015)

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meta-analytical findings of the value-added aspects of games for learning, the issue appears to be just as prevalent in computer and game literature as other multimedia sub-categories, if not more so.

Consequently, this chapter is aimed at reconciling what is assumed with what is known about the psychological underpinning of narrative, both in general and in game environments, specifically. Through the use of examples drawn from our particular narrative-structured, game-based instructional program, *Project TECHNOLOGIA*, we address three major questions regarding narrative as part of teaching and learning:

1. How can narrative be optimally characterized with regard to impact on learning?
2. What are the specific affordances of storytelling and narrative structure for supporting classroom learning?
3. What is the relationship between narrative, co-authorship, and learning?

We know that humans disseminate knowledge, encourage investigation, and promote creative acts through the stories they share, so isolating and defining the connection between story *producers* (i.e., those who create narratives in games and other media) and *recipients* (i.e., those who read, analyze, and discuss narratives in games and other media) should help us improve game and instructional design writ large. To that end, we present a situated view to further our narrative framework and describe the potential of narrative application for shaping understanding, goal adoption, and transfer from game and gamified classroom environments to applied, real world settings.

BACKGROUND

For decades, cognitive scientists have suggested that thinking and learning are representational, symbol-driven processes attributed to an internal mind and recorded by synaptic neurochemical brain exchanges (e.g., Miller, 2003; Vera and Simon, 1993). However, given the extent to which experience with the lived-in world affects goal adoption and behavior, the leap from a biologically and chemically-driven explanation of thought (e.g., Skinnerian behaviorism) to the deeply philosophical concept of a mind (e.g., Descartes) is quite broad. To compare the brain to computer hardware (e.g., making use of internal symbols and representations via schematic cataloging) set in a disembodied, intangible mind dilutes the granular, individualized interactions of particular people within particular contexts acting on particular life experiences (Dreyfus, 1992; Varela, Thompson, & Rosch, 1991). As a result, we suggest that it would be beneficial to conduct future learning science research with an eye toward the influence of individual life-worlds on perception and action (i.e., *situated cognition*; see Barab & Roth, 2006; Young, 2004).

Storytelling and gaming are two areas where adopting this kind of *ecological* perspective might be especially helpful for delineating how and why learning occurs in particular formal and informal educational contexts. Much of the extant literature concerning stories and games is rooted in information processing and schema theory, and while this has been helpful for the purposes of deconstructing relationships between varying narrative elements (e.g., Burke's [1945] pentad of story elements and Bruner's [1991] 10 defining characteristics of narrative), it has also been limited in addressing the complex dynamics of author-reader-environment interaction. Schank (1977; 1989; 1991; 1995; 2006), for instance, argued that people create and use cognitive "scripts" to anticipate events and recall them based on story frameworks, planning actions around scenarios they prospectively play out in anticipation of

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