

Chapter 1

Toward a Theory of Game–Media Literacy: Playing and Building as Reading and Writing

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ABSTRACT

This paper discusses varied ideas on games, learning, and digital literacy for 21st-century education as theorized and practiced by the author and James Paul Gee, and their colleagues. With attention to games as means for learning, the author links Gee's theories to the learning sciences tradition (particularly those of the MIT Constructionists) and extending game media literacy to encompass "writing" (producing) as well as "reading" (playing) games. If game-playing is like reading and game-making is like writing, then we must introduce learners to both from a young age. The imagining and writing of web-games fosters the development of many essential skill-sets needed for creativity and innovation, providing an appealing new way for a global computing education, STEM education, for closing achievement gaps. Gee and the author reveal a shared aim to encourage researchers and theorists, as well as policymakers, to investigate gaming with regard to epistemology and cognition.

GAME LITERACY

In order to understand and define game literacy, we must first ask a few big questions: What is the significance of gaming practices for cognitive development and learning? How can games be

leveraged as an important component of digital literacy development?

My colleague James Paul Gee and I collaborated at this year's annual meeting of the American Educational Research Association, offering two gaming-based theoretical frameworks for learning and digital literacy. Although we are known

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to approach these topics (“gaming and learning” and “game literacy”) from different perspectives, we attempted to integrate our views regarding 21st-century learners and their preferred learning environments in an effort to arrive at the same focal point.

During the session, we discussed a variety of ideas with examples from our most recent work. We hoped to inspire educational researchers, practitioners, policy makers and funders to deepen their understanding of various “videogame practices,” involving 1) commercially-available videogames as learning tools; 2) videogames that teach educational content; 3) games and sims that involve modding and design as a learning environment; 4) game-making systems like GameStar Mechanics, Game Maker, Scratch; and 5) widely-used professional software programming tools like Java or Flash ActionScript.

This AERA session was intended to be a field-building session—a step toward a much larger conversation about the meaning and value of various kinds of game practices and literacies. We sought to shed light on why today’s students should become game-literate, and to demonstrate a variety of possible routes that lead to game literacy. We also discussed the role of utilizing games and creating game-media in the learning and cognitive development of today’s generation of students and educators.

MULTIPLE TRADITIONS FOR INITIATING AND INTERPRETING GAMING PRACTICES FOR LEARNING

Game literacy is a multidimensional combination of varied practices (e.g., reading, writing, and calculating; textual, visual, and spatial cognition; interactive design, programming, and engineering; multitasking and system understanding; meaning making, storytelling, role playing, perspective taking, and exercising judgment; etc.). Different

gaming practices form a whole that has roots in both traditional literacy theories and Constructionist digital literacy. Though seemingly disparate, both traditions attempt to develop methods for describing how players/learners learn and how they construct knowledge in gaming contexts. Both traditions focus on the processes of learning rather than the product (winning the game or the actual game created by a learner/designer). Both traditions struggle with the difficulties of capturing the process of learning (an intersection of individual, context and activity over time within a situated perspective) as a unit of analysis. Despite the challenges that persist in such a dynamic and distributed object of study, educators and researchers continue to explore and refine innovative methodological approaches that capture and track learning as it flourishes within the rich environments of various gaming practices so as to inform instructional practice and design (also known as design-based research, e.g., Brown, 1996; Dede, 2005).

RESEARCH INTO PLAYING VIDEOGAMES

The fascination with and research on the cognitive and learning processes that occurs during videogame play is becoming increasingly prominent—so much so, that a national conference dedicated entirely to this topic was launched by Dr. James Paul Gee in 2004 as a venue for scholarly discourse (Games, Learning and Society, GLS, www.glsconference.org). In this growing field of gaming research, scholars are addressing the nature of cognitive and emotional development, literacy practices, and thinking and learning during gameplay in a range of gaming environments and genres (Barab, 2009; Gee, 2003, 2007; Shaffer, 2006; Squire, 2002, 2006, 2009; Steinkuehler, 2007, 2009a, 2009b). This line of research focuses on assessing different kinds of learning while playing games released commercially for enter-

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