

## Chapter 7.10

# Making a Connection: Game Genres, Game Characteristics, and Teaching Structures

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### ABSTRACT

This chapter will make a connection between game genres, game characteristics, and constructivist teaching structures. Constructivist teaching structures, like open learning environments and anchored instruction, have the same aims as serious games – to facilitate higher order learning skills and knowledge. However, constructivist teaching structures are not games and serious games are grappling with how to design games and keep the fun and learning in perfect balance. Making connections between game genres and characteristics (where much of the fun resides) and teaching structures (where much of the learning resides) will highlight commonalities

that can be taken advantage of in the design of good serious games— where learning and fun are in perfect balance.

### INTRODUCTION

In the past decade, there has been significant support for creating serious games (Aldrich, 2004, 2005; Gee, 2003, 2007; Prensky, 2001; Squire, 2002). Serious games are focused on non-entertainment purposes, (i.e. training and instruction) in a variety of fields (i.e., public policy, education, corporate management, healthcare, military; Abt, 1965; B. Sawyer, 2006). The reemergence of interest in games for learning transpired from advances in technology, media, and game design

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has reinvigorated the movement to look to games as sound venues for instruction and training.

While the reemergence of the interest in games for learning/training has spurred the development of serious games, there is a lack of research and analysis supporting how learning is facilitated. There is support for the contention that game activities provide the engagement needed to motivate learners to persist in serious games (Aldrich, 2004; Annetta & Cheng, 2008; Malone & Lepper, 1987; Prensky, 2001; Shaffer, 2006; Squire, 2002). Exploring the motivational aspects and their impact on learning is a viable and worthy goal for serious games. Also of value to this emerging field is linking games to learning theory and practice. Doing so may help develop design heuristics and strategies that facilitate learning and retain the playful joy of games. Making these connections between games and learning theory and practices will help move the field to new heights and away from the mistake of combining games with drill and practice activities (Becker, this volume; Van Eck, 2007a).

## **BACKGROUND**

Game designers strive to create games that are fun and games that will engage players (Crawford, 2003; Koster, 2005; Rollings & Adams, 2003; Rouse, 2005). Game design strategies that are believed to lead to engagement can include story, shooting, racing, fighting, collaboration, role playing, constructing, managing, and many, many more (Rollings & Adams, 2003). It is because of these exciting and entertaining strategies that the commercial video game industry is so popular and profitable. Dickey (2005) has argued that many of the engagement strategies used in entertainment-based video games can inform instructional design practice because they mirror sound instructional practices. The sound instructional practices that Dickey refers to can

be found in many teaching structures grounded in the constructivist philosophy.

Constructivism encompasses a wide array of perspectives; yet while each perspective is different they share some common values and assumptions (Duffy & Cunningham, 1996; Land & Hannafin, 2000). A common assumption among the many perspectives is that individuals create their own knowledge from their unique experiences, background, and value system (Duffy & Cunningham, 1996; Duffy, Lowyck, Jonassen, & Welch, 1993; Jonassen, 1991; Jonassen, Cernusca, & Ionas, 2007). Further, constructivists believe that learning is not simply the result of transferring knowledge from one to another, but that knowledge is created by the individual's unique interpretation. Learners actively seek to construct their understanding by negotiating different perspectives. The learner's negotiation of different perspectives results in learning; which is always open to change as the learner continues to learn and gain experience (Duffy & Cunningham, 1996; Land & Hannafin, 2000).

Further, most constructivist perspectives advocate that learners are active processors of information and learning is an active process as well. To facilitate this active process, learners are typically situated in a learning environment that can be structured in a variety of ways. Some constructivist perspectives emphasize providing more social avenues for learners to negotiate and construct understanding (Land & Hannafin, 2000). The social avenues provide opportunities for learners to share their understanding, debate the relevance of others' contentions, and collaborate on ideas that further and deepen their understanding (Duffy & Cunningham, 1996; Jonassen, 1999). Others advocate emphasizing technology tools (simulation, databases, websites) as means for assisting learners in negotiating and constructing meaning (Hannafin, 1992).

Serious games seek to facilitate the type of learning advocated by many perspectives of constructivism. Since the learning aims of seri-

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