Exploratory Play in Simulation Sandbox Games: A Review of What We Know About Why Players Act Crazy.

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Exploratory Play in Simulation Sandbox Games: A Review of What We Know About Why Players Act Crazy

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Source Title: Gamification: Concepts, Methodologies, Tools, and Applications

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Abstract

There is a kind of seemingly nonsensical play behavior found in the simulation sandbox game genre. This behavior is very spontaneous and impulsive and associated with self-initiated learning, and here the author seeks to better understand what it is, and why it seems associated with simulation sandbox games. That is: What purpose does it serve, and what might provoke it? This requires a review of the literature on this play behavior, and that of the simulation sandbox genre, respectively. From this review the author concluded firstly that there is strong support that exploratory play is for discovering the structure and behavior of systems, and secondly that the observable characteristics of exploratory play make it a highly probable candidate for the bizarre behavior observed in simulation sandbox games. Moreover, several hypotheses were generated by identifying many characteristics of the genre (e.g. system complexity and responsiveness) that are directly relevant to the theorized motivations for exploratory play, suggesting some directions for future research into what conditions and designs might encourage exploratory play. Knowledge of the relationship between this genre and this form of play could prove invaluable for designing games for learning, because despite being centrally relevant to many studies on game-based learning, exploratory play has been neglected. It has been needlessly isolated in distinct strands of research on its components, which will be unified here to provide a comprehensive account of this behavior and its importance to future research in this area.

Chapter Preview

Introduction

A player of *The Sims* waits for a character to walk into the bathroom, then deletes all the doors, trapping him

inside. A player of *Minecraft* uses the materials available to construct from scratch a functioning computer within the game world. A player of *Black & White* teaches the highly versatile artificial intelligence of their pet that it is a good idea to eat its own poo. This seemingly pointless, whimsical player behavior is characteristic of the simulation sandbox genre of games (Breslin, 2009; Calhoun, 2010; Francis, 2006; Stewart, 2014; Squire, 2008). But why is there this correlation? What is this behavior, and why is it most prominent in this genre of game? What is the psychological explanation of the purpose of this behavior, and what circumstances provoke it?

My investigation led me to conclude firstly that when players engage in exploratory play, they are inadvertently learning about manipulating the game system - the purpose of the behavior is to discover the structure and behavior of the system with which one is playing. This review of the literature suggests that the features of this behavior that appear trivial, make it a powerful learning mechanism for understanding the structure and behavior of systems. Secondly, the observable traits of exploratory play as described in the literature are a good fit for the otherwise inexplicable behavior often seen in simulation sandbox games. And this drive in exploratory play to master the system suggests some hypotheses to explain its prominence in the simulation sandbox game (sim sandbox) genre due to its emphasis on things such as system responsiveness. Sim sandboxes may â€œpull forâ€ exploratory play in much the same way that plasticine and blocks and scissors elicit construction play (Rubin & Howe, 1985). Looking at the characteristics of exploratory play alongside the characteristics of the sim sandbox genre suggests several hypotheses about the design of game systems that might encourage this type of spontaneous learning-oriented play, which each require additional study for their potential applications in designing games for learning about systems.

While there has been some experimental evidence for learning through unstructured play (e.g. C. Cook, Goodman & Schulz, 2011; Gopnik & Schulz, 2007; Jennings, Harmon & Morgan, 1979; Schulz, Bonawitz & Standing, 2008), there has also been evidence of failure to learn by these methods (e.g. Doyle, Radzicki & Trees, 1998; Frank, 2011; Mayer, 2004). And provoking engagement in learning games can still be a hit-and-miss affair (e.g. Whitton, 2011). Garris, Ahlers and Driskell (2002) emphasize that,

Unfortunately, there is little consensus on game features that support learning, the process by which games engage learners, or the types of learning outcomes that can be achieved through game play. Ultimately, we run the risk of designing instructional games that neither instruct nor engage the learner. (p. 442)
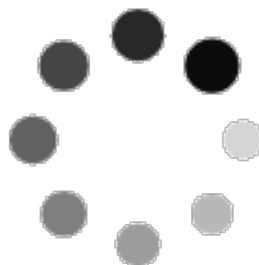
Squire (2008) agrees that,

[w]e need rigorous research into what players do with games (particularly those that donâ€™t claim explicit status as educational), and a better understanding of the thinking that is involved in playing them. (p. 167)

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