

# Chapter 14

## A Gameplay Model for Understanding and Designing Games

**Erik Hebisch**

*Institute of Human Factors and Technology Management IAT, University of Stuttgart, Germany*

**Ulrich Wechselberger**

*Institute for Computational Visualistics, University of Koblenz-Landau, Germany*

### ABSTRACT

*The study of video games involves many characteristics such as story, artwork and sound design. While it is possible to describe these qualities of a game in great detail, the same can generally not be said for the interactive qualities. This article argues that gameplay is the fundamental characteristic of a game and can be studied independently from the other qualities. The authors present a definition of gameplay and its components that enable the study of gameplay on an abstract level. They show how to use their definition for designing the interactions of a simple casual and a serious game, for analyzing the gameplay mechanics of an existing game and how this impacts on the study of interactivity in video games.*

### INTRODUCTION

Every game designer has a vision of which elements he would like to have in a game. Whether he works backward from a story to design the scenes a player encounters during play or forward from an idea of what would be interesting for a player to interact with, a game designer evaluates

how each element he employs adds or subtracts from the vision of how a player plays the game. The designer chooses story elements such as characters, plot lines and twists, visual elements such as character and monster appearance, or aural elements such as the game's score and the game's sound effects. And, of course, he designs how a player sees the game and interacts with it. This has a great effect on the experience of the game but it is often rather undefined what the ele-

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ments of the interactive experience are and how a good experience can be achieved. However, it is the responsibility of the game designer to decide what plays well in a video game.

Every player can say whether he enjoys a game or not. Usually, however, he cannot fully describe what exactly makes a particular game fun to play. Is it the engaging story? Is it the crisp graphics? Is it the responsive controls? The critic who reviews a game or compares it to other games has an equally hard time to qualify the elements that make a particular game fun to play. While visual and audio quality are important factors to how a game is perceived, a crucial aspect of games is that they are interactive. How does he describe how a game works? What exactly are the elements that make it interesting and engaging? How do the interactive elements impact the perception of a game? What makes one game better than another?

These questions apply to academics, too. Be it for media impact studies or the design of a serious game, on some occasions it is crucial for a scientist to describe how a game plays. With this, he can model the interaction between a player and a game system (and thus the cognitive activity of a player), either with regard to game analysis or game design.

What is missing are concepts for talking about the most fundamental aspects in a game. In section 2 we discuss several theoretical foundations for describing games. We use these foundations to find the characteristic that is independent from presentational aspects such as artwork or sound design, and find it in the concept of gameplay. In section 3 we present a definition of gameplay that aims to strike a balance between formal validity and practical applicability. We define the element of gameplay in detail and put together a collection of building blocks for gameplay mechanics. In section 4 we apply our definition to the design process of both a simple casual and a serious game as well as to the analysis of an existing game. We show how gameplay can be created and studied independently from presentational aspects. In

section 5 we conclude our findings and ponder the consequences for game studies in general.

## **BACKGROUND**

In search of a workable definition for what makes a game what it is we turn to the theorists.

According to Lindley (2005), games can be seen as systems consisting of three components: Simulation, Narration and Gameplay, each having a different tradition, language and methodology. Basic features and functions of the game world are part of the simulation layer. It is “the level at which the authored logic and parameters of a game system together with the specific interactive choices of the player determine an (implied) diegetic (i.e. represented) world” (Lindley, 2005). The *simulation layer* is based on an underlying set of rules, functions and constraints that have been developed by the game designers. It describes non-player character behavior (e.g. friendly/aggressive, the choices they make when certain things happen etc.), physics of the game world (e.g. the speed of a car, the distance a player can jump), the mechanics that govern all kinds of interaction between game elements (e.g. bonuses/penalties for fighting units based on terrain), and others. Some video games focus more, some focus less on the simulation layer. For example, simulation games like SimCity (Maxis 1989) lay stress on this layer while many other games do not contain many simulation elements. The *game layer* consists of a “framework of agreed rules” (Lindley, 2005). It defines what a player can and cannot do in a game, what he has to do in order to win, and the consequences of the players’ actions. Although rules are a fundamental part of any computer game, some games stress this layer more than others. For example, abstract games like Tetris (Pajitnov, 1984) concentrate on this layer, while adventure games like Heavy Rain (Quantic Dream, 2010) pay more attention to the other levels like the narrative layer. The third

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