Serious Game Design I: The Bicameral Sketch

J. R. Parker
MinkHollow Media
Cochrane, Alberta, Canada
parker@minkhollow.ca

Katrin Becker
MinkHollow Media
Cochrane, Alberta, Canada
becker@minkholow.ca

***Abstract*—A practical method for conducting the first stages of the design of a serious game is presented. The idea is to have two designers, and instructional designer and a game designer, prepare short overall designs using a two page document called a sketch. They then merge the two using a process that combines a storyboard and a walkthrough. The final result is a single short design document that can be used in successive stages.**

Keywords-component; game design; serious games; design documents; design process.

I. INTRODUCTION

Serious Games (Sawyer, 2002; Michael and Chen, 2006) have become a subject of significant study and commercial interest, and so it is a curious thing that there are few specialized methodologies described for the design of these games. What makes it necessary are the distinguishing characteristics between normal entertainment games and serious games, principal of which are:

1. A serious game has a major design feature that must be included - the aspect that is to be taught in an educational game, for example, or the message in a political or advertising game. This will be called the *focus*, and it must usually be weaved carefully into the design in order to achieve the maximum effect.
2. A second key aspect in serious game design is the nature of the client. Serious games are rarely sold at *Wal-Mart* in plastic wrap, and so are not generally created for a traditional publisher. The buyer/publisher of a serious game is often the individual or group with the message to be communicated. Thus, the entire chain of design documentation that concerns the commercial aspects of the game needs to be modified.

These two factors change the design process significantly, both in a formal sense and as a fundamental design process. For instance, the traditional high concept document is typically a sales pitch, but for a serious game one wonders who should read it; the producers are already convinced. And, of course, a typical game does not have the external goals of a serious game. The focus of a serious game for teaching calculus would be the specific concepts in mathematics to be taught - let's say rate of change and differentiation. The game may, on the other hand, seem to be about navigating and controlling a spacecraft. Integration of these two could include graphical displays of position, velocity, and fuel consumption and a goal of landing the craft without damage and while consuming as little fuel as possible. What should be avoided is the appearance that the focus has been tacked on at the last (Laurel, 2001).

The same is true of the treatment, and to a lesser extent of the detailed design. Commercial appeal is often replaced in these documents by glamour, in the form of items that attract the audience to the game and provide its ability to keep the players playing.

II. THE NEW HIGH-CONCEPT: THE SKETCH

The original High Concept is intended as an *elevator pitch*: it's what you would say if you were in an elevator with the president of Sony Entertainment and wanted to sell him on the game. Let's assume instead that the game is sold, that marketing is not an issue. What would you say now? In other words let's make the High Concept about goals, game play, actions, and story. A summary comparison between the new *sketch* document and the traditional high concept is:

New High Concept (Sketch)	**Existing High Concept**
Game Name and idea	Statement (2 line idea)
Concept to be communicated.	Features (bulleted list)
Player perspective and goal.	Player motivation
Brief narrative, if necessary.	Genre (License?)
Mechanics for achieving the goal; basic rules.	Competition
Opponents, counters to the player and their goals.	Target audience Design Goals
Scoring, values.	Selling points
How the mechanics, goals, and rules convey the idea.	Hardware
(Art)	Notes: Artwork,music.

This should be a two page document, three at most. An example for a game intended to teach the basics of stock trading, *Crash*, is shown at ***www.minkhollowmedia.ca/designI***. The new document outlines a design, in the traditional sense of the word, as well as does the high concept document used for commercial entertainment games while omitting the commercial aspects.

III. GAME DESIGN VS INSTRUCTIONAL DESIGN

Game designers and instructional designers share many skills related to design, and it can be said that *all* games teach, even if they just teach in-game skills. However, both have distinct backgrounds and areas of expertise. In game design the catalyst for a game is often some core experience that the designer found to be fun. What matters most in game design is providing the user (player) an entertaining experience.

In *Serious Games*, on the other hand, the catalyst is the message or, if the game is designed to facilitate learning, it is

one or more learning objectives or desired outcomes. The methods and attitudes of these two groups often differ, but a serious game needs input from both.

Thus, the second new aspect of the design process being proposed is the creation of two independent sketches, one created by a game designer and one by an instructional designer. Both begin knowing the focus of the game, and sometimes the basic foundation of the play will be shared too. The two documents are completed without cooperation. Then the two designers merge the documents into a single sketch, going through the two sketches section by section until agreement is reached on all aspects of play and communication. The final document is used as a basis for the more detailed design documents that follow.

The process of merging the two sketches is by necessity an informal one, and in the first stages it resembles that of a walkthrough or, perhaps more appropriately, a *storyboard*. Both designers prepare a brief discussion/defense of their suggestions to be delivered orally. A small group is convened consisting of the designers and a *delegate* from the group engaging the project (who will be called the *producers*). The delegate is present to ensure that due attention is paid to the focus and to serve as a referee and tie-breaker. Both designers present their concepts to this group completely in a short period, not more than three minutes. The document is in front of everyone, and visual aids can be used.

Following each presentation there can be questions asked of the designer, but no more than three minutes can be used for this. After both presentations, the corresponding sections of each sketch are compared and discussed, and if it can be agreed that one of the ideas would work better, then it is selected. In any case, ways of merging the two designs are explored. This process can take as much time as needed.

The idea is to create two independent schemes for conveying the focus. If the two agree then it can be used as defined. Otherwise a discussion of game play goals and mechanics for communicating the idea will ensue, as these sections appear first in the sketch. Once those issues have been resolved the remaining details of game play should follow, with the new sections of the sketch created to suit the merged concept, or simply copied from the one that has been agreed is the better of the two.

When the meeting is over there will be a single sketch from which the detailed game design can be constructed. The goal is consensus, not a majority. Both designers, who after all each have a portion of the necessary knowledge needed to build the game, have to allow the final design to proceed. The delegate must not volunteer information, but can supply it when asked. This keeps the roles clear: the designers are engaged to design, and can choose to concentrate each on their own specialty if they choose. The producer has an important idea to transmit and wants to ensure that the idea is dealt with, while not meddling unduly in the game design.

We will show a detailed example by designing an educational game and illustrating the process.

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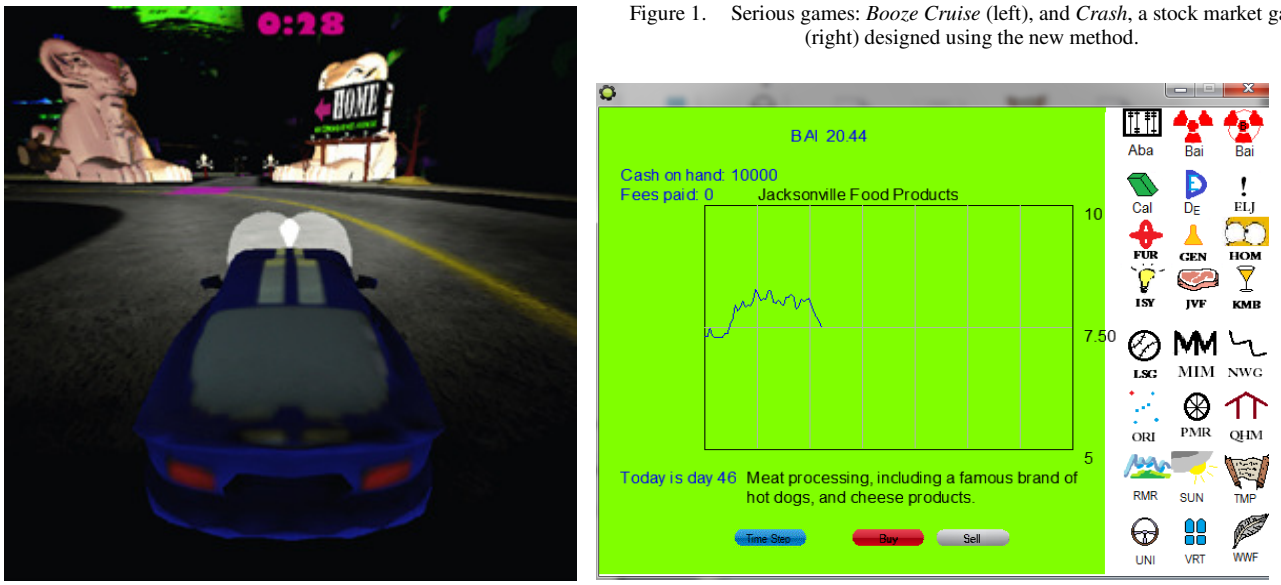

Figure 1. Serious games: *Booze Cruise* (left), and *Crash*, a stock market game (right) designed using the new method.