

Chapter 23

Designing a Generic Educational Game Shell

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ABSTRACT

This chapter describes the design phase of the creation of a generic educational game shell (GEGS) for the frame game Parcheesi™. The frame game structure was adapted through modifications to the game board, materials, and game scenario, and navigation aids were added to guide players. Learning content was integrated into the game, and pedagogical aspects of the game (i.e., objectives, target learners, school learning material) were specified. Mechanisms were added to create various question types and to provide for feedback, debriefing, and game evaluation. Finally, these modifications and additions were summarized into a design plan for the technical/ media development team. Screen and form layouts were used to communicate the plan in non-technical terms for feedback and to further guide the developers. Finally, the Web pages of the GEGS were designed in the form of a model. The chapter closes with suggestions for avoiding common errors in the design of online educational games.

INTRODUCTION

Designing a generic educational game shell (GEGS) based on a frame game involves first defining the elements of the game structure that are to be supported, added or modified, and describing the mechanisms for inserting learning content into the game. Subsequently, a design prototype showing screen and form layouts is posted online to show

how game builders will use the GEGS to create educational games. This becomes the basic reference for the developers of GEGS interface and media elements. Finally, elaboration of the models of the principal components of the GEGS are worked out and validated by the design team.

In this chapter, we illustrate stages in the design of the *Parcheesi*™ GEGS (Sauvé, 2006; Sauvé et al., 2006). We first explain our adaptations of the frame game board, accessories, scenario (gameplay), rules, and instructions. We then describe our changes to

DOI: 10.4018/978-1-61520-731-2.ch023

Figure 1. (a) The original Parcheesi game board; (b) Adapted Parcheesi board.

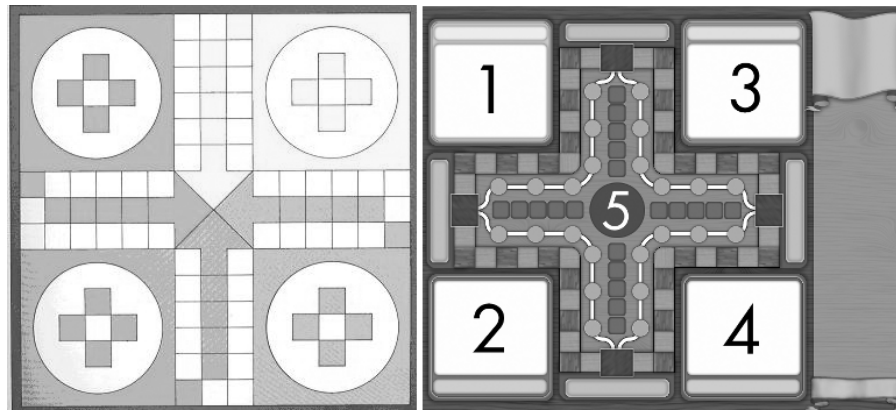
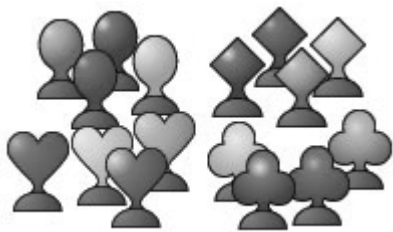


Figure 2. Parcheesi game tokens



the frame game content, including its description, learning questions, and pedagogic features. In the third part of the chapter, we describe two evaluation mechanisms that were missing in the original frame game but were included in the GEGS in response to feedback and evaluation of the game by its users. In the fourth part of the chapter, we show an example of the design prototype based on GEGS screens. Finally, we note errors to be avoided when a frame game is adapted to become an online GEGS.

ADAPTING THE STRUCTURE OF A FRAME GAME

In creating a GEGS, the structure of a frame game must generally be altered to include pedagogic and technical aspects while taking into account the requirements of its target users. We now examine

the steps in adapting a game frame, accessories, and scenario (gameplay), including its rules and instructions.

The Game Board

Generally, the game board is not modified when it is reproduced in GEGS. The number of paths in the initial itinerary of a player's position marker ("token") should be maintained to sustain interest in the game, which was the case for our GEGS: 56 squares in the regular path (Figure 1a) were maintained on the GEGS board. However, to meet our pedagogical requirements, we added a second fast track to the original board, while maintaining the original number of squares and the square board shape. The second track allows a player's token to reach the center of the board with half as many squares as in the original track (Figure 1b). We also replaced the pluses in the four corners with slots for photos or images to illustrate learning content.

Game Accessories

Parcheesi accessories include dice, tokens, needles or spinners, playing cards – all objects which can potentially be manipulated and changed. For a GEGS, all additions of new elements must be

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