Chapter 49
Context-Free Educational Games: Open-Source and Flexible

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ABSTRACT

A discussion regarding the integration of video games in education has been going on lately. Recent studies indicate a positive shift in attitude towards the role of video games in education, however, the issue of impeding dangers remains. This chapter will focus mainly on presenting an approach to teaching and evaluation through the implementation of educational games created using the Game module, designed as an add-on for the Moodle e-learning platform. Through the use of common 'casual' games, such as 'Crossword' and 'Hangman', and drawing questions from the Moodle question bank or the dictionaries, the Game module can be perceived as a freely available tool which can enrich an online lesson across various platforms, including normal computers, PDAs, et cetera. These games have advantages such as technical requirements lower than modern commercial games, facilitating the distribution of game-based contents to broader audiences without demanding constantly updated software as well as hardware infrastructure, simple rules, et cetera.

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INTRODUCTION AND LITERATURE REVIEW

Games and game players have been a part of human life for thousands of years. According to Klabbers (2006), play is a natural element that has determined the course of nature right from its beginning. However, there is a distinction between 'Game' and 'Play'. Play is subjectively grounded in the player, while game is objectively grounded in the game rules (Klabbers, 2006, p.22). A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome (Salen & Zimmerman, 2003, p.96). According to Sauvé et al. (2007), a game is a fictitious, whimsical or artificial situation in which players are put in a position of conflict. Sometimes players square off against one another and at other times they are on the same side and are pitted against other teams. Rules govern games and structure game actions based on learning objectives or purposes set by the game itself, such as winning or taking revenge. Operational gaming is not something new. It has its roots in ancient China where Generals of the 5th century B.C. used elements similar to the theory of games to win battles (Klabbers, 2006, p.25). Many centuries later, the Prussian army used war games to experiment with strategies and tactics, and in the mid 20th century, Von Neumann and Morgenstern elaborated on mathematical game theory with their work "The Theory of Games and Economic Behavior".

Digital games appeared back in the 1960's, when a group of MIT students developed the game "Spacewar!" whose goal was to have two players fight each other (Brand, 1972; Graetz, 1981). Gradually, digital games started penetrating places of entertainment where people would spend their spare time playing billiards or similar games while in the 70's the evolution of technology made them more accessible through desktop PCs and game consoles. Digital games were received quite positively by the narrow computer users' community as they demonstrated a number of characteristics that made players become engaged in them (Table 1).

In the years that followed, this initial positive acceptance of digital games in combination with the appearance of the information superhighway and the diversification of learning technologies resulted in an increased interest in games with educational content and purpose and the first discussions on the newly introduced term 'edutain-

Table 1. Game characteristics and their influence on the player (Prensky, 2001)

Game characteristics	*Possible influence on the user*
Games are a form of fun.	That gives us enjoyment and pleasure.
Games are form of play.	That gives us intense and passionate involvement.
Games have rules.	That gives us structure.
Games have goals.	That give us motivation.
Games are interactive.	That gives us doing.
Games are adaptive.	That gives us flow.
Games have outcomes and feedback.	That gives us learning.
Games have win states.	That gives us ego gratification.
Games have conflict/competition/challenge/opposition.	That gives us adrenaline.
Games have problem solving.	That sparks our creativity.
Games have interaction.	That gives us social groups.
Games have representation and story.	That gives us emotion.