

Chapter 12

eRiskGame: A Persistent Browser-Based Game for Supporting Project-Based Learning in the Risk Management Context

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ABSTRACT

Motivated by the increasing demand for software engineering professionals, in particular project managers, by the dissemination of the use of games as an attractive instrument in the learning process and by the universalization of the Web platform as a catalyst of human relations nowadays, this chapter proposes the use of a Persistent Browser-Based Game as a support in the qualifying process for new professionals of Project Management. Following the pedagogical theory of the Project-Based Learning - PBL, the game gives the player the opportunity to experience real situations of Project Management by proposing challenges commonly faced in most enterprises. These ever present challenges include unpredictability in the software manufacturing organizations, by means of the use of intelligent agents to assign challenges and common barriers to Software Projects.

INTRODUCTION

The importance and the real needs of the adoption of methods and principles of the Project Management (PMI, 2004) in organizations are currently widely discussed and accepted. In these organi-

zations, the main role of the Project Manager is the task of conducting a project to its successful conclusion. However, that is not what usually happens in software projects (Brewer, 2005).

In an attempt to explain the high number of projects that fail due to reasons related to bad management, some studies have discussed a possible relationship between the lack of certain

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abilities by managers and the traditional teaching methods. This is one of the consequences of acquiring knowledge without an experience in some real project or complementary educational approaches, such as games and simulations.

In order to provide a solution for this deficiency, in this chapter we propose a tool to provide a new way of learning that is not only attractive, but efficient and collaborative as well. This tool meets the needs of users with distinct routines and schedules. This chapter proposes the eRiskGame tool, which is a Persistent Browser-Based Game for educational purpose. The game is about the tasks that a Project Manager must perform in an organization. Its focus will be on Risk Management, more specifically in the Planning, Control and Monitoring (budget, time schedule and software quality).

This serious game uses PBL to bring the player a way to acquire knowledge on project management, particularly in the risk control involved in this process. To that end intelligent software agents were employed in monitoring and controlling of the environment, which is in constant change and affects the professionals, the organization and its customers.

BACKGROUND

This session introduces the background and the important terms involved in the development of this tool.

Technological Aspects and Motivators

We live in a highly dynamic, diverse and demanding society, where new technologies are constantly seeking to supply the needs and take into account the particularities of that heterogeneous public, which have different time availability, locomotion and spaces. These new technologies have the fundamental role of making these differences

transparent, allowing persons with distinct dispositions and skills to interact jeopardizing their performance.

In this context, we have the Web as a powerful resource in the process of teaching and learning, through which we can learn and teach in many ways, in different places and at different speeds. This technology allows the expansion and integration of knowledge in a way that could be fast, dynamic and accessible to all providing the construction/reconstruction and socialization of knowledge for a better individual, social and collective context of all involved.

There has been a growing interest in the use of computer games as a didactic-pedagogical tool, for training, qualification or improvement of skills in several knowledge areas. Not only the academy, but also the industry has shown great interest in this market portion, which already moves \$20 million per year (Susi et al., 2007), and attracts more and more attention of those seeking a way not only innovative, but effective to transmit knowledge without the common lack of motivation in the traditional distance education methods.

Software Engineering and Teaching Model

In the context of software engineering, numerous initiatives have arisen in order to use the ludic qualities and motivation that the games have in the education or training of new professionals, in an attempt to reduce the limitations imposed by time and/or format of the traditional courses in this area.

In the various educational levels, one of the factors that most concern the teachers is the motivational level of their students. In Sandford et al. (2006) it has been observed that 53% of the teachers see the motivation for their pupils as primary reason for using educational games. However, the authors argue that the use of games in educational environments does not ensure motivation alone.

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