

Chapter 14

Integrating the Principles of DGBL, CSCL, and Playability in the Design of Social Videogames: A Case Study

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ABSTRACT

Research and experience have proved that videogames can be applied effectively in a wide variety of learning contexts. With the objective to extend the use of educational videogames with hospitalized children, the authors are working on the design of social educational videogames. Their proposal follows the foundations of Digital Game-Based Learning (DGBL), the Computer Supported Collaborative Learning (CSCL), and playability. In order to test the effects of the designed prototype with real users in educational contexts, the authors carried out a pilot study about their educational 3D videogame prototype. The objective of this pilot experiment was measuring the playability and extending this evaluation to the social interactions and emotional aspects. The authors present in this chapter the principles of design of their videogame and some preliminary results about the developed study.

DOI: 10.4018/978-1-4666-1987-6.ch014

INTRODUCTION

Mobile and digital technologies have changed the youth and the ways they interact and communicate with others, how they learn, and in some cases, their attitudes and behaviours. Additionally, the use of technology eases closer communications among the patients and their schools, also allowing the reduction of the feeling of isolation of the minors with long term or chronic illnesses. Thus, we can affirm then that the use of mobile and digital technologies is an opportunity for the hospitalized minors to communicate, interact, improve their skills, and learn about the causes and consequences of their illness.

During long periods of hospitalization, the children are prone to develop stress and anxiety caused by physical discomfort of the illness and the treatments, fear of medical procedures, separation of their families, the change of their environment, and being confined with restricted movements. The lack of face-to-face interaction and little communication with the family can contribute to the low morale that obstructs the efficiency of the medical treatment or can cause psychological traumas. A recommended solution is to compensate this situation with toys and promote game activities that have proved to be therapeutic that involve love and fun, raise the morale, augment tolerance to pain, and improve the fulfilment of the treatments. In this sense, the use of new technologies, and in particular, videogames, can become an element of compensation, because playing is a vital part in the process of healing for a kid and may work as a ‘social companion’ for the minor in a moment of necessity, particularly when there is not anyone else around.

On the other hand, the research is focused on the search of forms to help people to learn to solve problems and allow them to adopt new reasoning forms (Pivec & Pivec, 2009; Dondi & Moretti, 2003) and transform to the learning process in interesting, easy, and fun. In this sense, the videogames can be really powerful learning tools.

The idea of using games as learning tools can be traced back to seminal works by Malone in the early 1980s, which remained mostly underground until the beginning of the century. However, in the last five years, we have experienced a dramatic growth in the academic field that argues for the application of game-based learning approaches in education. The argument is no longer about whether we should be using games, but about how we should be using them, how we should design them, and how we should integrate them with the existing curriculum.

According to Prensky (2005), there are two main reasons for the use of videogames as tools for the support of the study: (1) the new students have changed radically, and (2) these students need to be motivated through new forms to learn. The videogames with educative goals in addition to the “entertainment” are named “serious games” (Michael & Chen, 2006).

The lack of motivation for studies by hospitalized minors can change with the use of tools and methodologies, which pay special attention to isolation. In this sense, to mitigate the isolation, the use of methodologies and techniques originated from the collaborative learning that make possible and necessary the interaction with other students (Soller & Lesgold, 2000) is ideal. Furthermore, because of the hospitalized minor’s situation heterogeneity, it is difficult for the teachers to give an educative answer adequate to the particular circumstances of each student. In addition, the circumstances that surround the hospitalized student can change fast in short periods of time. The emotional state, necessities, and skills can be seriously affected, and, as consequence, the systems that interact must adapt immediately to the new circumstances.

In the SAVEH project, we have designed a package of technological solutions not just for those kids that meet in the hospital classrooms, but also for those that stay at home, their friends, family, classmates, etc. (González, et al., 2011). Some of the tools specifically developed include:

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