Chapter 5
Serious Games Tools to Support the Literacy Process

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ABSTRACT

The use of technologies in the teaching-learning process is constantly growing. In the process of literacy, for example, different learning objects have been developed. Literacy may be defined as the ability and confidence to engage with language to acquire, construct, and communicate meaning in all aspects of daily living. However, it is usual to find students with difficulties in writing and reading. Serious games are a kind of technology that has emerged to help students in the learning process. They present a playful environment that spark the interest of the student and motivates him to explore, research, and reflect on the content presented. This chapter presents three serious games developed to support students in the reading and comprehension of text.

INTRODUCTION

Reading is a fundamental skill that is needed in almost all disciplines in our formal educational system. Therefore, people that do not develop reading abilities appropriately also have difficulties in other subjects, which dismays the interest in learning and lead to frustration about school (Korhonen et al., 2014). Reading and writing skills are part of the literacy process. Literacy may be defined as the ability and confidence to engage with language to acquire, construct and communicate meaning in all aspects of daily living.

The world is changing, and nowadays students also need to know how to navigate the online space to successfully access information and opportunities. Thus, today's expectations related to literacy involve abilities that go far beyond the skills necessary to read and write short sentences. Warschauer (2006) defines literacy as the ability to participate in the meanings of text, to use texts functionally and to critically analyze and transform texts. In this contemporary vision, individuals are expected to use oral and written language demonstrating an understanding of the world, being able to communicate, to participate in problem solving and decision making (Jenner, 2003). In a digital communication age, reading and writing has also assumed a new role in the way people interact, share information and socialize (Sweeny, 2010).

Distinct tools and methodologies have been proposed to support literacy processes, such as trigger word teaching (Davis and Braun, 2010) and graphic organizers (Rello, Saggion, Baeza-Yates, Graells, 2012).

Serious games have also been used to support students in their learning processes in different fields. A serious game has been defined as a game in which education (in its various forms) is its primary goal, rather than entertainment (Breuer & Bente, 2010). The term was presented by Abt (1987) and his idea was to support learning processes through the use of games. There are several reports on how gamers develop their thinking strategies towards more analogical thinking rather than trial-and-error thinking (Hong & Liu, 2003; Mitamura & Oohori 2012), an idea that backs up the development and use of serious games in different educational applications.

According to (Prensky, 2012) teachers need to find ways to create 21st century citizens and this task requires fully integrating skills such as critical thinking, problem solving, video and programming into our teaching. In this respect, serious games may help teachers in this challenge. And as has been discussed by previous research (Kirriemuir & McFarlane, 2003) serious games may improve students' concentration and attention levels, increasing students' motivation and improving the learning process.

This paper presents three different serious games that have been developed to help students in reading comprehension. What they all have in common is that they use in their internal mechanism a text mining tool to break down a text and extract from it its most relevant set of words.

The first serious game is called ***Word Shuffle***. In this game, students read a text (added in the game by the teacher) and after reading they are invited to discover the shuffled words. Students have a number of attempts where different words, that have been mined from the text, are presented to be discovered.

The second game is called ***The Vikings' Challenge*** and the students are invited to read and understand the text (also added in the game by the teacher) through the viking world. The student gets in a room where seven challenges are presented to him/her. These challenges are related to the text and they are defined by the teacher. The student has to answer the challenges to get rewards and deliver all the rewards to Odin at Valhalla.

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