ABSTRACT

Our main purpose in this chapter is to examine the possibility of stimulating self-regulation of learning (SRL) by means of Information and Communication Technologies (ICT), more specifically, Web 2.0 technologies. Web 2.0 is commonly associated with applications that facilitate interactive information sharing and collaboration on the World Wide Web. To that end, the authors first present a theoretical description of the topics that are relevant to this chapter: SRL and ICT. Second, they compare SRL and ICT characterizing features, establishing functional relation between both sets of variables. Third, they define the Web 2.0 and two tools, Wikideas, and Creativity Connector, which were designed by us according to Web 2.0 technology. Fourth, the authors briefly report a pilot intervention they carried out in order to support SRL, using these two applications to perform some tasks that required competence in “creativity and innovation”. Lastly, after summarizing these ideas, the authors suggest further study topics that may promote interesting lines of research.
INTRODUCTION

In the last few decades, we have witnessed the rapid theoretical and empirical development of self-regulated learning (SRL), in both the psychological and educational fields (Boekaerts & Corno, 2005; Mooij, 2009; Sanz de Acedo Lizarraga, Ugarte, Iriarte, & Sanz de Acedo Baquedano, 2003; Waugh, 2003; Zimmerman, 2001). There are many reasons for this development. The most important of these reasons is the following: students who regulate their academic activities have a strong desire to learn and obtain the best learning results (Njiru & Waugh, 2007; Williams & Hellman, 2004).

Research on SRL, which has mostly been carried out in traditional educational contexts has allowed us to (1) better understand this multidimensional process; (2) determine which subjects and environmental variables are involved in the above mentioned process; and (3) discover how and under what circumstances students come to direct and supervise their learning and activate the cognitive, metacognitive, motivational, and behavioural competencies required to maintain and achieve their goals (Zeidner, Boekaerts, & Pintrich, 2000).

We have also observed growing interest in the study of SRL in contexts enriched by ICT. Technological resources are increasingly used at all levels of the educational system, as they are assumed to improve the quality of teaching and learning, and to provide new avenues for thinking, interacting, and working (McLoughlin & Lee, 2009). Their global impact on learning, particularly on SRL, requires further study. Currently, they are thought to have a positive effect because they motivate students to intentionally participate in their learning processes (Banyard, Underwood, & Twiner, 2006). Becker (2000) proposed four key benefits of ICT in education when they are implemented in a responsible way: they increase students’ commitment to better performance both in and out of class; they improve writing and research competencies; they foment authentic efforts; and they help students to better learn the academic material.

SRL and ICT are considered essential for balanced development of the key competencies that should be promoted in Primary and Secondary Compulsory Education (Eurydice, 2002). If students do not monitor their learning tasks, such as those that they perform while using new technologies, they will not be able to develop the necessary skills to join the contemporary society of knowledge and computer technology. However, with the help of their classmates, teachers, and educational institution, they may manage to become familiar with and to integrate SRL and ICT into their academic activities. If they are able to meet these goals, they will be successful in their studies, and this success is more likely to be more permanent (Montgomery, 2000; Sosin, Lecha, Agarwal, Bartlett, & Daniel, 2004).

ICT are increasingly more inclusive because most of the educational actions require one-on-one interaction. Consequently new software has been designed to facilitate the teaching and learning processes in specific subjects. Even so, few tools have been designed to directly support SRL, although many may be used for this purpose (Trigano, 2006), as in our case. Based on the Web 2.0 technologies, we have designed two tools, called Wikideas and Creativity Connector, with the aim of helping students to become competent in “creativity and innovation”. In other words, we intend to help them exercise their capacity to generate many, varied, original, and detailed ideas, and to allow their implementation (Ardaiz Villanueva, Sanz de Acedo Lizarraga, & Sanz de Acedo Baquedano, 2008). We chose to reinforce this competence because we considered it essential for the students to be able to develop initiative and an entrepreneurial spirit and to learn to express their original ideas using computer resources.

Our goal in this chapter is, therefore, to examine the relationship between SRL and ICT. More specifically, we will investigate two issues:
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