Chapter XVIII

Cognitive Tools for Self-Regulated E-Learning

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Abstract

Working from the premise that students need advanced self-regulated learning (SRL) skills to succeed in e-learning environments, this chapter describes the use of a software application (gStudy) designed to help students take control of their learning and become better self-regulated learners. To address the challenges educators face in developing students' metacognitive monitoring and self-regulatory skills, gStudy's cognitive tools were designed in accordance with current SRL theory. Undergraduate students who used gStudy in an educational psychology course commented that they appreciated gStudy's features, interface, and ability to positively influence their approach to learning. The authors conclude that SRL-fostering software applications such as gStudy may be key strategic elements in institutional transitions to e-learning.

Cognitive Tools for Self-Regulated E-Learning

Greater access to information and a growing need for lifelong learning have increased the importance of self-regulated learning (SRL) research for postsecondary education (Narciss & Körndle, 1998). More than ever before, students are learning outside regular classrooms, often in online learning environments that require different skills from those needed in on-campus lectures. With virtually unlimited access to information, students must take more active roles in evaluating the quality and relevance of the information available to them and in assessing their understanding of that information (Nesbit & Winne, 2003). This transition brings with it a definite shift in the roles of teachers and of students. While teachers will still be responsible for establishing clear goals and objectives and for guiding students with feedback, there will be greater onus on students to assess whether the strategies and tactics they choose really will help them to meet their educational goals. Although the need for individuals to take responsibility for their learning is growing, students often fail in monitoring whether they are meeting course requirements or advancing toward their goals (Schunk & Ertmer, 2000; Winne & Hadwin, 1998; Zimmerman, 2002).

Cognitive toolsets that help students to become better at monitoring and adapting their learning strategies offer a potential solution to this increased need for SRL in formal coursework and in lifelong learning (Brown, Hedberg, & Harper, 1994). Institutions that can seize this opportunity to produce graduates with strong SRL skills will be recognized as having successfully met the changing demands of education. Accordingly, this chapter focuses on a software application designed to help students take control of their learning and become better self-regulators. After providing a brief account of SRL theory, we introduce gStudy, a set of cognitive tools developed at Simon Fraser University to support SRL. Throughout, we look at gStudy both as a practical tool that educators can use in their courses to help students and as a research tool that researchers can use to learn more about the theories underlying SRL and their applications. We conclude by evaluating the significance of cognitive tools for SRL and applications such as gStudy in the context of institutional transitions to e-learning.

Theoretical Background

Self-regulation of learning includes analyzing learning tasks; setting goals; identifying and choosing appropriate strategies for achieving the goals; enacting

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