

The study of motivation in promoting and sustaining self-regulated learning



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A B S T R A C T

A general framework is presented to help understand the relationship between motivation and self-regulated learning. According to the framework, self-regulated learning can be facilitated by the adoption of mastery and relative ability goals and hindered by the adoption of extrinsic goals. In addition, positive self-efficacy and task value beliefs can promote self-regulated behavior. Self-regulated learning is defined as the strategies that students use to regulate their cognition (i.e., use of various cognitive and met cognitive strategies) as well as the use of resource management strategies that students use to control their learning.

A model of self-regulated learning

Self-regulated learning offers an important perspective on academic learning in current research in educational psychology (Schunk & Zimmerman, 1994).

Although there are a number of different models derived from a variety of different theoretical perspectives (see Schunk & Zimmerman, 1994; Zimmerman & Schunk, 1989), most models assume that an important aspect of self-regulated learning is the students' use of various cognitive and metacognitive strategies to control and regulate their learning.

The model of self-regulated learning described here includes three general categories of strategies: (1) cognitive learning strategies, (2) self-regulatory strategies to control cognition, and (3) resource management strategies (see Garcia & Pintrich, 1994; Pintrich, 1988a and Pintrich, 1988b; Pintrich, 1989; Pintrich & De Groot, 1990; Pintrich & Garcia, 1991; Pintrich, Smith, Garcia & McKeachie, 1993).

1. Cognitive learning strategies

In terms of cognitive learning strategies, following the work of Weinstein and Mayer (1986), rehearsal, elaboration, and organizational strategies were identified as important cognitive strategies related to academic performance in the class-

room (McKeachie, Pintrich, Lin & Smith, 1986; Pintrich, 1989; Pintrich & De Groot, 1990). These strategies can be applied to simple memory tasks (e.g., recall of information, words, or lists) or to more complex tasks that require comprehension of the information (e.g., understanding a piece of text or a lecture) (Weinstein & Mayer, 1986).

Rehearsal strategies involve the recitation of items to be learned or the saying of words aloud as one reads a piece of text. Highlighting or underlining text in a rather passive and unreflective manner also can be more like a rehearsal strategy than an elaborative strategy.

These rehearsal strategies are assumed to help the student attend to and select important information from lists or texts and keep this information active in working memory, albeit they may not reflect a very deep level of processing. Elaboration strategies include paraphrasing or summarizing the material to be learned, creating analogies, generative note-taking (where the student actually reorganizes and connects ideas in their notes in contrast to passive, linear note-taking), explaining the ideas in the material to be learned to someone else, and question asking and answering (Weinstein & Mayer, 1986).

The other general type of deeper processing strategy, organizational, includes behaviors such as selecting the main idea from text, outlining the text or material to be learned, and using a variety of specific techniques for selecting

and organizing the ideas in the material (e.g., sketching a network or map of the important ideas, identifying the prose or expository structures of texts). (See Weinstein & Mayer, 1986.)

All of these organizational strategies have been shown to result in a deeper understanding of the material to be learned in contrast to rehearsal strategies (Weinstein & Mayer, 1986).

2. Metacognitive and self-regulatory strategies

Besides cognitive strategies, students' metacognitive knowledge and use of metacognitive strategies can have an important influence upon their achievement. There are two general aspects of metacognition, knowledge about cognition and self-regulation of cognition (Brown, Bransford, Ferrara & Campione, 1983; Flavell, 1979).

Some of the theoretical and empirical confusion over the status of metacognition as a psychological construct has been fostered by the confounding of issues of metacognitive knowledge and awareness with metacognitive control and self-regulation (Brown et al., 1983).

Pintrich, Wolters and Baxter (1999) have suggested that metacognitive knowledge be limited to students' knowledge about person, task, and strategy variables. Self-regulation would then refer to students' monitoring, controlling, and regulating their own cognitive activities and actual behavior. In the research program at the University of Michigan, the focus has been on the strategies individuals use to plan, monitor, and regulate their cognition, not their metacognitive knowledge.

Most models of metacognitive control or self-regulating strategies include three general

types of strategies: planning, monitoring, and regulating (see, for example, Corno, 1986; Zimmerman & Martinez-Pons, 1986 and Zimmerman & Martinez-Pons, 1988); the University of Michigan model is no different (see Pintrich, 1988a, Pintrich, 1988b and Pintrich, 1989; Pintrich & De Groot, 1990; Pintrich & Garcia, 1991; Pintrich et al., 1993). Although these three types of strategies are highly related conceptually (Pintrich et al., 1999) and, at least in our data (e.g., Pintrich, 1989; Pintrich et al., 1993), seem to be highly correlated empirically, they can be discussed separately.

3. Resource management strategies

The final component of our model of learning and self-regulatory strategies, resource management strategies, concerns strategies that students use to manage and control their environment. Examples include managing and controlling their time, their effort, their study environment, and other people, including teachers and peers, through the use of help-seeking strategies (cf., Corno, 1986; Ryan & Pintrich, 1998; Zimmerman & Martinez-Pons, 1986 and Zimmerman & Martinez-Pons, 1988).

In line with a general adaptive approach to learning, these resource management strategies are assumed to help students adapt to their environment as well as change the environment to fit their goals and needs (see, for example, Sternberg, 1985). Although these resource management strategies are important, due to space limitations, they are not discussed further in this chapter. (The interested reader is encouraged to read the relevant articles and chapters included in the references.)

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