

learners to assume an active and purposeful role in their own learning has been a growing concern among instructors and researchers alike. Programs now exist to train students in metacognitive or study skills (e.g., Weinstein, 1982; Feuerstein et al., 1980; Dansereau et al., 1979; De Bono, 1985; Wang & Palincsar, 1989). Some are aimed at college students, others at younger learners. Some concentrate on domain-specific skills pertaining to a particular subject, such as reading comprehension; others train more general strategies that may be useful across a broad range of tasks. And some programs are embedded within school curricula, while others exist as separate, study skills courses.

Despite the variety among these programs, those that are effective seem to have at least two criteria in common. First, students must have a base of prior knowledge that may be related to the strategies they are learning. Domain-specific strategies, in particular, are virtually useless when students know little about the subject to which they pertain. Second, students must know when and why various self-regulatory strategies may be effectively employed (e.g., Pressley, Borkowski, & O'Sullivan, 1984; Prawatt, 1989; Sawyer, Graham, & Harris, 1992). Knowing how to be planful is not enough to guarantee that one will be planful. Having such conditional knowledge does not guarantee that one will always use it. But realizing when and why such behavior will be useful in furthering learning goals helps to motivate students to engage in metacognitive, self-regulatory ways.

## Conclusion

As noted in the previous chapter, B. F. Skinner continued to argue against the necessity for inventing mental fictions to account for learning. At first, Roediger (1980) seemed to side with Skinner when he pointed out the proliferation of mental entities in current models of human memory and questioned what we have really learned from them. His conclusion, however, was not that mental constructs are useless, but that we should be cautious in what we take them to mean about learning and memory.

Advances in theories of human memory parallel, and perhaps depend on, advances in technology... The information processing approach has been an important source of models and ideas, but the fate of its predecessors should serve to keep us humble concerning its eventual success... Unless today's technology has somehow reached its ultimate development, and we can be certain it has not, then we have not reached the ultimate metaphor for the human mind either. (Roediger, 1980, p. 244)

Cognitive information-processing theorists have not been the only ones interested in learning and memory from a cognitive perspective. In Chapter 4, the ideas of educational psychologist David P. Ausubel will be pre-