Fostering Independence: Helping Students Become More Efficient Self-Directed **Learners: A First Literacy Professional Development Workshop**

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Monitoring Performance

Research on the effects of students' self-monitoring activities has highlighted two important findings. First, students who naturally monitor their own progress and try to explain to themselves what they are learning along the way generally show greater learning gains as compared to students who engage less often in self-monitoring and self-explanation activities.

For example, in one study, students were asked to talk aloud while they studied an introductory science topic in a textbook. After studying, the students took a problem-solving test that measured how much they had learned. The researchers split the students into two groups according to their problem-solving performance —the good problem solvers and the poor problem solvers—and then looked to see whether there were any differences in how they studied the textbook from the talk-aloud protocols. A key difference they found was that the good problem solvers were far more likely to monitor their understanding while they studied, that is, to continually stop themselves as they were reading to ask whether they were understanding the concepts just presented (Chi et al., 1989).

Although this research shows a positive relationship between natural self-monitoring and learning effectiveness, the question of real interest for instructors is whether teaching students to self-monitor actually improves students' learning. Research in multiple science domains indicates that the answer is yes. Students who were taught or prompted to monitor their own understanding or to explain to themselves what they were learning had greater learning gains relative to students who were not given any monitoring instruction (Bielaczyc, Pirolli, & Brown, 1995; Chi et al., 1994). In addition, research has shown that when students are taught to ask each other a series of comprehension-monitoring questions during reading, they learn to self-monitor more often and hence learn more from what they read (Palinscar & Brown, 1984).

Evaluating One's Own Strengths and Weaknesses

Research has found that people in general have great difficulty recognizing their own strengths and weaknesses, and students appear to be especially poor judges of their own knowledge and skills. For example, when nursing students were asked about their proficiency in performing several basic procedures (such as inserting an IV), the majority of them *overestimated* their abilities relative to their actual performance. This phenomenon has been found in a variety of contexts (Dunning, 2007). Moreover, research suggests that the students with weaker knowledge and skills are less able to assess their abilities than students with stronger skills. For example, when asked to predict their performance both before and after completing a test, students in an undergraduate psychology course showed different levels of accuracy in their estimates, based on their *actual* performance: The highest-performing students were accurate in their predictions and postdictions (and became more accurate over subsequent tests), but the poor students grossly overestimated their performance both before and after taking the test and showed little improvement in their estimates over time (Hacker et al., 2000).

This tendency—especially among novices—to inaccurately assess one's knowledge and skill relative to a particular goal is particularly troubling because it has serious consequences for one's ability to achieve that goal. For example, a student who inaccurately assesses his or her skills for a particular task might seriously underestimate the time it will take to effectively complete the given assignment or the additional help and resources that will have to be acquired.