Three Ways to Help Students Become More Metacognitively Aware

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Metacognition is about being able to successfully plan, monitor, and evaluate your learning. It's not a skill that can be listed as a strength by most of our students. Few have encountered themselves as learners. They don't have an expansive repertoire of study strategies. They don't often think about alternatives when the studying isn't going all that well. And most don't evaluate how well they learned beyond the grade they receive. It's something else that concerned teachers need to worry about while teaching students.

It seems like what students need to learn in college never stops growing. They need content knowledge and lots of it. They need intellectual skills such as critical thinking, evidence analysis, and argument construction. They need better study skills such as college-level reading skills, problem-solving skills, a repertoire of test-preparation strategies, and revising skills. And they need these metacognitive skills. How in the world are teachers supposed to teach everything?

Perhaps some of what students need can be taught without devoting actual class time to teaching those skills. For example, Kimberly Tanner thinks we can help students become more metacognitively aware by building classroom cultures "grounded in metacognition" (2012, p. 116). In other words, we create a classroom climate that confronts students with themselves as learners. Tanner suggests three ways of doing so.

First, she recommends **encouraging students to express their confusion in class.** "While most faculty welcome questions from students in or out of class, it is generally not in the culture of college science courses [she's writing to biologists, but her point is true of most college classrooms] for students to share their confusions; rather, there is a focus on right answers and on being scientifically correct" (p. 117). Alternatively, students could be encouraged to ask themselves what they don't understand and then discuss those areas in class (or online) to their benefit, as well as to the benefit of other students and the teacher. Sometimes what students describe as confusing isn't clear to the teacher (who understands the area so well), but that's an instance where students can often help each other or the teacher understand what's confusing. In the same vein, students can be encouraged to ask each other about what they don't understand, or the teacher can identify what has confused former students about the concept. The goal here is simply to make it acceptable to say in class and to other learners, "I don't understand."

Tanner next recommends **incorporating reflection into graded course work.** If students are answering questions about assigned reading or submitting homework problems, they can be asked, "Were any ideas in the reading confusing, challenging, difficult to understand, or ideas you'd never considered previously? Which homework problem was the most difficult? What made it difficult? If you got stuck on a problem but finally figured it out, what helped you get to the solution?" So long as students are making a good-faith effort to answer these questions, they can receive full credit. The value of the question is in the metacognitive thinking it stimulates.

Finally, Tanner suggests **faculty modeling—thinking out loud in front of students** and sharing "how you start, how you decide what to do first and then next, how you check your work, how you know when you are done" (p. 118). Can you recall when you first learned the concept you are trying to teach? The idea here is to share with students what confused you and how you found your way to understanding. Obviously, examples based on course

content are most relevant, but teachers can demonstrate metacognition with any learning tasks. Are you stuck on something in your research? How are you trying to figure it out? What resources and colleagues are you consulting? How many solutions have you tried so far that didn't work? As many who teach writing know, students think revising is necessary only if you didn't get it right the first time. They are surprised to see a piece of their teacher's writing that has been revised and to learn that the changes are not just one set of revisions but five different attempts to make the writing better.

Tanner makes one last point worth mentioning. The call for more active learning has been heard, and many teachers are working diligently to get students active and engaged in class. Kudos to every teacher who is trying to give students the opportunity to learn by doing. However, as Tanner notes, students can be active; they can be doing a hands-on activity. But they can be doing it and still not be doing much thinking. Activity in and of itself does not promote learning. Activity must be accompanied by a metacognitive component, which requires students to process what they are doing, why they are doing it, and what they are learning from doing it.

Reference:

Tanner, K. D. 2012. "Promoting Student Metacognition." Cell Biology Education—Life Sciences Education, 11 (Summer): 113–120.

Reprinted from Teaching Metacognition Implicitly *The Teaching Professor,* 26.9 (2012): 2.