Wednesday, November 8th, 2017, 2:00pm-3:30pm

METACOGNITIVE STRATEGIES, TOOLS, AND TECHNIQUES FOR THE CSM CLASSROOM

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Think-Work-Pair-Share: Metacognitive Awareness Inventory

Think about yourself as an undergraduate learner

A. Complete the Metacognitive Awareness Inventory (MAI) based on how you approached learning as an undergraduate student.
B. Complete the MAI Scoring Guide
C. Consider: were you a metacognitive learner? If so, where did you learn these skills? Was there a point when they became necessary for your academic success?

(Schraw & Dennison, 1994)

- Knowledge and regulation of cognition were related
- MAI score was correlated with test performance (especially knowledge of cognition)

Why is Metacognition Important?

- The term was first used by Flavell (1979) and Brown (1980) to describe the knowledge and regulation of one's own thought processes
- Metacognition contributes to achievement (e.g., Kitsantas, Winsler, & Huie, 2008) and learning (e.g., Nash-Ditzel, 2010; Pintrich, 2002), but is relatively independent from intelligence (for a recent review of this topic, see Onyekuru & Njoku, 2017)
- Academically successful high school students may not be prepared with good metacognitive strategies for college (Balduf, 2009; Cohen, 2012)
- Metacognition can be taught successfully in a college setting (e.g., Steiner, 2016; Tanner, 2012) and is best learned within the context of a course (e.g., Rickey & Stacy, 2000).

Metacognition in STEM

- Rickey and Stacy (2000) suggest that metacognition is essential for learning chemistry, and that chemistry instructors *must* play a role in teaching it within the context of their courses
- Tanner (2012) says promoting student metacognition is the primary way to "help students learn to think like biologists" (p. 114)
- Schoenfeld (2016) describes metacognitive processes as integral in "learning to think mathematically" (p. 1).

Each of these resources also have suggestions for instructors on how to promote metacognition in the classroom.

Private Working Time (15-20 min): Fostering your Students' Metacognition

Think about your students

1. Which areas of knowledge about cognition do your students need assistance with developing?
2. Which areas of regulation of cognition do your students need to develop?
3. Write down ideas for changes you could make to course materials, assignments, assessments, class format, or instructional practices to help your students develop these skills.

Small-Group (20-25 minutes): CSM Colleague Idea Sharing and Feedback

Directions: Take turns sharing ideas and feedback with others in your small-group.

A. If you have tried something to develop your students' metacognitive skills, describe what you have tried and how it influenced your teaching and/or the students' learning.

B. If you are considering trying something to develop your students' metacognitive skills, say what you are planning to address and describe specific changes that you will make to the course to develop these skills.

C. Everyone: Share ideas, considerations, suggestions in support of your colleague's efforts.

Consider scheduling time to meet with/observe a colleague sometime in the spring to follow up on how things are going.

Whole Group Debriefing

In 1 minute or less, please respond to one of the following prompts:

A. One new thing that I learned about metacognition is …

B. Something that I think I can do next semester to foster my students' metacognition is …

C. A question that I still have about fostering students' metacognition is …

Workshop Evaluation

References

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