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CURRICULUM DESIGN WITH METACOGNITION IN MIND

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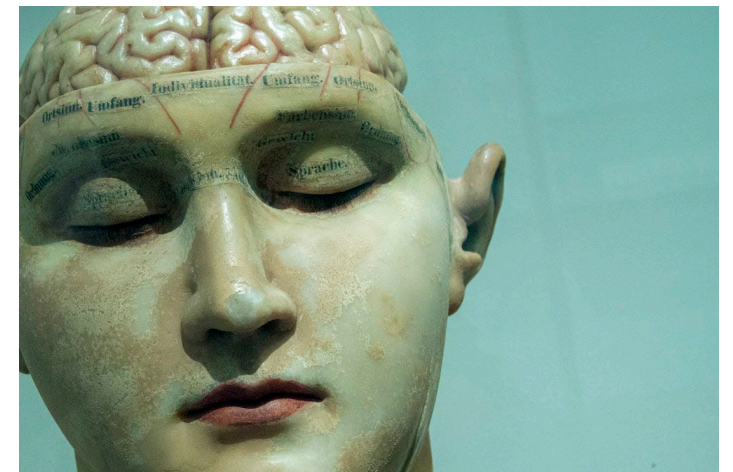


Photo: David Matos
Picture of face with brain exposed.



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Learning Goal and Objectives

GOAL: Participants will learn how to effectively engage in and integrate metacognition into their instruction through awareness of teaching strategies, reflection about their teaching practice, and the integration of metacognitive strategies based on students' needs.

- Objectives: Upon completion, participants will be able to:
 1. Describe metacognition through a faculty and student lens
 2. Apply metacognition to course design principles in various learning environments
 3. Select a metacognitive strategy and design an activity for their own teaching context

What is metacognition?

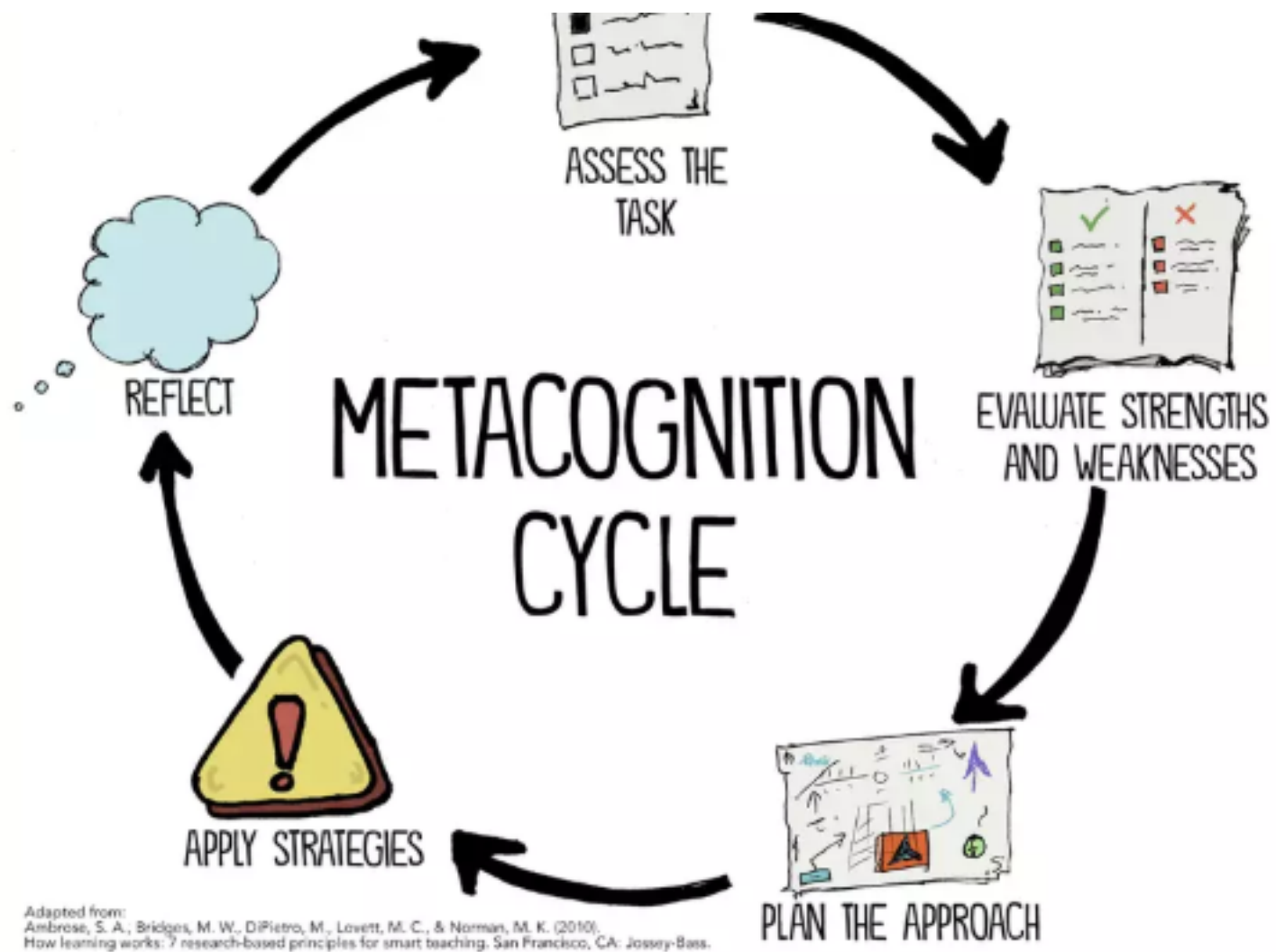


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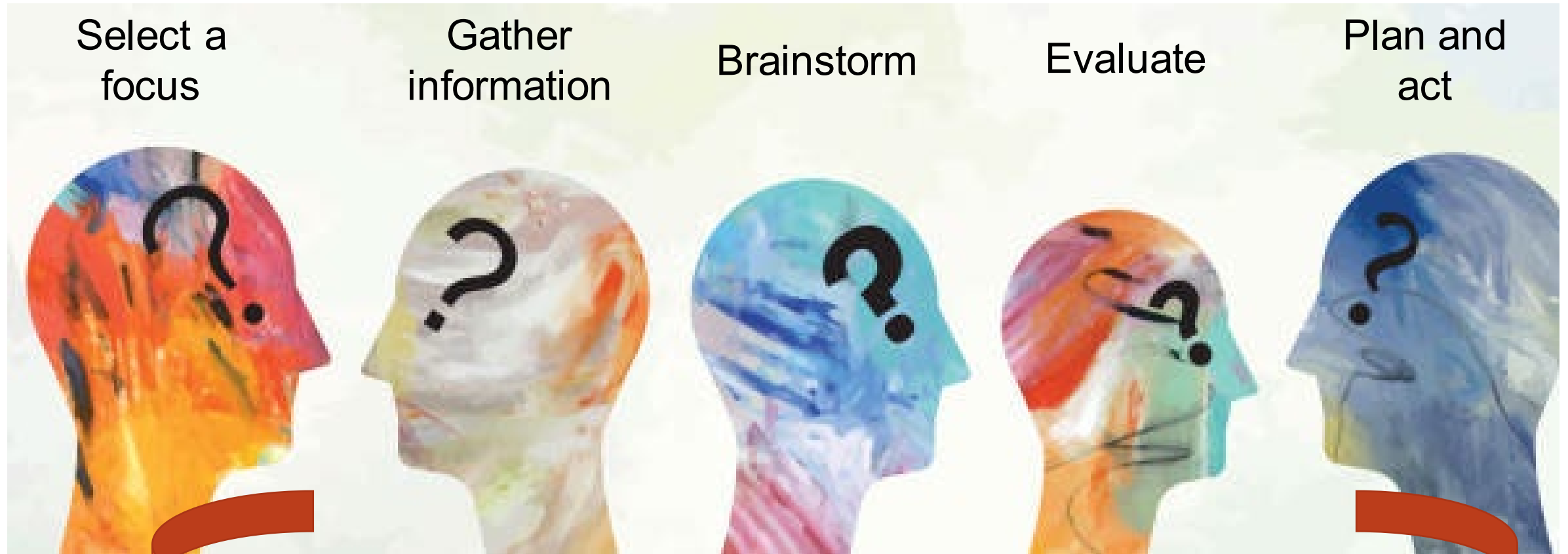
Utilizing metacognition supports the concept of “working smarter, not harder” from two perspectives: the teacher is not doing the thinking for the student, and as a result, the student does the heavy lifting of deeper learning without realizing it.

- Teresa Diaz in Education Week Teacher



SELF-Questioning

Metacognitive framework based on social-emotional learning



Reflect

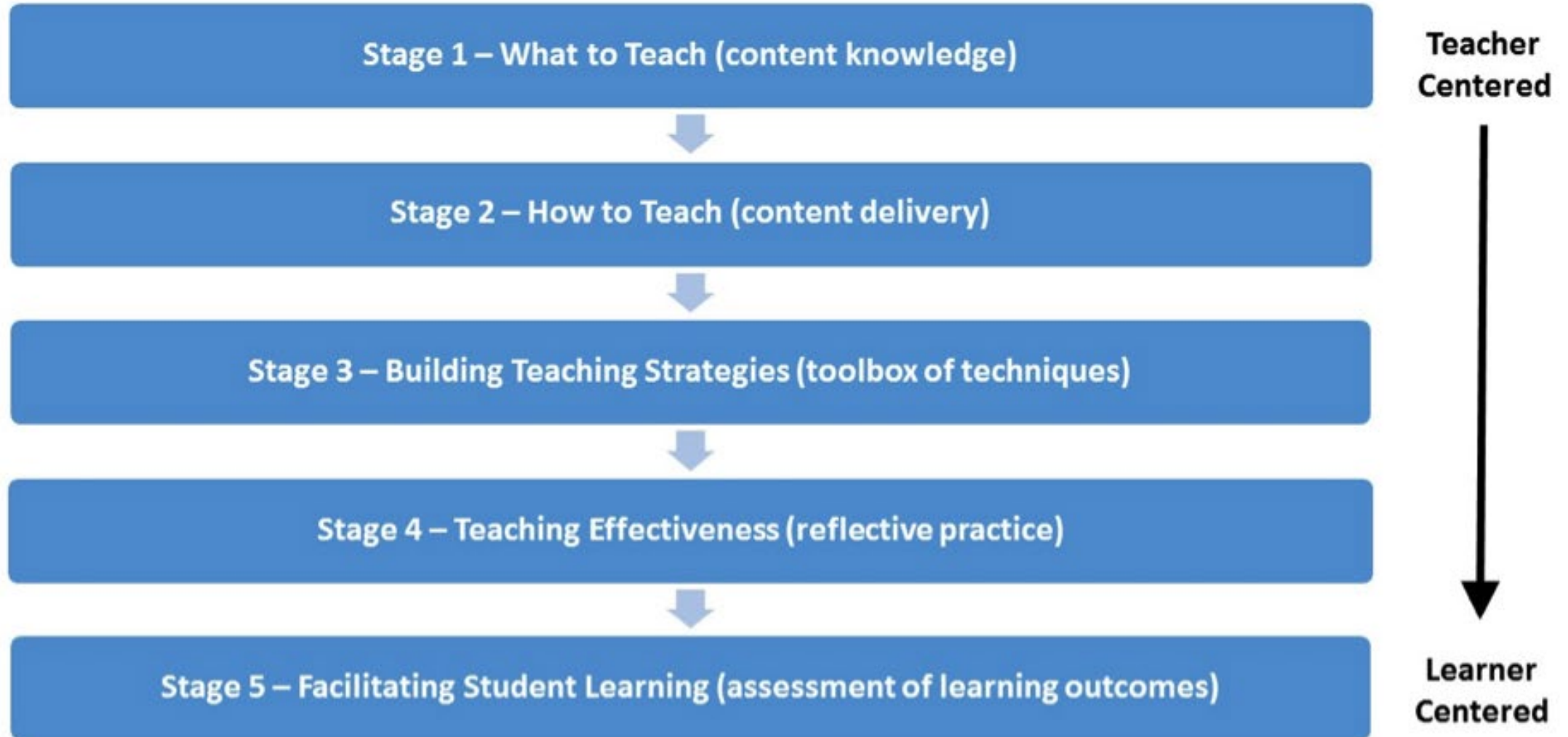
Why is metacognition an important...**critical**...skill?

1. Increase student's abilities to transfer or adapt their learning to new contexts and tasks
2. Levels of awareness that go beyond the subject matter
3. Able to think about themselves as learners in the learning process and in different contexts
4. Aware of their strengths and weaknesses as learners
5. Know their limits (able to assess readiness for tasks)
6. “whiners to winners”

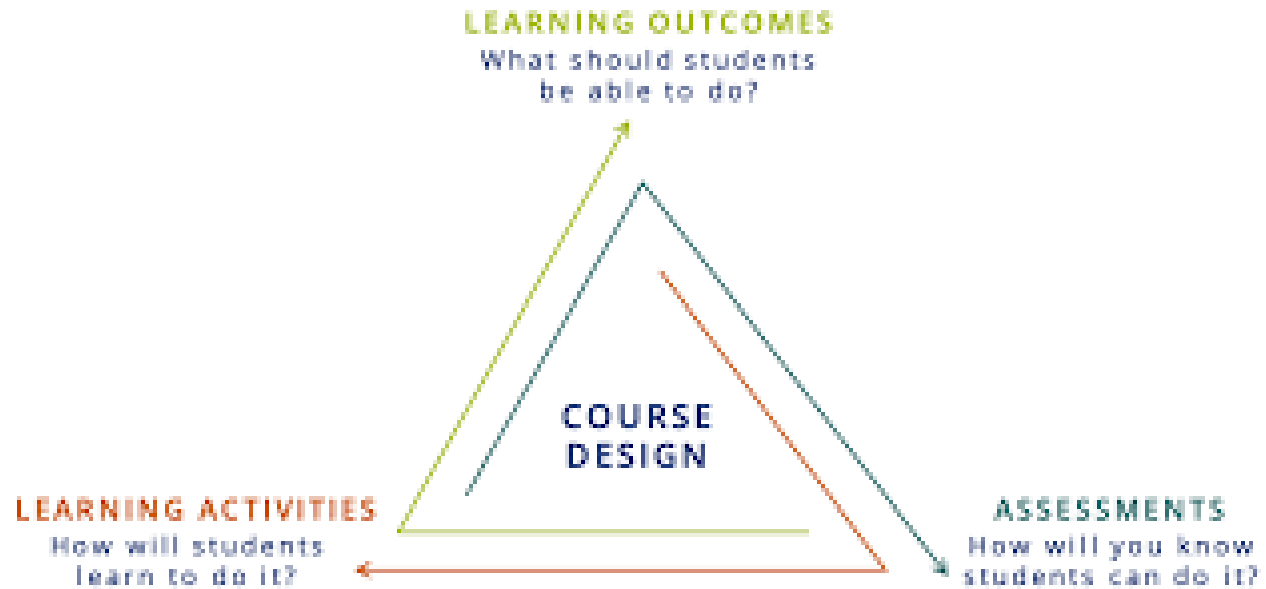
Curriculum Considerations

Now we know WHY metacognition is important, let's look at HOW you can teach it!

Development of College Teaching



Adapted from Akerlind, G.S. (2007). Constraints on academics' potential for developing as a teacher. *Studies in Higher Education*, 32(1): 21-37.



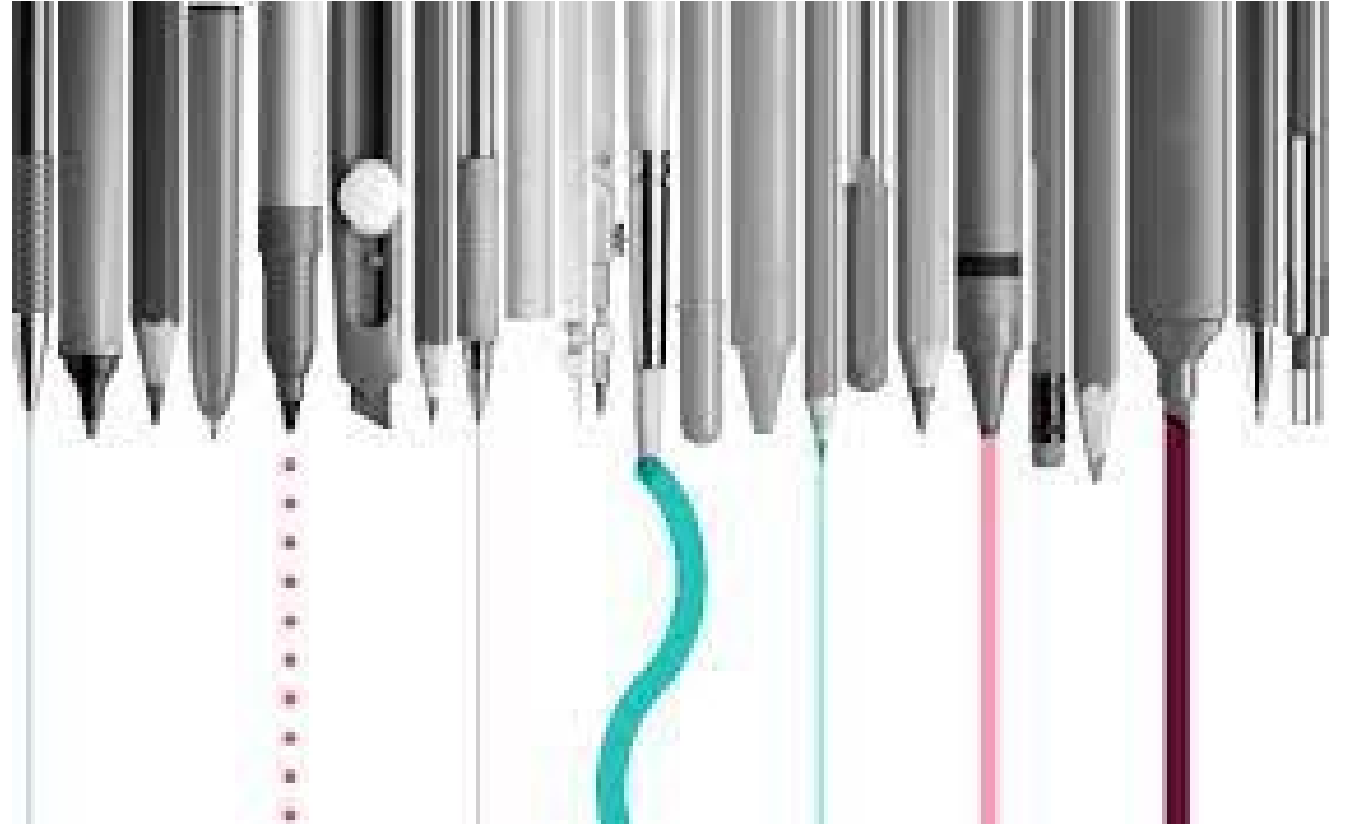
Key to metacognitive strategies

1. Must be used consistently over time so that students learn them and learn how to use them (change is hard!)
2. Helping students go from passive learners to active learners that CAN control their thinking and learning
3. Addressing cognitive dissonance
 - If students thought they were amazing and get a failing grade, what do they do? Pay attention to behaviors- self-defense mechanisms of students
4. Need to learn a different way- don't let students keep repeating what's "always worked" (even when it isn't!)



STRATEGIES

Integration of Metacognition



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Immersion Activity

Your Turn!

- Metacognition application to a test question



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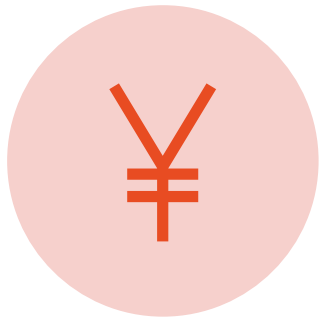
A nurse is caring for a client who is 1-hr postpartum and observes a large amount of lochia rubra and several small clots on the client's perineal pad. The fundus is midline and firm at the umbilicus. Which action will the nurse take?



A. Document the findings and continue to monitor.



B. Notify the client's provider.



C. Increase the frequency of fundal massage.



D. Encourage the client to empty her bladder.

Let's use the SELf-questioning model!

*Handout



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Phase of Cognitive behavior	Questions to ask yourself	Answers to the questions
Select a focus	What is the question asking?	
Gather information	What information do I already know? What additional information do I need to know?	
Brainstorm solutions	What are possible answers to the question?	
Evaluate the chosen solutions	Does the possible answer(s) make sense?	
Plan and Act	Decide on the best answer	
Reflect	Did I answer correctly? Did I answer correctly for the right reasons? What information did I really know? What information is not clear and requires more remediation?	



Answer

A. Document the findings and continue to monitor the client.

Rationale: These are expected findings. At 1-hr postpartum, lochia rubra should be intermittent and associated with uterine contractions. The volume of lochia resembles that of a heavy menstrual period. Small clots are common. The nurse should document the findings and continue to monitor the client.

Application Possibilities for Metacognition



Case Studies

In class or Admit to class ticket



Test Reviews

In-class Practice tests
Admit to Class
1:1 Test Reviews



Course Text Readings

Admit to class



Course Failure

Advisor Meetings



Clinical and Simulation Debrief

Example Forms: Metacognition- Case Study Analysis

Phase of Cognitive behavior	Questions to ask yourself	Answers to the questions
Select a focus	What is the question asking? What may be going on?	
Gather information	What information do I already know? What additional information do I need to know?	
Brainstorm solutions	What are possible answers to the question?	
Evaluate the chosen solutions	Does the possible answer(s) make sense?	
Plan and Act	Decide on the best answer	
Reflect	Did I answer correctly? Did I answer correctly for the right reasons? What information did I really know? What information is not clear and requires more remediation?	

Example Forms: Metacognition- Course Failure

Phase of Cognitive behavior	Questions to ask yourself	Answers to the questions
Select a focus	What can I do to be successful in this course, program, career?	
Gather information	What information do I understand about being successful? What information do I not know/understand related to success and what it takes to succeed?	
Brainstorm solutions	What is the best way to identify or clarify what I do not understand about how to be successful?	
Evaluate the chosen solutions	What strategies worked and did not work to improve my success in the past? What new strategies may contribute to being successful?	
Plan and Act	Decide on the best action plan and choose strategies to help improve my overall ability to be successful	
Reflect	Did my chosen strategy help with my success? How do I know which strategies helped or didn't help? Do I need to try other strategies to be successful?	

Example Forms: Metacognition- Clinical

Phase of Cognitive behavior	Questions to ask yourself	Answers to the questions
Select a focus	What was the main problem happening with my client?	
Gather information	What information do I understand about the problem? What information do I not know/understand about the problem?	
Brainstorm solutions	What interventions can I implement to address the identified problem? What resources can I utilize to help my understanding of the information I do not know or understand about the problem and/or potential nursing care relevant to the problem?	
Evaluate the chosen solutions	Do the identified solutions make sense to use with my client? Why or why not?	
Plan and Act	What solutions/interventions should I chose? What interventions should I implement 1 st , 2 nd , 3 rd , ...	
Reflect	Did my chosen interventions/solutions contribute to a positive client outcome? What solutions/interventions did I not think of? What can I do differently next time in a similar client situation?	

Example Forms: Metacognition- Reading Comprehension

Phase of Cognitive behavior	Questions to ask yourself	Answers to the questions
Select a focus	What did I just read (summarize the meaning of the reading)?	
Gather information	What information do I understand? What information do I not know/understand?	
Brainstorm solutions	What is the best way to identify or clarify what I do not understand?	
Evaluate the chosen solutions	What strategies worked and did not work to improve my understanding of the parts I did not understand? Should I look elsewhere or reach out to the professor?	
Plan and Act	Decide on the best action to help improve my understanding of the reading	
Reflect	Did my chosen plan help with my understanding? How do I know I understand what I just read? Do I need to try another method to help with my comprehension?	

Example Forms: Metacognition-Test Item Analysis

Phase of Cognitive behavior	Questions to ask yourself	Answers to the questions
Select a focus	What is the question asking?	
Gather information	What information do I already know? What additional information do I need to know?	
Brainstorm solutions	What are possible answers to the question?	
Evaluate the chosen solutions	Does the possible answer(s) make sense?	
Plan and Act	Decide on the best answer	
Reflect	Did I answer correctly? Did I answer correctly for the right reasons? What information did I really know? What information is not clear and requires more remediation?	



Important Principles



This works best if the students practice



All courses should integrate a metacognitive activity



Consistency is key—integrate activities throughout the curriculum



Demonstrate how metacognition works-do a worksheet with them as a class



Reinforce the importance of how metacognition helps them become aware of their knowledge gaps and will become part of their thinking in the long-term.

Your turn!

**Handout*

- What has caught your interest?
- What course could you begin to build metacognition into the curriculum?
- Roughly map out how this would look!
 1. What course and level of learner?
 2. How would you introduce metacognition to the students?
 3. What metacognitive model will you use?
 4. How will you infuse this model into your course?
- **SHARE!**

Share!

- How did this go?
- What are we trying to solve by incorporating metacognition into our curriculum?
- What challenges did you experience thinking through your own context?
- How do we get past these challenges?

- What questions do you still have?
- What information do you still need?



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