



PROMOTING STUDENT SUCCESS WITH METACOGNITION

Sara Ducey, College-wide Chair, Integrative Studies
Angela Lanier, Instructional Designer, ELITE

Outcomes

(This course satisfies
one of the requirements
for the Integrative
Learning
Pathway)

- Define metacognition
- Communicate the benefits of practicing metacognition on student success
- Evaluate various metacognitive strategies and activities
- Plan at least two metacognitive activities to use in class
- Consider how to use the Reflection and Self-Assessment segment of the AAC&U Integrative Learning VALUE rubric to evaluate student work



WARM UP REFLECTION

Reflection on a class that went well and one that was
challenging.

What do we mean by metacognition?



Thinking about thinking



Learning about and understanding how to learn



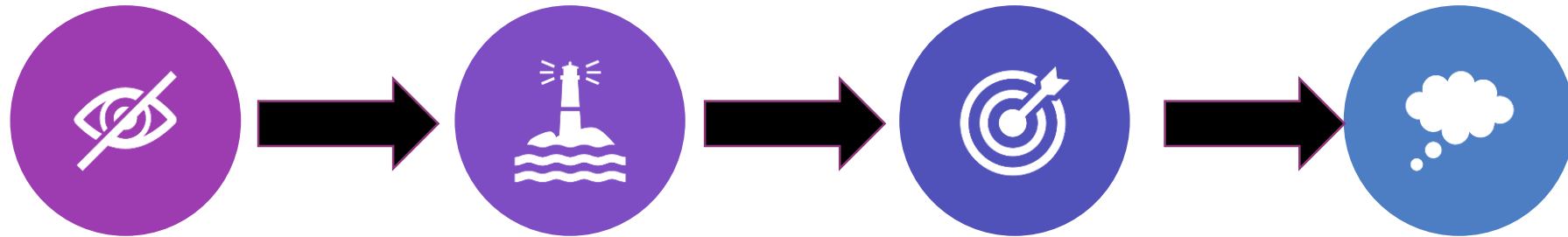
Having an awareness of what you know and how you know it



Regulating one's own learning

What do we mean by metacognition?

(Kolencik & Hillwig, 2011)



TACIT

AWARENESS

STRATEGIC

REFLECTIVE

What Do We Mean by Metacognition?

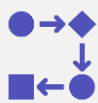
(Flavell, 1979)



Person variables: What one recognizes about his or her strengths and weaknesses in learning and processing information.



Task variables: What one knows or can figure out about the nature of a task and the processing demands required to complete the task



Strategy variables: The strategies a person has “at the ready” to apply in a flexible way to successfully accomplish a task

What Do We Mean by Metacognition?

[AAC&U VALUE Rubric](#)



Benchmark

Describes own performance, giving a general description of success and failure



Milestone1

Articulates strengths and challenges to increase effectiveness in different contexts



Milestone 2

Evaluates changes in own learning over time, recognizing complex contextual factors



Capstone

Envisions future self
Makes plans that build on past experiences across different contexts

Why Teach Metacognitive Skills?

[\(Teaching Excellence in
Adult Literacy, 2010\)](#)

Students who become skilled at using metacognitive strategies are:

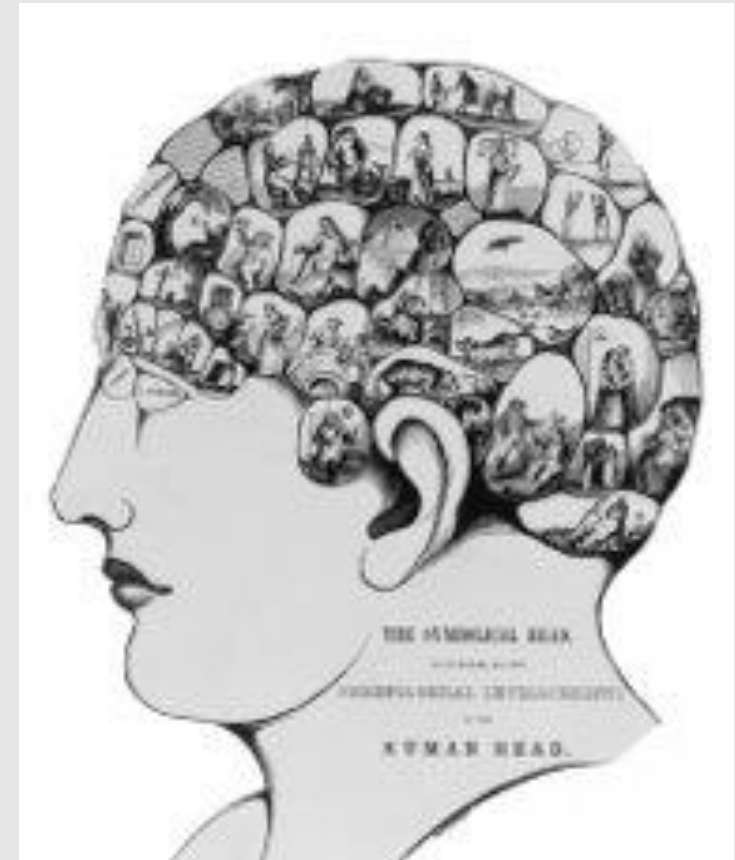
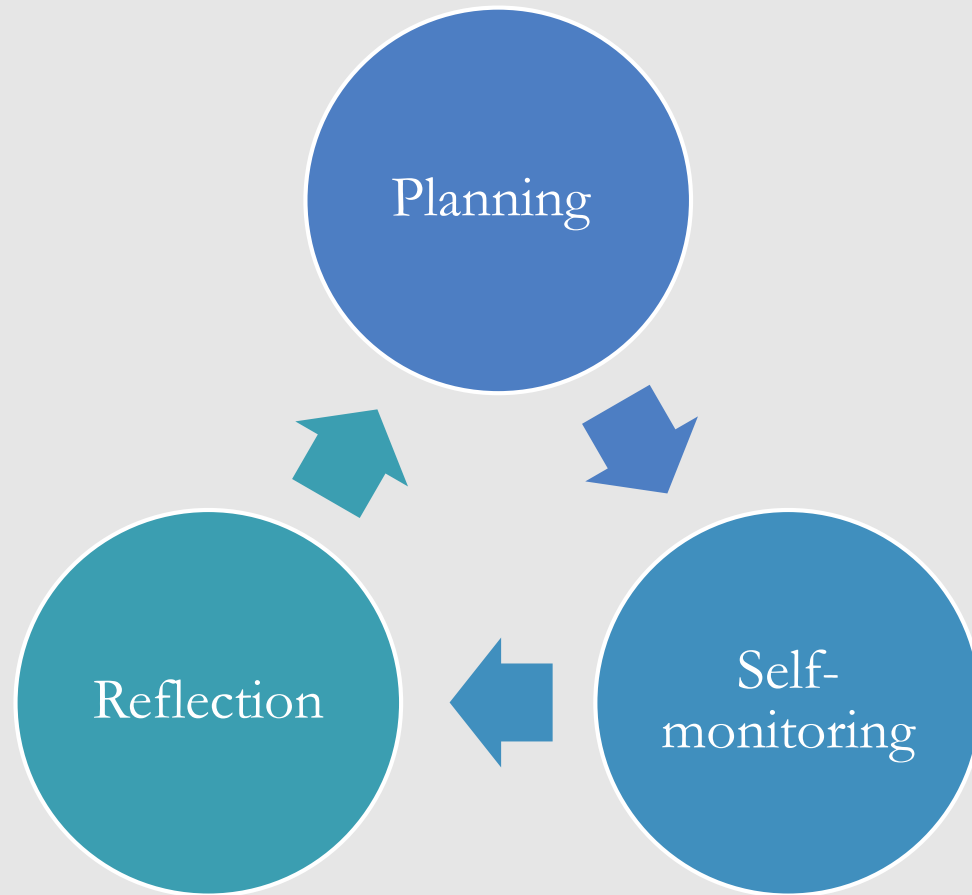
- more confident, independent learners
- better able to think through a problem, approach a learning task, select appropriate strategies and make decisions to successfully perform a task
- capable of "talking with themselves" about their learning, the challenges they encounter and how to self-correct and continue learning
- better performers on exams and complete work more efficiently, using the right tool for the job and modifying learning strategies as needed.



THE STRATEGIES

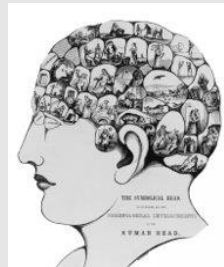
Engaging in metacognition requires a repertoire of strategies at the ready.

Categories of Metacognitive Strategies



Planning Strategies

- Previewing information or tasks
- Creating a study or project plan
- Breaking down complex tasks to manageable chunks
- Determining time required to complete tasks
- Developing timelines
- Assessing prior knowledge
- Asking Self-Questions

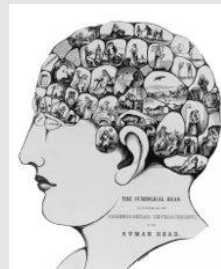


Self-Questions for Planning (Volk, 2017):

- How do you plan on preparing for the upcoming exam? Why?
- What resources are available to support you? How will you make sure to use these?
- What concepts have you found most confusing so far? What has been clearest? Given this, how could you best spend your time preparing for the exam?
- Based on your performance on the first exam, write a memo to yourself with advice about preparing for the next exam.
- Other

Self-Monitoring Strategies

- Checking progress against a plan
- Monitoring comprehension, engagement, and progress
- Adjusting strategies
- Identifying knowledge or skill gaps
- Self-instructing
- Troubleshooting and problem solving, independently

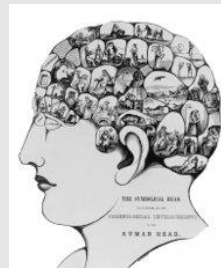


Self-Questions (Volk, 2017)

- What did you think the question was asking?
- What process did you use to arrive at your answer? Why did you choose “b,” for example?
- What were the main reasons you didn’t chose “a” or “c”?
- Compare your ideas with your discussion partner.
- What most confused you about this question?
- How confident are you in your answer? Why? What more would you need to increase your confidence?
- Other

Reflection Strategies

- Self-assessment and evaluation
- Identifying and determining success of strategies and processes used to complete a task
- Making connections around skills (transfer)
- Making connections around content (synthesis)
- Forward planning
- Imaging and creative thought around content and skills



Self-Questions for Reflection/ Evaluation

- Pose three questions you had about the concepts you explored in this assignment that you still can't answer.
- Describe at least two ideas related to this assignment that you found confusing.
- Do you agree that you “learned a lot” from the assignment? Why? Why not?
- Think about how you approached completing this assignment and compare it with the way that you completed the last assignment.
- What advice would you have for yourself based on what you know if you were just beginning the assignment?
- Other



REFLECTION 2

I used to think...now I think

KWHL Chart - 21st Century Style

K	W	H	L
What do I know?	What do I want to know?	How do I find out?	What have I learned?

[This Photo](#) by Unknown author is licensed under [CC BY-SA-NC](#).

Metacognition in Action

[KW\(H\)L Charts](#) help students:

- access prior knowledge
- communicate what they want or need to know and what resources will help them fill in the gaps
- reflect on what they learned to determine if it met their needs.

3. Now that you have looked over your graded assessment, which of the following caused you to make mistakes? Check off all of these that apply.

	I didn't show my work.
	I didn't follow step format or didn't solve an equation correctly.
	I made a calculation error.
	I didn't write an equation that represents the problem.
	I didn't interpret a word problem correctly.
	I never studied the information.
	I didn't study the information enough or effectively.
	I did not read the question carefully or correctly.
	I rushed through my work.
	I didn't pace myself, so I ran out of time.
	Other: _____

Metacognition in Action

[Exam Wrappers](#) and other self-evaluation tools guide students to identify strengths and weaknesses, categorize their mistakes, make corrections, and reflect on their performance to prepare for the next task.

Image source: <https://theadurlingudl.org/2018/01/31/reflecting-on-student-feedback-exam-wrappers/>

Write a commentary on one of the following:

1. (a)

business

3rd person

She was almost through with her figures when she heard a car drive up to the gate, and looking out of the window she saw her two older brothers. They had seemed to avoid her ever since **Carl's** arrival, four weeks ago that day, and she hurried to the door to welcome them. She saw at once that they had come with some very definite purpose. **They followed her stiffly** into the sitting-room. **Oscar** sat down, but **Lou** walked over to the window and remained standing, his hands behind him.

Tension

"You are by yourself?" he asked, looking toward the doorway into the parlor. "Yes. **Carl and Emil** went up to the Catholic fair." **For a few moments neither of the men spoke.** Then Lou came out **sharply**. "How soon does he intend to go away from here?" "I don't know, Lou. Not for some time, I hope." **Alexandra spoke in an even, quiet tone that often exasperated her brothers.** They felt that **she was trying to be superior** with them.

Small community

Oscar spoke up **gruffly**. "We thought we ought to tell you that people have begun to talk," he said meaningly. Alexandra looked at him. "What about?" Oscar met her eyes **blankly**. "About you, keeping him here so long. **It is silly to let him be hanging on to a woman this way.** People think you're getting taken in."

family dispute

Alexandra shut her account-book **firmly**. "Boys," she said **serenely**, "don't let's go on with this. We won't come out anywhere. I can't take advice on such a matter. I know you mean well, but you must not feel **responsible** for me in things of this sort. If we go on with this talk it will only make hard feeling."

honor

Lou **whipped** about from the window. "You ought to think a little about your family. You're making us all ridiculous."

property/ownership inheritance land

"How am I?" "People are beginning to say **you want to marry the fellow.**" "Well, and what is ridiculous about that?" Lou and Oscar exchanged **egg-cold looks.** "Alexandra! Can't you see **he's just a tramp and he's after your money?** He wants to be taken care of, he does!" "Well, suppose I want to take care of him? Whose business is it but my own?" "Don't you know he'd get hold of your **money?**" "He'd get hold of what I wished to give him, certainly."

Oscar sat up suddenly and Lou clutched at his beasty hair. "Give him!" Lou shouted. "Our property, our homestead?" "I don't know about the homestead," said Alexandra quietly. "I know you and Oscar have always expected that it would be left to your children, and I'm not sure but what you're **right.** **But I'll do exactly as I please with the rest of my land, boys.**"

"The rest of your land!" cried Lou, **growing more excited every minute.** "Didn't all the land come out of the homestead? **It was bought with money bequeathed on the homestead, and Oscar and me worked ourselves to the bone paying interest on it.**"

Separating family

work

Brothers = awkward determined men vs. woman

superior attitude

men/women's rights

Brothers united

brain vs. brawn

the absent man, Carl

Money

She's independent - They're influenced by Alex. forced by community to justify herself.

A = Stubborn, self-confident

TASK 2: RE-READING AND ANNOTATING [10-30 MINUTES]

PART ONE

This Photo by Unknown author is licensed under CC BY-SA.

Metacognition in Action

Think Aloud/Talk to Text (annotation)

strategies help students verbalize or visualize their thinking, which promotes better comprehension.

How do we build *a culture* of metacognitive habits? (Tanner, 2012)



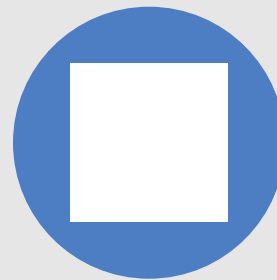
Cultivate a classroom environment where students feel comfortable expressing confusion



Include reflection and metacognitive tasks into course assignments



Model for students the kind of thinking used in the discipline-
- *"Think like a biologist, or think like an accountant."*



Model and practice should always be in context

Assessing Metacognition Using the AAC&U VALUE Rubric



Benchmark

Describes own
performance

General description of
success and failure



Milestone 1

Articulates strengths and
challenges to

Increase effectiveness in
different contexts



Milestone 2

Evaluates changes in own
learning over time

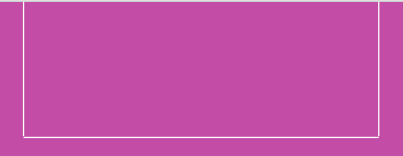
Recognizing complex
contextual factors



Capstone

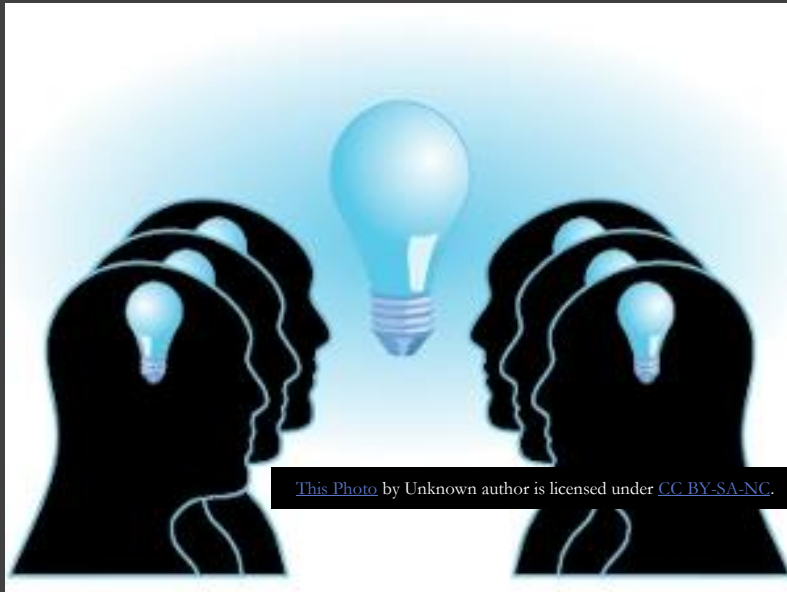
Envisions future self

Makes plans that build on
past experiences across
different contexts



SELF-ASSESSMENT:

REFLECT ON YOUR OWN METACOGNITIVE PRACTICE



(SEE HANDOUT – WITH REFLECTION QUESTIONS
FROM TANNER ARTICLE)

Share self-
reflections of
metacognitive
practices

Hi- I'm Mr. Metacognition,
but you
can call me
Meta.



Bibliography

- Brown University. (2019). Teaching metacognition. *Sheridan Center for Teaching and Learning*. Found on <https://www.brown.edu/sheridan/teaching-learning-resources/teaching-resources/classroom-practices/promoting-metacognition>.
- Chick, N. (n.d.) Metacognition. *Center for Teaching, Vanderbilt University*. Found on <https://cft.vanderbilt.edu/guides-sub-pages/metacognition/>.
- Flavell, J.H. (1979). Metacognition and cognitive monitoring. *American Psychologist*, 34(10), 906-911.
- Kolencik, P.A. & Hillwig, S.A. (2011). *Encouraging metacognition: Supporting learners through metacognitive teaching strategies*. New York: Peter Lang Publishing.
- Ottenhoff, J. (2011). Learning How to Learn: Metacognition in Liberal Education. *Liberal Education*, 97, n3-4, 28-33. Retrieved <https://www.aacu.org/publications-research/periodicals/learning-how-learn-metacognition-liberal-education>.
- TEAL Center. (2010). Cognitive processes. Found on https://lincs.ed.gov/sites/default/files/4_TEAL_Metacognitive.pdf.
- Tanner, K. (2012). Promoting student metacognition. *Life Sciences Education*, 11, 113-120.
- Volk, S. (2017). “What am I doing? Is it getting me anywhere?” Scaffolding student metacognition. *Teaching and Learning at Oberlin College*. Found on <http://languages.oberlin.edu/blogs/ctie/2017/11/05/what-am-i-doing-is-it-getting-me-anywhere-scaffolding-student-metacognition/>.



SESSION FEEDBACK

Please complete the workshop evaluation form and
check out other Integrative Learning workshops:

<https://www.montgomerycollege.edu/documents/offices/elite/integrative-learning-pathway.pdf>