Metacognition: The Missing Link to a Deeper Think

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Outcomes

Today we will look at:

✓ What is Metacognition?
✓ Why Do I Care?
✓ The Three Phases of Metacognition
✓ Tools for Teaching Metacognition

Metacognition Self-Assessment


I am a Novice
– I am just starting to learn this and I don’t really understand it yet.

I am an Apprentice
– I am starting to get it, but I still need someone to coach me through it.

I am a Practitioner
– I can mostly do it myself, but I sometimes mess up or get stuck.

I am an Expert
– I understand it well and I could thoroughly teach it to someone else.
What is metacognition?

Video Debrief

Metacognition in 10 words or less:

Why do I care?

- Kids don’t always see connections between actions and outcomes
- Need help seeing that often what you do = outcome you get
- Mythbuster: Success in school happens or doesn’t
- Learning is malleable: can be taught to think through problems and reflect on outcomes
Learners can think before they enter a classroom.

*The educator’s role is to teach them to think in different ways and to think more effectively.

Common Core Standards

The Common Core Standards require students to think and communicate their thinking in order to demonstrate understanding of complex text and conceptual mathematics.

Capacities of a Literate Individual

1. They demonstrate independence.
2. They build strong content knowledge.
3. They respond to the varying demands of audience, task, purpose, and discipline.
4. They comprehend as well as critique.
5. They value evidence.
6. They use technology and digital media strategically and capably.
7. They come to understand other perspectives and cultures.
Benefits to Students with Learning Disabilities

- When metacognitive strategies are explicitly taught they can support students' information retrieval. (Lenz, Ellis, & Scanlon, 1996)
- Moreover, students possess a powerful learning tool that builds learning independence. Confronted with a problem-solving situation, students can implement metacognitive strategies when they have difficulty remembering how to solve a particular problem.
- As students learn, practice, and independently use metacognitive strategies, these strategies often become integrated into these students' learning repertoires.

-Mercer & Mercer, 1993

The result of not thinking before we attempt to solve real world problems....

We need students who can do the following:

- Be problem solvers-don’t fear/panic
- Practice critical thinking
- Use precise language
- Persevere!!!
- Think with others
- Utilize resources
3 Phases of Metacognitive Processes: Planning, Monitoring and Reflecting

- Planning: Person, Task & Strategy Variables
- Monitoring: How am I doing?
- Reflecting/evaluating: What worked? What adjustments can be made?

Planning: Variables

- **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 the 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.

Example: Preparing a Meal

**Person Variable:** I’m not good at multi-tasking in the kitchen. I get easily distracted and burn things.

**Task Variable:** I will have multiple things happening at one time. I will need to be able to pay attention to all things. I need to have supplies ready to go.

**Strategy Variable:** Get out all equipment. Prep all vegetables and spices ahead. Pre-measure what I can and have it ready. Use a timer. Chunk the recipe so I have stages to follow.
Person, Task & Strategy Variables

For example: “I know that I (person variable) have difficulty with finding the pertinent information in word problems (task variable), so I will answer the computational problems first and do a close reading of the word problem to try to figure out what it is asking and how to solve it (strategy variable).”

Phase 1: Planning

Teach planning for thinking:

• Be clear about the task—restate it, break it down
• Determine strategies: graphic organizer, take notes, draw a picture or diagram, identify what you already know
• Set goals—what do I want to accomplish?
• Determine a sequence
• Set deadlines—chunk it
• Identify possible distractions
• Determine how to overcome distractions

Classroom Example: Be Sure To

AND MAKE SURE YOU...
Video Debrief

- How does this strategy fit into the metacognitive process?

Phase Two: Monitor & Adjust

How am I doing? How’s it going?

Am I:
- making progress on the task?
- thinking about the learning and identifying any problems?
- comprehending what I read, or is said, and identifying the problems if I am not?
- making adjustments to help myself?

Classroom Example: Traffic Lights
Video Debrief

• How does the Traffic Lights strategy promote metacognition?

Phase 3: Self Reflect & Evaluate

How well did I
• accomplish my task
• manage my time
• stay on task
• use strategies to help me

Classroom Example: Text to Assess

We do not learn from experience... we learn from reflecting on experience.
- John Dewey
Video Debrief

• How did the texting strategy fit into the metacognitive process?

• How else could it be used and for what purpose?

Tools and Resources for Teaching Metacognition

 Thinking Stems

✓ Post in the room-make it visual reminder
✓ Use regularly as part of daily learning
✓ Model.......model.......model
✓ Ask for examples of how they used it
Own It

- Self-check
- Includes reflection
- Model model model
- Share with partner/class

Metacognitive Reading Strategies

- Predict
- Connect
- Visualize
- Clarify
- Seek Evidence
- Summarize

Metacognition Student Guide

- Give with assignments
- Students submit with content work

Metacognition has 3 basic elements:

- Developing a plan of action
- Maintaining/monitoring the plan
- Evaluating the plan/outcome

Before

- Ask yourself:
  - What in my prior knowledge could help me?
  - In what direction do I want my thinking to take me?
  - What should I do first?
  - What strategies could help me do the task?

During

- Ask yourself:
  - How am I doing?
  - Am I on the right track?
  - How should I proceed?
  - What information is important to remember?
  - What am I struggling with?
  - How can I resolve what is difficult?

After

- How well did I do?
  - Did my process work?
  - What did I do well?
  - What could I have done differently?
  - What can I do next time to improve?
  - How can I build off of my successes?
Post Lesson Reflection

✓ How did I do?
✓ What did I do well?
✓ What could I improve next time?

1. Approximately how much time did you spend on this task?

2. How satisfied are you with the results you got? Explain.

3. What strategies did you use to complete the work?

4. What enduring learnings did you take away from the assignment?

5. What could you do next time to get even better results?

Teacher Reflection: Evaluate the lesson/unit - What kinds of thinking did it require?

- How did you encourage your students’ thinking about their thinking?
- Did you include ways for students to regulate and monitor their own learning in your plans? For example, were students asked to articulate their learning process and what they had learned?
- Did students share strategies and solutions with each other?
- Did students have opportunities for revision and for self- or peer assessment?
- What aspects of the unfolding events increased or decreased the opportunity for students to reflect on and regulate their learning in this learning event?
- How do you think this may have influenced what occurred?

Thanks so much!

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Resources

http://litag.com/2012/03/15/common-core-brings-metacognition-back/

Wehmeyer, Connie. Metacognition. 2013

Teaching Channel
https://www.teachingchannel.org/videos/peer-teaching–2
https://www.teachingchannel.org/videos/student-goal-setting
https://www.teachingchannel.org/videos/testing-to-assess-learning