Lesson 7: Strategies for Developing Students’ Thinking Skills

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Lesson 7 Objectives

Participants will be able to:

1. Identify different ‘types’ of thinking and how they help to develop self-regulated learning that can be applied to reading graphics
2. Describe ways to infuse thinking opportunities into instruction with tactile graphics
Why Deliberately Think about Thinking?

- Incorporating opportunities for thinking “on the fly” rarely works
- Thinking skills can transfer across content areas and life tasks
- Promoting active engagement
Types of Thinking

• **Flexible**
  • Can I think differently about a situation?
  • Can I assume the viewpoint of someone else?

• **Fluent**
  • Can I come up with various solutions?
  • Can I identify a variety of tools to accomplish a procedure or solve a problem?

• **Elaborative**
  • Can I take what I know and add to it?
  • Can I analyze and compare to come up with the next steps?

• **Original**
  • Can I come up with new and different ideas?
Becoming Self Regulated Learners: Cycle of Strategic Action

Interpret Tasks

Planning

Adjusting

Enacting Strategies

Monitoring

(Butler & Schnellert, 2015)
Learner’s Engagement Depends On:

• Learning environment
• Emotions and motivation
• What the learner brings to the task (metacognition, knowledge, experiences, strengths and challenges, beliefs, etc.)

(Butler & Schnellert, 2015)
Questions to promote thinking about strategic action

• Interpret Activities  
  • What do you need to do?  
  • How will you know you did a good job?

• Choosing Strategies  
  • What has worked in the past?  
  • What strategy did you use there?  
  • How will you approach this task (what’s your plan)?

• Monitoring and Adjusting  
  • How are you doing? How do you know?  
  • What can you do differently to solve the problem?
Building Strategy Tool Box

• Hits all categories of thinking

• Prompts to build the skill:
  • What else could you do?
  • How did that strategy compare to the other?
  • You had trouble with X using that strategy, how could you modify?
Strategy 1: Opportunities to Compare and Contrast

• Categorize on different features (flexible thinking)
• Try different strategies and evaluation which was more effective

• Examples for graphics:
  • Compare one bar graph to another- What is the same (salient feature of a “bar graph”)
  • Make a group of graphics the student explores to figure out why they were grouped together (e.g., all have a key, all have X and Y axes, etc.)
  • Try different techniques for exploring the graphic
Shape Sort Example

• Practice flexible thinking
• Practice compare and contrast skills
• Has to analyze and make a plan vs. just being asked to make groups based on a feature
Strategy 2: Open Up Directive Teaching by asking more questions

• Directive teaching:
  • Teaches a rote process or procedure
  • Students work on following directions

• Open-ended opportunities:
  • Provide insight into the student’s thinking
  • Provides more “ownership” of the task to the student
  • Additional opportunities to analyze, brainstorm, compare, etc.
Tactile Book- Directive

• Student followed directions
• Practice exploring a tactile picture
• Opportunity to correct technique
Tactile Book Example- More Open

• Questions give the student an opportunity to predict and make connections
• Provides insight to the teacher (before telling the student) what student can do on own and the approach they take
  • Check this out, what do you notice?
  • How did you figure that out?
  • What would you expect to find? Why?
• Provides opportunities to give feedback on strategies used
Strategy 3: Think Aloud

• Teacher Think Aloud - models metacognition, strategic action cycle and learning as a process with mistakes part of it

• Student Think Aloud - draws the student’s attention to the process, provides additional insight to the teacher
Prompts to develop think aloud skills

• What did you do to figure that out?
• What’s your plan?
• What can you do to make sure?
• Why did you select that strategy?
Tips for Improving Questioning and Student’s Thinking Skills:

• Record yourself teaching a student!
• Pre-plan higher level questions
• Ask why and how often!
• Provide frequent opportunities to engage in the whole strategic action process
• Focus on process vs. outcome with your feedback
Thank You

Keep them thinking!
Reference