Reading, Reflecting, and Relating: A Metacognitive Approach to Learning

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Three Principles of Learning

1. Preconceptions

2. Expert Knowledge
   • Deep foundation
   • Contextual framework
   • Organizational structure

3. Importance of **Metacognition**

*Bransford et al. (2000)*
Metacomprehension

![Graph showing exam scores across quartiles]

- **Perceived Pre-Exam**
- **Perceived Post-Exam**
- **Measured**

*Y-axis: Exam Score*  
*X-axis: Quartile (1st, 2nd, 3rd, 4th)*
Expert Learners

Metacognitive Knowledge (declarative, procedural, conditional)

Personal Resources
- Prior Knowledge
- Available Strategies

Task Requirements
- Type of Learning
- Appropriate Strategies

Metacognitive Control (self-regulation)

Plan

Evaluate

Monitor

Reflection

Strategic Reading

Learning from texts is an essential skill

**Expert Readers:**
- read with a purpose and in “extensive mode”
- accomplished in use of prior knowledge
- utilize a wide variety of strategies for monitoring and comprehension (e.g., prediction, integration, self-questioning, reflecting)

**Novice Readers:**
- focus on decoding single words or phrases
- fail to adjust for different texts or purposes
- seldom use text-processing strategies

*Paris et al. (1996)*
Reading Reflection Project

Encourage regular reading before class

Foster development of:
- metacognitive knowledge and skills
- metacomprehension skills
- strategic reading skills

Deepen content learning
Assessing the Efficacy of Reflections

Survey of Reading Strategies
• depth of reading
• environmental conditions
• reading strategies

Analysis of Reading Reflections
• Reading reflection grade
• Analysis of quality of reflection (rubric)
• Statistical analysis (correlation; simple, multiple, and Shapley regression)
Depth of Reading

Control (n=5 classes; 144 students)

Percent Students

No Reading | Skim - No Read | Surface Read | Deep Read

Bar chart showing the percentage of students at different depths of reading, with 'No Reading' having the highest percentage.
Depth of Reading

- **Control** (n = 144 students; 5 courses)
- **Reading Reflections** (n = 18 students; 2 courses)

**Percent Students**

- **No Reading**
- **Skim - No Read**
- **Surface Read**
- **Deep Read**
Reflection & Monitoring

Reading Reflections:
• Completed after each reading assignment
• Short responses to a few questions

• What is the main point of this reading?
• What did you find surprising? Why?
• What did you find confusing? Why?

• Submitted online before class
• Credit awarded for “reflective” submissions
Correlation
Reading Reflections vs. Course Grades

MACALESTER GEOLGY
Pearson = 0.842
p-value = <0.001

HAMLINE ECONOMICS
Pearson = 0.779
p-value = <0.001
Benefits of Reading Reflections

- Encourage reading before class
- Classroom activities guided by reflections
- Cultivate metacognitive knowledge & skills
- Encourage reflection

- Address affective domain
- Foster metacomprehension
- Promote deeper learning
Link to Reading Reflection handout:
www.macalester.edu/geology/wirth/ReadingReflection.pdf