More about Critical Thinking

Critical thinking is a general term to describe the kinds of thinking and the habits of mind that lead to constructive, ethical action. While most people recognize critical thinking when they see it, defining and categorizing critical thinking skills and dispositions can be a challenge. Many skills are relevant to different categories, and some important skills defy categorization. Other skills are similar but not identical in different subject areas or contexts. Fortunately, in the classroom, exact definitions of skills aren't too important as long as students are using these skills to complete complex tasks that require deep content understanding of subject-matter concepts.

Teaching and modeling critical thinking is more effective when you can focus on narrowly defined skills that can be easily observed and assessed. The following list can help you plan instruction that helps students develop critical thinking skills and disposition.

Effective Reasoning Skills

Deductive Reasoning

- Using known theories and information to draw conclusions (Think Sherlock Holmes observing everything about someone's appearance to describe them accurately)

Inductive Reasoning

- Generating new theories based on observation of concrete phenomena (Think Isaac Newton coming up with the theory of gravitation after observing various objects falling to the ground)

Analysis

- Breaking complex ideas into parts
- Describing the parts of a concept thoroughly and accurately
- Identifying the principles and assumptions underlying an idea
- Defining and describing

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Synthesis

- Identifying and describing patterns
- Connecting different concepts through patterns
- Creating generalizations based on observed patterns
- Recognizing and describing similarities and differences
- Applying generalizations to new situations and contexts

Evaluation

- Applying standards for quality to an idea or theory
- Discriminating among good and better conclusions
- Approaching ideas with an open mind
- Recognizing bias and faulty reasoning
- Identifying and assessing pre-conceptions

Systems Thinking

- Identifying and assessing pre-conceptions
- Observing carefully with an open mind
- Looking at the “big picture”
- Focusing on relationships between concepts
- Attending to processes, change, and flow
- Describing non-linear networks
- Looking for underlying relationships that affect behaviors and events
- Identifying dependencies and barriers

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Decision Making

- Clarifying and defining the issue to be addressed
- Determining what level of thought and effort the decision requires
- Accurately describing possible options
- Gathering accurate and relevant information or data
- Describing relevant factors, such as risk, cost, time, and effort
- Identifying stakeholders
- Predicting possible consequences
- Determining the pros and cons of all options
- Making a decision
- Explaining the decision to those involved

Problem Solving

- Describing the problem accurately and thoroughly
- Gathering relevant and accurate information
- Generating many possible solutions
- Breaking a problem down into parts
- Identifying dependencies, support resources, and barriers
- Identifying relations among parts
- Winnowing down possible solutions to the best ones
- Making predictions about the consequences of different solutions
- Choosing a solution to implement
- Testing the solution objectively
- Revising the solution and/or problem-solving process to improve the results
- Evaluating the solution and reworking if necessary or possible

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