Seven Critical Thinking/Questioning Strategies

1) **Analogy:** The cognitive process of transforming information from one context to another. Developing analogous thinking is an important step in creative production and innovation. *EXAMPLE: How is independence like a house?*

2) **Analysis of point of view:** When learners read or study historical documents or information reports, knowing the point of view of the author is critical in the interpretation process. Knowing the factors that surround the document; how, where when, why and for what purpose it was produce, as well as whether the document was meant for public or private consumption provides the reader multiple lenses to understanding. *EXAMPLE: What biases does the author represent in this article (consider time, place and other circumstances)?*

3) **Incompletion:** When all the facts are not in place, the learner must use prior knowledge and other resources to complete the problem solving process. Incompletion in questioning is a more sophisticated level of questioning in that the learner must have a solid foundation of both experiential and factual information. *EXAMPLE: Solve this problem-but be aware that at least two steps are missing.*

4) **Web analysis:** To uncover and mine into the complex interrelated causes and effects that develop from one source, students can use web analysis as a mapping tool. This questioning strategy is useful for visual/spatial learner and for those students needing assistance in "unpacking" their thinking. *EXAMPLE: How extensive are the effects from the 2009 recession?*

5) **Hypothetical thinking:** A sophisticated level of thinking that requires the learner to use logical questioning and abstract thinking. When using hypothetical thinking, the student learns to investigate problems in a careful and systematic fashion. *EXAMPLE: What if did not rain in the summer? What if Ophelia had not committed suicide?*

6) **Reversal:** When stuck in a rut or to stimulate new thinking, reversal of thinking is an effective strategy. This process reframes the information and allows the student to look at the problem from a different point of view. *EXAMPLE: How can I achieve the opposite effect in this experiment? How do we make our lives more difficult?*

7) **Application of another symbol system:** This strategy is effective when working with learners who think differently. It also forces the leaner to step outside his/her comfort zone to transform information multi-modally. *EXAMPLE: Act out the math problem. Draw a picture without words that represents the Gettysburg Address.*

Assessment Questions for Critical Thinking

Critical Thinking Strategy	Assessment Questions
Identifying main idea/argument	• What is the main idea, point or argument the author is making? • What specific points support the main idea, point or argument? • How does the author resolve the argument?
Analyzing arguments	• What evidence is used to support or contradicts the argument? • What assumptions does the author rely upon? • What is the structure of the argument?
Compare & contrast	• What are the specific elements of each item? • How can the elements be organized into categories of similarity and difference? • What are the principles that govern each of the elements?
Sequencing & prioritizing	• In what way is the order or sequence important? • How might changing the order or sequence change the outcome? • Why is the order or sequence important?
Finding relevance & irrelevance	• What information is relevant or irrelevant to the argument? • What makes the information relevant or irrelevant to the argument? • How can relevant/irrelevant information be made irrelevant/relevant
Discerning fact versus opinion	• How can the facts be identified and validated? • How does the author use opinions to support or contradict the argument? • In what ways do the facts support or contradict opinions?
Investigating reliable & unreliable sources	• What sources does the author use? • In what ways does the source support or contradict the author's point of view? • How is a source validated or invalidated?
Distinguishing assumptions & generalizations	• How does the author use assumptions in the argument? • What generalizations are made in the arguments? • How does the argument create assumptions or generalizations?
Identifying cause & effect	• What are the specific causes and effects? • What would happen if a cause or effect where changed? • In what ways do the causes/effects predict the effects/causes?
Understanding point of view	• How might the author's point of view developed? • How does the author's point of view affect the argument? • What is another point of view?
Recognizing bias & stereotype	• What bias or stereotype is used to support or contradict the argument? • Why did the author use bias or stereotyping in the argument?
Using deduction & induction	• How has the author used a sequence to generate a conclusion? (Deductive) • How has the author used individual events to generate conclusions? (Inductive)

Resources: Brookhart, 2010; Cash, 2011