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Explanations, Analogies, and Elaborations: Incorporating Questioning Prompts in Instruction Sessions

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Elaborative Interrogation

An Introduction to Learning Techniques (Dunlosky et al., 2013)

How learning techniques help

Cognitive benefits of explanation

Specificity of prompts across studies

Elaborations as enhancements (Hannon, 2012)

Elaborative interrogation vs. self-explanation

Effectiveness of Elaborations

Effectiveness in different contexts

Students working individually, dyads, small groups
(Woloshyn & Stockey, 1995)

High and low knowledge domains (Woloshyn et al., 1992)

Facts in longer connected discourse (Seifert, 1994)

Cognitive Mechanisms

Activation of "schema" (Willoughby & Wood, 1994)

Integrative vs. comparative elaborations (Hannon, 2012)

Cognitive mechanisms: Prior knowledge, gaps, linking new themes, structuring conceptual understanding

Examples of Prompts Used

Why would the distribution of oxygen (a system wide function) be less efficient if there is a hole in the septum (a structure of the septum)? (Chi et al., 1994)

Identify the differences between the concepts. Generate an example (Hannon, 2012)

In what ways is Japan related to other civilizations we learned? (King, 1991)

Why does an object speed up as its radius gets smaller? (McDaniel & Donnelly, 1996)

Why does the Richardson's ground squirrel live in underground tunnels? (Seifert, 1994)

Why would that animal do/have that? (Willoughby & Wood, 1994)

Elaborations: An Active-Constructive-Interactive Technique

Taxonomy of learners' activities (Chi, 2009)

Active: Most basic level, focus, repeat, manipulate the learning material

Constructive: Outputs that generate new ideas through explaining, elaborating, concept mapping, hypothesis induction

Interactive: Instructional and joint dialogues

Interactive>Constructive>Active>Passive

APPLICATIONS FOR INFORMATION LITERACY INSTRUCTION

Examples of Prompts

INFORMATION HAS VALUE

DISTINGUISH AMONG DIMENSIONS OF VALUE OF INFORMATION

How do you give credit to the ideas/ opinions of others? Why?

How do you value information in your online interactions?

What are the issues related to privacy in sharing personal information in your online interactions?

Do you value information differently using different platforms/venues of information? Why?

Examples of Prompts

RESEARCH AS INQUIRY

FORMULATE A RESEARCH PROCESS TO SATISFY AN INFORMATION NEED

What is the puzzle behind the question?

What would you need to know to answer the question?

Where would you go to answer the question? How would you answer the Question?

What do you already know? Questions? What new themes emerge? How are they related to what you already know?

Examples of Prompts

SEARCHING AS STRATEGIC EXPLORATION

DISCRIMINATE BETWEEN SEARCH PROCESSES BASED ON CIRCUMSTANCE, NEED, AND TYPE OF INQUIRY

What platforms/venues of information would be appropriate? How are they organized/structured?

Who might produce this information?

What search strategies would you employ? Why?

How would you manage these results?

Examples of Prompts

INFORMATION CREATION AS A PROCESS

ARTICULATE THE SIGNIFICANCE OF DIFFERENT INFORMATION CREATION PROCESSES, METHODS OF DELIVERY, AND FORMATS

How are format, process, and delivery related?

What's format got to do with it?

What is the value of examining different formats of information for specific information needs?

Examples of Prompts

AUTHORITY IS CONSTRUCTED AND CONTEXTUAL

EVALUATE THE AUTHORITY OF INFORMATION SOURCES TO MEET AN INFORMATION NEED

What are some of the types of authority?

What factors do you look for in your assessment of authority?

What is the difference between authority and expertise?

What is your expertise?

Examples of Prompts

SCHOLARSHIP AS CONVERSATION

RECOGNIZE SCHOLARLY AND PROFESSIONAL CONVERSATIONS AT DIFFERENT LEVELS

What are some of the venues of scholarly conversation? Barriers?

What are the key issues/topics? Who are the people in the conversation?

What are the products of the conversation? Citation chaining/paradigm shifts?

How has the perspective changed on the topic over time?

THANK YOU!

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