

6-1-2018

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

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## Recommended Citation

Farooq, Omer, "Explanations, Analogies, and Elaborations: Incorporating Questioning Prompts in Instruction Sessions" (2018). *Criss Library Faculty Proceedings & Presentations*. 91.

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

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# Elaborative Interrogation

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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

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**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

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**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

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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

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**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**

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# APPLICATIONS FOR INFORMATION LITERACY INSTRUCTION

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# Examples of Prompts

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**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

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## 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

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## 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

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## 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

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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

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## 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?**



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THANK YOU!

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