Metaphors and Decoding Emotional Bottlenecks

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Step 3: Modeling

The “Decoding the Disciplines” Cycle

1. What is a bottleneck to learning in this class, a place where many students consistently fail to master crucial material?

2. What do specialists do so they get past this bottleneck?

3. How can I explicitly model these operations for students?

4. How can I give my students an opportunity to practice and get feedback on each of these operations?

5. How can I motivate students and address the affective side of learning?

6. How can I tell whether students have mastered these operations by the end of the process?

7. How can I share what I have learned with others?
Step 3: Principles of Modeling

- Provide a metaphor
- Perform a disciplinary example in front of students
- Highlight the crucial aspects
Step 3: How can I model cognitive processes for students?

Modeling through a Concept Lesson

Tony Ardizzone
Professor of English

Decoding the Disciplines
Bottleneck: Expositional Writing
Step 3 Modeling: Inductive Writing
Step 3: Modeling the “Bottleneck”

How can you model the cognitive process that was explicated in Step 2? What metaphors or analogies can you use?

Help each person create a way to model that will be familiar to students.

(8 minutes discussion for each person)
Step 3: Metaphors for Modeling

- Did anyone come up with a useful metaphor?
- How do metaphors help show the cognitive process?
Decoding the Disciplines

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I: Emotional Bottlenecks

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What are emotional bottlenecks?

- Emotions are completely intertwined with learning.
- How you frame something cognitively shapes the emotions you feel about it.
- Emotional bottlenecks may come in the form of narratives students bring to your class.
Two different types of student narratives can produce emotional bottlenecks

- Narratives about how to operate in the discipline

  “I learn best when I am not in a team.”

- Narratives about the content

  “I am not descended from an ape.”
I: Narrative about the Discipline

Video about student preconceptions
I: Narrative about the Subject

- Video about clashing narratives
II. The Affective Bottleneck in your class

What is an emotional bottleneck for the students in one of your courses? And what is the nature of the problem?

- Think and write (1 minutes)
- First member of group speaks (2 mins.)
- Second member of group speaks (2 mins.)
- Third member of group speaks (2 mins.)
II: Your Bottlenecks

- Will someone share an emotional bottleneck?
- Were there similarities or differences?
Student preconceptions-E.g. from History

Bottleneck: Some students reduce the complex history of ideas about conflict and competition to two sets of thinkers: good (those they agree with) and bad (those they disagree with)
To make a conceptual shift:

1. Collect information about student preconceptions—what do they think about the topic before you teach it?
2. Show them the results.
3. Make a side-by-side comparison with the new way of thinking.
4. Now they may begin to assimilate new instruction.
Collecting Preconceptions—History e.g.

- **Bottleneck**: Many students reduce the history of earlier ideas to simple, a-historical categories of good and bad.

- **Pre-Assessment**: To what extent is the level of competition we have in our society today good or bad? Why do you say that?
Collecting Preconceptions—History e.g.

- **Narrative 1**: People used to be ignorant, didn’t allow competition, and squelched freedom. Now we allow competition and life is better.

- **Narrative 2**: We used to have a moral world that was balanced, but unrestricted competition destroyed the harmony of life and now everything is contested.

  - Students look for good guys and bad guys in history
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Step 2: Expert Thinking—History e.g.

- Historians reconstruct the perspectives of different actors in the past
  - They define the values and assumptions that are implicit in their ideas
Step 3: Modeling—History e.g.

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Step 3: Modeling—History e.g.

- **Create Metaphor:**
  - Gestalt Images

- **Do the operation before students**
  - In-class modeling of reconstruction of the values and assumptions implicit in texts

See Handout 5
Step 4: Practice and Feedback

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Step 4: Practice and Feedback

- Retelling fairytales from a different viewpoint
- Find the contrasting values or assumptions behind specific passages from writers with very different world views
Step 4: Practice—History e.g.

Creature Comforts

Aquinas

Virtue

The Afterlife

Double click anywhere & add an idea

Creature Comforts

Economic Productivity

Mandeville

Population increase

Virtue

The Afterlife

Handout 5
Step 4: Practice—History e.g.

- On-line assignments
  - Week 4 – Students asked to
    1. Identify the values implicit in Victorian champions of competition
    2. Identify passages in which these values are present, and to explain what in the passage convinced them of this
    3. Then they have to contrast this to the values of thinkers who did not accept these views of competition
Step 4: Practice—History e.g.

- On-line assignments
  - Week 5 – Students asked to
    1. Find contrasting passages from Marx and Engels and from defender of capitalism Samuel Smiles
    2. Then they have to explain what values were present in each passage
Step 5: Motivation

1. Disrupt Rituals of Learning (Bain, 2006)
2. Hold Students Accountable to Peers/Publicly
Step 6: Assess your student preconceptions

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Step 6: Assessment—History e.g.

- **Pre-Post comparisons**
  - Compare assignments in weeks 4 and 15
  - Average score increased from 2.3 to 3.5 (34%)

- **Scoring scale:**
  1 = repetition of literal meaning
  5 = polished presentation of the assumptions implicit in the text

- Give evidence a number so others can use it easily
Step 6: Assessment—History e.g.

- Multiple measures: Is there other evidence that students incorporated these ideas into their notions of history?
  - Week 14 Assignment: Describe a way of analyzing historical sources that you have learned in this course (i.e. what might you do in writing this paper that you would not have thought to do when the course began?)
  - Videotaped Interviews: Did students specifically describe the use of values and assumptions in discussing what they gained from the course?
Step 6: Assessment—History e.g.

- Video of students talking about switching perspectives
Evidence of Students’ Learning: Spring 2011

Level of Thought in Students’ Answer to the Survey Questions as Reflected in their Total Score

(Statistically Significant)
$X^2 (2) = 56.523$, $p < .001$
Level of Thought in Students’ Answer to the Survey Question on Analysis

(Statistically Significant)

$X^2 (2)=21.910, p<.001$
One of the Survey Questions:

Some students are unhappy with the way U.S. sources depicted Spain, while others disagreed with sources that criticized the United States. No one comes off well in all the sources. Which of the student reactions most closely matches your own response?

__Student A: “I’ll say what the professor has been saying about them.”
__Student B: “I’ll give both sides of the story to be objective.”
__Student C: “I won’t use offensive materials to be responsible.”
__Student D: “I’ll try to figure out why they say what they do.”
Evidence of Students’ Learning: Spring 2011

Measure of Students’ Ability to Negotiate Affect in their Response to the Survey Question on Upsetting Material
Step 6: Assessment

Bottleneck: Students do not know historical patterns of Mexican migration.
Step 6: Assessing Preconceptions

Questions to use

1. Besides hard work, what does it take to do well in this course?
2. What happened during X? (the Middle Ages?
3. What have you heard about X? (global warming, calculus)

Always add Part II: “Why do you say that?”
Step 6: How would you assess student preconceptions?

Discuss in teams of 3:

What question could you ask to uncover the narratives or preconceptions students bring to your class?

3 minutes per person
How would you assess student preconceptions?

Report back-- Will someone share an example?
So What?

How instructors frame concepts cognitively shapes the emotions students feel about it.

- Collect data about student narratives
- Show results to students
- Enact the cognitive shift
IV. Bottlenecks and Disciplinary Ways of Knowing
Decoding the Disciplines

- Begin by identifying bottlenecks to learning in your classes
- Bottlenecks raise a flag where an understanding of the epistemology is lacking
- To better help students get “unstuck,” we need to bring our disciplinary ways of thinking to a conscious level
- For use with individual faculty or teams