Mental Maps and Classroom Technology: Multiple Points of Entry

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Hediger, Melissa; Garver, Joel; and Leauby, Bruce, "Mental Maps and Classroom Technology: Multiple Points of Entry" (2012). Differentiated Learning series. 2.
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Mental Maps and Other “Points of Entry” for Helping Students Understand New Information

**Concept maps**

Excerpt from Kathy Yancey’s workshop summary:

“Visual mapping helps students to see the relationships among the material in a course and/or the relationships among the material in different courses. We know that ‘mental maps’ are used by experts in their fields when confronted by problems to solve or new material to be learned.

For this method to work most effectively, students should not only have the experience of making a ‘map’ but they should also be asked to articulate the rationale for the map to others.”

**Common goals**

- To visualize relationships and hierarchies and to articulate what ‘links’ the various ideas together
- To connect prior knowledge to new knowledge
- To move students beyond rote memorization
- To move students towards more ‘expert’ ways of understanding concepts in a discipline

**Need to consider purpose**

![Concept mapping classroom triangle from Leuby, Szabat, and Mass (2010)](image)

**Points to consider to get student “buy in”**

- Bentley, Kennedy, and Semsar (2011) did surveys after using concept maps in four physiology courses. Three factors were associated with positive student attitudes about the use of concept maps:
  - Mapping activities need to be designed to meet certain educational goals and not be too complex
  - Students need adequate feedback (whether from professor, TA, or peers)
Students need to understand how mapping and the concepts on the map relate to the exam (so not just seen as “busy work”)

- Negative comments tended to revolve around four themes: structure of the maps (especially if too large), amount of feedback, exam alignment, and mismatch with their own learning styles/study habits

**Implementing ideas** (Novak and Cañas, as well as Zeilick)

- Focus questions to give students direction
- Post-it notes to move around easily, especially as students learn to construct
- Discussing good “linking words” or phrases to start articulating the relationships between terms
- Complete or partially filled in maps to get them used to the practice, or have them start with a topic on which they are an expert

**Graphic Organizers as another “point of entry”**

- Robinson et al. (2006) and partial graphic organizers
- Consider the ones included in your textbooks and how students might extend them to incorporate your lecture material
- Can serve as a reading, note-taking, and/or studying tool
- Can be especially useful in understanding categories, comparing and contrasting, etc.

**Classroom technology “points of entry”**

- Using Power Point in Philosophy (Dr. Joel Garver)

**References**


Accounting example from Leauby, Szabat, and Maas (2010)

**Figure 1:** Concept Map Of Concept Maps→ from Zellick, M. (http://www.flaguide.org/cat/conmap/conmap7.php)
## APPENDIX B

### Example of a Partial Graphic Organizer Used in Experiments 1–4

<table>
<thead>
<tr>
<th>Definition</th>
<th>Similarity</th>
<th>Pragnanz</th>
</tr>
</thead>
<tbody>
<tr>
<td>People tend to perceive as a unit things that are close together in space.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>People tend to fill in missing pieces to form a complete picture.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Example</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A person sees the word Texas in a stadium because some fans are wearing orange shirts, whereas others are wearing white shirts.</td>
<td>Mary falsely remembers that a shape she saw was round when it actually was oval.</td>
</tr>
</tbody>
</table>