Session 03: Learning Styles

Valentin Razmov

Outline
- Quarter-long activities you chose
- Classroom activities and discussions related to learning styles

Resources
- Teaching Tips
  - Ch. 13 (pp. 151-158, 167-171)
  - Tools for Teaching, by Barbara Gross Davis
    - Ch. 7 (p. 56), Ch. 22 (pp. 185-193)
  - Matters of Style, by Richard Felder
- Collection of resources on learning styles
  - http://www.ncsu.edu/felder-public/Learning_Styles.html
- How People Learn
  - pp. 12-13
    (http://www.nap.edu/openbook/0309070368/html/)
- Fish & Fish

Chosen Activities: Statistics
- Doing:
  - Be a Tutor 3
  - Mentor a New TA 0
  - Lead (Part of) a CSE599A Session 1
  - Organize a Role-Playing Session 0
  - Practice Teaching Us (Microteaching) 4
  - Observe a Fellow TA and Provide Feedback to Them 13
  - Be Observed in Class and Discuss Experiences with Peers and/or the Instructor 10
- Writing:
  - Keep a Teaching Journal 5
  - Reflect on Your Teaching Experiences 3
  - Write a Learner's Autobiography 1
  - Write Your Teaching Philosophy Statement 8
  - Write a Short Research Paper 0
- Reading (and Writing):
  - Read a Book and Write Your Reaction 2
  - Do a Literature Review 3

Chosen Activities: Observers and Observed (latest)

<table>
<thead>
<tr>
<th>Observers</th>
<th>Observed</th>
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</thead>
<tbody>
<tr>
<td>Ethan</td>
<td>Adrienne</td>
</tr>
<tr>
<td>Yaa</td>
<td>Travis</td>
</tr>
<tr>
<td>Mandy</td>
<td>Amina</td>
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<tr>
<td>Joshua</td>
<td></td>
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<tr>
<td>Roxana, YongChul</td>
<td>Elizabeth</td>
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<tr>
<td>John</td>
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<tr>
<td>Nadia</td>
<td>Suporn</td>
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<tr>
<td>Travis, Markus</td>
<td>Viah</td>
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<tr>
<td>Kayor</td>
<td>Paul</td>
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<tr>
<td>Vishnu</td>
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<tr>
<td>Elizabeth</td>
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<tr>
<td>Jonah</td>
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<td>Priyad</td>
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</table>

Felder-Silverman Learning Styles Test Results
- I'd like to collect the results anonymously and aggregate them, in order to see the distribution of preferences among all of us.
- Please enter your results on the sheet you get, but not your name.
- I will come and collect the sheets in a minute.
- Caution: These are not your in-born preferences; they are "muscles" that you can (re)train if you need them differently.
Student Attention vs. Time

Plot the graph of how you think the level of student attention changes with time during a 50-minute lecture.

Content Retention in a Conversation

- Person A calls Person B on the phone and tells B some information. How much of that information do you think is retained (correctly) after the conversation?
  - Less than 20%
  - 20-40%
  - 40-60%
  - 60-80%
  - Over 80%

Implications for How One Can Teach More Effectively

Suggestions:
- Regularly shift gears, change subjects and teaching techniques to avoid/break monotony
- Involve people mentally and physically (kinesthetic learning activities) in their learning
- Provide alternative means for the non-auditory learners in the audience
  - Visual archives (slides, diagrams, text), audio archives, etc.

People Learn Best When ... (revisited)

- ... their strongest senses are engaged (e.g., visual, auditory, kinesthetic).
  - The case against a one-size-fits-all approach
  - Suggestion: Provide alternative forms and formats of explanation in order to match the different learning styles of your students / audience.

What Different Learning Styles Are Out There?

- Visual vs. auditory learners
- Kinesthetic vs. static learners
- Active vs. passive learners
- Individual vs. group learners
- Learners with vs. without disabilities
- Cultural biases, learned behaviors, norms, and expectations

Felder-Silverman have terms for many of these.

Why Do Learning Styles Matter?

- If students are aware of them, they’ll be more careful about not shunning activities that do not fit “their style.”
- Student-teachers who know about learning styles may be more careful in approaching their students.
- The awareness of learning styles suggests what might be reasonable to expect from students.
  - “Grad students understand computing well, but students in their classes may have a different way of looking at things.”
  - They suggest that we all differ in some aspects and that a one-size-fits-all approach to teaching would fail for many.
  - It is tempting, but inconsiderate, to say “This was easy for me, therefore it should be clear for them too.”
How Do We Gauge Student Engagement?

- “Teaching Tips” argues that we cannot reliably tell the level of engagement by eye contact, question responses, or even by the exam results.
- How do we tell if students are engaged then?

Suggestions:
- Consider the whole person; try to get to know them more fully and avoid judging them.
- The case for an individualized approach to teaching
- Show respect for the differences.
- Be encouraging.

Felder-Silverman Test Results Aggregated (from Today)

<table>
<thead>
<tr>
<th>ActSenVisSeq 1</th>
<th>ActIntVrbSeq</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>RefSenVisGlo</td>
<td>ActIntVisSeq 1</td>
</tr>
<tr>
<td>RefSenVisSeq</td>
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<td>ActSenVrbSeq</td>
<td>ActIntVrbGlo 1</td>
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<tr>
<td>RefSenVrbGlo</td>
<td>RefIntVisGlo 3</td>
</tr>
</tbody>
</table>

MBTI Test Results in CSE403 (Aggregated across 6 Quarters)

| ENFJ 10 | ESTJ 3 |
| INFJ 14 | ISTJ 20 |
| ENFP 1  | ESFJ 3 |
| INFP 2  | ISFJ 7 |
| ENTJ 17 | ESTP 2 |
| INTJ 25 | ISTP 3 |
| ENTP 7  | ESFP 2 |
| INTP 8  | ISFP 4 |

Does It Make a Difference Which Test One Uses?

Felder et al. results:
- No matter which one of several known tests one bases the conclusions on, the recommendations remain the same.
- Teachers need to provide multiple paths (not just a repetition of the same one) to the concepts that they want students to learn.

Meta-Lessons: Teaching Techniques I Used Today

- Having students prepare for class by reading a short related material
- Getting feedback from students in class
- Sheets where you entered the test results
- Classroom technology to engage everyone
- In-class discussion
- Shifting gears between presentation and discussion
- Meta-cognition
- How are we doing?
- Just-in-time teaching
- Incorporating results from the test into the discussion
- One-minute paper: for quick feedback
Take-Away Points

- There are valid differences in how each of us perceives and reacts to the world!
  - The "if you aren't like us, there's something wrong with you" mentality has caused untold suffering in the history of mankind, and, unfortunately, continues to pervade even today.
  - If you've seen only one view of the world, it's not surprising that you might believe it to be the only possible way.
  - Approach your students (and really, all people) with an appreciation of how they differ and are unique.

One-minute Feedback

- What one or two ideas discussed today captured your attention and thinking the most?

- List any ideas / concepts that you would like to hear more about. Be specific.