

Session 02: How People Learn

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Session 02

Outline

- n Questions on the quarter-long activities you need to choose from
- n Classroom technology (Classroom Presenter)
- n Classroom activities and discussions related to how people learn

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Resources

- n *Teaching Tips*
 - n pp. 6, 36, 59-60, 140-149 (ch.12), 192, 218-219, 300-316 (ch.23)
- n *How People Learn*
 - n Pages 234-238, 244-247
 - n (<http://www.nap.edu/openbook/0309070368/html/>)
- n *Mastery: Keys to Success and Long-Term Fulfillment*, by George Leonard
- n *Tools for Teaching*, by Barbara Gross Davis
 - n Ch.21, 22, 23 (ch.23 is available at <http://teaching.berkeley.edu/bgd/motivate.html>)
- n *The Pickup Sticks Model of Teaching*, by Alan Shalloway
 - n http://www.netobjectives.com/eazines/ez0501NetObj_TrimTabs.pdf, pages 3,5-6
- n *Fish is Fish*

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Classroom Presenter Usage

Hints:

- n Do not close the Presenter application – you will lose all slides if you do.
- n To submit a response, write it on the slide, obeying the specified format, and then press the "Send" button.
- n Let's test a student submission...
- n Have you already chosen your two activities for the quarter?

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How People Learn

What do you think?

People learn best when _____

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People Learn Best When...

- n ... they see the value / rewards of what they are learning (i.e., they are motivated) or, even better, are inspired or have an urgent need to learn it.
- n ... they feel that they can succeed at what they are trying to learn.
 - n This usually goes together with the above point.

Suggestions:

- n Frequently revisit the tie between what you're teaching and the motivation why it is important.
- n Be encouraging and give more free reign when you see inspiration.

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People Learn Best When...

- ... the learning curve is not too steep and not too mild; what they are learning they already "almost know."
 - Finding the right balance requires skill from the teacher.
 - A "one size fits all" approach would fail on this criterion.
- ... they see connections between the new knowledge and the existing understanding that they already have.
 - And the gap between the two is not too big as to prevent them from seeing that they could "build a bridge."

Suggestions:

- Approach students personally, not as members of a herd.
- Get early feedback to understand where students are in their understanding and know where to "meet them."

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People Learn Best When...

- ... they practice (over and over) what is being learned.
 - So most of it must necessarily be happening outside the classroom.
- ... they reflect on their practice and adjust it accordingly.
- ... they receive frequent feedback on what they are doing.
 - These are often tied together –
 - Learning = Doing + Reflecting + Receiving feedback

Suggestions:

- Have assignments that give students practice and provide room for reflection (e.g., written) upon what they are doing
- Give students individual feedback and do it as frequently as practical given the resources you have at hand.

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People Learn Best When...

- ... their strongest senses are engaged (e.g., visual, auditory, motor).
 - different learning styles
 - the case against a "one size fits all" approach
- ... they are responsible for their own learning.
- ... they don't have to unlearn something else.

Suggestions:

- Provide alternative forms and formats of explanation in order to match the different learning styles of your students.
- Teach students how to fish, do not give them the fish!
 - Provide help by giving directions and rationale, not by providing answers.
- Teach the essentials first, to prevent bad habits from forming.

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How People Learn (cont.)

What do you think?

People respond negatively to learning when

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People Respond Negatively to Learning When...

- ... pressure is too high (i.e., there is very little time).
- ... they don't believe in the value behind what is being learned.
- ... they believe that the subject or practice detracts them from doing what they want.

Suggestions:

- Allow ample time for the lessons to sink in, but without rewarding laziness.
- Motivate using their terms, not yours.
- Carefully explain why what they are learning will help them be more effective *in the long run*.

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People Respond Negatively to Learning When...

- ... the subject conflicts with their established ways of thinking.
- ... the perceived final result of the learning experience is negative.
 - This may lead to more than just not learning; it may result in the anti-lesson being reinforced.

Suggestions:

- Consciously introduce situations in which conventional ways of thinking are spectacularly failing. Then, introduce the new knowledge to rescue students from the problematic situation.
- Have students take "baby steps" and emphasize the need for quality at each one.

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Meta Lessons: Teaching Techniques Used

- Think for a minute about the teaching techniques that were used here in class today.

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Meta Lessons: Teaching Techniques Used

- Teaching techniques I consciously used today:
 - In-class discussion
 - Active involvement of *everyone*
 - ... in a non-threatening way (anonymously)
 - Acknowledging contributions from multiple sources
 - Using student submissions to illicit opinions, gather useful data, and emphasize the value of diverse viewpoints
 - Asking a high-level question to illustrate the breadth / complexity of an issue and the need to drill deeper
 - Getting student feedback through student submissions

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Meta Lessons: Benefits of the Teaching Techniques

- Emphasizing the point that valuable contributions can be made by many, not just by the instructor
 - The instructor acknowledges this by folding student submitted material directly into the lecture.
- Everyone's opinion can be "heard" without an identity disclosure
 - No raising hands, speaking up, etc.
- The instructor can immediately gauge the level of understanding of the audience.

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Meta Lessons: Drawbacks of the Teaching Techniques

- It tends to slow down the pace of the lecture.
- In a discussion, the main point may become muddled unless emphasized the instructor / facilitator.
- If the concept being discussed is well beyond the knowledge of the audience, the quality of contributions may be quite low and/or the audience may feel they have little to contribute without more explicit direction.
- Some students may be (and likely are) predisposed to learning quietly by listening and synthesizing on their own.

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Perception of Amount Learned vs. Time

Assume you are learning a new skill. Which of the graphs below roughly represents how your perception of the amount learned evolves with time?

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