How Learning Works Part II
Workshop goals for participants:

• To develop an awareness of *how skills are mastered* through *practice and feedback*

• To brainstorm and share teaching techniques applicable to one’s own courses.
Instructions for Activity

• Take 5 minutes to review the syllabus you brought today and identify the following:
  ▫ What skills do you hope your students will develop through participating in your class?
  ▫ What types of activities are you planning that will help your students master these skills?
  ▫ What skills will students need to have already mastered in order to complete your course successfully?
Instructions for Activity (cont.)

• 10 minutes for pair discussion.

• Turn to a partner and share your responses to the previous questions.

• Discuss briefly the following:
  ▫ What challenges have you faced in helping students develop mastery of new skills?
  ▫ How do you assess whether or not students have mastered a skill?
Debrief: Developing Mastery of Skills

• Share a few examples of skills that you are trying to help students master in your course?

• How does developing mastery of skills differ from developing knowledge of content?
Debrief

- Why is developing mastery of skills challenging within higher education classrooms?
- Can our own expertise get in the way of helping our students develop mastery?
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Incompetence

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Incompetence

CONSCIOUS
Competence

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Strategies that Can Help

Importance of:

• Knowing audience
• Articulating goals and what “mastery” means
• Breaking skills into component parts
• Practice specific sub-tasks, beware of cognitive load
• Anticipate difficulties with transfer
What does it mean to “transfer” knowledge?

What is “transfer?”

“The application of skills (or knowledge, strategies, approaches or habits) learned in one context to a novel context.”

Examples?
Why Doesn’t Transfer Occur?

• “Near” versus “Far” transfer

• Students’ knowledge may be overly context dependent

• Students may not have a deep understanding of underlying principles and structures—they may understand the “what” but not the “why”
How Do We Help Students Transfer Knowledge and Skills?

- Intentionally “teach for transfer”

- Make no assumptions! Explicitly explain or discuss with students where or when to apply a skill or set of skills.

- Give students opportunities to apply skills or knowledge in diverse contexts.
Helping students transfer knowledge

• Help students see “the big picture.” Ask students to generalize to larger principles

• Use comparisons to help students identify “deep features”
Practice and Feedback
What kind of practice and feedback is important for learning?

Practice that is:

• Focused on a specific goal or criterion
• Targeted towards an appropriate level of challenge relative to student’s current performance
• Of sufficient quantity and frequency to meet criteria

Coupled with feedback that is:

• Targeted, specific
• Timely
• Linked to further practice
Write down how you could best integrate *goal-based* practice and *targeted* feedback to help students achieve your skill-based learning objectives.
What we can do...

- Actively hunt down our expert blindspots
- Emphasize both individual skill & integration of skills
- Explicitly teach for transfer
- Provide multiple opportunities for authentic practice
  - Oriented toward clear goals
  - Coupled with targeted feedback