From Theory to Practice: How to Teach Effectively on the Fly

RYAN KRAEMER, MD FACP
Teaching on the Fly

When do you teach on the fly?
Ideas for Teaching on the Fly
5 steps to teach quickly & effectively

The One Minute Preceptor

1. Obtain a commitment
2. Probe for supporting evidence
3. Teach general rules
4. Reinforce what was right
5. Suggestions for improvement

The One Minute Preceptor

1. Obtain a commitment

1. Obtain a commitment

2. Probe for supporting evidence

The One Minute Preceptor

The One Minute Preceptor

1. Obtain a commitment
2. Probe for supporting evidence
3. Teach general rules

The One Minute Preceptor

1. Obtain a commitment
2. Probe for supporting evidence
3. Teach general rules
4. Reinforce what was right

1. Obtain a commitment
2. Probe for supporting evidence
3. Teach general rules
4. Reinforce what was right
5. Correct Mistakes

Obtain a Commitment

• Learner must commit to a decision to start the teaching discussion
• Your instinct: teach → But get a commitment first
  • Examples
    • “What do you think is going on with this patient?”
    • “What do you want to do next in the work-up?”
    • “What other diagnoses would you consider?”
    • “What antibiotic do you want to use?”
    • “Do you think the patient needs to be hospitalized?”
Obtain a Commitment

• Learner must commit to a decision to start the teaching discussion
• Your instinct: teach → But get a commitment first
• Examples
  • “What do you think is going on with this patient?”
  • “What do you want to do next in the work-up?”
  • “What other diagnoses would you consider?”
  • “What antibiotic do you want to use?”
  • “Do you think the patient needs to be hospitalized?”
Power of Prediction

Making predictions about material that you wish to learn increases your ability to understand that material and retrieve it later.
Power of Prediction Study

Participants ask to memorize a list of loosely connected words, *whale-mammal*

**Group 1**
13 seconds to study each word pair

**Group 2**
8 seconds to see first word & predict 2nd
5 seconds to see 2nd word

Final test: 55% accurate

67% accurate

Why prediction leads to learning?

• To learn, you must connect new knowledge to old knowledge
• Prediction activates prior knowledge
Why prediction leads to learning?

• Prediction increases curiosity

• Curiosity increases hippocampal activity

• Curious brains, pay more attention and form deeper & longer memories

Obtain a Commitment

- Learner must commit to a decision to start the teaching discussion.
- Your instinct: teach → But get a commitment first.
- Examples
  - “What do you think is going on with this patient?”
  - “What do you want to do next in the work-up?”
  - “What other diagnoses would you consider?”
  - “What antibiotic do you want to use?”
  - “Do you think the patient needs to be hospitalized?”
Probe for Supporting Evidence

• Before offering your opinion, ask the learner why they made that decision

Example:
• Learner: “I think we should start lactated ringer's”
• You: “Good idea, why did you pick LR?”

  ◦ Ensure not a lucky guess; well reasoned logic
  ◦ Understand their rationale
  ◦ Encourages learner to think out loud
Teach General Rules

- Based on the learner’s commitment and rationale
- Teaching in general statements instead of only specific to the patient at hand

Example:
- Instead of, “Good idea, let’s use a progesterone only pill in her”
- Say, “You’re right, in patients with migraine with aura, we don’t want to use estrogen containing oral contraceptives.”
Teach General Rules

Transfer: *application of skills or knowledge learned in one context to a novel context*

Goal of teaching = transfer

Transfer fails when learner knows “what” but not “when” or “why”
Teach General Rules

• Improves knowledge transfer to the next patient
• Helps learner understand “what, when, & “why”

Example
• Instead of: Make sure to check a BS in an hour
• In patients with hyperkalemia that you give insulin & D50, they can get hypoglycemic, so always repeat a BS ...
Reinforce what was done right

- The learner has always done something well
- The comment must be specific

**Example:**

- Instead of, “Great job with that patient”
- Say, “Great job asking about all of the contraindications to estrogen when prescribing OCPs”
Correct Mistakes

• Correct Mistakes → Suggestions for improvement
• What could they do better next time?
• What resource could they use to learn more or next time?
• If many mistakes or not sure where to start, have the learner self evaluate
  • “What did you learn from this patient?”
  • “What would you do differently next time?”
The One Minute Preceptor

1. Obtain a commitment

The One Minute Preceptor

1. Obtain a commitment

2. Probe for supporting evidence

The One Minute Preceptor

1. Obtain a commitment
2. Probe for supporting evidence
3. Teach general rules

The One Minute Preceptor

1. Obtain a commitment
2. Probe for supporting evidence
3. Teach general rules
4. Reinforce what was right

The One Minute Preceptor

1. Obtain a commitment
2. Probe for supporting evidence
3. Teach general rules
4. Reinforce what was right
5. Correct Mistakes

From Theory to Practice: How to Teach Effectively on the Fly

• You can teach quickly & effectively in small bits that add up to lots of learning

The One Minute Preceptor

1. Obtain a commitment
2. Probe for supporting evidence
3. Teach general rules
4. Reinforce what was right
5. Correct Mistakes