Medical Education: Pearls for Effective Teaching

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Department of Obstetrics and Gynecology Grand Rounds
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Conflict of Interest

Charlene Dewey has NO financial relationships to disclose.
Acknowledgements

- Dewey and Turner, The Art of Bedside Teaching, SGIM, 2005
“Anybody who believes that all you have to do to be a good teacher is to love to teach also has to believe that all you have to do to become a good surgeon is to love to cut.”

The purpose of this session is to review important medical education clinical teaching pearls.
Objectives

Participants completing this session will be able to:

1. List characteristics of the effective teacher
2. Compare and contrast four clinical teaching models
3. Select an accurate definition of feedback
4. Practice an open-ended question to assess knowledge.
5. Identify one pearl to adapt into clinical teaching activities
Agenda

1. Introductions
2. Clinical teaching pearls
3. Resources
4. Summary
Ground Rules

- Interactive
- ARS
- Questions welcomed
- Evidence and my own reflections
Rate your current teaching ability

A. Novice
B. Mid-beginner
C. Intermediate
D. Advanced
E. Beyond stellar
I have more than 4-hours of formal training to improve my clinical teaching skills.

A. Strongly Disagree
B. Disagree
C. Neither disagree/agree
D. Agree
E. Strongly Agree

0% 0% 0% 0% 0%
Pearls for Effective Teaching

1. Knowledge is important but it is not everything.
2. Objectives drive the teaching and learning process.
3. Don’t spew information, facilitate learning.
4. Keep the big picture in mind & use a teaching model.
5. Every problem is not a nail.
6. Use questions to guide learning.
7. Feedback is part of teaching.
8. On a scale of 1 to 10, all learners are NOT a 9.
Which characteristic of a good teacher is listed most often?

A. Knowledge
B. Respect
C. Enthusiasm
D. Experience
Pearl 1

Knowledge is important but it is not everything.
Characteristics of the Good Teacher

- Enthusiastic
- Creates a safe learning environment
- Effective communicator
- Knowledgeable
- Respectful
- Warm, caring, & approachable
- Accessible & flexible
- Sets high expectations
- Inspires learners
- Skilled leader
- Self-assesses teaching & uses constructive criticism and advice
- Collaborates with colleagues
- Teaches skills and procedures
- Professional

Pearl 2

Objectives drive the teaching and learning process.

By the end of the rotation learners will be able to...
Importance of Objectives

- Objectives drive the curriculum!!!!!!!!!
  - Objectives drive the content.
  - Objectives drive the instructional strategies.
  - Objectives drive the evaluation.
  - Objectives drive the outcomes.
  - …therefore they drive learning!

Objective = Content = Instructional Strategy = Evaluation = Outcomes

Learning
# Learner Objectives

<table>
<thead>
<tr>
<th>Domain</th>
<th>Behavior Type</th>
<th>Taxonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive</td>
<td>Knowledge</td>
<td>Bloom’s</td>
</tr>
<tr>
<td>Affective</td>
<td>Attitudes</td>
<td>Krathwohl</td>
</tr>
<tr>
<td>Psychomotor</td>
<td>Skill Competency</td>
<td>Simpson</td>
</tr>
<tr>
<td></td>
<td>Behavior Performance</td>
<td></td>
</tr>
</tbody>
</table>

## Learning Domains

<table>
<thead>
<tr>
<th>Bloom’s</th>
<th>Krathwohl</th>
<th>Simpson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating</td>
<td>Critique, Judge, Evaluate</td>
<td>Origination</td>
</tr>
<tr>
<td></td>
<td>Characterization by value</td>
<td>Create, design, originate</td>
</tr>
<tr>
<td>Evaluating</td>
<td>Construct, Hypothesize, Design</td>
<td>Adaptaion</td>
</tr>
<tr>
<td></td>
<td>Organization</td>
<td>Adapt, change, revise</td>
</tr>
<tr>
<td>Analyzing</td>
<td>Debate, Compare &amp; Contrast</td>
<td>Concrete overt response</td>
</tr>
<tr>
<td></td>
<td>Valuing</td>
<td>Carry out, operate, perform</td>
</tr>
<tr>
<td>Applying</td>
<td>Apply, Demonstrate, Complete</td>
<td>Comply with, engage in, volunteer</td>
</tr>
<tr>
<td></td>
<td>Responding</td>
<td>Mechanism</td>
</tr>
<tr>
<td>Understanding</td>
<td>Classify, Explain, Summarize</td>
<td>Guided response</td>
</tr>
<tr>
<td></td>
<td>Receiving</td>
<td>Attempt, imitate, try</td>
</tr>
</tbody>
</table>
Pearl 3

Don’t spew information, facilitate learning.
Teaching = Facilitating Learning

“Teaching is the process of facilitating learning and being assured that learning has occurred.”

~Charlene Dewey, 2004

Pearl 4

Have the big picture in mind & use a teaching model.
Three Stages of Clinical Teaching by Irby

Preparation

Teaching

Reflection

Before

During

After

Case-Based Clinical Teaching

1. The 5 Microskills model ("One-Minute" Preceptor)
2. The "Aunt Minnie" model
3. The SNAPPS model
4. Learner-Centered Precepting
5. Modeling Problem Solving
6. The "One-Minute" Observation
7. Activated Demonstration
8. Reflection
9. Psychomotor skills model

Created by Culberson, Dewey, Ismail, Friedland, Tejada-Simon & Turner. NIH Funded Relationship-Centered Transformation of Curricula, Baylor College of Medicine, 2006.
5 Microskills

- Useful for early learners
- Simple and quick
- Teacher-centered model
- Five steps:
  1. Get a commitment
  2. Probe for supporting evidence
  3. Teach general rules
  4. Reinforce what was done right
  5. Correct mistakes

Created by Culberson, Dewey, Ismail, Friedland, Tejada-Simon & Turner. NIH Funded Relationship-Centered Transformation of Curricula, Baylor College of Medicine, 2006.
## 5 Microskills

<table>
<thead>
<tr>
<th>Microskill</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get a commitment</td>
<td>What do you think is going on?</td>
</tr>
<tr>
<td>Probe for supporting evidence</td>
<td>What led you to that conclusion?</td>
</tr>
<tr>
<td>Teach basic rules</td>
<td>In general, when this happens or this is the case, think of... or do this...</td>
</tr>
<tr>
<td>Reinforce appropriate behaviors</td>
<td>You did an excellent job of...</td>
</tr>
<tr>
<td>Feedback</td>
<td></td>
</tr>
<tr>
<td>Correct mistakes &amp; set plan</td>
<td>To improve for the next time, try this...</td>
</tr>
</tbody>
</table>

Five Microskills Model

http://www.bing.com/images/search
SNAPPS Model

- Use for advanced learners
- **Learner-centered** teaching model
- Faculty member is more quiet
- Learner uses questions to advanced self-directed corrections and learning
- Attending is facilitator and provides feedback
- Emphasizes ACGME competency of practice-based learning and improvement

# The SNAPPSS Model

<table>
<thead>
<tr>
<th>S</th>
<th><strong>Summarize</strong> briefly the history &amp; physical findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td><strong>Narrow</strong> the differential to 2-3 relevant possibilities</td>
</tr>
<tr>
<td>A</td>
<td><strong>Analyze</strong> the differential by comparing and contrasting the possibilities</td>
</tr>
<tr>
<td>P</td>
<td><strong>Probe</strong> the preceptor by asking questions about uncertainties, difficulties, or alternative approaches</td>
</tr>
<tr>
<td>P</td>
<td><strong>Plan</strong> management for the patient’s medical issues</td>
</tr>
<tr>
<td>S</td>
<td><strong>Select</strong> a case-related issue for self-directed learning</td>
</tr>
</tbody>
</table>

SNAPPS Model

http://www.bing.com/images/search
Aunt Minnie

Aunt Minnie Model

- Based on learner’s pattern recognition ability
- Limited time (10-30 sec encounter)
- Case is straightforward
- Learner presents cc and diagnosis
- Attending sees patient while the learner charts
- Discuss case in more depth later if diagnosis incorrect

Teaching Psychomotor Skills

Physical examinations
- 5 step model
- Demo, observe, demo/correct

Procedural skills
- 5 step model
- Rubrics/check-lists
- Hands-over-hands: beginners
- Step-by-step instructions: intermediate
- Observation with continuous feedback: advanced

Clinical Teaching Models

1. 5 Microskills
   a) Learner-centered presentation
2. Aunt Mini
   b) Teaching PE & procedure skills
3. SNAPPS
   c) Teach knowledge to early learners
4. 5 Step psychomotor skills
   d) Brief chief complaint and diagnosis
Pearl 5

Every problem is not a nail.
Teaching

If you only know how to use a HAMMER then every problem is a NAIL!

Five Categories of Instructional Strategies

- Direct Instruction
- Indirect Instruction
- Interactive Instruction
- Experiential Learning
- Independent Study

## Strategies Based on Domains

<table>
<thead>
<tr>
<th>Strategies for Knowledge</th>
<th>Strategies for Attitudes</th>
<th>Strategies for Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readings</td>
<td>Exposure (readings, discussions, experiences)</td>
<td>Supervised experiences</td>
</tr>
<tr>
<td>Lecture/discussion</td>
<td>Facilitation of openness, introspection, and reflection</td>
<td>Demonstrations</td>
</tr>
<tr>
<td>Learning projects</td>
<td>Role plays</td>
<td>Simulations (practice)</td>
</tr>
<tr>
<td>Programmed learning</td>
<td>Role models</td>
<td>• Artificial models</td>
</tr>
<tr>
<td>Discussion</td>
<td>Demonstrations</td>
<td>• Role-plays</td>
</tr>
<tr>
<td>Problem-solving exercises</td>
<td>Simulations</td>
<td>• Standardized patients</td>
</tr>
<tr>
<td>Real life or simulated experiences</td>
<td>Audio or visual reviews of skill performances</td>
<td>• Computer</td>
</tr>
<tr>
<td>Structured note taking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homework</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Instructional Strategies

Which educational strategy increases learning?

<table>
<thead>
<tr>
<th>Instructional Strategy</th>
<th>Ave Effect Size (ES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifying similarities and differences</td>
<td>1.61</td>
</tr>
<tr>
<td>Summarizing and note taking</td>
<td>1.00</td>
</tr>
<tr>
<td>Reinforcing effort and providing recognition</td>
<td>.80</td>
</tr>
<tr>
<td>Homework and practice</td>
<td>.77</td>
</tr>
<tr>
<td>Nonlinguistic representations</td>
<td>.75</td>
</tr>
<tr>
<td>Cooperative learning</td>
<td>.73</td>
</tr>
<tr>
<td>Setting objectives &amp; providing feedback</td>
<td>.61</td>
</tr>
<tr>
<td>Generating and testing hypotheses</td>
<td>.61</td>
</tr>
<tr>
<td>Questions, cues and advanced organizers</td>
<td>.51</td>
</tr>
</tbody>
</table>

ES: .20=small; .50=medium; .80=large

Select the statement you agree with most.

A. Pimping is an effective teaching method.
B. Pimping allows you to embarrass learners into learning.
C. Pimping should not be used.
D. Pimping creates a safe learning environment.
Pearl 6

Use questions to guide learning.
Assess Learners with Questions

• Closed vs. open
  – Is this allergic rhinitis?
  – What is allergic rhinitis?

• Lower order vs. higher order
  – Recite the five steps in the microskills model of ambulatory teaching.
  – Explain why drug X is better than drug Y.
  – How would you design a research study based on the latest knowledge around genomics?
Effective Questions

Hierarchy of knowledge and examples of questions to determine the learner’s knowledge*

- How well have you managed this patient? What have you learnt?
- In this patient, what is the diagnosis? …treatment plan? …likely outcome?
- What do these findings mean?
- What are the causes? …effects? What do you understand by …?
- What is the name of …? Where…?

Evaluation → Analysis → Synthesis → Comprehension → Facts → Closed question
→ Open question

* Adapted from Peyton and Allery⁵ and Douglas et al.⁶

Pearl 7

Feedback is part of teaching.

Feedback

An informed, **objective** appraisal of observed performance in an **attempt to improve** clinical skills.

~Adapted from Lewis First, MD

Feedback

Overall feedback should:

- Be expected
- Be provided often
- Encourage a plan for follow-up

Characteristics of effective feedback include:

- It is **timely** (linked closely to the observed behavior)
- It is **specific**
- It is **linked to goals/objectives/competencies**
- It **improves performance**
- It is **focused, limited, and balanced** (not too much at one time; good and bad)
Reflection & Feedback

Dr. Dewey’s 5-step reflection plan:

1. Observe and assess first – illicit learner’s reflection
2. Identify the feedback focus – teacher & learner
3. Reinforce positive behaviors
4. Discuss changes/improvements
5. Summarize and create improvement plan

Select an accurate definition of feedback.

A. Observations based on a learner’s personal & physical characteristics.
B. Written summary of performance
C. An informed, objective appraisal of observed performance in an attempt to improve clinical skills.
D. I don’t know
Pearl 8

On a scale of 1 to 10, all learners are NOT a 9.
Assessing Competencies

The 6 ACGME core competencies:

– Professionalism (PRO)
– Medical knowledge (MK)
– Patient care (PC)
– Systems-based practice (SBP)
– Interpersonal communication (ICS)
– Practice-based learning and improvement (PBLI)

Created by Culberson, Dewey, Ismail, Friedland, Tejada-Simon & Turner. NIH Funded Relationship-Centered Transformation of Curricula, Baylor College of Medicine, 2006.
Milestones

- **Level 1:** incoming resident.
- **Level 2:** advancing and demonstrates additional milestones.
- **Level 3:** demonstrates milestones targeted for residency.
- **Level 4:** advanced; substantially demonstrates the milestones targeted for residency. This level is designed as the graduation target.
- **Level 5:** advanced beyond performance targets set for residency and is demonstrating “aspirational” goals seen in practice for several years. It is expected that only a few exceptional residents will reach this level.
# Milestones

## The Obstetrics and Gynecology Milestone Project


### Care of Patients in the Intrapartum Period — Patient Care

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrates basic knowledge of routine/uncomplicated intrapartum obstetrical care including, conduct of normal labor</td>
<td>Provides intrapartum obstetrical care for women with uncomplicated pregnancies (e.g., identification of fetal lie, interpretation of fetal heart rate monitoring, and tocodynamometry)</td>
<td>Manages abnormal labor</td>
<td>Provides care for women with complex intrapartum complications and conditions</td>
<td>Applies innovative approaches to complex and atypical intrapartum conditions and implements treatment plans based on emerging evidence</td>
</tr>
<tr>
<td></td>
<td>Differentiates between normal and abnormal labor</td>
<td>Manages intrapartum complications (e.g., cord prolapse, placental abruption)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recognizes intrapartum complications (e.g., chorioamnionitis, shoulder dystocia)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments:**

Not yet rotated
Psychomotor Skill Competency

- Unconsciously competent
- Consciously competent
- Consciously incompetent
- Unconsciously incompetent

Select one pearl you will adapt into your clinical teaching.

A. Knowledge is important but it is not everything.
B. Objectives drive the teaching and learning process.
C. Don’t spew information, facilitate learning.
D. Keep the big picture in mind & use a teaching model.
E. Every problem is not a nail.
F. Use questions to guide learning.
G. Feedback is part of teaching.
H. On a scale of 1 to 10, all learners are NOT a 9.
Resources

• Internal faculty development:
  – EDP workshops
  – EDP Peer review and consultation
  – EDP departmental training retreats

• External faculty development:
  – Medical education conferences
  – Specialty conferences
  – Other institutions
Book Suggestions
Summary

• Listed characteristics of the effective teacher
• Compared and contrasted four clinical teaching models
• Selected an accurate definition of feedback
• Practiced using an open-ended question to assess knowledge.
• Identified one pearl to adapt into clinical teaching activities
TENETS OF GOOD TEACHING

Tell me - I forget
Show me - I remember
Involve me - I understand
