SAMPLE HANDOUT

TEACHING SKILLS FOR RESIDENTS

*( Your Specialty)*

Mount Sinai Medical Center

The Resident Teaching Development Program

*( Your Name)*

*[Date of the seminar]*



The Institute for Medical Education

Mount Sinai School of Medicine

*Developed By*: Lisa Coplit MD, Yasmin Meah MD, Todd Simon MD

*Thanks To*: Erica Friedman MD, Patricia McArdle EdD, Lawrence Smith MD

TEACHING SKILLS FOR RESIDENTS

Resident Teaching Development Program

*(Date of Seminar)*

9:00-9:30am *Goals for the day and Best Teacher*

9:30-10:00am *Introduction*

* Characteristics of the best teachers
* Goals and Agenda for the day

10:00-11:00am *Setting Goals and Expectations*

* Purpose and Utility
* Techniques
* RIME

11:00-11:15am *Break*

11:15-12:30pm *Teaching Theory and Techniques Part I*

* Adult Learning Theory
* Diagnosing Your Learner/RIME
* Questioning as a Teaching Tool

12:30-1:00pm *Grab Some Pizza*

1:00-2:45pm *Teaching Theory and Techniques Part II with Lunch*

* Barriers & Solutions to Teaching on the wards
* Tips for Teaching with Limited Time
* The 5 Microskills of Clinical Teaching

2:45-3:00pm *Break*

3:00-4:00pm *Giving Feedback*

* Relevance and utility of effective feedback
* Basic principles of giving feedback
* Practice giving feedback

4:00-4:30 *Wrap Up*

*Complete Personal Teaching Reminder*

*Complete Course Evaluation*

PLEASE COMPLETE

Resident Teaching Development Program

# 

# Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are two things about teaching you would like to learn in this course:
2. Who was your favorite teacher **ever**?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Name, where and when he/she taught you)

GOALS FOR THE COURSE

1. To improve your confidence as a clinical teacher and team leader of interns and medical students.

1. To prepare you for this role by providing you with practical teaching techniques that work in the variety of settings in which you teach.
2. To provide you with realistic techniques for setting goals/expectations for your learners and for giving them formative feedback.
3. To improve clinical teaching by residents at Mount Sinai Hospital as measured by teaching evaluations from interns, students, and faculty.

**Setting Goals and Expectations**

**THE 3 STEPS OF SETTING GOALS**

1. **Define the goals** (knowledge, skills, and attitudes)

* What do you want them to learn
* How will they learn it?

1. **Tell your learners the goals**

* “My goals **for you** are….”
* Be specific and clear (concrete)
* Tell them the relevance of the goals

1. **Ask learners for their goals**

Adapted from the Stanford Faculty Development Program, Leland Stanford University, 1998

**Third Year Clerkship**

**Educational Goals Functional Goals(Expectations)**

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**The "RIME" model**   
*Adapted from materials by*

*Lou Pangaro, M.D. – USUHS*

**Reporter**

**Interpreter**

**Manager**

**Educator**

**The "RIME" model**   
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# Reporter

The student can accurately gather and clearly communicate the clinical facts on his/her own patients. Mastery in this step requires the basic skill to do a history and physical examination (gather data) and the basic knowledge to know what to look for. Implicit in the step is the ability to recognize normal from abnormal and the confidence to identify and label a new problem. This step requires a sense of responsibility, and achieving consistency in "bedside" skills in dealing directly with patients.

**Interpreter**

The student is able to interpret the clinical data using reasoning and problem solving skills. At a basic level, the student must **prioritize among problems** identified in their time with the patient. The next step is to offer a **differential diagnosis**. Follow-up of tests provides another opportunity to "interpret" the data. This step requires a higher level of knowledge, more skill in selecting the clinical findings which support possible diagnoses and in applying test results to specific patients. The student has to make the transition, emotionally, from "bystander" to see himself/herself as an active participant in patient care.

**Manager**

The student is able to manage the care of the patient, anticipate outcomes, make independent decisions and understand the alternatives. This step takes even more knowledge, more confidence and more judgment in deciding when action needs to be taken, and to propose and select among options for patients. A key element is to tailor the plan to the particular patient’s circumstances and preferences.

**Educator**

The student has mastered each prior step, is a self-directed learner and teaches other learners. Success in each prior step depends on self-directed learning, and on a mastery of basics. To be an "educator" in our framework means to go beyond the required basics, to read deeply, and to share new learning with others. Defining important questions to research in more depth takes insight. Having the drive to look for hard evidence on which clinical practice can be based, and having the skill to know whether the evidence will stand up to scrutiny are qualities of an advanced trainee.

**Personal Goals**

Setting Goals & Expectations

I would like to try….

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Teaching Techniques and Theory**

**Part I**

### Principles of Adult Learning

**Adults learn best when………………………….**

*Some of the material in this section was adapted from: Instructor’s Guide for Teaching Residents to Teach. Gary Dunnington, MD and Debra DaRosa, PhD. Association for Surgical Education. And the Stanford Faculty Development Clinical Teaching Skills Program. And Knowles, Malcolm S., Elwood F Holton III and Richard A. Swanson. 1998. The Adult Learner. Houston: Gulf Publishing.*

**PRINCIPLES OF ADULT LEARNING THEORY**

**The assumptions of Knowles’ Adult Learning Theory --**

**In other words, ADULTS LEARN BEST WHEN……**

* **INSTRUCTION IS RELEVANT**

Adults must see a reason for learning something. The learning must be applicable to their work, other responsibilities, or their interests.

* **INSTRUCTION IS PROBLEM-CENTERED**

The road to the diagnosis is more important than the “right” diagnosis itself. Learners can acquire new skills & information as they problem solve.

* **INSTRUCTION IS CONDUCTED IN A SAFE LEARNING ENVIRONMENT**

The learning environment should be respectful and encourage processing and verbalization of thought.

* **INSTRUCTION IS EXPERIENCE ORIENTED**

Adults need to connect new learning to their lifetime of knowledge and experiences. Past experiences are relevant to the understanding of future problems.

* **FEEDBACK IS PROVIDED**

Learners need to know whether they are learning correctly so that they can succeed.

* **LEARNING IS ACTIVE**

The most permanent type of learning occurs when learners are involved in their own learning process. You can see that active learning is integral to all of the principles of adult learning mentioned above.

**Adults learn best when……………..**

I. Instruction is **Relevant**

Adults must see a reason for learning something. The learning must be applicable to their work, other responsibilities, or their interests.

1. **Identify clear goals and objectives for your learners**
2. **Point out the practical applications of theories and concepts**
3. **Allow learners to be self-directed (choose topics of interest, identify their own knowledge gaps, etc.)**
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

II. Instruction is **Problem Centered = Patient Centered**

The road to the diagnosis is more important than the “right” diagnosis itself. Learners can acquire new skills & information as they problem solve.

1. **Use engaging clinical cases**
2. **Think aloud as you reason through diagnostic or management possibilities**
3. **Ask questions that require reasoning**
4. **Ask questions about hypothetical cases**
5. **Give learners time to think and respond to questions**
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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III. A **Safe Learning Environment** Exists

The learning environment should be respectful and encourage processing and verbalization of thought.

1. **Introduce yourself and use learners’ names**
2. **Invite learners’ opinions**
3. **Acknowledge your own limitations**
4. **Encourage questions and independent thinking**
5. **Clarify your expectations**
6. **Safe ≠ Easy**
7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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IV. Instruction is **Experience Oriented**

Adults need to connect new learning to their lifetime of knowledge and experiences. Past experiences are relevant to the understanding of future problems.

1. **Draw on learner’s experiences to reinforce key teaching points Ex. When was the last time you saw a case like this?**
2. **Relate concepts to learners’ experiences**
3. **Provide time for learners to practice skills while you supervise**
4. **Increase responsibility when appropriate**
5. **Use teachable moments**
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V. **Feedback** is Provided

Learners need to know whether they are learning correctly so that they can succeed.

1. **Refer to goals to guide discussion**
2. **Make it timely**
3. **Be specific**
4. **Use objective language**
5. **Ask learners to self-assess first**
6. **Make plans for improvement**
7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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VI. Learning is **Active**

The most permanent type of learning occurs when learners are involved in their own learning process. You can see that active learning is integral to all of the principles of adult learning mentioned above.

1. **Avoid long lectures**
2. **Encourage note taking**
3. **Use modeling instead of shadowing**
4. **Use brainstorming**
5. **Have learners reformulate material**
6. **Assign and discuss readings**
7. **Encourage learner to learner interaction**
8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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**Interpreter**

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QUESTIONING AS A TEACHING TOOL

1. **RECALL QUESTIONS**

Recall questions are used when you want the learner to recall facts (scientific, medical, patient information, skills). Students or interns who are just beginning to develop clinical reasoning skills (in a particular field) may initially only be able to answer recall questions. Although knowing the answers to these types of questions is often critical, we should challenge them to analyze, synthesize and apply as well.

**Example**: What are the 3 most common causes of cholecystitis?

Explain the correct way to examine the abdomen?

What is this patient’s bilirubin level?

1. **ANALYSIS/SYNTHESIS QUESTIONS**

Analysis and synthesis questions require the learner to demonstrate understanding of a topic versus being able to simply present a list of facts. The learner is able create a context into which the individual pieces of data fit. They must apply deductive reasoning and logic to answer these questions.

**Example**: How can we discriminate between the diagnostic possibilities we just listed?

What factors are influencing your choice of diagnoses?

How do the patient’s various symptoms relate to each other?

1. **APPLICATION**

You are asking the learner to apply what they know (information or understanding) to a specific patient. You can ask them to apply their knowledge, skills, or attitudes to the management plan, diagnosis, procedure, etc. of a particular patient. **Application questions can be recall-application or analysis/synthesis-application questions.**

**Example**: How will you treat this patient’s pain?

How will you know when you have confirmed your diagnosis?

Can you show me the techniques you would use to examine this patient for ascites?

Adapted from the Stanford Faculty Development Program, Leland Stanford University, 1998

1. **SELF ASSESSMENT**

Self assessment questions require learners to assess themselves at every level: Their basic knowledge, their ability to synthesize data (for diagnosis or plan), their ability to apply knowledge, their technical skills and their attitudes.

**Example**: Do you think you have enough experience to deal with this patient?

Do you think you understand the pathophysiologic mechanisms of DKA?

How would you handle this same scenario if presented with it again?

All types of questions can assess either Knowledge, Skills or Attitudes. All questions can be open or closed ended.

**Key point about all types of questions:**

1. Remember to wait for the answers to your questions. Try 5 seconds.
2. Try not to ask a question that requires a yes or no answer. If you do, you may need to ask some probing questions – How did you come to that conclusion?
3. Encourage resident to resident (or student to student) interaction. What do you think about Dan’s idea?
4. Don’t overuse any one technique, including questioning.

Adapted from the Stanford Faculty Development Program, Leland Stanford University, 1998

**Teaching Techniques and Theory**

**Part II Teaching on the Wards**

**Barriers to Teaching Solutions**

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**Tips for Teaching With Limited Time**

(insert powerpoint handouts)

**The Five Microskills for Clinical Teaching**

This practical teaching technique, composed of 5 consecutive “microskills” or steps, is based on many of the principles of adult learning. It is a great technique to use when you’re teaching 1 on 1 and when time is limited (it is also called the one minute preceptor).

1. Get a commitment – *What do you think is going on?*
2. Probe for supporting evidence – *What led you to that conclusion?*
3. Teach general rules – *when this happens, do this…*
4. Reinforce what was right – *Specifically, you did an excellent job of…*
5. Correct Mistakes – *Next time this happens, try this…*

***Case Presentation***

***Diagnose Learner***

1. Get a commitment
2. Probe for supporting evidence (reasoning)

Microskill 1: Get A Commitment

This step is necessary when your leaner either waits for your response or asks for your guidance. You want learn what they are thinking about the case.

**Examples of questions likely to get a commitment:**

*What do you think is going on with this patient?*

*Why do you think the patient has been non-compliant?*

*What do you want to do next in the work-up?*

*What do you want to accomplish during this hospitalization?*

**Examples of questions not likely to get a commitment:**

*Sounds like pneumonia, don’t you think?*

*Anything else?*

*Did you find out which symptoms came first?*

Microskill 2: Probe for Supporting Evidence

Once the learner has stated his/her opinion, you want to avoid your instinct to tell them whether you agree or not. Instead, ask questions to find out their reasoning behind their opinion. Their knowledge may not be evident before this step. You are taking the opportunity to evaluate them while allowing them to think through the case.

**Helpful Approaches**

*What are the major findings that led to your conclusions?*

*What else did you consider?*

*Why did you rule out that choice?*

**Non-helpful Approaches**

*I disagree. Do you have any other ideas?*

*This seems like a classic case of….*

*What were her vital signs?*

Microskill 3: Teach General Rules

You have evaluated what this leaner knows and what he/she needs to learn about. Use this opportunity to provide the learner with some general concepts or principles related to the case. The learner can then apply these concepts to other patients in the future.

**Helpful Approaches**

*If the patient only has cellulites, incision and drainage are not possible. You have to wait until the area becomes fluctuant to drain it.*

*Patients with UTI usually experience pain with urination, increased frequency and urgency, and they may have hematuria. The urinalysis should show bacteria and wbcs and may also have some rbcs.*

**Non-helpful Approaches**

*This patient has heart failure and needs diuresis. Don’t start the beta blocker now.*

I’m convinced that to diagnose cellulites you need an aspiration for culture.

Microskill 4: Reinforce What They Did Right

Your learner may or may not know what aspect of his/her reasoning/management plan/diagnostic strategy/presentation style was effective. Make sure to let the learner know, specifically, what was correct and effective.

**Helpful Approaches**

*You did a very thorough job evaluating the patient’s abdominal complaints. Identifying the combination of anemia and blood in the stool was critical in making the diagnosis of colon cancer.*

*You considered the patient’s finances in your selection of drugs. Your sensitivity to cost will likely contribute to his compliance.*

**Non-helpful Approaches**

You are right. That was a good decision.

Nice presentation.

Microskill 5: Correct Mistakes

If the learner has made a mistake or needs improvement, it is crucial to his/her learning that you address it. You might want to let the learner critique him/herself first then offer your specific observations and ideas for improvement.

**Helpful Approaches**

*I agree that the patient is probably drug seeking, but we still need to do a careful history and physical exam before we make any recommendations.*

**Non-helpful Approaches**

*You did what? What were you thinking?*

Materials in this section were mainly adapted from Neher JO, Gordon CC, Meyer B, Stevens N. A Five-Step "Microskills" Model of Clinical Teaching. Journal of the American Board of Family Practice. 1992 and from the Instructor’s Guide for Teaching Residents to Teach. Gary Dunnington, MD and Debra DaRosa, PhD. Association for Surgical Education.

# OB/Gyn

## Microskills Roleplay #1

*You are a 3rd year medical student in clinic presenting this patient to your chief resident.*

I have a 23 year-old primipara who is 12 weeks pregnant by her LMP. She has had one sexual partner, does not smoke, drink or use drugs. She has no medical problems. There is no family history of congenital anomalies. This was a planned pregnancy. Before conception, she started prenatal vitamins and had a blood test that showed she was immune to rubella. Her examination is normal and her uterus is about 12 week size on bimanual exam. She asked about an ultrasound. I’m inclined to get one because she wants to know if it is a boy or a girl and all of her friends have shown “pictures” of their babies.

# OB/Gyn

## Microskills Roleplay #2

*You are an intern at Elmhurst clinic presenting this patient to your chief resident.*

I have a 23-year-old pimipara who is 42 weeks pregnant. Her pregnancy has otherwise been unremarkable. She has shown no signs of elevated blood pressure, edema, or proteinuria. A non-stress test is reactive. I did Leopold maneuvers and the baby is vertex. I think the fetus weighs about 8 pounds. Her cervix is posterior, 3 cm’s long, closed and firm. I’d like to try to get her delivered before the baby gets too much bigger. What should I do to get her delivered?

# OB/Gyn

## Microskills Roleplay #3

*You are a 4th year medical student in clinic presenting this patient to your resident.*

I have an 18-year-old G1P0 single Caucasian woman who presented today for a prenatal appointment. She is currently 34 weeks gestation by dates. She has noticed a 1.5 week history of a frontal headache and swelling in her feet and hands which is new over the past several days. Her blood pressure in the clinic today is 160/98. Her exam confirms her uterine size at 34 weeks by palpation, she has 3+ pitting ankle edema and brisk knee reflexes. Her urine is showing 4+ protein.

# OB/Gyn

## Microskills Roleplay #4

*You are a 3rd year medical student in clinic presenting this patient to your resident.*

Ms. E is a 17-year-old P0 at 20 weeks gestation who comes in today complaining of vaginal bleeding for the first time today. She has no abdominal pain and has been feeling well otherwise. Her vital signs are normal and exam confirms her uterine size of 20 weeks. She thinks the doctor told her that her placenta was normal when she went for her sonogram but she isn’t sure.

# OB/Gyn

## Microskills Roleplay #5

*You are a PGY-2 resident presenting this patient to your resident. You evaluated this patient in the ER and want your resident’s opinion.*

I was called by the ER about Ms. M, a 30 year-old P2 woman, LMP 7 weeks ago, who is complaining about sharp RLQ pain after she ate a turkey sandwich tonight. She is nauseated and is having diarrhea. She has never had pain like this before and she has no history of surgery. The ER attending cannot find a gestational sac in the uterus but her urine HCG is positive.

# Pediatrics

## Microskills Roleplay #1

*You are an end of the year 3rd year medical student presenting this patient to your ward resident. The patient was just transferred from the PICU to the floor and you were the first person on the team to see the patient.*

### The patient is a 13 year old white female with a 6 year history of IDDM, received in transfer from the PICU. Her diabetes has previously been in good control, but she has now had three hospitalizations for DKA in the last 3 months. She denied being noncompliant with her insulin. The PICU course was unremarkable, and her labs have stabilized in acceptable ranges. Her vitals are within normal limits, and her physical exam was notable only for a somewhat flat affect and weight at the 10th percentile for age. I can’t figure out why she developed DKA.

# Pediatrics

## Microskills Roleplay #2

*You are an intern presenting this patient to your ward resident. You were called by the ER to admit the patient and you have just finished your assessment.*

I just saw the new admission in the ER and his orders are already done. He is a 6 year old boy with a h/o sickle cell disease (Hgbss) who presents with a day of fever and tachypnea. He also has a non-productive cough and a little bit of right sided chest pain when he coughs. He has no sick contacts and has never had pneumonia before. His physical exam is only remarkable for a temperature of 38 deg, an O2 sat of 96% and decreased breath sounds on the right side. The CXR is still pending. It seems like a classic pneumonia so I ordered IV antibiotics.

# Surgery

## Microskills Roleplay #1

*You are a 4th year sub-intern presenting this patient to your resident.*

Mr. P is a 58yo male with HTN, DM, and asthma who is POD #2 for left hemicolectomy for colon CA. I was just called to evaluate him for shortness of breath. He had just finished a nebulizer treatment and was still complaining of difficulty breathing. He was a little diaphoretic and it looked like he was using his accessory muscles to breath. On exam, he was afebrile and had a normal BP, but his heart rate was 104. He had course breath sounds bilaterally and some decreased breath sounds at the bases. I ordered another nebulizer treatment and incentive spirometry. Is there anything else I should do?

# Surgery

## Microskills Roleplay #2

*You are an intern at Elmhurst presenting this patient to your resident on rounds.*

Mr. M is a 65yo male with DM, CAD, POD #2 s/p hemicolectomy for colon CA. He has no complaints. Vitals signs are normal this morning except his I/O’s show that over the last 24 hours he has only put out 500cc of urine. His exam is benign. I want to give him a trial of lasix.

# Surgery

## Microskills Roleplay #3

*You are an intern presenting this patient to your resident on rounds.*

Mr. L is a 55yo man with DM who is POD #2 s/p hemicolectomy for colon CA. He has been doing well except last night I was called because he was having some mild chest discomfort. It sounded like heartburn and an ECG was normal so I gave him Mylanta prn and he feels a little better this morning although the pain is still intermittent. I think it’s dyspepsia and I’m going to continue the Mylanta.

# Surgery

## Microskills Roleplay #4

*You are a 4th year sub-intern in surgery presenting this patient to your resident.*

I was in the ED evaluating Ms. H. She is a 45yo female 2 weeks s/p laparoscopic BPD who presents with LLQ pain over the last 3 days and some nausea. On exam, she has a low grade temperature of 37.9 and there is some erythema around one of the trochar sites. She is able to take po and denies other symptoms. I’m not sure what the source of her fever is?

# Psychiatry

## Microskills Roleplay #1

*You are a 3rd year medical student in clinic presenting this patient to your chief resident in the Psychiatric Emergency Room.*

This is a 21 year-old male with no past psychiatric history who presents to the ER with the feeling that his girlfriend is poisoning him. He states that she has been demanding that he eat at home every night with the excuse that it will save them money, but he is convinced that she is poisoning him each night with arsenic, and that is why she wants him to eat at home every night. He realized this about two weeks ago, after they had an argument on this issue. He seems vaguely paranoid, but he doesn’t endorse any other paranoid symptoms. He denies manic symptoms as well as denying auditory and visual hallucinations, and he denies neurovegetative symptoms of depression. When I asked him about his mood, he said, “How would you feel?” and he seemed to get quite angry. His vital signs and physical exam are normal. I’m not sure what to do with this guy.

# Psychiatry

## Microskills Roleplay #2

*You are an intern on the inpatient service presenting this patient to your chief resident.*

This is a 39 year old woman with a previous diagnosis of bipolar disorder who presented last night to the emergency room. She was apparently very disorganized last night and was brought in by the police because she was standing in the street yelling at cars as they passed by. They wrote in the chart that they thought she was manic. She was apparently being treated with valproic acid and risperidone, but she hasn’t taken them in months. When I saw her this morning, she seems calm and euthymic. She is very disorganized with almost incoherent speech, bizarre affect—laughing at just about everything I say, and some bizarre posturing during my interview—throwing herself backwards onto the bed and lifting her feet into the air. I am not sure if her diagnosis is correct.

# Psychiatry

## Microskills Roleplay #3

*You are a 2nd year resident in the psychiatric emergency room presenting this patient to your chief resident.*

This is a 40 year old homeless man who presents to the ER saying that he intends to kill himself tonight. He says that he has been depressed “forever,” and he says that he was on medication—prozac he thinks—but he ran out, and he’s not sure it ever worked for him. He says that he can’t sleep, can’t eat, is tired all the time, and is miserable. He reports that he is currently living in an abandoned building a few blocks from here, but it’s a crack house, and he fears for his safety there. He is worried about having to go back into the park because it’s cold out. He denies IV drug use, but he says that he drinks to keep warm and to pass the time, which amounts to about a 5th of vodka a day which he pays for by begging on the streets. When I asked him about how he would kill himself, he said, “I don’t know, maybe throw myself in front of a subway. Don’t think I wouldn’t do it.” He says he hears voices telling him to kill himself too. I think this guy is faking it to get a bed, but when he says this stuff, I feel like I can’t exactly send him out.

# Psychiatry

## Microskills Roleplay #4

*You are a PGY-2 resident presenting this patient to your resident. You evaluated this patient in the ER and want your resident’s opinion.*

I just saw this patient in the medical ER on a consult. It’s a 18 year old man who was brought in from the cold by the police. They found him sitting on a bench in the park, but when the spoke to him, he didn’t answer. When they touched him, he didn’t respond. They found that they couldn’t really get him to move his limbs, so they brought him here in an ambulance. The medical team examined him and found him to be in good physical shape with stable vital signs; however, he hasn’t responded to any of their questions, and they found him difficult to move for the physical, almost like he was resisting them. When I saw him, he just laid on the stretcher, looking straight ahead. He didn’t answer any of my questions. He has waxy flexibility when I move his arms. They want to know what to do with him. What should I tell them?

# Medicine

## Microskills Roleplay #1

*You are a 3rd year medical student presenting this patient that you just saw in the ED to your resident.*

Mrs. S is a 52 year old woman with a history of HTN who was brought to the ED by EMS because she was having chest tightness for 3 hours. The chest tightness started while she was watching TV. It didn’t radiate and she didn’t have diaphoresis or nausea with it. She did have a little shortness of breath. She rated the discomfort a 4/10 and it resolved with oxygen in the ambulance. She hasn’t had any recent shortness of breath and has pretty good exercise tolerance. She says that she has been under a lot of stress at work recently. She has a FH of CAD: her father had bypass surgery at age 60 and her brother had an MI at age 46. She was admitted for similar symptoms 1 year ago. Her stress MIBI was normal then but it was submaximal because she stopped from fatigue. Her exam, EKG, and CK and troponin were all normal. She is being admitted to telemetry. I don’t think that her pain is cardiac, it’s probably stress. What do you think?

# Medicine

## Microskills Roleplay #2

*You are an intern at presenting a new patient that you just admitted to your resident.*

I just saw a 75 year old man with a history of HTN and DM who was admitted for anemia. He presented to the ER feeling tired and a little short of breath for about one month. His ECG and cardiac enzymes were normal but he was found to have a hemoglobin of 6.5. He denies any blood in his stool and he doesn’t think he’s ever had a colonoscopy. He hasn’t had any nausea or vomiting either. On exam his vitals are all normal and he is pale. His abdomen is benign and he has heme negative brown stool. I am going to transfuse him tonight. Should we ask GI to see him tomorrow or can he get a workup as an outpatient?

# Medicine

## Microskills Roleplay #3

*You are a 4th year medical student in presenting this patient to your resident.*

I was just called about Mrs. M, our 45 year old woman who is here with hyperosmolar hyperglycemia. She’s feeling much better but her fingersticks are still in the 400’s in the afternoons. Her fingerstick this morning was 220. We have her on NPH 18 units in the morning and 12 units at bedtime in addition to sliding scale insulin. I’m not sure how to adjust her insulin because she’s still not eating very much.

**Personal Goals**

Teaching Theory & Techniques

I would like to try….

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Giving Feedback**

IMPORTANCE OF FEEDBACK

The important things to remember about feedback in medical education are that (1) it is necessary, (2) it is valuable, (3) after a bit of practice and planning, it is not as difficult as one might think.

# *Jack Ende, MD*

# *Ende, JAMA, 1983*

**Guidelines for Giving Feedback**

#### Ende, JAMA, 1983

Feedback should be undertaken with the teacher and trainee working as allies, with common goals.

Feedback should be well timed and expected.

Feedback should be based on first-hand data.

Feedback should be regulated in quantity and limited to behaviors that are remediable.

Feedback should be phrased in descriptive, non-evaluative language.

Feedback should deal with specific performance, not generalizations.

If you are using subjective data, it should be labeled as such.

Feedback should deal with decision and actions, rather than assumed intentions or

interpretations.

##### Structuring a Constructive Feedback Session

#### Ende, JAMA, 1983

Conduct feedback sessions in a private, relaxed, and supportive atmosphere.

Outline an agenda for the session.

Check for degree of agreement with other teachers and staff.

Allow the learner to discuss his/her experience or performance first. Be a good listener.

Share your information. Link to the learner’s goals.

Compare your assessment with the learner’s and discuss.

Establish follow-up plans.

Summarize.

Insert Ende Article:

Feedback in Clinical Medical Education, 1983

MEDICINE

FEEDBACK ROLEPLAY

# Part A: Teacher

You are a PGY-2 resident on the 10W at Mount Sinai. You are responsible for 2 third year medical students and two interns. The students’ clerkship is at the end of its second week and you have become very disturbed by the performance of one of the medical students. She is a pleasant, very affable student who develops excellent rapport with her patients. One of the nurses has come to you telling you how impressed she was by her very adept handling of an angry patient. However, her clinical performance has been borderline. Her morning presentations lack focus and she often misses critical issues while concentrating on minutia (misses the forest for the trees). She has real difficulty putting together the results of a history and physical exam to come up with a differential diagnosis. Although she seems to be very motivated and dedicated, her fund of knowledge is weak and she appears to be poorly read and prepared for her patients. You have asked her to meet you today to discuss her performance.

MEDICINE

FEEDBACK ROLEPLAY

# Part B: Student

You are a third year medical student on a Medicine 10W team at the end of the second week of your rotation. This is the last rotation of your third year. You plan to go into psychiatry and so have found the patients on the Medicine service challenging, particularly from a psychosocial point of view. Even though you are not interested in Medicine as a career, you have put in long, hard hours over the last two weeks to get as much as possible out of this short rotation on 10W. Although you have not had time to read as much as you would have liked, you have been diligent about your ward work and have taken extra time with patients, discussing their problems. One senior faculty member gave you a strong compliment regarding your care for one of his patients who became critically ill. Your resident has asked to see you today and you assume it is to give you a positive clerkship evaluation.

OB/GYN

FEEDBACK ROLEPLAY

# Part A: Teacher

You are the chief resident on the L&D floor at Mount Sinai. You are responsible for 2 third year medical students, one intern, and one PGY 2. The students’ clerkship is at the end of its second week (6 week clerkship with 2 weeks on L&D) and you have become very disturbed by the performance of one of the medical students. She is a pleasant, very affable student who develops excellent rapport with her patients. One of the nurses has come to you telling you how impressed she was by her very adept handling of an angry patient. However, her clinical performance has been borderline. Her morning presentations lack focus and she often misses critical issues while concentrating on minutia (misses the forest for the trees). She has real difficulty putting together the results of a history and physical exam to come up with a differential diagnosis. Although she seems to be very motivated and dedicated, her fund of knowledge is weak and she appears to be poorly read and prepared for her patients. You have asked her to meet you today to discuss her performance.

OB/GYN

FEEDBACK ROLEPLAY

# Part B: Student

You are a third year medical student on the L&D floor at the end of the second week of a 6 week rotation (2 weeks on L&D). This is the last rotation of your third year. You plan to go into psychiatry and so have found the patients on the OB service challenging, particularly from a psychosocial point of view. Even though you are not interested in OB as a career, you have put in long, hard hours over the last two weeks to get as much as possible out of this short rotation on L&D. Although you have not had time to read as much as you would have liked, you have been diligent about your ward work and have taken extra time with patients, discussing their problems. One senior faculty member gave you a strong compliment regarding your care for one of his patients who became critically ill and lost her baby. Your chief resident has asked to see you today and you assume it is to give you a positive clerkship evaluation.

PSYCHIATRY

FEEDBACK ROLEPLAY

# Part A: Teacher

You are the chief resident of the Inpatient Psychiatry Department at Mount Sinai. You are responsible for 4 third year medical students, 2 PGY1s, and 2 PGY2s. The students’ clerkship is at the end of its second week (4 week clerkship) and you have become very disturbed by the performance of one of the medical students. She is a pleasant, very affable student who develops excellent rapport with her patients. One of the nurses has come to you telling you how impressed she was by her very adept handling of an angry patient. However, her clinical performance has been borderline. Her presentations lack focus and she often misses critical issues while concentrating on minutia (misses the forest for the trees). She has real difficulty putting together the results of a psychiatric history and mental status exam to come up with a differential diagnosis. Although she seems to be very motivated and dedicated, her fund of knowledge is weak and she appears to be poorly read and prepared for her patients. You have asked her to meet you today to discuss her performance.

PSYCHIATRY

FEEDBACK ROLEPLAY

# Part B: Student

You are a third year medical student on the psychiatry inpatient unit at the end of the second week of a 4 week rotation. This is the last rotation of your third year. You plan to go into OB/GYN and have found the patients on the psychiatry service challenging, particularly from a psychosocial point of view. Even though you are not interested in psychiatry as a career, you have put in long, hard hours over the last two weeks to get as much as possible out of this short rotation. Although you have not had time to read as much as you would have liked, you have been diligent about your ward work and have taken extra time with patients, discussing their problems. One senior faculty member gave you a strong compliment regarding your care for one of his patients who became quite agitated on the unit. Your chief resident has asked to see you today and you assume it is to give you a positive clerkship evaluation.

SURGERY

FEEDBACK ROLEPLAY

# Part A: Teacher

You are the PGY-4 on the floor at Mount Sinai. The students’ clerkship is at the end of its second week and you have become very disturbed by the performance of one of the medical students. She is a pleasant, very affable student who develops excellent rapport with her patients. One of the nurses has come to you telling you how impressed she was by her very adept handling of an angry patient. However, her clinical performance has been borderline. Her morning presentations lack focus and she often misses critical issues while concentrating on minutia (misses the forest for the trees). She has real difficulty putting together the results of a history and physical exam to come up with a differential diagnosis. Although she seems to be very motivated and dedicated, her fund of knowledge is weak and she appears to be poorly read and prepared for her patients. You have asked her to meet you today to discuss her performance.

SURGERY

FEEDBACK ROLEPLAY

# Part B: Student

You are a third year medical student on the surgery floor at the end of the second week of your rotation. This is the last rotation of your third year. You plan to go into psychiatry and so have found the patients on the surgery service challenging, particularly from a psychosocial point of view. Even though you are not interested in surgery as a career, you have put in long, hard hours over the last two weeks to get as much as possible out of this rotation. Although you have not had time to read as much as you would have liked, you have been diligent about your ward work and have taken extra time with patients, discussing their problems. One senior faculty member gave you a strong compliment regarding your care for one of his patients who became critically ill and was transferred to the SICU. Your chief resident has asked to see you today and you assume it is to give you a positive clerkship evaluation.

**Personal Goals**

Giving Feedback

I would like to try….

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

GOALS FOR THE COURSE

How did we do?

1. To improve your confidence as a clinical teacher and team leader of interns and medical students.

1. To prepare you for this role by providing you with practical teaching techniques that work in the variety of settings in which you teach.
2. To provide you with realistic techniques for setting goals/expectations for your learners and for giving them formative feedback.
3. To improve clinical teaching by residents at Mount Sinai Hospital as measured by teaching evaluations from interns, students, and faculty.

###### Learn Your Teaching Style

[www.residentteachers.com](http://www.residentteachers.com)

**References**

**Residents as Teachers**

[Aiyer M, Woods G, Lombard G, Meyer L, Vanka A.](http://www.ncbi.nlm.nih.gov/pubmed/18414164?ordinalpos=43&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum) Change in residents' perceptions of teaching: following a one day "Residents as Teachers" (RasT) workshop. *South Med J.* 2008 May;101(5):495-502.

American Academy of Pediatrics – The Section on Residents of the American Academy of Pediatrics. Residents as Teachers Handbook.

Apter A, Metzger R, Glassroth J. Residents’ Perceptions of their role as teachers. *J Med Ed*. 1988;63:900-5.

Arseneau R. An instrument to assess the outcomes of a teacher education program for residents. *Academic Medicine*. 1995;70:166-167.

Bensinger LD, Meah YS, Smith LG. Resident as teacher: the Mount Sinai experience and a review of the

literature. *Mt Sinai J Med* 2005 Sep;72(5):307-11.

Bing-You RG, Harvey BJ. Factors Related to Resident's Desire and Ability to Teach in the Clinical Setting. *Teaching and Learning in Medicine.* 1991;3(2):95-100.

Bing-You RG, Tooker J. Teaching Skills Improvement Programs in US Internal Medicine Residencies. *Medical Education.* 1993;27:259-265.

Busari JO, Scherpbier AJ, van der Vleuten CP, Essed GG. The perceptions of attending doctors of the role of residents as teachers of undergraduate clinical students. *Med Educ*. 2003 Mar;37(3):241-7*.*

Dunningham GL, DaRosa D. A Prospective Randomized Trial of a Residents-as-Teachers Training Program. *Acad Med*. 1998;73(6):696-700.

Edwards JC, Brannan JR, Burgess L, Plauche W, Marier RL. Case presentation format and clinical reasoning: A strategy for teaching medical students. *Medical Teacher.* 1987;V9(3):285-292.

Edwards JC, Kissling GE, Plauche WC, Marier RL. Evaluation of a teaching skills improvement programme for residents. *Med Educ*. 1988;22:514-517.

Edwards JC, Kissling GE, Plauche WC, Marier RL. Long-term evaluation of training residents in clinical teaching skills. *J Med Educ*. 1986;61:967-970.

**Edwards, J.C., & Marier, R.L. (Eds). Clinical Teaching Techniques for Residents. Chap 4 *Clinical teaching for medical residents: Roles, techniques and programs*. Springer Series on Medical Education, New York, NY: Springer; 1998:Vol 10.**

Edwards KS, Woolf PK, Hetzler T. Pediatric residents as learners and teachers of evidence-based medicine. Acad Med. 2002 Jul;77(7):748.

Friedland JA, Zimmerman JL, Liscum KR. Skills for internship. Acad Med. 1998;73:610-611.

Gaba ND, Blatt B, Macri CJ, Greenberg L. Improving teaching skills in obstetrics and gynecology residents: evaluation of a residents-as-teachers program. *Am J Obstet Gynecol* 2007;196:87.e1-87.e7.

Gill DJ, Frank SA. The neurology resident as teacher: evaluating and improving our role.

*Neurology*. 2004 Oct 12;63(7):1334-8.

Greenberg LW, Goldberg R and Jewett LS. Teaching in the clinical setting: factor influencing residents’ perceptions, confidence and behavior. *Med Educ*. 1984;18:360-5.

Hafler JP. Residents as teachers: a process for training and development. *J Nutr*. 2003 Feb;133(2):544S-6S.

**Hafler JP. Observing, developing and reflecting on residents’ teaching strategies. Chap 4. Edwards JC, Friedland JA, Bing-You R (Eds). *Residents’ Teaching Skills*. New York: Springer Publishing Co., 2002.**

Hammoud MM, Haefner HK, Schigelone A, Gruppen LD. Teaching residents how to teach improves quality of clerkship. *Am J Obstet Gynecol*. 2004 Nov;191(5):1741-5.

Irby DM. Evaluating resident teaching. In: Edwards JC, Marier RL, eds. *Clinical Teaching for Medical Residents: Roles, Techniques, and Programs*. New York, NY: Springer; 1988:121-128.

Janine C. Edwards, Joan Freidlander, Robert Bing-You. *Residents Teaching Skills*. Springer Publishing Company. 2001.

Jewett LS, Greenberg LW, Goldberg RM. Teaching Residents How to Teach: A One-Year Study. *J Med Ed*. 1982;57:361-366.

Johnson EC, Bachur R, et al. Developing Residents as Teachers: Process and Content. *Pediatrics*. 1996:907-916.

Kerfoot BP, Nabha KS, Hafler JP. Designing a surgical 'resident-as-teacher' programme.

*Med Educ*. 2004 Nov;38(11):1190.

Kerfoot BP, Nabha KS, Hafler JP. The impact of duty hour restrictions on teaching by surgical residents.

*Med Educ*. 2005 May;39(5):528-9.

Litzelman DK, Stratos GA, Skeff KM. The effect of a clinical teaching retreat on residents’ teaching skills. *Acad Med*. 1994;69:433-434.

Morrison EH, Boker JR, Hollingshead J, Prislin MD, Hitchcock MA, Litzelman DK. Reliability and validity of an objective structured teaching examination for generalist resident teachers. *Acad Med*. 2002 Oct;77(10 Suppl):S29-32.

Morrison EH, Friedland JA, Boker J, Rucker L, Hollingshead J, Murata P. Residents-as-teachers Training in U.S. Residency Programs and Offices of Graduate Medical Education. Acad Med. 2001;76(10):S1-S4

Morrison EH, Garman KA, Friedland JA. A national Web site for residents as teachers*. Acad Med*. 2001 May;76(5):544-5.

Morrison EH, Hafler JP, Yesterday a Learner, Today a Teacher Too: Residents as Teachers in 2000. *Pediatrics*. 2000;105(1):238-41.

Morrison EH, Hitchcock MA, Harthill M, Boker JR, Masunaga H. The on-line Clinical Teaching Perception Inventory: a "snapshot" of medical teachers. *Fam Med*. 2005 Jan;37(1):48-53

Morrison EH, Hollingshead J, Hubbell FA, Hitchcock MA, Rucker L, Prislin MD. Reach out and teach someone: generalist residents' needs for teaching skills development. *Fam Med*. 2002 Jun;34(6):445-50.

Morrison EH, Rucker L, Boker JR, Hollingshead J, Hitchcock MA, Prislin MD, Hubbell FA. A pilot randomized, controlled trial of a longitudinal residents-as-teachers curriculum. *Acad Med*. 2003;78(7):722-9.

Morrison EH, Rucker L, Boker, JR, Gabbert, CC, et al. **The Effect of a 13-Hour Curriculum To Improve Residents' Teaching Skills: A Randomized Trial.** *Annals of Internal Medicine.* 2004;141(4): 257-264.

Morrison EH, Rucker L, Prislin MD, Castro CS. Lack of correlation of residents' academic performance and teaching skills. *Am J Med.* 2000 Aug 15;109(3):238-40.

Morrison EH, Shapiro JF, Harthill M. Resident doctors' understanding of their roles as clinical teachers.

*Med Educ*. 2005 Feb;39(2):137-44.

Pelletier M, Belliveau P. The Role of Surgery Residents in Educating Medical Students. *Acad Med*. May 1998;73(5):447.

**Post RE, Quattlebaum RG, Benich, JJIII. Residents-as-Teachers Curricula: A Critical Review. Acad Med. March 2009;84(3):374-380.**

**Richardson WS and Smith LG. Effective Work Rounds: The Three Function Approach. *APDIM Chief Resident’s Manual*. 1993: p. 51-55.**

Rider EA, Federman DD, Hafler JP. Residents as teachers--a faculty development approach to programme development. *Med Educ*. 2000 Nov;34(11):955-6.

Roop SA, Pangaro L. Effect of clinical teaching on student performance during a medicine clerkship. *Am J Med*. 2001 Feb 15;110(3):205-9.

Shapiro J, Friedman M, Lie D. The resident as teacher of medical humanities. *Med Educ*. 2002 Nov;36(11):1099-100.

Skeff KM, Berman J, Stratos G. A review of clinical teaching improvement methods and a theoretical framework for their evaluation. In: Edwards JC, Marier RL, eds. *Clinical Teaching for Medical Residents: Roles, Techniques, and Programs*. New York, NY: Springer; 1988:92-120.

Spickard A, Corbett EC, Schorling JB. Improving residents’ teaching skills and attitudes toward teaching. *J Gen Intern Med*. 1996;11:475-480.

Wamsley MA, Julian KA, Wipf JE. A literature review of "resident-as-teacher" curricula: do teaching courses make a difference*? J Gen Intern Med*. 2004 May;19(5 Pt 2):574-81.

White CB, Bassali RW, Heery LB. Teaching Residents to Teach: An Instructional Program for Training Pediatric Residents to Precept Third-Year Medical Students in the Ambulatory Clinic. *Arch Pediatr Adolesc Med*. 1997;151:730-735.

White S. Examining What Residents Look for in Their Role Models. *Acad Med.* 1996;71(3):290-292.

Wilkerson L, Lesky L, Medio F. The Resident as Teacher During Work Rounds. *J Med Ed*. 1986;61:823-829.

Williams BC, Pillsbury MS, Stern DT, Grum CM. Comparison of resident and medical student evaluation of faculty teaching. *Eval health Prof.*  2001;24:53-60.

Wipf JE, Orlander JD, Anderson JJ. The effect of a teaching skills course on interns’ and students’ evaluations of their resident-teachers. *Acad Med*. 1999;74(8):938-42.

Wipf JE, Pinsky LE, Burke W. Turning Interns into Senior Residents: Preparing Residents for Their Teaching and Leadership Roles. *Acad Med*. July 1995;70(7):591-596.

Yedidia, MJ, Schwartz MD, Hirschkorn C, Lipkin M. Learners as Teachers: The Conflicting Roles of Medical Residents. *J Gen Intern Med*. 1995;10:615-623.

Teaching and Learning in Medicine

Aagaard E, Teherani A, Irby D. Effectiveness of the one-minute preceptor model for diagnosing the patient and the learner: proof of concept. *Acad med* 2004;79:42-9.

Bowen JL. Educational strategies to promote clinical diagnostic reasoning. NEJM. 2006;355(21):2217-2225.

[Brar MK, Laube DW, Bett GC.](http://www.ncbi.nlm.nih.gov/pubmed/17980197?ordinalpos=159&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum) Effect of quantitative feedback on student performance on the National Board Medical Examination in an obstetrics and gynecology clerkship. Am J Obstet Gynecol. 2007 Nov;197(5):530

Eckstrom E, Homer L, Bowen J. Measuring outcomes of a one-minute preceptor faculty development workshop. *J Gen Intern Med* 2006;21:410-4.

**Ende J. Feedback in clinical medical education. *JAMA*. 1983;250:777-81.**

Ferenchick G, Simpson D, Blackman J, DaRosa DA, Dunnington GL. Strategies for efficient and effective teaching in the ambulatory care setting. *Acad Med*. 1997;72:277-280.

Furney SL, Orsini AN, Orsetti KE, Stern DT, Gruppen LD, Irby DM. Teaching the one-minute preceptor. A randomized controlled trial. *J Gen Intern Med*. 2001 Sep;16(9):620-4.

**Gall MD. The Use of Questions in Teaching. *Review of Educational Research*. 1970;40(5):707-721.**

[Grantcharov TP, Reznick RK.](http://www.ncbi.nlm.nih.gov/pubmed/18483056?ordinalpos=22&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum) Teaching procedural skills. BMJ. 2008 May 17;336(7653):1129-31

Hafferty FW. Beyond Curriculum Reform: Confronting Medicine’s Hidden Curriculum. *Acad Med*. 1998;73:403-407

Hewson M, Little M. Giving feedback in medical education: verification of recommended techniques. *J Gen Intern Med* 1998;13:111-6.

Hewson MG, Copeland HL, Fishleder AJ. What’s the use of faculty development? Program evaluation using retrospective self-assessments and independent performance ratings. *Teaching and Learning in Medicine*. 2001;13(3):153-160.

Hewson MG, Copeland HL. Outcomes assessment of a faculty development program in medicine and pediatrics. *Acad Med*. 1999;74(10):S68-71.

Hutchinson L. Evaluating and researching the effectiveness of educational interventions. *BMJ*. 1999;318:1257-1269.

Irby D. How attending physicians make instructional decisions when conducting teaching rounds. *Acad Med* 1992;67:630-8.

Irby DM. What clinical teachers in medicine need to know. *Acad Med*. 1994;69(5):333-342.

Irby, DM. Teaching and Learning in Ambulatory Care Settings: A Thematic Review of the Literature. *Acad Med*. 1995;70(10):898-931.

Irby DM. What Clinical Teachers in Medicine Need to Know. *Acad Med*. 1994;69(5):333-342.

Irby DM. Three Exemplary Models of Case-Based Teaching. *Acad Med*. 1994;69(12):947-953.

[Irby DM, Wilkerson L.](http://www.ncbi.nlm.nih.gov/pubmed/18276715?ordinalpos=100&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum) Teaching when time is limited. *BMJ*. 2008 Feb 16;336(7640):384-7

Kaufman DM. ABC of learning and teaching in medicine: Applying educational theory in practice. *BMJ*. 2003;326:213-216.

Kroenke K, Attending rounds. *J Gen Int Med*. 1992;7:68-75.

Kuo A, Irby D, Loeser H. Does direct observation improve medical students’ clerkship experiences? *Med Educ* 2005;39:518.

LaCombe MA. On Bedside Teaching. *Ann Intern Med*. 1997;126:217-220.

Lehmann LS, Brancati FL, Chen M-C, Roter D, Dobs AS. The effect of bedside case presentations on patients' perceptions of their medical care. *N Engl J Med* 1997;336:1150-5

Litzelman DK, Stratos GA, Marriott DJ, Skeff KM. Factorial validation of a widely disseminated educational framework for evaluating clinical teachers. *Acad Med*. 1998;73(6):688-95.

Lowman J. *Mastering the Techniques of Teaching*. Jossey-Bass Publishers. 1984.

Mager, R. F. *Preparing instructional objectives: A critical tool in the development of effective instruction (3rd Ed)*. Atlanta, GA: CEP Press.

**Mann KV. Motivation in Medical Education: How Theory Can Inform Our Practice. *Acad Med*. 1999;74:237-239.**

Marriott DJ, Litzelman DK. Students’ global assessments of clinical teachers: a reliable and valid measure of teaching effectiveness. *Acad Med*. 1998;73(suppl):S72-S74.

Merriam SB, Caffarella RS. *Learning in Adulthood : A Comprehensive Guide, 2nd Ed.* Jossey-Bass Publishers, 1999.

**Neher JO, Gordon CC, Meyer B, Stevens N. A Five-Step "Microskills" Model of Clinical Teaching. *Journal of the American Board of Family Practice.* 1992;5(4):419-424.**

[Notzer N, Abramovitz R.](http://www.ncbi.nlm.nih.gov/pubmed/18309569?ordinalpos=90&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum) Can brief workshops improve clinical instruction? *Med Educ*. 2008 Feb;42(2):152-6.

# Orlich DC, Kauchak DP, Harder RJ, Pendergrass RA, Callahan RC, Keogh AJ, Gibson H. *Teaching Strategies: A Guide to Better Instruction.* D.C. Heath and Company. 1990

Perera J., et al. Formative feedback to students: the mismatch between faculty perceptions and student expectations. *Med Teach*. 2008;30(4):395-9

Regehr G, Norman GR. Issues in Cognitive Psychology: Implications for Professional Education. *Academic Medicine*. 1996;71(9):988-1001.

[Rubak S, Mortensen L, Ringsted C, Malling B.](http://www.ncbi.nlm.nih.gov/pubmed/18507769?ordinalpos=12&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum) A controlled study of the short- and long-term effects of a Train the Trainers course. *Med Educ*. 2008 May 22.

Salerno S, O’Malley P, Pangaro L, Wheeler G, Moores L, Jackson J. Faculty development seminars based on the one minute preceptor improve feedback in the ambulatory setting. *J Gen Intern Med* 2002;17:779-87.

Schmidt H, Norman G, Boshuizen H. A cognitive perspective on medical expertise: theory and implications. *Acad Med* 1990;65:611-21.

Skeff, K. M. Enhancing teaching effectiveness and vitality in the ambulatory setting.  *JGIM*. 1988;3:S26-S33.

Skeff KM, Stratos GA, Berman J, Bergen MR. Improving clinical teaching. Evaluation of a national dissemination program. *Arch Intern Med*. 1992;152(6):1156-61.

Stern DT, Williams BC, Gill A, Gruppen LD, Woolliscroft JO, Grum CM. Is there a relationship between attending physicians' and residents' teaching skills and students' examination scores? *Acad Med*. 2000 Nov;75(11):1144-6.

[Teunissen PW, Dornan T.](http://www.ncbi.nlm.nih.gov/pubmed/18356236?ordinalpos=73&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum) Lifelong learning at work. BMJ. 2008 Mar 22;336(7645):667-9.

Van de Ridder JM, Stokking KM, McGaghie WC, ten Cate OT. What is feedback in clinical education? *Med Educ*. 2008 Feb;42(2):189-97.

[Vorvick LJ, Avnon T, Emmett RS, Robins L.](http://www.ncbi.nlm.nih.gov/pubmed/18412920?ordinalpos=44&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum) Improving teaching by teaching feedback. *Med Educ.* 2008 May;42(5):540-1.

Whitman N, Schwenk TL. *The Physician as Teacher*. Salt Lake City: Whitman Associates; 1997. p.275.

Wilkerson L, Irby DM. Strategies for Improving Teaching Practices: A Comprehensive Approach to Faculty Development. *Acad Med*. 1998;73(4): 387-396.

Wilkes M, Bligh J. Evaluating educational interventions. *BMJ*. 1999;318:1269-1272.

Williams BC, Litzelman DK, Babbott SF, Lubitz RM, Hofer TP. Validation of a global measure of faculty's clinical teaching performance. *Acad Med*. 2002;77(2):177-80.

Wolpaw TM, Wolpaw DR, Papp KK. SNAPPS: a learner-centered model for outpatient education. *Acad Med* 2003;78:893-8.

**Useful Web Resources/Links**

ACGME Outcome Project [www.acgme.org/Outcome/](http://www.acgme.org/Outcome/)

Resident as Teacher website: Many useful resources and links [www.residentteachers.com](http://www.residentteachers.com)

Harvard Macy Program for Physician Educators: <http://www.harvardmacy.org/default.asp>

Stanford Faculty Development Center Website <http://sfdc.stanford.edu/>

Association of American Medical Colleges Website: Group on Educational Affairs Residents’ Teaching Skills Special Interest Group <http://www.aamc.org/about/gea/sigs/test/resnew.htm>

Springer Series on Medical Education can be purchased at [www.springerpub.com](http://www.springerpub.com)

The Association for Surgical Education Clearinghouse. Good source for surgical education materials including resident as teacher. <http://www.surgicaleducation.com/educlear/>