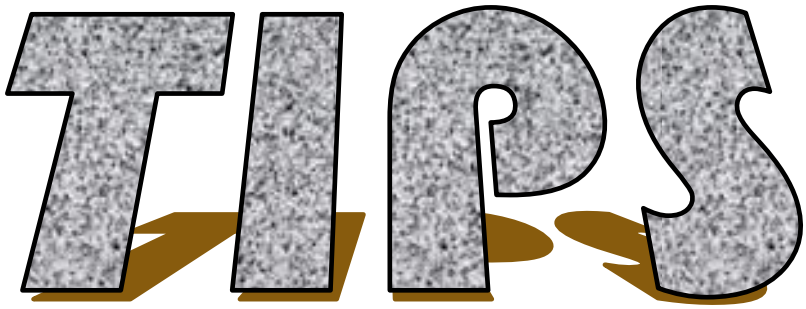

For Faculty

Teaching Improvement Project Systems
Facilitators: Ms. Deirdre Bonnycastle
Dr. Marcel D'Eon
Dr. Kalyani Premkumar
Mr. Sean Polreis

Educational Support and Development
Room B103 Health Sciences Building
107 Wiggins Road
Saskatoon, SK S7N 5E5

Phone:(306)966-6151
Fax:(306)966-7920

Contact Information

Educational Support and Development

Dr. Marcel Deon Rm. 2686 RUH email: marcel.deon@usask.ca

Dr. K. Premkumar Rm. 2684 RUH email: kalyani.premkumar@usask.ca

Ms. D. Bonnycastle Rm. 2689 RUH email: d.bonnycastle@usask.ca

Mr. S. Polreis Rm. 2699 RUH email: smp138@usask.ca

TIPS Videos http://www.medicine.usask.ca/tips/presentation_skills.php

Medical Education Wiki http://medicaleducation.wetpaint.com/

ES&D website http://www.medicine.usask.ca/education/support

MEDICAL EDUCATION BLOG

Your source for up to date information on teaching, technology and medical educational resources.

http://blogs.usask.ca.medical_education/

Preparation

Attire is business casual and the ambiance is relaxed.

Pre-Reading Day 1 Everyone

Read pages 7-35 and complete assignments
Watch the videos at
http://www.medicine.usask.ca/tips/Present.php

Pre-Reading Day 2 Classroom Teaching

Read pages 47-58 and complete other assignments as instructed
Prepare a brief presentation on an Active Learning technique found at **http://medicaleducation.wetpaint.com/,** *click on the* ***active*** *link.*

Pre-Reading Day 2 Clinical Teaching

Read pages 65-75 and complete assignments
Prepare a brief presentation on the teaching technique assigned

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Overview and Objectives of TIPS

The purpose of the TIPS course is to enhance your expertise as an instructor through sessions in which you will analyze, practice, and evaluate selected instructional techniques.

TIPS stands for **T**eaching **I**mprovement **P**roject **S**ystems and was originally developed and produced by the University of Kentucky Center for Learning Resources, College of Allied Health Professions, with a grant from the W.K. Kellogg Foundation. TIPS was designed to help health care professionals become better teachers. It was introduced to Canada through the University of British Columbia, Faculty of Medicine, and in 1993 made its way to the University of Saskatchewan. The second day of the manual was extensively revised with the assistance of the University of Saskatchewan, Department of Family Medicine.

The four key roles of medical teachers are:

1. intentional role model
2. clinical supervisor
3. teacher
4. medical expert

This manual will focus on aspects of the third role. We anticipate that by the end of the TIPS course, **you will be able to meet the following objectives**:

- write standardized instructional objectives
- plan an instructional session with an appropriate Set, Body, and Closure
- deliver a planned instructional session
- use audiovisual aids effectively
- critique instructional sessions
- give effective feedback
- apply TIPS techniques to different types of instructional sessions
- choose to continue to strengthen your teaching skills and
- become an advocate for better teaching and learning at the College of Medicine.

What is a Microteaching Session?

A microteaching session, as the name suggests, is a mini instructional session lasting for ***7 minutes or less.*** Each participant will present **TWO** microteaching sessions, one on each day of the workshop. These sessions will be used to analyze, practice and evaluate certain instructional techniques. They are not meant to actually teach subject X, a mistake some people make when planning their session. **Your microteaching should focus on demonstrating your mastery of the TIPS instructional process.**

In considering a topic, you need to think of some material, which can be learned in 7 minutes. Pick a small part of a larger presentation rather than compressing 50 minutes worth of information into 7! In either case, *we suggest that you choose a topic which is simple, straightforward, and with which you feel very comfortable*. Some participants choose a different topic on the second day; some choose to repeat the session from the first day. Either approach is acceptable; both can help you become a better teacher.

Note one of your presentations must be in PowerPoint, because we have been asked by your department heads to assist you in your use of this tool. A PowerPoint Guide is available at http://medicaleducation.wetpaint.com/page/Videoconferencing+as+a+Teaching+Tool.

You should bring instruments, charts, equipment, etc. that you will need to add realism to your lesson. We have a computer and flip chart available. If your teaching method is small group discussion or one-on-one tutoring of graduate students or bedside teaching, you may want to do the same in your microteaching session; the microteach is an opportunity to practice the kind of teaching that you normally do or anticipate doing.

You will present your first teaching episode during the afternoon of Day One to fellow participants in your small group (who will *roleplay* learners of any kind and at whatever level you wish). These presentations are recorded for your own personal viewing later. Following your microteaching session, the members of your group and the TIPS facilitator will provide you with *a gentle critique* pointing out strengths and making suggestions for improvement. You will then be emailed a copy of your video for viewing and reflection as part of your preparation for Day 2. We recommend that you *view the microteach examples* provided on **http://www.medicine.usask.ca/tips/Present.php** to help give you a better idea of what microteaching looks like and what will be expected of you.

At the workshop, we will answer any questions that you may have and we will show you other examples of microteaching sessions. As well, during the day, you will be given opportunities to plan and prepare your sessions. However, *you must come with at least an idea for a topic and some props, if needed.*

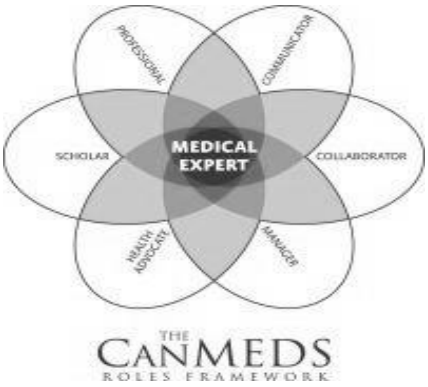
A miniskirt presentation is long enough to cover the content and short enough to keep the audience interested

Why Should Physicians Teach?

Altruistic

Medicine has a long tradition of precepting

- senior physicians mentor younger physicians into the profession
- docere the Latin origin of doctor means teacher
- Hippocratic oath
- improves patient safety
- perpetuate knowledge and skills
- CanMeds scholar/communicator role
- expectation for teaching patients
- practice of medicine is more than personal knowledge



Practical

Improves the health team relationship
Provides variety in work day
Prepares for academic faculty positions
Provides practice for teaching patients

Cognitive Benefits

Physicians become more knowledgeable
Physicians improve their research, organizational skills
Physician's communication skills improves

Metacognitive Benefits (Reflecting on thinking)

Physicians examine their thinking about communication and teaching
Physician s analyze the thinking process of others in order to teach and provide feedback
Practice being reflective physicians

Key Principles of Learning

Focused questions for guided reading:
- Describe the nature of intelligence presented here.
- Describe four proven approaches to learning and explain why they are effective.

Intelligence: This is more like knowing a lot about something than having superior innate and inherited neural capacity. Whether in the area of music, chess, mathematics, languages, or interpersonal relations, *expertise is based on huge numbers of hours of practice and readily accessible information about the subject*. Intelligence is, to misquote Edison, 10% inspiration and 90% perspiration.

Being able to solve a problem, even in medicine, is based more on knowing a lot about the context and having well-organized background knowledge for that specific situation than possessing generic problem-solving ability or skill.

Learning: Learners often confuse *familiarity* with learning. They believe that if they can *recognize* something they know it! That is why students continue to read, re-read, and attend lectures: they derive some *comfort* in being able to recognize terms and words in *familiar* contexts. They become lulled into thinking that they are prepared and come out of exams wondering why they did not do well. Reading/listening does not help people to ***recall*** the information or ***use*** it in a useful context.

Learning in Medicine[1]
Learning is viewed here as developing a way of thinking and acting that that is characteristic of an expert community. Such a way of thinking consists of two important elements:

1. *the knowledge that represents phenomena in the subject domain* (evidence based medicine)

2. *the thinking activities that construe, modify and use this knowledge to interpret situations in that domain and to act in them.* (diagnostic reasoning and management)

Effective Learning: Effective learning is the process of embedding knowledge, skills, and attitudes in memory; it is ***a relatively durable change in the memory of an individual***. No one learns anything that is not in some way connected to what she already knows. This means that we are always building on something that is already there. Use of this existing knowledge structure is a key to teaching.

Active learning[2] is more effective than listening to lectures. New knowledge does not become useful until the brain or body is engaged and, when practiced in relevant contexts, leads to understanding. Understanding is simply the word we use to describe what we observe when people possess a well-organized and interconnected network of concepts and ideas. Active learning allows learners to integrate the new with knowledge that already exists.

Practice: Practice in contexts is the most effective strategy. Practice (or reinforcement) involves solving realistic problems and exercises, working on cases, or explaining concepts and principles to others. This is the fallacy behind *see one, do one, teach one*. One is never enough practice.

Mastery and over-learning: Mastery training is also very effective. Mastery means attaining a high level of proficiency in core concepts. Mastery helps establish a solid base of prior learning on which to build more. One cannot build onto what is a weak and shaky foundation either in construction or in teaching!
Just because students remember the material on Monday, does not mean they will still know it on Friday or a week or year later. Strengthen the learning by asking students to use it again and over time. Students forget, so they need to *over-learn* the material to try to prevent memory decay. Students need to learn to a level of *mastery* to allow their brains to concentrate on other learning. This means concentrating on a few key points and learning them well before moving on. *Automaticity* and mastery learning are key goals in our learning. If students do not have the background knowledge, they will have trouble learning more in that area. That is why students who enter medicine without a science degree have more trouble passing the science courses in first year. It is not that they are less intelligent; they just don't possess the same level of background knowledge as those who took many courses in the basic medical sciences before entering medicine.

A medical student using a student response system (clicker) in a large class

An example of *Write, Pair, Share,* an active learning technique for large classroom

Cooperative learning[3]: Cooperative small group learning is also very effective in that it can be organized to include practice and mastery learning along with the motivation that group support helps to create.

Reading assignments: The best way to read is with some *direction*. Give a *purpose*, a specific question to answer, to focus the reading and it will be more productive on many fronts. Don't ask students to just read up on a topic. The intellectual engagement is greater and the retention of information will be better and longer if there are focused questions. But it may take a lot longer!

To watch a video about student centered teaching, watch
http://video.google.com/videoplay?docid=-5629273206953884671

A group of medical students organizing hormones into classification systems

Medical students playing Jeopardy in an anatomy class

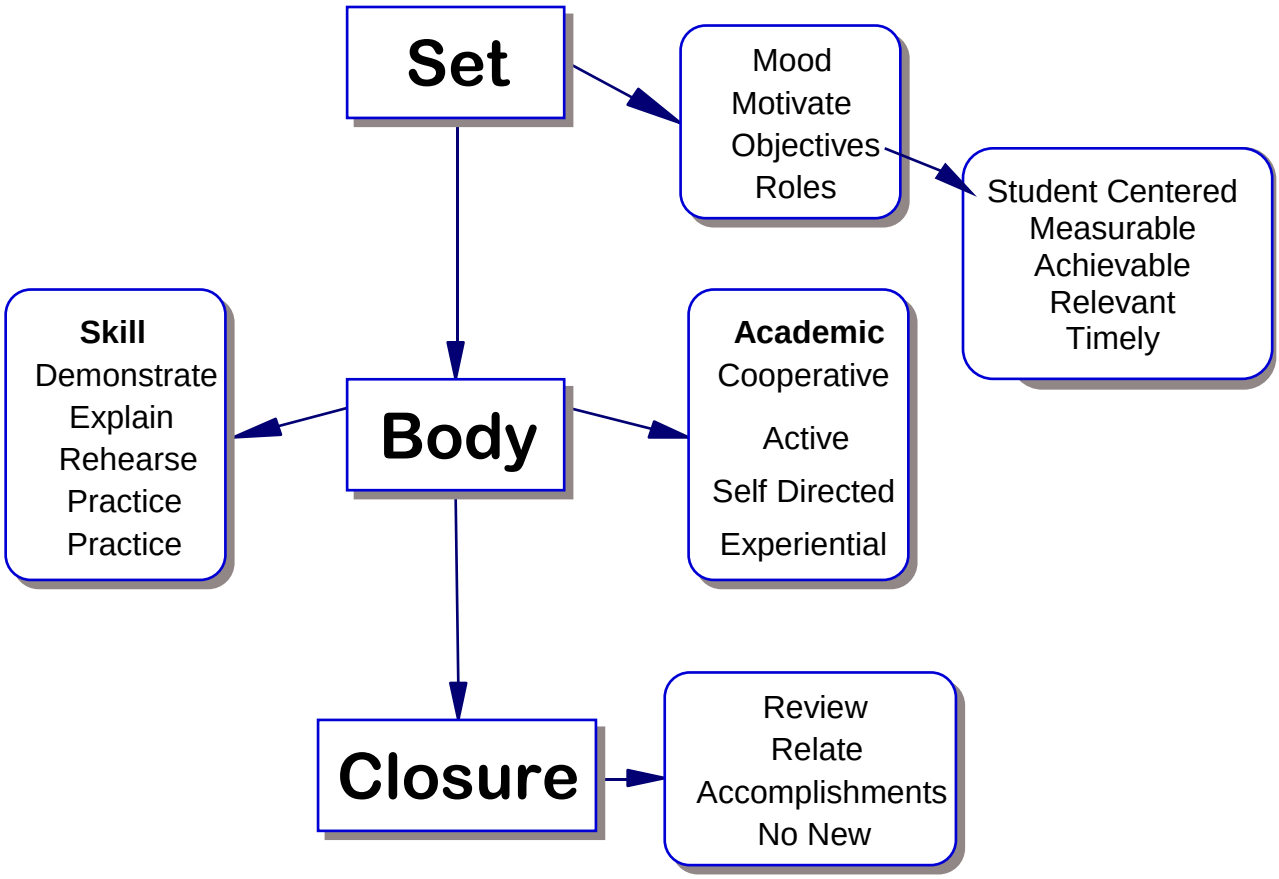
In my past year and in reviews of many reforms and innovations, I see one major theme that results in better medical education. Anyone that invests more time in a focus on the medical student where they are in learning and helping them to remove their own barriers and the barriers that we introduce in our medical education does a better job. Those bold enough to attempt problem based, case based, scheme based, community based, are invested in the students and their learning and not surprisingly they respond.

-Dr. Robert Bowman

[1] Billet, 1996 Situated learning: bridging sociocultural and cognitive theorizing *Learning and Instruction, 6*
[2] Any activity that substantially involves students with the course content through talking and listening, writing, reading and reflecting, and demonstrating counts as active learning
[3] The instructional use of small groups, so that students work together to maximize their own and each other's learning.

Practice Organizing an Instructional Session

The TIPS program uses a specific planning model that organizes classroom instructional sessions around the following:



It is very important that you read the following material and do the assignments at the end of each section. You will need this information before you can complete the exercises you will be doing in the workshop.

Writing Instructional Objectives

A learning objective is a description of the behaviour expected of a learner after instruction.

Objectives need to:

- be communicated to the learners to guide their study
- outline what the student will do in your session to achieve the overall competency the student will be expected to demonstrate at the end of the course
- be used by faculty to guide:
    - course development
    - creation of teaching materials
    - plans for assessment of students.

Communicating objectives to learners, forms part of the instructional set. Learning objectives need to represent real and important goals.

> "Memorizing elements, principles or rules is just one step on the way to a real goal of being able to interpret or predict or act more effectively in the world we inhabit. Trivial learning objectives will not motivate anyone …
> and they are more likely to encourage surface learning than real understanding.… Learning objectives for any unit of study need to be few enough and significant enough for teachers and students to keep them in mind. Only in this way can they guide planning and preparation for learning and teaching. And only if we can limit our learning objectives will there be time in the curriculum for students to undertake the kinds of exploratory and expressive activities which deepen understanding and creativity." (Toohey, 1999,)

The Importance of the Verb

The verb you chose for the objective tells you what type of learning activity to use. Assessment is much easier to plan because the verb tells you how students should be evaluated. This will be illustrated in more depth on page 27. Double verbs are frowned on and you should try and use the higher level verb.

Answering the following questions will help you to write objectives:

- What do I expect the student ***to be able to do*** as a result of my instruction?
- How will the student ***demonstrate*** that he/she has learned?

Comparison of ambiguous words that should *not* be used to write objectives and action words:

Action Words (USE)	**Ambiguous Words (DO NOT USE)**
solve	know
apply	determine
adjust	become familiar with
assemble	appreciate (the value of)
choose (or select)	grasp (the significance of)
identify (the ones which ____)	understand (or 'really understand')
discriminate (or distinguish between)	
list (the properties of ____), describe, explain	

Examples of medical objectives: (Notice the highlighted verb that states what the student will be able to do)

1. From memory, the student will be able to **describe** the mechanisms of action, the pharmacological effects, the therapeutic actions, and the adverse effects of lithium.
2. Provided with the necessary equipment, the student will be able to **intubate** a patient with minimum discomfort to the patient.

Examples of poorly written objectives:

1. Students will be able to **understand** the theory of evolution. (What do the students need to understand? Why would medical students need to know this?)
2. The student will be able to **discuss** major depressive disorder and bipolar disorder. (What aspects of the disorders do they need to discuss: symptoms, diagnosis, treatment, effect on family members? This verb may be used if students will actually hold a verbal or online discussion about X.)
3. The student **will know** what to do for the woman in labour. (What exactly do the students need to know: delivery procedures, identification of labour complications, or administration of anesthetic?)
4. The student will **list** and **identify** the determinants of health. (Which is the most important task? If it's *identifying*, then listing would be an activity used to learn this task and not be an objective.)

A glossary of verbs has been included at the end of this section to assist you in selecting action words.

Some General Considerations for Objectives: SMART

They must be **S**TUDENT-CENTERED. The objectives must express what the student will be **able to do** once the instruction is concluded (*Students will be able to identify symptoms of endocarditis.*), not what the instructor will do or hopes to do (*I will talk about endocarditis.*), and not what the student will do to learn the material (*Students will complete a case report on endocarditis.*)

Objectives need to be plainly **M**EASURABLE in some written, oral, OSCE, or direct format. If they are not measurable, there will usually be widespread disagreement about whether the student has achieved the objective. That is why you **never** use the verb *understand or know*, they can never be directly measured because they can't be observed. They are thinking processes, not actions and can only be judged based on assumptions about what is going on in the student's head.

The learning expected of the student must also be **A**CHIEVABLE under the constraints of time and place. There are few things more frustrating and demotivating than an objective that student cannot possibly meet.

The objectives need also be **R**ELEVANT; they must pertain to the course and the overall goals of the students and the program.

The objectives need to be **T**IMELY; in other words they need to fit with the flow of content for that semester. Prerequisites should have been taught recently and classes attended later need to reinforce the material

---

*Principles of Instructional Design. 4th ed. R. Gagne, L. Briggs, W. Wager. (1992). Harcourt Brace Jovanovich, Fort Worth, TX. Learning System Design: An Approach to the Improvement of Instruction. R. Davis, L. Alexander & S. Yelon. (1974). McGraw-Hill, NY.

A GLOSSARY OF VERBS

Here is a list of verbs and their meanings to help you choose the right verb for writing objectives. Keep this for future reference.

Account	Account for: state reasons for, report on. Give an account of: narrate a series of events or transactions
Analyze	Identify components and the relationship between them; draw ou and relate implications; breaking down into component parts
Apply	Use, utilize, employ in a particular situation
Assess	Make a judgment of value, quality, outcomes, results or size
Calculate	Ascertain/determine from given facts, figures or information
Categorize	To place in classes or divisions
Clarify	Make clear or plain
Classify	Arrange or include in classes/categories
Communicate	To make known
Compare	Show how things are similar or different
Conduct	To guide or lead
Construct	Make; build; put together items or arguments
Contrast	Show how things are different or opposite
Critically (analysis/ evaluate)	Add a degree or level of accuracy depth, knowledge and understanding, logic, questioning, reflection and quality to (analyze/evaluation)
Deduce	Draw conclusions
Define	State meaning and identify essential qualities
Demonstrate	Show by example; display
Describe	Provide characteristics and features; to give an account of
Diagnose	To identify a disease by analysis and examination
Discuss	Identify issues and provide points for and/or against
Distinguish	Recognize or note/indicate as being distinct or different from; to note differences between
Elicit	To bring out (as in history and physical examination)
Evaluate	Make a judgment based on criteria; determine the value of
Examine	Inquire into

Explain	Relate cause and effect; make the relationships between things evident; provide why and/or how
Extract	Choose relevant and/or appropriate details
Extrapolate	Infer from what is known
Formulate	To express in an orderly and systematic way
Identify	Recognize and name
Interpret	Draw meaning from; to clarify the meaning of
Investigate	Plan, inquire into and draw conclusions about
Justify	Support an argument or conclusion
List	To itemize
Outline	Sketch in general terms; indicate the main features of; to give a general account or description
Perform	To begin and carry out
Predict	Suggest what may happen based on available information
Propose	Put forward (for example a point of view, idea, argument, suggestion) for consideration or action
Recall	Present remembered ideas, facts or experiences
Recommend	Provide reasons in favor
Recount	Retell a series of events
Select	To pick out as best or most suitable
State	To express
Summarize	Express, concisely, the relevant details
Synthesize	Putting together various elements to make a whole

Aligning Competencies and Objectives

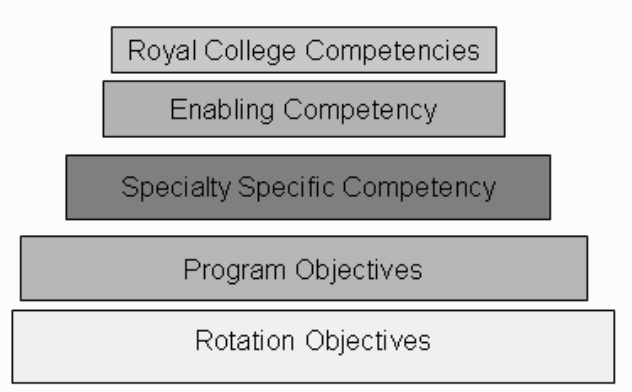
The objectives for a single teaching session are part of a more complex framework of medical competencies. You may really be interested in Y, but Y needs to fit into the larger framework of expectations that your students need to meet. Competencies are assessed at the end of training usually in national exams, while program objectives are assessed at the end of the year by the home university. Clinical teachers primarily participate in rotation assessments.

CANMEDS

The following diagram illustrates how the Royal College of Physicians and Surgeons have approached the framework for the CANMEDS roles. RCPS has determined the first two levels; individual colleges are expected to determine the specialty and program levels and individual physicians are responsible for their rotational objectives.

Family Medicine

What would be the similar process in Family Medicine?



Your Assignment
(Complete this before you come to TIPS on Day 1.)

Given the following situation, **write one instructional objective** using the guidelines and suggestions in this manual:

You are teaching a one-hour session on diagnosing diabetes mellitus to undergraduate students.

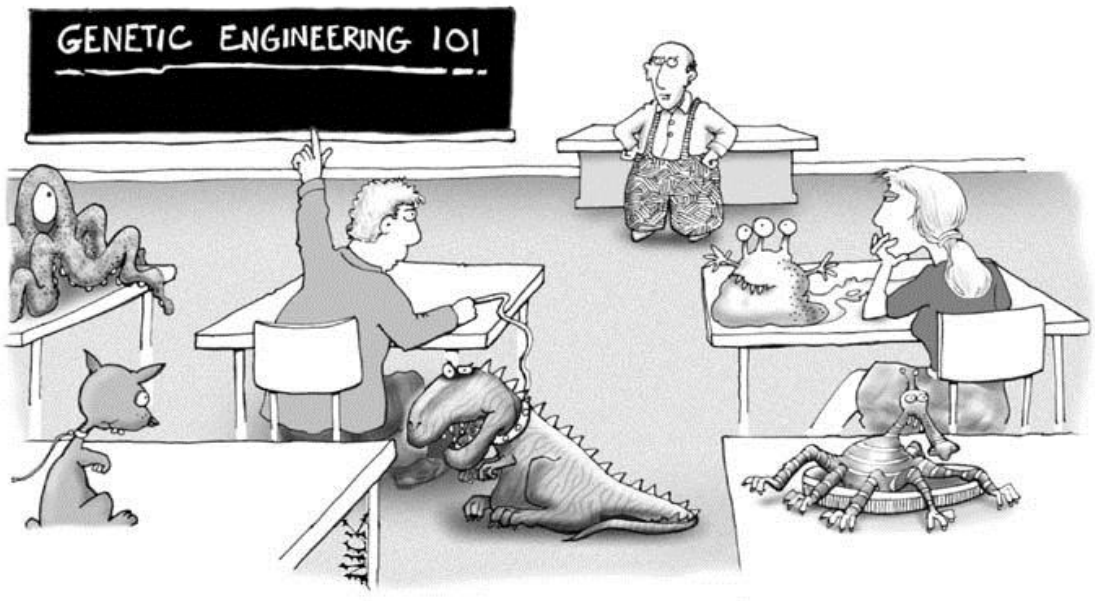
S

M

A

R

T



"Okay...is there anybody ELSE whose homework ate their dog?"

Used with permission of Nearing Zero,
a repository of science-based cartoons
http://www.nearingzero.net

Instructional Set

An instructional session can be divided into three distinct components:
1. Set
2. Body
3. Closure.

In this section, the elements of the Set will be presented. The purpose of the Set is to prepare the learners to learn. (Ready, SET, Go!) People come to an instructional session with many things on their minds, and a few of them may actually be thinking about what they will learn. In the Set, the teacher focuses the learners' attention, orients them to the objectives and prepares them to participate in instruction.

In the Set, the teacher establishes the **M**OOD. People generally learn best in a relaxed, comfortable, non-threatening situation that has high expectations and standards. Threatening students and yelling are counter-productive as would be a too friendly or easy approach.

The teacher **M**OTIVATES by including some unusual way to get the attention of students, displaying enthusiasm for the content, or arousing curiosity with a clinical problem. Letting the students know why they are learning something enhances motivation. Even if you think the utility is obvious, *ensure your learners understand the purpose and utility of the lesson.* Teachers could just tell students why they are learning something, but more effectively, teachers can involve students in an activity such as exploring a clinical scenario or meeting a patient that would help to demonstrate the usefulness of what they are about to learn.

Most importantly, in the Set, let the learners know what the **O**BJECTIVES for the session are. People learn best if they know what is expected of them. Either explain the objectives out loud in class, write them on flip chart paper, or include them in a handout, but always (except in rare instances), *always* let the learners know as specifically as you can, what they are supposed to get out of your session(s).

At the beginning of the session, it is important, particularly if you are going to be trying something a little new or different, to let the students know the **R**OLES that they will be taking. Is this to be a passive listening session, an opportunity to ask questions, a group problem-solving/tutorial type lesson, or what? In the Set, teachers let the students know what they are expected to do during the instructional session.

So, in the Set, the teacher creates the **M**ood, begins to **M**otivate the learners, gives the **O**bjectives, and prepares the learners for their **R**ole during the session. Some people may find ***MMOR,*** a useful mnemonic. We pronounce it like 'more' because the Set makes the students want 'more' of what you came to teach them! Including a well-developed Set will have a huge and immediate effect on the teaching and learning process.

Assignment 2

(Complete this before you come to TIPS on Day 1)

At TIPS, interacting in a small group with other participants, you will have an opportunity to confirm your thinking in both parts of this assignment. Please come prepared.

- **Directions:** Identify the well-developed SET and those that are poorly developed. Which elements of a SET were or were not present in each situation?

  Scenario: First year medical students in Professional skills: Communications

  a) "Good morning. I understand that you have been learning about effective communication with patients. Today I'm going to talk about three effective ways to communicate with an angry patient. Let's get started."

  b) "Good morning. I understand that you have been learning about effective communications with the patient by using more open-ended statements and less 'cross-examination' techniques. What would you do if you were confronted with an angry and distraught patient? This happens, not frequently, but from time to time. You'll need to be ready for this because your actions could save time in the long run and will make a huge difference in how well the patient responds to and complies with treatment. So, by the time you leave today I want you to be able to demonstrate three effective ways to communicate with an angry patient. First, we'll gather some background information from you, then, I'll supplement this with the best information I have, and finally, you'll get a chance to practice in small role-play groups. Any questions?"

  c) "I don't really think that this is a good way to teach this to you or that you really need it right now, but I guess I have to give it a go. What did you do in your last session?" (Students respond.) "Good. Sounds like someone is doing something right, for a change! Today we'll be exploring ways to calm the angry patient, so we can deal with the medical concerns."

Assignment 3

Given the following objective, outline an appropriate Set:

M
M
O The learner will be able to list 6 symptoms of diabetes mellitus.
R

Instructional Body

The Body of your instructional session is the core. This is where you present the material and allow students to practice to help them learn the material that they need to know.

The University of Saskatchewan, College of Medicine is making an informed educational decision to pursue the goal of creating an excellent Saskatchewan-style UGME **CASE** Curriculum focusing on the achievement of Competencies through **C**ooperative Learning, **A**ctive Learning, **S**elf-Directed Learning, and **E**xperiential Learning. In deciding against becoming a "full PBL" school we are not just being rugged prairie individualists nor are we simply balking at the costs involved. Despite a vast number of studies there appears to be no convincing evidence that PBL improves the knowledge base or clinical reasoning skills of students (Albanese, 2000; Colliver 2000).

To help our learners to transfer their knowledge, skills, and attitudes (become strong problem-solvers), we are committed to teaching knowledge, skills and attitudes in clinically relevant contexts, using integrative patient scenarios, or cases. As students learn and progress, the tasks they face will grow with them until the cases and practice exercises are real, authentic situations. This will allow our students to build on success, reinforce prior learning, and become prepared to transfer their learning to new and different situations. See http://medicaleducation.wetpaint.com/ for ideas about each of the components. This website is an important resource about teaching in medicine.

The CASE Curriculum is focused on **Competencies**
The overall goals of the U of S and MCC Objectives set the ultimate destination for our students. Each course and set of courses will define complementary competencies which students are expected to achieve upon completing each year that will lead directly and integrally to the Goals of the U of S and the MCC objectives. Similarly knowledge and skills at supporting levels must contribute to and be inextricably linked through the competencies to them. The concept of competency assumes both proficient and enduring performance of the behaviour requiring several opportunities for practice and identification of key core knowledge, skills, and attitudes.

The CASE Curriculum incorporates **Cooperative Learning** (CL)
We believe in best-practice CL which has five important and necessary features: positive interdependence, face-to-face promotive interaction, individual accountability, interpersonal and small group skills, and group processing (Johnson, Johnson, Smith, 1998; Nilson, 1998). Considering the large amount of research over a long period of time that has shown that CL is effective at facilitating learning to work in teams and for transfer, we are committed to incorporating CL environments into our curriculum, programs, and individual teaching sessions.

The CASE Curriculum uses **Active Learning** (AL)
Active Learning (AL) is an approach to teaching that incorporates one or more of the five elements of talking and listening, reading, writing, reflecting and creating into the engagement by learners in relevant and authentic tasks in a supportive environment. Compared to a traditional approach of passive information transmission, AL produces better learning, including concept formation; increased motivation; discovery of misconceptions; and the acquisition of knowledge, critical thinking, attitudes and values, and interpersonal skills. Case discussions are one example of active learning approaches. Therefore, the College of Medicine will incorporate into all course, programs, and individual teaching session opportunities for students to engage in AL. This does not mean that all teaching and learning will be given in small groups. AL can take place within the traditional large or a small group setting for short or long periods of time.

The CASE Curriculum incorporates opportunities for **Self-Directed Learning** (SDL)
SDL is a continuum ranging from near-complete teacher or institutional control of the learning tasks and environment to complete learner control. Opportunities for SDL are more limited while students attend professional schools "where the standards for knowledge and performance may be imposed by regulatory agencies or professional organization". Nevertheless, opportunities for meaningful SDL must be present to balance the tight delimitations of knowledge and skills in a competency based curriculum. As professionals, physicians are expected to be lifelong learners who know where to find and assess medical information. As residents, learners will be expected to use these skills daily when preceptors are too busy to provide information directly. Therefore, teaching in the College of Medicine will encourage and cultivate a genuine form of SDL in our learners.

The CASE Curriculum is based on **Experiential Learning** (EL)
Our curriculum will employ AL strategies and progress through increasingly complex learning tasks. Whereas CL provides a useful and tested pedagogical approach, EL is the process by which they will tackle these progressively more complex tasks, sometimes in groups. Beginning with a particular experience such as a patient encounter or paper case, students first plan a response to the situation and then carry out their plans. The cycle moves on to an observation or data collection stage and finally to reflection and the creation of general rules and principles. This simple cycle (plan, act, observe, reflect) is a process that will help students approach and learn from experiences they encounter. Therefore, the College of Medicine will encourage and build into its programs explicit emphasis on the experiential learning cycle. This is being accomplished to some degree now and will be expanded in the future.

References
Albanese M. Problem-based learning: why curricula are likely to show little effect on knowledge and clinical skills. Medical Education, 2000; 34;729-738.
Allen A. Self-directed learning in professional education: guided self-assessment as a tool to facilitate self-directed learning of medical students. In HB Long and Associates (eds.), Expanding Horizons in Self-Directed Learning. University of Oklahoma, 1997.
Candy, P.C. Self-Direction for Lifelong Learning: A comprehensive Guide to Theory and Practice (San Francisco, Jossey-Bass, 1991).
Colliver J. Effectiveness of problem-based learning curricula: research and theory. Academic Medicine, 2000, 75(3);259-266.

Examples of Teacher Activation of Learning

		Teaching Activity
Cognitive Presenting and clarifying the subject matter	**Relating/ structuring**	Asking for similarities and differences between theories Instructing to make an overview Creating graphic organizers
	Analyzing	Asking analytic questions Identifying problems
	Concretizing/ applying	Having students make connections with their own experiences Letting students solve a practical problem Roleplaying
	Memorizing/ rehearsing	Mnemonics, memory games, flash cards, clickers, review questions
	Processing critically	Having students present arguments that represent conflicting views Organizing a group discussion
	Selecting	Asking for main points and central concepts Student created graphic organizers
Affective Creating or promoting an effective learning climate	**Motivating/ expecting**	Giving students personal responsibility for their learning Providing objectives Giving tasks students can handle.
	Concentrating exerting effort	Using attention focusing techniques Change activity every 15 minutes Making students talk about the results of their thinking process in a group.
	Attributing/ judging oneself	Stimulating students to make attributions based on a realistic diagnosis, to estimate their competence and self-efficacy highly.
	Appraising	Emphasizing the importance of a task to realize personal goals. Providing constructive feedback
	Dealing with emotions	Having students experience success, praising them.
Regulative Regulating learning processes Metacognitive	**Orienting/ planning**	Activating students' prior knowledge. Giving students freedom of choice in subject matter, objectives and activities.
	Monitoring/ testing/ diagnosing	Making students monitor each other's process. Letting students invent test questions. Making them analyze the cause of problems.
	Adjusting	Encouraging students to search for solutions on their own with difficulties, having them tackle problems together.
	Evaluating/ reflecting	Letting students compose an exam and take one another's exam. Instructing to compare their own approach with that of others.

Based on J.D. Vermunt, N. Verloop
Congruence and friction between learning and teaching
Learning and Instruction 9 (1999) 257–280 267

Here are some elements that you will need to keep in mind when delivering your body.

Do it, do it, do it. Active learning is generally better than passive. Choose cases and examples that are stimulating and challenging. Engage students in solving a relevant problem.

Breathe. Teaching is not the same as saying out loud in class everything known to the human mind about a particular topic. Students cannot absorb information at such a rapid rate, so pause and allow time for thinking and reflection.

Start small and build big. Prior learning is one of the chief determinants of future learning. It is important, therefore, to find out what students already know and do not know and to build on that base. It is counterproductive to try to foist huge amounts of information on students if they do not have a solid foundation. Students should be given the time to master one idea or principle before going on to something new, so don't rush.

Variety is the spice of life. No one instructional method will work all the time for every student. Use a variety of approaches depending on the stage of the teaching and learning situation and the needs of the students. Remember that students progress from relative dependence to relative independence as they become more familiar with and confident about a particular learning task. Consider setting goals, using probing questions, setting up a semi-structured debate format in small groups, leading a discussion, solving a clinical case, lecturing, assigning reading material to be done in class or out, having students work together in class, or any of a number of other methods.

Toohey, Susan. (1999). Designing Courses for Higher Education. Buckigham, GB: The Society for Research into Higher Education and Open University Press.

Your Assignment

(Complete this before you come to TIPS on Day 1.)

Go to http://medicaleducation.wetpaint.com/ and pick one of the techniques listed under the ***Active Learning*** category. Use it to build the Body for a session on the objective listed below.

The learner will be able to list 6 symptoms of diabetes mellitus.

C

A

S

E

Instructional Closure

Closure is the part where you wrap up your instructional session. It should only take a few minutes, and it is never time wasted! During closure, you will reinforce what was taught, remind students of the topics importance, and keep them motivated. ***Always*** set aside time for closure, even if it is only a brief moment.

REVIEW/SUMMARIZE**.** This is a chance to make sure that the students have picked up the main points and understand how everything is connected. The teacher can provide the review, or you can ask students to recall the key points and construct a review themselves. PowerPoint games and clickers could be used to accomplish this as well. The review should help students leave your session with a grasp of the big picture, the elusive *Take-home Message*.

RELATE TO THE SET. This is an opportunity to reinforce the usefulness of what was learned and reinforce the objectives. It may not be readily apparent to the students how useful the information could be nor how much they have learned.

PROVIDE A SENSE OF **A**CCOMPLISHMENT. Learners can become motivated if they see that they have accomplished something worthwhile. They will persevere in the learning tasks if they see that they have made some progress. Point out where they were before your session, and what they have learned from you. Review the objectives from the Set so that students can see that they have learned something (as in 'Relate to Set' above). Congratulate them on their hard work!

NO NEW MATERIAL. Often teachers are so pressed to deliver a huge amount of content that they never seem to have enough time. Closure is often neglected and frequently abused. Put aside a few minutes to provide an appropriate Closure, and do not fill the time with new material you didn't have time for in the body of your session. One more pointer: don't end with the interrogative statement, "Are there any questions?" To students this means, "Class is over, gather your books, and get out of here." Students who actually respond to your request may suffer from negative peer pressure. This question should have been built into the body of your presentation and not left until the 3 minutes before class ends.

To help you remember the elements of "Closure" we have devised a mnemonic taken from the words Review, Relate, Accomplishment, and No New: **RRANN** (past tense - closure comes at the end!).

Gagne, R., Briggs, L., and Wager, W. (1992). Principles of Instructional Design. Fort Worth, TX: Harcourt Brace Jovanovich. Mackway-Jones, K. & Walker, M. (Eds.). The Pocket Guide to Teaching for Medical Instructors. London: BMJ Books.

Your Assignment!

(Complete this before you come to TIPS on Day 1.)

Given the following instructional objective, what could you do to provide students with a suitable closure:

The learner will be able to list 6 symptoms of diabetes mellitus.

R

R

A

N

Make sure you have watched the example online and answered the questions about the video at
http://www.medicine.usask.ca/tips/Present.php
.

If you want more information about Set, Body and Closure, see
http://www.medicine.usask.ca/tips/presentation_skills.php

If you want more information about actively involving students in learning, see
http://medicaleducation.wetpaint.com/page/CASE+Curriculum+Model

The Final Check

Linking Objective, Learning Activity and Assessment

Classification	Instructional Objectives The student will be able to:	Learning Activities/ Teachi Method	Assessment Methods
Remembering Recalling specific information	Recognise List Describe Identify Retrieve Name Locate/Find	Graphic Organizers Mnemonics Crosswords Puzzles Jeopardy or other games Note Taking Drill and Practice Flash Cards	Simple Multiple Choi (MCQ) True/False Fill in the blank Label Diagram
Explaining Explaining ideas or concepts	Interpret Summarise Infer Paraphrase Classify Explain Attribute	Concept mapping Short Case Cooperative Task Write, Pair, Share Role Play Matching Games	Short Case Short Answer Blog/Journal Graphing Matching Short Presentation Poster Session
Applying Using information in another familiar situation	Implement Carry out Use Execute Operate Take	Simulation Lab Discuss Rounds Cases Standardized Patients Virtual Patients Chart Review 5 Step Procedure Teaching Field Trips	Demonstration Case Study SOAP 360 Assessment Patient/family Assessment OSCE MCQ with vignettes
Analyzing Breaking informatio into parts to explore understandings and relationships	Analyse Compare Contrast Organize Deconstruct Outline Structure Integrate	Collaborative Tasks PBL Spreadsheets Research Project Project 5 Minute Preceptor Writing a Wiki Reflection Problem Solving Open Ended Questions Complex Case Study Concept mapping	Survey Report Paper Project Report Group Presentation Grand Rounds Create a Mind Map Reflective Writing Problem Identificatio Complex Case Study Extended Matching MCQ

Evaluating Judging the value o ideas, materials and methods by developing and applying standards and criteria	Check Hypothesise Critique Judge Test Detect Experiment Monitor Value	PBL Complex Case Study Research Project Discussion Critical Thinking Exercises Critiquing Exercises Feedback Error Identification Reflection	Peer Review Create Rubrics Comparison Report Criteria Selection Tasks Error Identification Project Report Rubric
Creating Putting together ide or elements to develop an original idea or engage in creative thinking	Design Construct Plan Produce Invent Devise Make Build	Produce a Video, Art, Animation, Photograph, Roleplay Concert, Game, Practice Guidelines Build a Model, Simulation Publish a Blog, Journal Article, Poster Session	Final Product Rubric Peer Review Expert Review Creativity Rubric

-Based on the work of Andrew Church http://www.bloglines.com/blog/andrewch?id=4

"But I want them to be able to explain this theory on the exam."

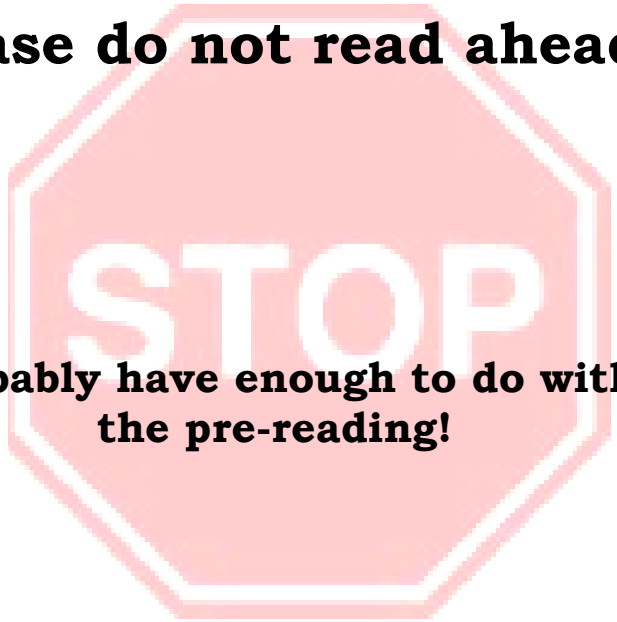
This statement was made by a TIPS participant who chose the verb *List* for her objective.

A mismatch between the objective and the assessment is not an uncommon occurrence. If this happens to you, use the verb that you want to assess people with and rewrite your objective.

Use the space below for notes or questions.

The next section begins Day 1 of the TIPS course.

Please do not read ahead!



You probably have enough to do with just the pre-reading!

Use this space for notes!

Welcome

to TIPS

DAY ONE

Overview of Teaching and Learning

The Central Purpose of Teaching:

a) aiding the process of learning
b) getting the student from one state of mind to another
c) facilitating learning
d) helping someone(s) to make a permanent change in their thinking/behaviour

What the Central Purpose is NOT:

a) providing facts and information
b) telling students what to do
c) giving handouts and notes

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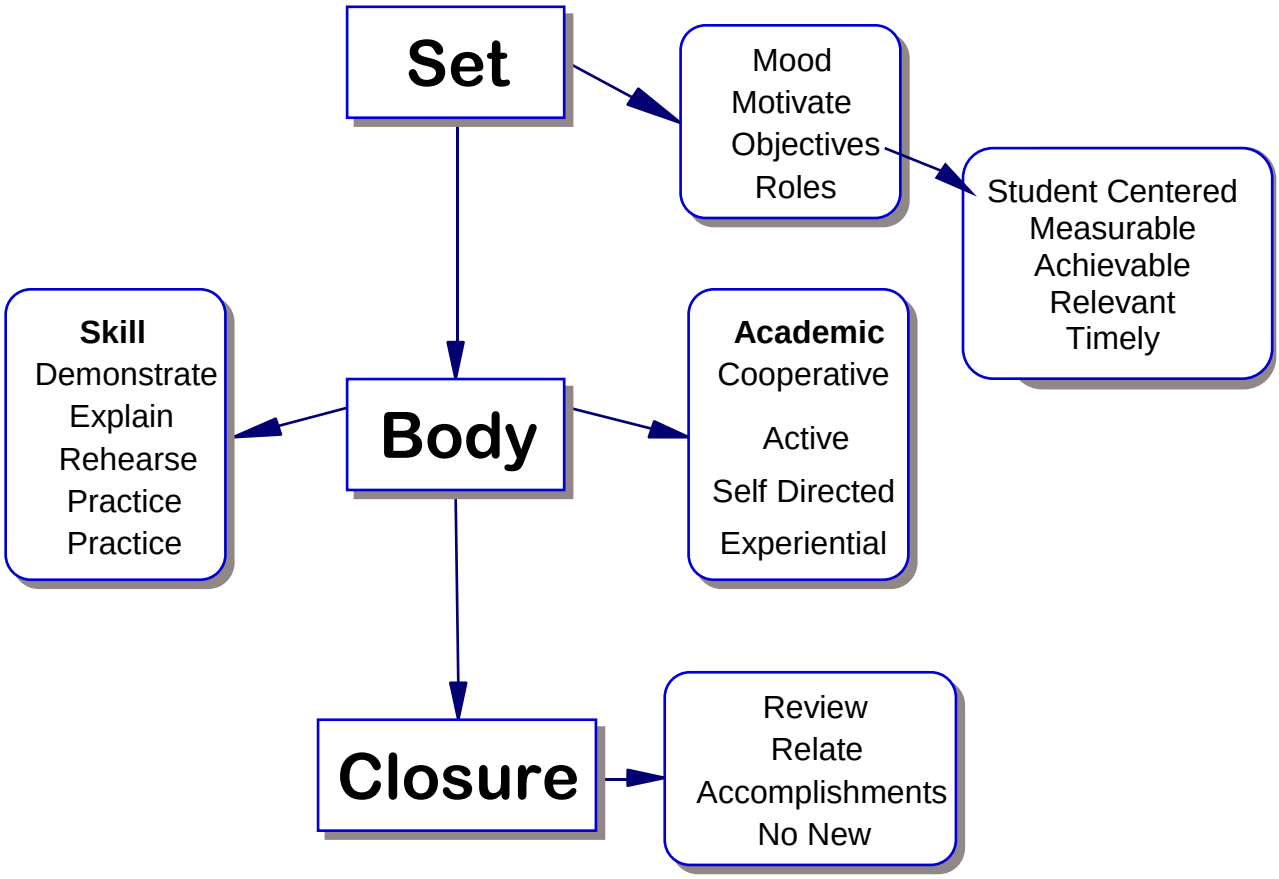
Practice Designing an Instructional Session

Review



Group Task

Given an assigned competency or expectation that medical students are required to achieve upon graduation, create an appropriate rotational objective that will help the student develop the knowledge, skill or attitude they require. Note: Remember that objectives are steps to achieving the competency (See page 20).

S
M
A
R
T

Sample Lesson Plan

Topic: _____ Date: _____

Objectives (**S**tudent-centered **M**easurable **A**chievable **R**elevant **T**imely):

_____

_____

_____

Set (**M**ood **M**otivation **O**bjectives **R**oles): Materials I need

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Body (**C**ooperative **A**ctive **S**elf Directed **E**xperiential) Materials I need

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Closure (**R**eview **R**elate **A**ccomplishments **N**o **N**ew): Materials I need

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Practice Critiquing a Microteaching Session

You will be shown an actual microteaching session videotaped several years ago at an earlier TIPS course. The person doing the teaching has given us permission to use this episode for instructional purposes. (We will not use your tapes as examples of microteaching unless you explicitly allow us to do so. Nor will we send them to America's Funniest Home Videos!) We want you to watch for the objectives, set, elements of a great body, and closure. Then rank them on a scale from 1-5 where 1 is wasn't done, 3 is OK and 5 is clearly complete. Use this space for writing notes and comments about the microteaching example.

Objectives: (**S**tudent-centered **M**easurable **A**chievable **R**elevant **T**imely):

Set: (**M**ood **M**otivation **O**bjectives **R**oles)

_____

_____

_____

Body:

C*ooperative* _____

A*ctive* _____

S*elf Directed* _____

E*xperiential* _____

Closure: (**R**eview **R**elate **A**ccomplishments **N**o **N**ew material)

_____

_____

Instructional Media:

loud / large enough _____

clear / legible _____

uncluttered / focused _____

Characteristics of a Good Critique

Comprehensive:

- Not necessarily long
- Focus on what most needs improvement
- Focus on what can reasonably be expected to improve
- Cover strengths and weaknesses

Objective:

- Focused on student performance
- Describe specific actions
- Avoid personal opinion and biases
- Honest and based on performance as it was

Well Organized:

- Use some pattern of organization which is logical and makes sense to both the instructor and student (ex: sequence of performance)
- Break whole into parts or build parts into whole

Flexible:

- Examine entire performance in the context it was accomplished
- Fit tone, technique, and content of critique to the occasion and student
- Allow for variables
- Determine what to say at the proper moment

Acceptable:

- Student must accept and have confidence in the instructor's qualifications, ability, and authority
- Instructor's manner, attitude, and ability will often provide this
- Critique should be presented fairly, honestly, and with conviction

Constructive:

- Student must profit from the critique
- Praise is used to inspire improvement
- Positive guidance for correcting fault and strengthening weakness

Thoughtful:

- Respect student's need for self-esteem, recognition, and approval
- Use discretion and criticize in private

Specific:

- Express firmly in terms clearly understood; concrete, not general
- Students should know exactly what they did poorly and how to improve

Preparing Your First Microteaching Session

Before your presentation

Prepare	Know your material thoroughly
Organize	Know your outline and presentation.
Visualize	Mentally rehearse the sequence of the presentation detail. Imagine a positive, successful presentation.
Rehearse	Stand just as if your audience was in front of you and practice. Tape yourself or ask for "critiques."
Think positively	Don't let self-doubt erode your confidence: You can do it!
Check	Check over the room and your equipment.
Breathe	Inhale deeply a number of times.
Release tension	Unobtrusive isometric exercises will help release nervous energy.
Greet people	Create rapport with your audience by greeting them as they arrive.

During your presentation

Connect	Make it many one-on-one conversations, use eye contact.
Pause	Pause occasionally to slow your pace if needed.
Speak on	If you forget the next point, keep talking! No one will know. Or sip some water to give yourself a chance to look at your notes.
Move	Use natural gestures. Use the whole stage but avoid nervous pacing.
Smile!	Smiling helps build rapport with the audience. They will smile back!

Power Point TIPS

Fonts

- Select sans-serif fonts such as Arial or Verdana. Avoid serif fonts (serif fonts – like the ones you are reading in this manual, have additional lines at the tips of alphabets) such as Times New Roman or Palatino as they are sometimes more difficult to read. Note: use sans-serif fonts for material that is projected; use serif for hard copies.
- Do not use font size smaller than 28 point.
- Use a single sans-serif font for most of the presentation. Use different colors, sizes and styles (bold, underline) for impact.
- Avoid italicized fonts as they are difficult to read quickly.
- No more than 6-8 words per line
- For bullet points, use the 6 x 6 Rule. One thought per line with no more than 6 words per line and no more than 6 lines per slide
- Use dark text on light background for small rooms and light text on dark background for large rooms.
- Do not use all caps except for titles.

To test the font, stand back six feet from the monitor and see if you can read the slide.

Graphics and Design

- Keep the background consistent and subtle.
- Use only enough text when using charts or graphs to explain. Clearly label the graphic.
- Keep the design clean and uncluttered. Leave empty space around the text and graphics
- Use quality clipart and use it sparingly. The graphic should relate to and enhance the topic of the slide.
- Try to use the same style graphics throughout the presentation (e.g. cartoon, photographs)
- Limit the number of graphics on each slide.
- Check all graphics on a projection screen before the actual presentation.
- Avoid flashy graphics and noisy animation effects unless they relate directly to the slide.

Color

- Limit the number of colors on a single screen.
- Bright colors make small objects and thin lines stand out.
- Use no more than four colors on one chart.

General Presentation

- Check the spelling and grammar.
- **Do not read the presentation.**
- Give a brief overview at the start. Then present the information. Finally review important points.
- It is often more effective to have bulleted points appear one at a time so the audience listens to the presenter rather than reading the screen.
- Do not turn your back on the audience. Try to position the monitor so you can speak from it.

Adapted from: http://www.cheney268.com/training/powerpoint/powerpointtips.htm

PowerPoint Guide is available at
http://medicaleducation.wetpaint.com/page/Videoconferencing+as+a+Teaching+Tool.

Microteaching Lesson Plan

Topic: _____ Date: _____

Objectives (**S**tudent-centered **M**easurable **A**chievable **R**elevant **T**imely):

_____

_____

_____

Set (**M**ood **M**otivation **O**bjectives **R**oles): Materials I need

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Body (**C**ooperative **A**ctive **S**elf Directed **E**xperiential) Materials I need

_____ _____

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Closure (**R**eview **R**elate **A**ccomplishments **N**o **N**ew): Materials I need

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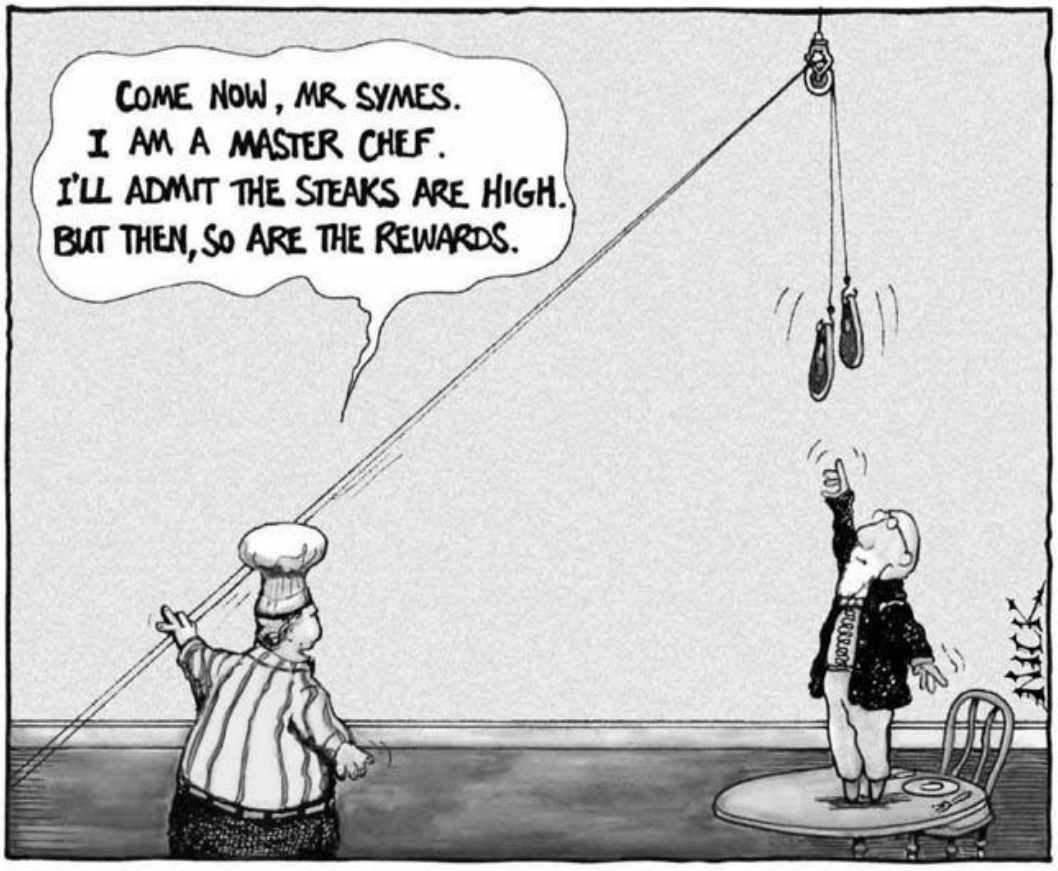
_____ _____



used with permission from Nearing Zero

COLLEGE OF MEDICINE, UNIVERSITY OF SASKATCHEWAN

ASSESSMENT OF TIPS COURSE AND TEACHING

Department: _____

Please rate the value to your learning of the individual sessions by circling the responses which best reflect your impressions.

SCALE:	**0 = Not Observed**
	1 = Very Poor
	2 = Poor
	3 = Fair
	4 = Good
	5 = Very Good
	6 = Excellent

Pre-Reading for Day 1

1.	Written material (Microteaching, Objectives, Set, Body/Closure)	**0 1 2 3 4 5 6**
2.	Web resources	**0 1 2 3 4 5 6**

Day One

3.	Overview of teaching and learning	**0 1 2 3 4 5 6**
4.	Practicing instructional plans (small group)	**0 1 2 3 4 5 6**
5.	Critiquing microteaching	**0 1 2 3 4 5 6**
6.	Preparation for microteaching (individual preparation)	**0 1 2 3 4 5 6**

COMMENTS:

_____

_____

_____

_____

_____

Using the same scale as on the first page, please rate the teaching of <u>those indicated</u> by circling the responses which best reflect your impressions.

<u>SCALE</u>

Facilitator's Name: _____

7.	Knowledgeable and Analytical (Breadth, analysis and synthesis of ideas)	**0 1 2 3 4 5 6**
8.	Clear and Organized (Explains clearly and stresses important concepts)	**0 1 2 3 4 5 6**
9.	Enthusiastic and Stimulating (Enjoys teaching and is dynamic, energetic)	**0 1 2 3 4 5 6**
10.	Established rapport (Respects learners; listens, is supportive)	**0 1 2 3 4 5 6**
11.	Actively Involved Learners (Challenges thought; questions; answers precisely)	**0 1 2 3 4 5 6**
12.	Provided Direction and Feedback	**0 1 2 3 4 5 6**
13.	Was Accessible	**0 1 2 3 4 5 6**
14.	Overall Teaching Effectiveness	**0 1 2 3 4 5 6**

COMMENTS:

_____

_____

_____

_____

_____

Thank You!

Pre-reading for DAY TWO Classroom

Coveropathy and Content Management Why 'Less is More'

In this activity, you are trying to help a friend of yours who has never made the trip drive confidently from Vancouver to Saskatoon. Underline the essential directions. We'll talk this through on day 2 of TIPS. (Can you spot the error?)

Take Highway 1 east. You will drive through the Fraser valley and bypass such towns as Abbotsford and Chilliwack. Abbotsford has a large airfield where each year there is an air display. When the pope visited a few years ago, the airfield was used for his address. Chilliwack is an Indian name. The area is noted for its pea production.

The first place you turn off is Hope. Hope is the junction of four major highways. One of them is the Coquihalla highway which is the most direct way to Kamloops but it is a toll highway. The other way is along the Fraser canyon which is scenic but not as fast. You can take a tramway across the river half way up the canyon and see the spectacular rapids. It is a popular spot for rafting. Take the Coquihalla highway to Kamloops.

At Kamloops take Highway 1 again to Calgary. Near the border with Alberta you will enter the Yoho and Banff national parks and the Rocky mountains. I hope you have good weather as the scenery is spectacular. You may also see bears, moose and deer beside the road but be sure to stay in your car. In the winter, the area around Lake Louise and Banff is popular with skiers, both Alpine and Nordic. There are several isolated lodges that can be reached on cross country skis where you can stay overnight.

You eventually reach Calgary. Each year Calgary has a stampede initiated by a huge parade through the city. Rodeos are under criticism these days because of their cruelty to animals. Attaching a clamp to a stallion's genitals so it will buck for the amusement of spectators is considered by many to be barbaric.

Leave Calgary on Highway 2, travelling north, until you get to Highway 9. Turn east. You will go through Drumheller. The landscape there is very dramatic. You may wish to visit the dinosaur museum while you're there. The next town is Hanna, the home of 'Nickelback'. You will notice a change in terrain as you enter the prairies. Here there are vast wheat fields and isolated farms. The skyscapes can be spectacular.

It won't surprise you that the border town between Alberta and Saskatchewan is called Alsask. Other interesting place names are Moose Jaw, where another great air show takes place every year, and Swift Current. Saskatchewan is also an Indian name. It is noted for its wheat production. Some of the earlier inhabitants were from Eastern Europe and you may get to eat dishes such as cabbage rolls and perogies. Regina is the provincial capital. The Highway number changes to #7 when you cross the border. You'll go through Kindersley and Rosetown before you finally get to Saskatoon. There is a small but vital medical education program there, with dedicated teachers noted for progressive ideas such as attending TIPS workshops.

Have a safe and enjoyable trip!

Cognitive Stuffing Quiz

We don't expect you to know the answers to the questions from this research but we want you to guess as a way of inviting you to engage more actively with the material. On Day 2 we will take up the 'answers' and consider the implications.

1 i. In lectures, assimilation of information by students begins to diminish after how many minutes?

a.10 b.15 c.20 d.25 e.30.

ii. After how many minutes is assimilation near zero?[1]

a.20 b.30 c.40 d.50 e.60.

2. To learn all the terms and relationships expected of medical students in the first year physiology course at the U of S in 2000 how many must be learned per hour of contact time?[2]

a. 6 b. 9 c. 12 d. 15 e. 18.

3. To learn all the terms and concepts expected of medical students in the second year cardiovascular systems course at the U of S in 2000 how many must be learned per hour of contact time?[2]

a. 3 b. 6 c. 9 d. 12 e. 15.

4. A recommended rate of learning of new facts or concepts per hour at university level is:

a. 3 b. 6 c. 9 d. 12 e. 15.

5. Some studies of medical students' long-term recall of simple knowledge in the basic sciences have shown that they retain about __% forgetting most only _____ after the course.[3]

Retain: a. 25%; b. 35%; c. 45%; d. 55%; e. 65%

Forgetting after: a. minutes; b. days; c. weeks; d. months; e. years.

6. A recent study at the U of S[4] gave Med II students 10 months later, 20 of the same questions they had in their final Immunology exam in May of the previous year. The average on the May exam in those 20 questions was 74.5%. The average score on those questions 10 months later was…

a. 42 % b. 52 % c. 62 % d. 72 %.

7. In that same study at the U of S[4] Med II students were given 11 months later 25 of the same questions they had in their final Neuroanatomy exam in April of the previous year. The average on the exam in those 25 questions was 87.7%. The average score on those questions 11 months later was…

a. 42 % b. 52 % c. 62 % d. 72 %.

8. In a similar study at the U of S[5] Med IV students were given over three years later 20 of the same questions they had in their mid term Neuroanatomy exam. The mean knowledge loss on those 20 questions about three years later was…

a. 50 % b. 60 % c. 65 % d. 70 %.

9. One study compared lectures in which varying percentages of sentences disseminated new information. Remaining time was used for restating, highlighting, giving more examples, etc. Which of the following percentages (i.e. percentage of sentences with new information) in a lecture proved to be more effective?[6]

a. 90% b. 70% c. 50%.

10. One study of knowledge growth in medical students compared pretest and posttest items related to a 3 week lecture based nutrition course.[7] What is the percentage of answers to items that changed from (pretest to posttest answers):

a. "Don't Know" to correct:

i. 55% ii. 65% iii. 75% iv. 85% v. 95%.

b. Incorrect to correct:

i. 10% ii. 20% iii. 35% iv. 50% v. 70%.

11. A study of anatomical knowledge 12 and 21 months later.

a) Retention of un-reinforced information changed from 69% to

i. 39% ii. 49% iii. 59% iv. 79%

b) Retention of reinforced clinical questions changed from 50% to

i. 46% ii. 56% iii. 66% iv. 76%.

---

[1]Lloyd, D.H. circa 1960. University of Reading, Berkshire, England. Stuart, J. and Rutherford, R. (1978). Medical student concentration during lectures. The Lancet 12, 514-516. Cited in Johnson, D.W., Johnson, R., and Smith, K. (1998). Active Learning: Cooperation in the College Classroom. Edina, MN: Interaction Book Co. Studies involved medical and arts and science university students.

[2]Dr. D'Eon counted the number of 'new' concepts in each of the examinations for three consecutive years then averaged those into the number of lectures. Undoubtedly the count would have been higher is he had counted concepts and principles from the lecture notes!

[3]Krebs R, Hofer R, Bloch R, Guibert, J-J. (1994). Conversation et oubli des connaissances en biologie acquises pour le premier examen propédeutique de médecine, MEDUCS Bulletin de l'Association Suisse d'Education Medicale, 4, pp10-15.

[4] D'Eon M. 2006. Knowledge loss of medical students on first year basic science courses at the University of Saskatchewan. BMC Medical Education, 6:5.
http://www.biomedcentral.com/1472-6920/6/5

[5]Mateen, F.J., D'Eon, M.F. 2008. Neuroanatomy: A single institution study of knowledge loss. *Medical Teacher* 30: 537-539.

[6]Russell, I.J., Hendricson, W.D., Herbert, R.J., 1984. Effects of lecturing information density on medical student achievement. Journal of Medical Education 57:881-889.

[7]Hodgson CS. Tracking knowledge growth across an integrated nutrition curriculum. Acad. Med. 2000;75(10 suppl):S12-14

[8]Blunt MJ, Blizard PJ. Recall and retrieval of anatomical knowledge. British Journal of Medical Education. 1975; 9, 255-63.

What is Cognitive Stuffing and How Does it Lead to Ineffective Learning?

*"I can't cut down the amount of material I am supposed to teach so I have time for active learning. There is just so much out there that medical students need to know. I need to **cover** everything during the lecture".*

However, as one student (3rd yr., January 2001) expressed it:

> "The courses more beneficial to me in the classroom were those that focused on fewer objectives BUT learning them well. Too many facts muddifies (*sic*) understanding and leads to confusion. Reading around topics is required regardless, but it is easier if I know the main ideas/topics/concepts to focus on."

Cognitive Stuffing is the result of the instructor's Coveropathy, the fear of not covering everything learned in the last 10 years about topic X. If you believe you *need* to cover 20 facts in an hour, then you don't have time for student interaction that allows them to absorb the knowledge. The quickest method to deliver large amount of materials is to create a lecture that recites the facts. The student will only write down/listen to what you say and then memorize the material at a later date. This is the lowest level of learning, information acquisition without much comprehension and no application.

Combine your cognitive stuffing with that of all other professors and students have a tremendous amount of factual material to memorize and are forced into ***Bulimic Learning***. If the students have to cover a lot of information for the exam, they won't have time to complete higher order cognitive tasks on their own, so they use short-term memory techniques such as listing, defining, describing. Students are left without a sense of how information connects with other information to form meaningful patterns (No comprehension) thus making retrieval a year from now almost impossible. They have not been shown how information fits together to help them accomplish relevant medical tasks and use clinical hours to learn the patterns they should have learned in medical school.

Cognitive stuffing is a direct result of the following:

- trying to cover too many objectives and staying at the information acquisition level
- ignoring/being unaware of established College of Medicine objectives
- forgetting how long it took you to reach your current level of knowledge
- not letting students know how the facts inter-relate to form meaningful knowledge networks that are easier to remember over the long term
- not providing time for interaction with the material, peers and the instructor
- lack of application exercises for learners to practice using the information.

(From March 2010)

I think you are broaching an important topic. Much of what I was taught in my first 2 years of medical school just was not clinically relevant. Almost 15 years later, I see the same situation for medical students today.

Earlier this week a student (a student who is performing well in my class) was complaining about the volume and difficulty of material in another class. Apparently the professor in this class brags that his class is one of the most difficult to pass among the first two years of medical school. But I would love to critically evaluate his curriculum for its relevance to clinical medicine.

We do know some poor performing medical students tend to have problems later in their careers. On the other hand, the competent physician must develop a broad range of expertise including clinical reasoning and good people skills. I believe we need far more coordination between clinicians and the basic sciences to develop improve curriculum.

Sincerely,

Medical Doctor

Teaching Large Classes

The **objectives** for this session are the following:

1. select appropriate active learning strategies for large classes to accomplish a variety of purposes (introduction, application exercises, practice, feedback), and
2. plan the management of time, resources, and movement.

From your copy of the Green Guide No. 1, "Teaching Large Classes" please read pp. 31-41 in interaction as well as the short article by Kim West of our own Gwenna Moss TLC and note what you consider to be good ideas and some not so good ideas as well as any comments, questions, or concerns that arise as a result of the reading. Of course, if you wish, you may certainly read the other sections and I expect that you will at some point.

Now go to **http://medicaleducation.wetpaint.com/**and click on the **Active** link on the right hand side under Classroom Teaching Techniques. Look at the examples in at least one of the table cells and come to class prepared to discuss what you saw.

What are some strategies that you use to help students learn in large groups? What are some of the current challenges that you face? How might you address those challenges perhaps with ideas from the book?

Foundational Principles of Assessment

The importance of student assessment (but you already knew that)

"The lack of congruence between course methods and assessment may actually undermine standards where students pay more attention to perceived assessment demands than to learning tasks. For example, students may bail out of their project team in order to revise for an exam, thus completely undermining their learning." (p. 2)
"All assessment systems have unintended consequences."

Gibbs, 1995. Assessing Student Centred Courses

"The examination system distorted the efforts of the students to achieve personal understanding and some types of examination questions actually tapped limited conceptual understanding. Students were, to varying degrees, developing an understanding of the course which was structured to what they thought the exam would test, rather than to those elements of the discipline or profession in which they were registered".

Entwhistle, 1992, p. 599.

"The design of assignments and, in particular, the criteria used in allocating marks, can have a dramatic effect on the way students approach both assessed assignments and other learning activities. Many conventional assessment methods, including essays, unseen exams and laboratory reports, allow students to take a surface approach or even implicitly encourage and reward such an approach."

Gibbs, 1992. Improving the Quality of Student Learning, p. 17.

Objectives:

At the end of this section on student assessment, we hope that you will be able to:

1. describe three key principles of student assessment
2. convincingly summarize the importance of student assessment
3. distinguish between formative and summative assessment and summarize the importance of using each type
4. select an appropriate test format for a particular learning objective.

We'll take up the formative/summative quiz and the test type quiz on Day 2.

Formative and Summative Assessment

(There's a short exercise to complete.)

In this activity we have grouped examples of these two types of student assessment. Note the characteristics common to each group. Compare and contrast this to the attributes of the other group. When you have a good idea of the defining elements of each type, proceed to the exercise where you will be trying to identify the formative and summative elements of those assessment situations.

Formative:

a) Checking to make sure that the report was done correctly and reviewing it with the student.
b) Asking each student to answer a question at the end of your lecture. Reading the student answers and reviewing the material next day with them in class.
c) Observing and coaching a simulated pastoral counseling session.
d) Students write a short quiz at the end of a set of two instructional sessions for feedback (not marks).

Summative

a) Final examination. No student review permitted.
b) Major Board examination for license to practice.
c) Qualifying oral examination.

Try these. We'll discuss them at the workshop.

For these situations, identify to what extent they have elements of formative and summative evaluation present.

a) A mid-term exam; the students receive the marks but never see it again.
b) Short quiz worth 3% of the final; students receive the results next day.
c) Short answer question at the end of class; the answers are discussed next class.
d) Using direct observations of performance for a final letter of recommendation, not seen by the student.
e) Pop quiz on a lecture not assigned marks; the results are returned two weeks later.
f) Giving marks at the end of the year for group participation in discussions.

True (T), False (F), or Undecided (?)?

Circle your choice and we'll review these at the workshop.

Test Type Quiz:

1. Essay exams are easier to construct than objective items.	T	F
2. Essay exams require more thorough student preparation and study time than objective items.	T	F
3. Essay exams require writing skills whereas objective exams do not.	T	F
4. Essay exams teach a person how to write.	T	F
5. Objective exams encourage more guessing than essay exams.	T	F
6. Essay exams limit the extent of content covered.	T	F
7. Essay and objective exams can be used to measure the same content abilities.	T	F

Ory, John C and Ryan, Katherine E. (1993). ***Tips for Improving Testing and Grading***. Newbury Park, CA: SAGE Publications, Inc. p. 20.

Comparison of Advantages & Disadvantages of Different Types of Tests

Review these on your own time as needed for selecting a test type that would work best for objectives in the courses and classes you teach.

Oral Examinations		
	Disadvantages	**Advantages**
1.	Lacks standardization	Provides direct personal contact with candidates
2.	Lacks objectivity and reproducibility or results	Provides opportunity to take into account mitigating circumstances
3.	Suffers from possible abuse of the personal contact	Provides flexibility in moving from strong to weak areas
4.	Suffers from undue influence or irrelevant factors	Requires the candidate to supply his own formulation without cues
5.	Lacks an adequate cadre of trained examiners to administer the examinatio	Provides opportunity to question the candidat about how he arrived at an answer
6.	Is excessively costly in terms of professional time in relation to the limit value of the information it yields	Provides opportunity for simultaneous assessment by two examiners. (Unfortunately in practice all those advantages are rarely used.)

Practical Examinations		
	Disadvantages	**Advantages**
1.	Lacks standardized conditions either in laboratory experiments using animals or i bedside examinations with patients of varying degrees of cooperativeness	Provides opportunity to test in a realistic setting skills involving all the senses while the examine observes and checks performance
2.	Lacks objectivity and suffers from intrusio of irrelevant factors	Provides opportunity to confront the candidate with problems he has not met before both in the laboratory and at the bedside to test his investigative ability as distinguished from his ability to carry out “cook-book” exercises
3.	Is of limited feasibility for large groups	Provides opportunity to observe and test attitude and responsiveness to the total situation
4.	Entails difficulties in arranging for examiners to observe candidates demonstrating the skills to be tested	Provides opportunity to test the ability to communicate under pressure, to discriminate between important and trivial issues, to arrange and display the data in a final form.

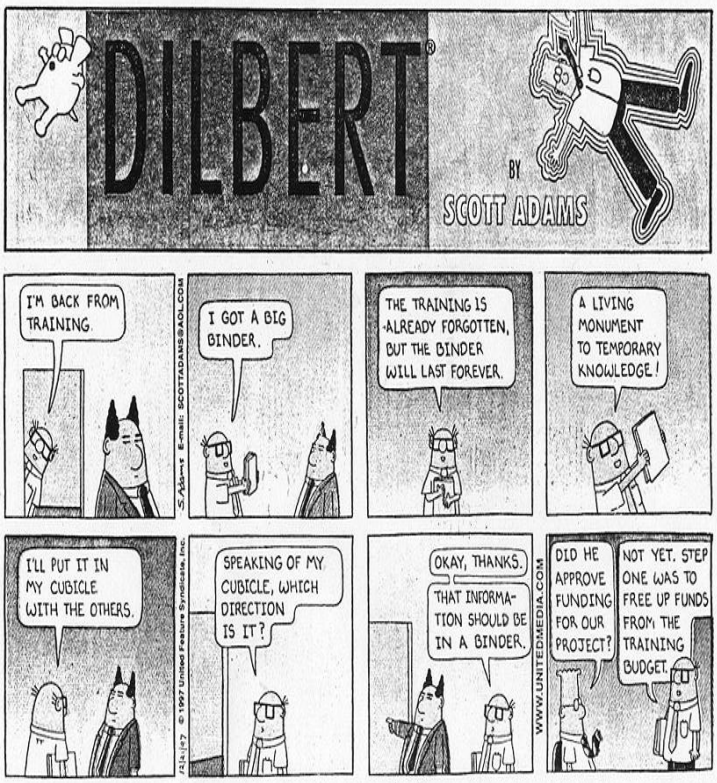
Essay Examinations		
	Disadvantages	**Advantages**
1.	Limits severely the area of the student's total work that can be sampled	Provides opportunity to candidate to indicate his knowledge of and his ability to organize ideas and explain them effectively in his language.
2.	Lacks objectivity	If marked using a rubric, objectivity improves
3.	Presents difficulties in obtaining consistent judgments of performance	Students prepare with 'deep learning' studyin practices
4.	Provides negligible feedback	If a marking rubric, includes descriptors for categories that are shared with students, ther feedback improves
5.	Requires excessive time to score	

Multiple Choice Questions		
	Disadvantage	**Advantage**
1.	Requires extended time to construct in order to avoid arbitrary and ambiguous questions	Provides objectivity, reliability and validity
2.	Requires adjustment for positive scores that may be achieved by chance or by guessing	Increases significantly the range of variety of facts that can be sampled in a given time.
3.	Provides cues that are unavailable in practice	Provides opportunity to obtain detailed feedback for both students and faculty.
4.	Students use a surface approach when studying and believe that simple memor will help them succeed**.**	

Guilbert, JJ. 1977. **Educational Handbook for Health Personnel**. Geneva: World Health Organization.

Ory J & Ryan K. 1993. **Tips for Improving Testing and Grading.** Sage Publications.

Biggs J. 1999. **Teaching for quality learning at university.** Buckingham, UK: Society for Research into Higher Education and Open University Press.


DILBERT®
BY
SCOTT ADAMS
I'M BACK FROM TRAINING.
I GOT A BIG BINDER.
THE TRAINING IS ALREADY FORGOTTEN, BUT THE BINDER WILL LAST FOREVER.
A LIVING MONUMENT TO TEMPORARY KNOWLEDGE!
I'LL PUT IT IN MY CUBICLE WITH THE OTHERS.
SPEAKING OF MY CUBICLE, WHICH DIRECTION IS IT?
OKAY, THANKS. THAT INFORMATION SHOULD BE IN A BINDER.
DID HE APPROVE FUNDING FOR OUR PROJECT?
NOT YET. STEP ONE WAS TO FREE UP FUNDS FROM THE TRAINING BUDGET.
S Adams E-mails: SCOTTADAMS@AOL.COM
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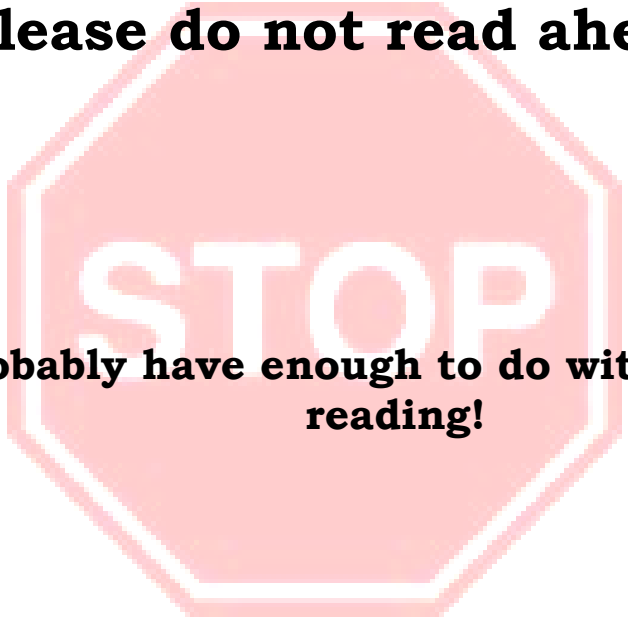
WWW.UNITEDMEDIA.COM

The next section begins Day 2 of the TIPS for Classroom Faculty course.

Please do not read ahead!



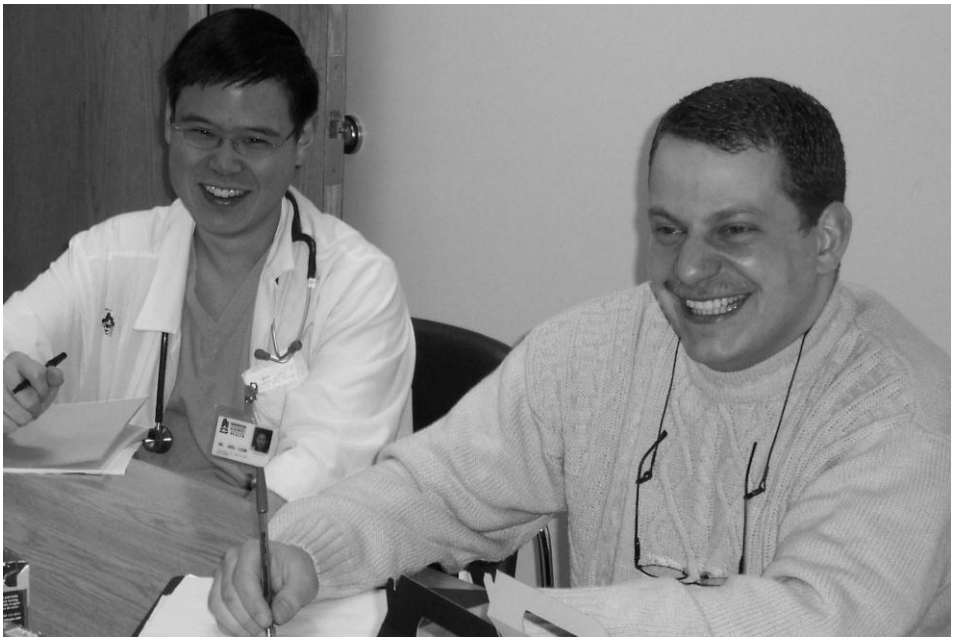
You probably have enough to do with just the pre-reading!

Use this space for notes!

DAY TWO

Classroom Teaching Module

Preparing Your Second Microteaching Session



Microteaching Lesson Plan

Topic: _____ Date: _____

Objectives (**S**tudent-centered **M**easurable **A**chievable **R**elevant **T**imely):

_____

_____

_____

Set (**M**ood **M**otivation **O**bjectives **R**oles): Materials I need

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Body (**C**ooperative **A**ctive **S**elf Directed **E**xperiential) Materials I need
(or Skills Step 2)

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Closure (**R**eview **R**elate **A**ccomplishments **N**o **N**ew): Materials I need

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

TIPS Teaching Observation Form

Name: _____ Date: _____

Session Title: _____

Objectives: (**S**tudent-centered **M**easurable **A**chievable **R**elevant **T**imely)

_____

_____

Set: (**M**ood **M**otivation **O**bjectives **R**oles)

_____

_____

_____

Body: (**C**ooperative **A**ctive **S**elf Directed **E**xperiential) or (Skills Step 2)

_____

_____

_____

_____

Closure: (**R**eview **R**elate **A**ccomplishments **N**o **N**ew material)

_____

_____

Instructional Media:

loud / large enough _____

clear / legible _____

uncluttered / focused _____

Pre-Reading for DAY TWO Clinical

Who are you as a teacher?

Case 1

Sara is a first year resident in family practice. She graduated from McGill with honours and arrived in Saskatchewan with high expectations. She has just received her mid rotation evaluation and she is failing.

Sara's Story

Sara graduated from a university that uses a problem-based learning (PBL) approach and she loved the intense questioning that took place in that environment. She prides herself in her ability to investigate thoroughly; she checks and double checks to make sure she has the correct information from the preceptor and from patients.
She has enjoyed her rotation so far and felt that she was learning a great deal.

Preceptor's Story

Dr. Willis was trained in Saskatchewan 30 years ago. He expects his residents to be fundamentally capable when they arrive in his clinic. He gave Sara a very poor evaluation because she obviously (to him) lacked basic knowledge and he had to spend a lot of time answering her questions. He has serious questions about the quality of her medical training.

What do you think is the problem here?

Educational Principle

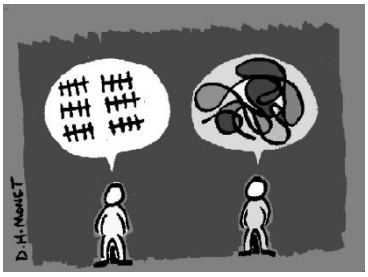
In a very real sense, each teacher is reflects his/her own teachers and the ones before them.

Your personal teaching style is a combination of the following 4 factors:

1. **your experience as a learner**

As teachers, we tend to copy what worked for us as students. Obviously, we were successful learning, so we tend to assume that other successful people learn the sam way we did.

Index of Learning Styles Questionnaire
http://www.engr.ncsu.edu/learningstyles lsweb.html



used with permission of Dave Mo

2. **the culture teaching *when* you grew up**

Take a look at the chart below for a brief look at how teaching has changed in North America over the last 50 years and think about how your teaching fits.

	1955-1970	1970-1990	1990-2005
Educational system values	hard work, upwa mobility, employability	self-directed, scientific focus, individual competency	collaboration, multitasking media/ technology users
Successful student characteristic	optimistic, trusti respectful, passive, malleable	skeptical, competitive, reflective, questioning, motivated	action oriented, globally aware, quick to respond

3. **the culture teaching *where* you grew up**

Teaching in European countries tends to be more formal than in North America. Professors rarely use first names and are expected to always be in control of the classroom. Canadian students might be viewed as disrespectful and undisciplined.

Teaching in Asian countries tends to be more focused on lectures, memorization and repetition. Canadian students might be viewed as impulsive and disorganized.

Teaching in large North American universities tends to be more formal than in smaller centres. Saskatchewan students might be viewed as lacking in scholarly demeanor.

4. **your personality**

Your comfort level in groups, your need to be in control and your ability handle stress all influence how you teach your class.

For more information about how learners are changing, see
http://blogs.usask.ca/medical_education/archive/2007/03/the_new_generat.html

Learning Styles Inventory

This questionnaire will help you to think about your *learning style* in the areas of sensory modalities, you will find yourself teaching students as if their style was like yours. The inventory is not meant to be a comprehensive list of all styles but serves as an introduction to the concept.

DIRECTIONS: Check all the columns, which correspond to your answers.

	Score:	**Always 3**	**Often 2**	**Rarely 1**	**Never 0**
SENSORY MODALITIES					
	VISUAL VERBAL (Text)				
	I like to read articles and documents.				
	I need written instructions.				
	I take notes or summarize information in writing.				
	I write out presentations beforehand.				
	Score:				
	VISUAL NONVERBAL (Images)				
	I like classes that use visual aids (e.g. blackboard, illustrations, charts, graphs, concept maps, outlines, graphic organizers).				
	I often draw my ideas on paper to help organize my thoughts.				
	I like examples that help me visualize new concepts.				
	I make visual representations of information such as doodles, cartoons, flashcards, etc.				
	Score:				
	AUDITORY (Sound)				
	I remember verbal explanations of new concepts and ideas.				
	I prefer verbal instructions.				
	I enjoy giving verbal reports/presentations.				
	I enjoy discussions and other opportunities to talk about what I am learning.				
	Score:				
	KINESTHETIC (Action)				
	I often pace the room when trying to memorize something.				
	I remember labs better than lectures.				
	I find myself tapping pencils or my foot when I'm bored.				
	I like to be dramatic and energetic in my presentation style.				
	Score:				

Add the score in each section and record the result below.

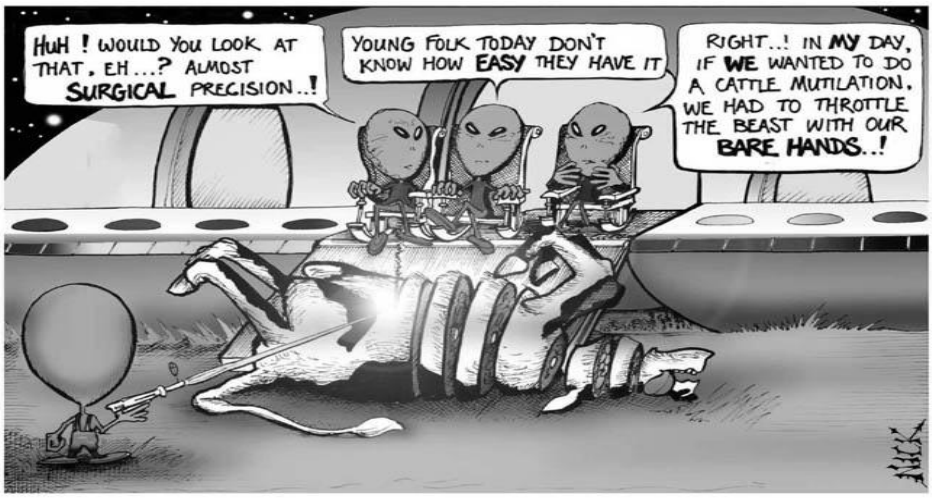
	SCORE
SENSORY MODALITIES	
VISUAL VERBAL (Text)	
VISUAL NON VERBAL (Images)	
AUDITORY (Sound)	
KINESTHETIC (Action)	

Your learning style strongly influences how you teach. Your lowest scores will be your weakest areas as a teacher. Presenting information in a way that doesn't fit your style will feel awkward and in some cases ridiculous because you will find it difficult to accept that other people need to learn differently than you do.

- based on the work of Luciano Mariani
http://web.tiscali.it/learningpaths/papers/papers.htm

Different kinds of experiences lead to different brain structures

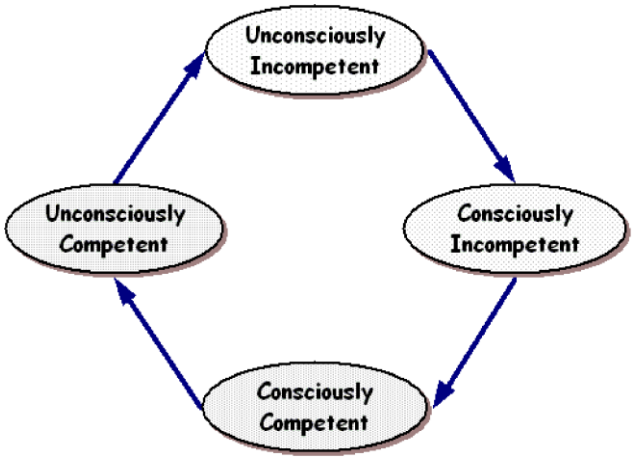
- Dr. B. Berry, Baylor College of Medicine



Alien old timers.

Used with permission of Nearing Zero

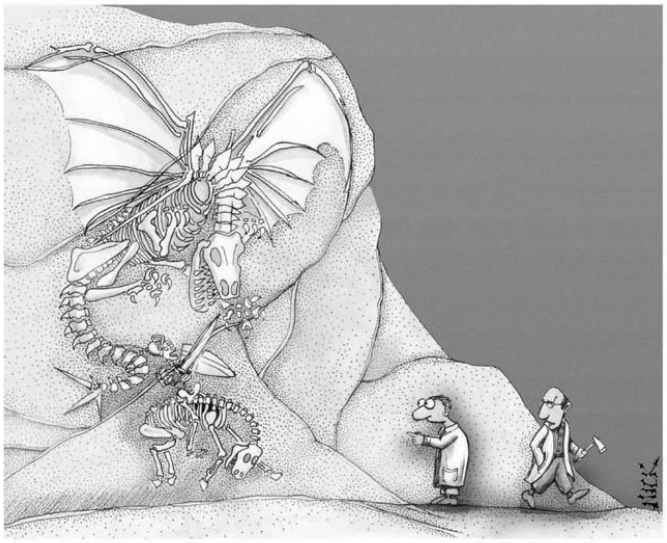
What is the Learning Cycle?



Before you learned to ride a bike, you were completely unaware of what bike riding was all about *(Unconsciously Incompetent);* you probably thought it looked pretty easy because lots of other kids were doing it. Then you climbed on the bike for the first time and you struggled with not knowing how to ride that vehicle *(Consciously Incompetent.)* Through persistent practice, you made your first trip unassisted down the street, but you were very aware of everything you had to do to keep that bike moving *(Consciously Competent.)* Eventually, riding a bike became automatic; years later, you could climb on a bike and your body would remember how to ride *(Unconsciously Competent.)*
After learning to ride, you might have decided to learn how to skate and the cycle begins again.

As a teacher in a clinical setting the first thing you need to do is diagnose where the students is in this learning cycle because you will need to change your teaching behaviour depending on where they are on the cycle. Except for simple skills and procedures, people rarely reach ***Unconscious Competence*** while in training. You can identify the initial stage by doing a quick orientation with the student on the first day of the rotation. This will be discussed on Day 2.

Stage	Student Needs	Clinical Techniques Examples
Unconsciously Incompetent	Awareness	Intentional Role Modeling Illness Scripts Simulations Questions
Consciously Incompetent	Teaching	5 step process Illness Scripts Seminars Peer Teaching Simulations
Consciously Competent	Safe Practice	Simulations SNAPPS Precepting Using Microskills Chart Stimulated Recall Direct Observation and Feedback
Unconsciously Competent	New Challenges	Teaching others Research



"Ignore it, Jeffries. It's unscientific."

Used with permission from http://www.nearingzero.net/

How can I assist students to improve their clinical reasoning?

Case 4

Terry Jones is a 3rd year resident and makes the following statement in a very sarcastic tone during rounds. "If she's overweight and depressed, she probably has irritable bowel syndrome."

Dr. Allen's response
I was appalled by this statement but wasn't sure how to respond.

What do you think is the problem here?

Cognitive Errors Lead to Diagnostic Errors

There are four types of cognitive errors commonly made by students:

1. Confirmation Bias
2. Attribution Errors
3. Commission Bias
4. Investigation Errors

1. Confirmation Biases

A 37-year-old woman is severely anemic. She has previously been diagnosed with celiac disease, which causes malabsorption, and she is told to increase her iron intake. Several months later when she doesn't improve, she is discovered to have a small tear in her esophagus. She had mentioned the pain when swallowing previously, but this symptom had been under investigated.

Confirmation biases cause you to look for proof of your diagnosis while ignoring factors that might disagree with it. They are the result of errors in cognition combined with the fast paced decision making required in many family practices and emergency rooms. These errors are frequently based on:

- **Availability/routine**
  When you see a lot of X or have studied a particular diagnosis recently, you tend to be looking for it. Ex. You have seen 6 cases of flu this week and here's another one. You only see the symptoms of flu you are looking for and ignore the symptoms of food poisoning.

- **Diagnosis Momentum**
  When a patient has been diagnosed with A previously, the assumption is that A was a correct diagnosis and that present symptoms are probably related to the previous diagnosis. This is more likely to occur when the initial diagnosis came from an authority figure, but has also occurred when a patient self-diagnoses (I have a migraine).

- **Lack of Experience**
  Lack of experience may cause the student who does not understand the variability of human biology to depend on textbook knowledge or medical studies that are incomplete. On the other hand, the student may have used the same diagnosis successfully in another situation and were hoping for the same results.

- **Search Satisfaction**
  The student may stop searching when one diagnosis is made and not look for other problems.

- **Overconfidence**
  The student is so invested in proving themselves right that the patient may be at risk. This is linked to the tendency to believe that one's previous decision-making was better than it was. Hindsight bias, the assumed ability to see how errors were made in the past can contribute to overconfidence.

2. Attribution Errors

A 65-year-old man arrives in emergency on a very busy Friday night. Joe is unconscious after being found in an alley outside the local bar. He is well known in the ER as being severely alcohol dependent, and he is placed in a bed "to sleep it off". When the doctor goes to send him home in the morning, Joe isn't responding and upon examination he is discovered to be the victim of a car accident.

When stereotypes about a race, gender, religion, age, addictions etc. result in misdiagnoses, the underlying assumption is frequently that this person is judged unworthy of full attention because they are …

Other examples I've heard are: "He lied about his military service, I don't want him (a patient with a history of psychiatric illness) in my hospital"; "Here's another woman with mysterious abdominal pain (a woman with a perforated uterus)." In each case, attribution errors led to misdiagnoses.

A subsection of attribution errors is liking the patient too much and not wanting to cause them pain or embarrassment, so you don't ask them questions about their sexual history, don't examine them for prostrate cancer, don't ask about sleeping pill use etc.

3. Commission Bias

A 45-year-old man with terminal bone cancer is unresponsive when the resident enters the room. He successfully resuscitates the man and then remembers the DNR order.

Commission bias is the result of overwhelming internal or external pressure to do something NOW rather than wait. Doctors want to help patients and their fearful families. Antibiotics, painkillers and sleep aids have all been over administered because of commission bias. Aggregate bias or the ordering of tests and x-rays when the guidelines don't recommend them is a form of commission bias. Omission bias is the other side of this coin and results in the student doing very little in the hope of avoiding errors.

4. Investigation Errors

A 56-year-old woman comes to emergency with pain in her left, back shoulder and a feeling that something isn't right. The patient is given medication for indigestion and send home. Two hours later, she returns because of heart failure.

Our job as clinical teachers is to help students learn from and correct mistakes so they don't developing habits of thinking that are ineffective and unhealthy. Investigation errors are primarily the result of asking the wrong questions because of the following factors:

- **Anchoring**
  The tendency to rely too heavily, or "anchor," on one trait or piece of information when making decisions, can lead to search satisfaction and other confirmation biases.

- **Base Rate Neglect**
  Under or over estimating how common a disease is in a community, gender, ethnic group etc.

- **Framing Effect**
  The way a patient is described influences clinical reasoning. Some students may be unable to pick up key words and nonverbal cues from nurses, patients and family members to make judgments about severity, frequency and urgency because of fatigue, coming from a different culture or inexperience. Others may rely too heavily on the frame and fail to look at the bigger picture. For example, when a patient is labeled as having fever, shortness of breath and cough, the student may jump to a diagnosis of pneumonia in a patient with pulmonary embolism.

- **Fear**
  Fear of death, fear of failure, fear of uncertainty can lead to avoiding patients with possible unpleasant outcomes. Some students become overly rational/clinical (as if the patient is an experiment) to cover the irrational fear. See the movie Wit for an example. Others become overly dependent on guidelines/evidence because their fear of failure is pushing them to the safety of outside expertise/authority.

- **The Last Bad Experience**
  If a student makes a serious error, they can run away, cover up, bluff it out, avoid or they can fight, be overly vigilant, obsess.

For more information, see previous posts on

Teaching Issues of Diversity
http://blogs.usask.ca/medical_education/archive/2006/04/teaching_issues.html

Preparing Students to Work with Addiction Issues
http://blogs.usask.ca/medical_education/archive/2006/08/preparing_stude.html

How Doctors Think Introduction
http://blogs.usask.ca/medical_education/archive/2007/04/how_doctors_thi.html

References

Croskerry, P. (2003) *When diagnoses fail*, The Canadian Journal of CME: 79-87
Crosskerry, P. (2003)*The importance of cognitive errors in diagnosis and strategies to minimize them.* Academic Medicine: 78(8):775-780
Groopman, J. (2007) *How doctors think*, Houghton Mifflin
Mazor, K. et all (2005) *Teaching and medical errors* Medical Education Journal:39:982-990
Redelmeir D. (2005) *The cognitive psychology of missed diagnoses* Annals of Internal Medicine Volume 142 Issue 2 | Pages 115-120
Wade, M. (2007) *26 Reasons What You Think is Right is Wrong*
http://www.healthbolt.net/2007/02/14/26-reasons-what-you-think-is-right-is-wrong/
Wikipedia *Cognitive Distortion* http://en.wikipedia.org/wiki/Cognitive_distortion

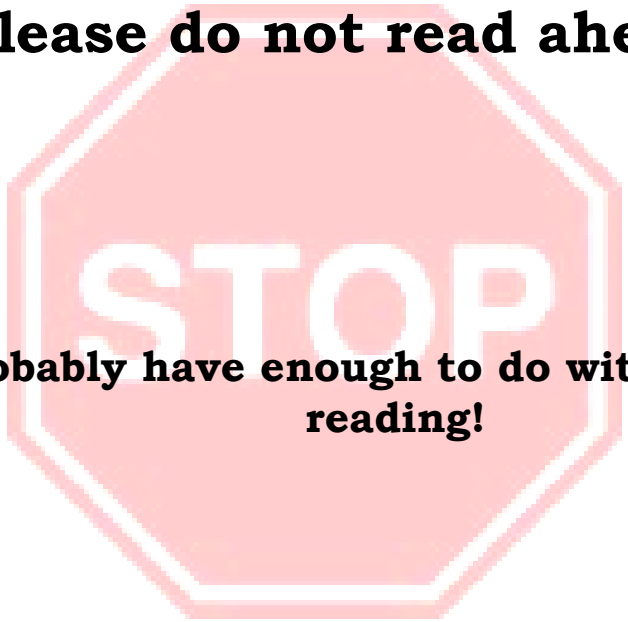
Cognitive and Affective De-biasing Strategies to Reduce Diagnostic Error

Strategy	Mechanism/Action
Develop insight/awareness	Provide detailed descriptions and thorough characterizations of known CDRs and ADRs together with multiple clinical examples illustrating their adverse effects on decision making and diagnosis formulation.
Consider alternatives	Establish forced consideration of alternative possibilities, e.g., the generation and working through of a differential diagnosis. Encourage routinely asking the question: what else might this be?
Heighten metacognition	Train for a reflective approach to problem-solving: stepping back from the immediate problem to examine and reflect on the thinking and affective processes.
Develop cognitive forcing	Develop generic and specific strategies to avoid predictable CDRs and ADRs in particular strategies clinical situations.
Provide specific training	Identify specific flaws and biases in thinking and provide directed training to overcome them: e.g., instruction in fundamental rules of probability, distinguishing correlation from causation, basic Bayesian probability theory.
Provide simulation training	Develop mental rehearsal, "cognitive walkthrough" strategies for specific clinical scenarios to allow CDRs and ADRs to be made and their consequences to be observed. Construct new scenarios or clinical training videos contrasting incorrect (biased) approaches with the correct (debiased) approach.
Decrease reliance on memory	Improve the accuracy of judgments through cognitive aids: mnemonics, clinical practice guidelines, algorithms, and hand-held computers.
Make task easier	Provide more information about the specific problem to reduce task difficulty and ambiguity. Make available rapid access to concise, clear, well organized information.
Minimize time pressures	Provide adequate time for quality decision-making.
Establish accountability	Establish clear accountability and follow-up for decisions made.
Improve feedback	Provide as rapid and reliable feedback as possible to decision makers so that errors are immediately appreciated, understood, and corrected, resulting in better calibration of decision makers.

P. Croskerry Diagnostic Failure: A Cognitive and Affective Approach from Advances in Patient Safety: From Research to Implementation.
http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=aps

The next section begins Day 2 of the TIPS course.

Please do not read ahead!



You probably have enough to do with just the pre-reading!

Use this space for notes!

DAY TWO

Clinical Teaching Module

The following material has been included largely as a future reference when you are working as a physician and decide to teach. Some but not all will be covered in class. The module is divided into three sections:

1. Orienting students to clinical experience
2. Teaching techniques for a clinical setting
3. Assessing performance
4. Practice teaching (microteaching)

The Appendix includes a fifth section on preparing your office for learners.

Educational Support and Development would like to acknowledge the support of the University of Saskatchewan's Department of Family Medicine particularly Drs. A. Danilkewich, A. Gruszczynski, A. Muller, and M. Lees in the development of this module.

1. Orienting Students to Clinical Experience

Upon completion of this module, you will be able to:

- diagnose the student's learning needs
- create an educational plan with the student.

The Learning Contract

Case

James has just completed his residency with Dr. Willis. He was evaluated very highly.

Preceptor's Story

Dr. Willis is very pleased with James. He has worked independently and required very little of his time. He wishes more students were like James.

James Story

James is happy with his evaluation, but is leaving this rotation with a feeling that he hasn't learned anything new. He was really hoping to learn more about patient advocacy because he had heard that Dr. Willis was on a couple of important government committees, but most of what Dr. Willis had him doing was routine. He only spent brief time with his preceptor and felt ignored most of the time he was in the clinic.

How could this rotation have been improved?

Educational Principle

People learn best when they are involved in diagnosing, planning, implementing and evaluating their own learning.

Knowles 1980

What will they learn from this rotation?

1. **Orientation**
   - staff can help orient to clinic/dept.
   - checklist can be helpful
   - describe your practice

2. **Take an *educational history***
   - what has the student done in previous rotations (student portfolio would be helpful)
   - how does the student learn
   - what does the student want to learn more about

3. **Set up an education plan**
   - describe your teaching style and special skills
   - determine what will be learned (rotation objectives)
   - determine case presentation format
   - decide on meeting times and dates (daily recommended)
   - assessment methods

What is a supportive learning environment?

A setting where it is easy for learners to acknowledge that they lack knowledge or skill, mistakes are seen as learning opportunities and students are encouraged to ask questions.

"You see Thag..? Names CAN break your bones. Especially when those names are carved on ROCKS."

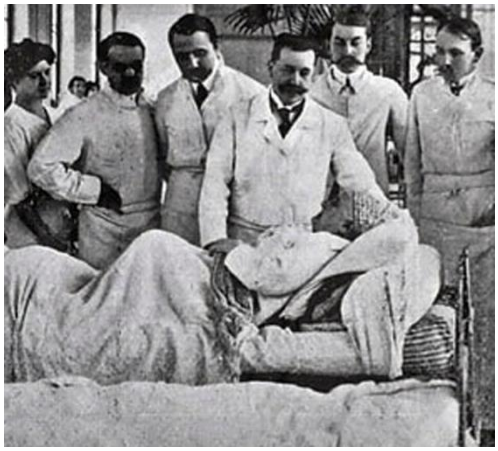
When the Learner Arrives, Orientation Checklist

- ☐ Post notices in the reception area about the learner
- ☐ Have the receptionist inform patients about the learner
- ☐ Review with the learner the institution's learning goals and objectives
- ☐ Review the "Clinical Skills Inventory" with learner
- ☐ Review the learner's expectations for the experience
- ☐ Consider signing a learning contract with learner
- ☐ Review working hours
- ☐ Review days off
- ☐ Review potential schedule conflicts and attempt to resolve them
- ☐ Review how to contact office in case of personal emergency or unanticipated schedule conflict
- ☐ Review office rules and policies (eg., parking, dress code, meals, telephone and computer use)
- ☐ Orient the learner to his or her personal workspace
- ☐ Review contents of examination room and where equipment, supplies, and forms are located
- ☐ Introduce learner to staff (including their responsibilities) and to partners
- ☐ Review when and how teaching will occur
- ☐ Review when and how feedback will be provided
- ☐ Review scheduling and which patients the learner will see
- ☐ Review how much time should be spent with patients
- ☐ Review what parts of examination should and should not be done in your absence
- ☐ Review how to organize the learner's time with the patient and you
- ☐ Review how you want patients presented to you
- ☐ Review how you want notes written or dictated
- ☐ Review which clinical tests are preformed in the office
- ☐ Review how to order imaging studies and other diagnostic tests
- ☐ Review how to schedule a consultation
- ☐ Review how to schedule a follow-up appointment
- ☐ Review where to retrieve patient education materials
- ☐ Review how to retrieve test results
- ☐ Review how to request a patient chart
- ☐ Review when the final evaluation will take place
- ☐ Review how to handle an office emergency (e.g., cardiac arrest)

From: Teaching in Your Office: A Guide to Instructing
Medical Students and Residents
http://www.amazon.com/Teaching-Your-Office-Instructing-Office-Based/dp/1930513070

2. *Teaching Techniques*

This module is designed to help you choose effective teaching techniques for your environment.



Upon completion of this module, you will be able to:

- describe the characteristics of excellent clinical teachers
- encourage deliberate practice
- describe clinical teaching techniques
- identify common critical thinking errors.

What are the characteristics of excellent clinical teachers?

Case 1

James Swann is a first year resident and is frustrated with his lack of interaction with Dr. Moore.

James's Story

I rarely see Dr. Moore; she expects me to look after a full caseload and becomes upset if I'm not averaging 15 minutes with my patient. I feel like I'm only here as cheap labor.

Dr. Moore's Story

Dr. Moore's Story

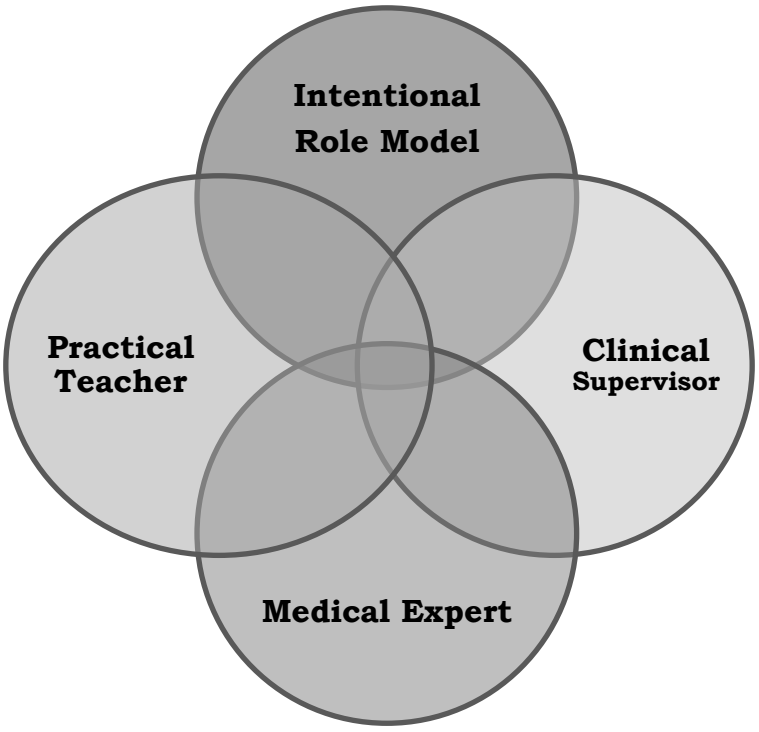
I have a very busy clinic and I expect James "to keep up". I don't have time to prepare teaching material or look up references for him. When I started my practice, I learned from working with the patients.

What do you think is the problem here?

Some student criticisms about clinical experiences:

- I didn't know what the objectives were
- I spend a lot of time doing tasks that didn't make sense to me because they seemed like time fillers (filing, fetch and carry, personal tasks for the doctor)
- I received feedback that was too vague to be useful
- I have no idea what my evaluation was based on.

The four key roles of clinical teachers are:



Characteristics of Excellent Clinical Teachers	
	How do I rate myself (1-5)
establishes mutual expectations	
sets priorities (time and efficiency)	
role models (Knowledge, Skills, Attitudes)	
stimulates reflection	
stimulates self-directed learning	
gives timely and effective feedback	

Most daily teaching in a clinical setting serves two purposes:

1. Teaching how to think like a physician
2. Teaching how to act like a physician

Teaching how to think like a physician (diagnostic thinking)

The teaching strategies that serve this purpose are:

1. SNAPPS
2. Precepting Using Microskills
3. Illness Scripts
4. Questioning
5. Chart Stimulated Recall
6. Intentional Role Modeling (Deliberate Practice)
7. Microteaching (mini lectures)
8. Rounds
9. Mentoring student projects
10. Learning with students (looking things up or working things out together models research skills)

Teaching how to act like a physician

The teaching strategies that serve this purpose are:

1. Intentional Role Modeling (Being observed/shadowed by student)
2. SOAP
3. 5 Step Approach for Teaching Skills and Procedures
4. Observation and Feedback
5. Independent Performance

SNAPPS

SNAPPS is a student-centred technique that focuses on the student's differential diagnosis skills. It works well with students and junior residents. It takes 10-20 minutes of uninterrupted time, so only select one or two cases per meeting.

Summarize the history and findings

- including physical exam and relevant test results
- level of detail expected depends on student's level

Narrow the differential

- student lists 2-3 relevant possibilities
- may involve creating a problem list for complex patients

Analyze the differential

- student uses evidence to compare and contrast possibilities
- allows student to verbalize their problem solving process
- stimulates discussion

Probe the preceptor by asking questions

- the learner is expected to ask questions about any areas they feel uncertain about, alternatives and management issues
- the learner uses this step to identify deficits in their learning

Plan management

- student presents a plan for how they will/would manage the medical issues

Select a case-related issue

- student identifies an area for further self-directed study

For More Information

SNAPPS: A Learner-centered Model for Outpatient Education. *Wolpaw, Terry M MD; Wolpaw, Daniel R MD; Papp, Klara K PhD* Academic Medicine. 78(9):893-898, September 2003.

Video http://www.practicalprof.ab.ca/teaching_nuts_bolts/snapps.html

PRECEPTING USING MICROSKILLS

Because time is at a premium in most clinical settings, the following quick technique (1-5 minutes maximum) might be helpful. *Precepting using Microskills* was developed to be used in your office or in the hallway. It's primary purpose is to **assess and improve the senior resident's decision making skills**. This technique is also known as the *Five Minute Preceptor*. The 6 steps are:

1. Get a commitment
2. Probe for supporting evidence
3. Teach general rules
4. Reinforce what was done well
5. Correct mistakes
6. Encourage reflection and integration.

To view a video of this technique, see the following website
http://www.practicalprof.ab.ca/teaching_nuts_bolts/one_minute_preceptor.html

Get a commitment

After the student has examined the patient, ask the student for their diagnosis/treatment/issues before offering your opinion or ideas about how he/she should have proceeded. This is the first step in diagnosing what the student's learning needs might be.

The Issue	**How to Ask for a Commitment**
Differential diagnosis	What....? (do you think is going on or is most likely?)
Diagnostic strategy	What....? (investigations should be ordered?)
Selection of therapy	What....? (is your first choice of medication/treatment?)
Prognosis	What....? (do you think is probably going to happen?)
Management issue	Why....? (do you think this patient is non-compliant?) What....? (would you like to achieve this visit)

Probe for supporting evidence

This step gives you the opportunity to see what evidence the student used to guide their decision. Your teaching goal continues to be "understanding the students thinking process" in a non-judgmental way.
Ex. "What led you to make this decision?"

Briefly teach general rules

If your probing of the student reveals the student needs/wants more knowledge about a particular topic, provide general rules, concepts, metaphors or considerations. Don't provide the student with a direct solution to the problem. Don't provide lengthy explanations.
Ex. "Patients with hypothyroidism often exhibit cold intolerance, weight gain and constipation."

Reinforce what was done well

Tell the student exactly what they did correctly and the effect it had on the patient and/or your clinic. This reinforces the correct knowledge or behaviour.
Ex. "Your probing for more information about the patient's support system highlighted several points where the patient is going to have problems complying with a standard care plan. Having this knowledge upfront allowed you to suggest alternatives that could be very helpful to this patient."

Correct mistakes

In a non life-threatening situation, wait until you have some time to discuss the mistake in private. Avoid responding in a judgmental way and find out the following:

- Is the student aware of the mistake and what to do, then you need to reinforce the correction
- Is the student aware of the mistake and unsure what to do, then this is a teachable moment
- Is the student unaware of the error, then you need to highlight the consequences of the error
- Is the student refusing to admit the error, then you may want to discuss the general consequences of medical errors. If this becomes a pattern with this particular student, you may want to discuss the issue with the medical school coordinator. Ex. "The results of the urinalysis will confirm your diagnosis of cystitis. What questions could you have asked to check for other causes?"

Encourage reflection and integration

Students become consciously competent by reflecting on the consequences of their actions and making decisions about what they might do next time. You can help them with that process by:

- Specifying the location of further research that might be interesting
- Using debriefing questions such as "Who was your most interesting patient today?" and "Was their anything that you didn't expect to experience?"
- Asking the student to keep a reflection log that will be used as part of their final evaluation.
- Ex. "How could you learn more about that topic?"

*A Five Step Microskills Model for Clinical Teaching (1992) Neber, J.O. et al
Journal of the American Board of Family Practice 5:419-424.
The Microskills Teaching Model Kansas University Medical College
http://wichita.kumc.edu/strategies/microskills/index.html accessed Nov. 21/06

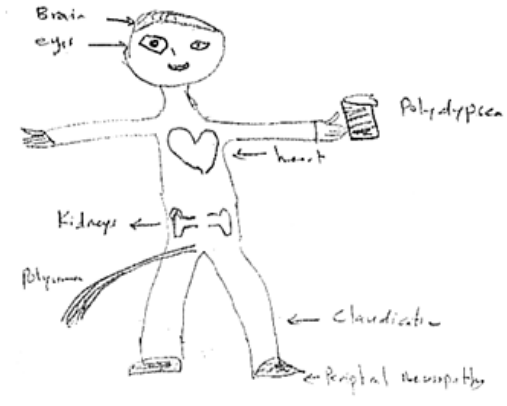
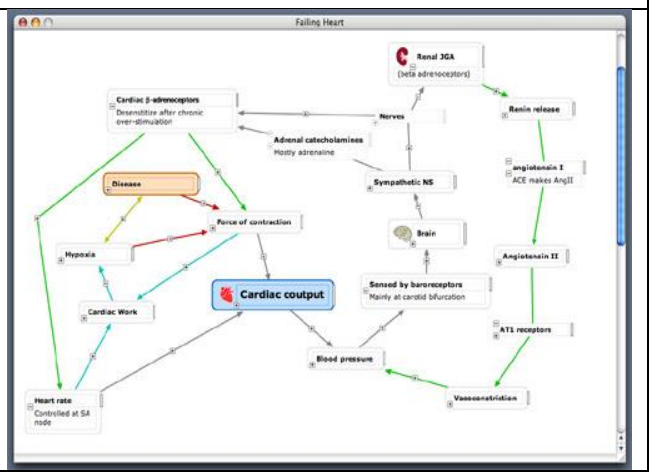
ILLNESS SCRIPTS

One of the primary differences between novice and expert physicians is the number of illness scripts experts have developed over the years. These patterns are similar to algorithms, but more individualized to the expert's experience and personal style. The more experienced the expert, the more shortcuts will be included in the individual's patterns because of automaticity (See unconscious competency in Learning Cycle).

Teaching Illness Scripts

You can assist learners in a clinical setting to develop their own patterns by asking them to graph common illnesses as they progress through their training. These graphs can be kept in a binder and added to as the learner increases their knowledge. You can remind them that the graph will be useful for studying for final exams. Both text-based and visual representations are acceptable depending on the student's personal learning preference. Sophisticated computer users might want to use online tools such as Mind Meister http://www.mindmeister.com/or NovaMind http://www.novamind.com/.

Caution: Remember this is not your illness script; it is the student's. It will not contain all the knowledge in your brain, nor will it look like what you draw on the board. This is also a developmental tool which will improve over time and experience.
To see examples of Illness Scripts, please see Med Maps
http://www.medmaps.co.uk/

An example of a beginning illness script fo diabetes used with permission of Mohammad Al Reshir	An example from Med Maps that is less visua and more text based
	

Asking Questions

The following question stems are organized according to Bloom's taxonomy of educational objectives. The further down the list, the more complex the question is.

Organizing

What conclusions have you reached about…?
In your own words…?
How else might you…?
Show how…?
How would you compare … to …?
Why did …. cause…?

Applying

What evidence is there that …?
In what ways might …?
Give some instances of …?
What would result if …?
Compare…?
Contrast…?
Where else might you use…?

Analyzing

What are the functions of…?
Compare ____ to _____.
What is the motivation for …?
How would you classify …?
What is the relationship between …?

Integrating

What would the result be …?
What facts could you compile about …?
What would you do if …?
Elaborate on your reason for …?
What would you do if …?

Generating

What would you have done differently if …?
How many ways can you think of to …?
Predict what would happen if …?
How would you improve …?
What changes would you make if …?

Evaluating

What would be the best way to …?
How effective was …?
Should ____ be permitted to …?
How well did …?

Teaching on the run tips 7: effective use of questions
http://www.mja.com.au/public/issues/182_03_070205/lak10788_fm.html

CHART STIMULATED RECALL

Resident or Student:		**Date of CSR:**
Preceptor:	**Chart # or Patient Initials:**	**Date of Visit:**

Comments and Feedback from the Chart Note
May include some or all of the following: *1. Record keeping and legibility* *2. Information documented is pertinent and relevant* *3. Follow-up documented* *4. General comments*

Comments and Feedback from Case Review
M*ay include some or all of the following:* *1. General comments about case presentation* *2. Synthesis and analysis of information* *3. Approach to management* *4 Use of evidence-based medicine.* *5. Demonstrated patient-centered care* *6. Comprehensive care* *7. Evidence of reflective practice*
When completing the CSR below, please refer to the list of CSR questions.

Case Review – Possible Interview Questions

(note which questions were asked)

http://www.practicalprof.ab.ca/teaching_nuts_bolts/chart_stimulated_recall.html

1. General Case Review

A. Clinical assessment:

Can you give me an outline of the case?

What features of the patient's presentation led you to your top two (or three) diagnoses?

Did you inquire about the patient's illness experience (feelings, ideas, effect on function and expectations) and what did you learn?

If there was ambiguity or uncertainty about the case, how did you deal with it?

Is there anything else you wish you would have asked?

B. Investigations and referrals

Why did you choose the investigations that you did?

Were there other tests that you thought of but deferred or ruled out?

How did you decide whether to refer to a consultant?

C. Treatment and Management

What features led you to choose the treatment that you did?

What were the patient's expectations for treatment?

Do you feel you reached common ground with the patient?

Were there other treatments that you thought of but didn't offer? If so, why did you decide against them?

D. Follow-up

What did you decide was appropriate for follow up?

What factors influenced your decision?

2. Comprehensive Care

A. Monitoring Chronic Disease

In your care of this patient, did you discuss his/her chronic disease/progress?

On reflection, do you think there are some monitoring strategies that would be appropriate?

B. Health Promotion and Prevention

In your care of this patient, have you discussed preventive interventions? (e.g. BP, mammography, smoking cessation, alcohol use, lifestyle change, diet, exercise, etc.)

On reflection, do you think there are some interventions that would be appropriate?

3. Patient Factors

Patient characteristics sometimes influence decision-making. Was there anything special about this patient that influenced your decisions regarding management? (e.g. psychosocial issues, compliance, past medical history, current medications, support systems, employment)

On reflection, is there anything about this patient you wish you knew more about?

4. Practice or System factors

Is there anything special about your practice setting that influenced your management in this case? (e.g. a nurse educator, lack of access to laboratory or x-ray)

On reflection, what changes would improve your ability to deliver care to this patient?

DELIBERATE PRACTICE

Deliberate Practice is a lifelong habit of continually evaluating and improving your knowledge, skills and attitudes. You develop this habit in students by allowing students multiple opportunities to engage in deliberate practice, which means

- addressing problems at the upper level of the student's ability
- encouraging reflection on their developing skills
- repeating the task numerous times
- providing opportunities to correct their errors.

The SOAP APPROACH TO STUDENT PRESENTATIONS

The **SOAP** approach is one way of assisting students to present patients consistently and accurately. You could give students a handout on SOAP as part of their orientation (see CD for example.)

S*ubjective*	what the patient (family/nurse) says about their current health
O*bjective*	what the student observes during the examination and laboratory results
A*ssessmen*t	the differential diagnosis
P*lan*	what the student proposes as next steps for this patient (therapeutic diagnosis)

‘FIVE STEP APPROACH’ MODEL FOR TEACHING SKILLS

As in all student-centered techniques, this model may be expanded or reduced depending on the background skills of the learner.

Teaching Skills: Effective Practice

- Assure learners know what capabilities they need to practice.
- Model and demonstrate the capabilities learners need to practice
- Arrange practice in steps. Number them if possible to aid memory..
- Encourage peer practice with discussion.
- Allow for an initial awkwardness, “functionally grotesque”

Step 1

An expert provides a complete demonstration of the skill at normal speed while talking to the patient. Little or no explanation is given. This step gives the student an idea of how long the skill or procedure normally takes, it role models patient interaction and it provides a holistic example. This step could also involve students watching a video or an animated simulation. See http://www.webmedtechnology.com/physician/video.html or http://note3.blogspot.com/ for examples of procedural videos.

Step 2

Pre-planning: Remember that you do the skill automatically and may have forgotten how you learned the skill. It’s important for the instructor to break down the number of steps required to complete ahead of time. If there are more than

seven steps, break the process of learning into stages, where students complete one stage at minimal competence before moving onto the next. A written checklist will improve retention of complex steps.

See http://meded.ucsd.edu/clinicalmed/introduction.htm for examples of procedural guides and BMJ Learning module on evidence based learning.

The instructor provides demonstration of the skill with full explanation, encouraging the learner to ask questions. Counting out the number of steps as you do them is very important; don't assume that if you say there are six steps that the students know what those six steps are.
If a patient isn't available, you may choose to do this step on a simulation dummy.

Step 3

The demonstrator performs the skill for a third time with the learner providing the explanation of each step and being questioned on key issues. The demonstrator provides necessary corrections. This step may need to be repeated until the demonstrator is satisfied that the learner fully understands the skill. This step is a very important safety check before the student works with a patient.

Step 4

The learner now carries out the skill under close supervision describing each step before it is taken. You may need to guide the student hands to help them transfer the knowledge from their brains into their hands. (adapted from Peyton 1998, 174-77) The more guided practice the student has; the more proficient they will be. See one, do one may not be a useful adage when trying to develop proficiency.

Step 5

The learner practices under loose supervision until they have reached an appropriate level of skill to perform independently.

Teaching Techniques of Three Roles of Clinical Teachers

Role	***Explanation***	***Teaching Technique***
1. Intentional Role Model	• demonstrates exemplary professional characteristics • demonstrates effective patient interaction • models decision making skills	*Deliberate Practice* *Mentoring*
2. Clinical Supervisor	• protects patient health and sensibilities • structures the work and learning environment for opportunities for safe practice • observes objectively and offers constructive feedback	*SOAP Presentation* *SNAPPS* *Microskills* *Feedback*
3. Teacher	• sets the goals and objectives for the learning experience • organizes the learning activities that will result in a change in behaviour or thinking • promotes problem solving and critical appraisal • assesses the student's performance • supports and encourages the learner	*Orientation* *Microteaching* *Procedural Skills* *Concept Mapping* *Bedside Teaching* *Assessment*

Teaching techniques that I would like to try

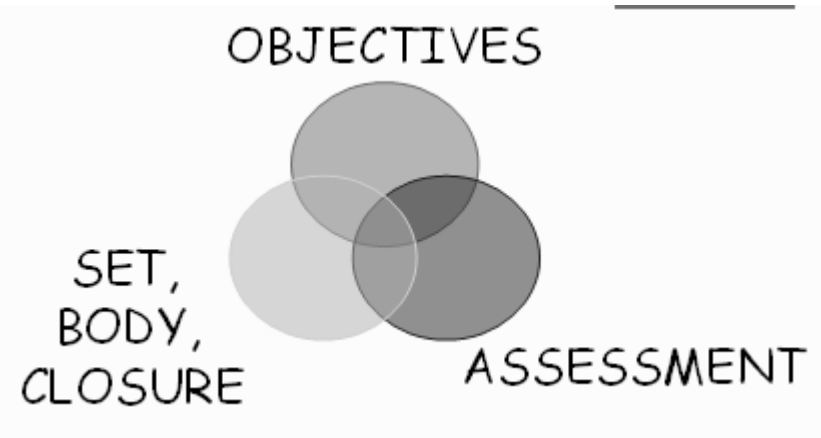
3. Introduction to Clinical Assessment

Objectives

Upon completion of this module, you will be able to:

1. Describe the relationship between objectives, teaching technique and assessment
2. Apply the OPEN model for delivering feedback
3. Identify formal tools to assess clinical performance
4. Discuss the CALMER approach for students experiencing academic difficulty.

The Relationship between Objectives, Teaching Technique and Assessment



Procedure Objective Use a stethoscope to perform medical examinations

Set, Body, Closure Student learns how to use a stethoscope to perform medical examinations

Practical Assessment (not paper-based) Student demonstrates their ability to use the stethoscope.

Stages of Learning		*Student Needs*
Unconscious Incompetence	Unaware Denial or minimizing of problem	if/then feedback from clinician proof of problem (video, audio tape, patient/peer feedback) (CALMER Approach)
Conscious Incompetence	Knows there is a problem bu not really willing/able to change	awareness of how to change (OPEN feedback)
Conscious Competence	Makes daily effort to change but attempts look and feel artificial, clumsy	encouragement and positive support
Relapse	Returns to previous behaviour accompanied by guilt, denial or challenge	encouragement and positive support
Unconscious Competence	Change has occurred and become automatic	new challenges

The OPEN Model for Delivering Feedback

Orient and **O**bserve the Student

Share **P**erspectives

Enter into Negotiations

Plan for **N**ext Time

Listening Skills Mnemonic Mnemonic

Body Language
Respect
Interest
Eye Contact
Following

Behavioural Feedback

Timely
Helpful
Appropriate
Never labeling, demoralizing or accusing
Collaborative and **C**ulturally sensitive
Specific

Dalhousie Field Notes Example

Guide To The CFPC Evaluation Objectives

Check Out www.cfpc.ca Under Exams & Certification

Phases Of The Clinical Encounter

History	Physical	Hypothesis	Investigation
Diagnosis	Procedure	Management & Treatment	
Referral	Follow-Up		

Selectivity
1. Appropriately Focused
2. Appropriately Thorough
3. Establishes Priorities
4. Urgent vs.Non-Urgent

Clinical Reasoning
1. Hypotheses / Diff. Dx
2. Gather Data **(Hx & Px)**
3. Interpret Data
4. Make Decisions
5. Set Goals / Objectives

Professionalism
1. Responsible/Reliable/ Trustworthy
2. Knows Limits
3. Flexible / Resourceful
4. Evokes Confidence
5. Caring / Compassionate
6. Respect / Boundaries/ Availability
7. Collegial
8. Ethical / Honest
9. Evidence Influenced
10. Community Responsive
11. Good Balance
12. Mindful Approach

Patient Centered Approach
1. Explores Disease And Illness **F**eelings**, I**deas, **F**unction & **E**xpectations
2. Whole Person / Context
3. Common Ground
4. Builds Relationship
5. Health Promotion / Prevention
6. Being Realistic

Procedural Skills
1. Decision to Act
2. Informed Consent & Preparation
3. During Procedure (Comfort / Saf
4. If Problems: Reevaluate
5. After Care / Follow-Up

Communication With Both Colle And Patients
1. Listening Skills
2. Language Skills
   - Verbal
   - Written
   - Charting
3. Non-Verbal Skills
   - Expressive
   - Receptive
4. Culture and Age Appropriatenes
5. Attitudinal

Dalhousie University Field Note

Date: _____ Learner: _____
Supervisor_____
Directly Observed □ Yes □ No

Problem / Procedure_____
_____
Phase Of Clinical Encounter
_____
Skill Dimension_____
Competency_____

Continue:

Suggestions For Improvement:

Follow Up:

Competency Stack:

Dalhousie University- Department of Family Medicine

Learner's Initials _____ Supervisor's Initials _____

Reflective Writing Example

3rd year medical student Blog *Why am I still here?* http://enanareina.blogspot.com/ used with permission

Tuesday, November 14, 2006

Breaking Bad News

We had our first-ever class on how to break bad news to a patient this week. I say "first-ever" because I actually think I might have benefited from having such a class earlier in my training, followed by a refresher course now. The class didn't really contain any instruction; instead, a standardized patient (SP) sat in the front, and two student volunteers each attempted to break the news to her that a routine chest x-ray revealed a lung mass suspicious for cancer (confirmed by CT). The first student did an excellent job; the only thing I would have done differently is that I wouldn't have interrupted the patient's questions to read things like "pleural effusion and right pleural mass" off the CT findings. The second student didn't really have a chance. The SP changed her tactics: instead of being quietly shocked and tearful, this time she was fuming mad from the get-go. "Some idiot called me and said there was a mistake on the x-ray, and instead of repeating it I got some cat scan thing, and all I wanted is your signature so I can go get my new job!" The poor student, flustered from the beginning, struggled to do his best, but the SP wouldn't give him any ground. At one point, he looked at the audience and the instructor and said "Can I call a friend?" He was given no lifelines, however, and literally ran out of the "patient's room" at the end of the encounter (amongst much laughter, including his).

I, fortunately, was not chosen for this encounter, and studiously avoided the instructor's eyes when she asked for volunteers. During both students' attempts, I squirmed in my chair, especially during the second. All I could think was "Thank GOD that isn't me up there!" It's one thing to deliberately enter an encounter that is guaranteed to be uncomfortable; it's entirely another to do so in front of a room of your classmates. I do think it might have been nice to have a little more instruction, like "What NOT to do when breaking bad news", or "How to pass the SP interaction on Thursday".

My extreme discomfort showed me that I have an awful lot to learn about this topic. I was present when my senior resident confirmed that the "head mass" seen CT was indeed most likely cancer for the family of the fifteen-year-old patient, and it didn't feel so awkward, just sad. But I didn't really have to talk. I've never had to break that news myself. I'm really not looking forward to the "practice session" on Thursday, where I will get my own SP and I will have to tell them something bad. However, I think this is something, like the rectal exam, that I'd rather practice on someone who's getting paid before I have to do it for real.

I do have a fear about breaking bad news, and that is that I will cry. I don't know if a patient or their family would be offended if their doctor cried while delivering bad news. Would it be a sign that the doctor cared, or would it make the encounter more about the doctor than the patient? Is it a sign of weakness?

On a slightly related tangent, I expect to have to use my new-found knowledge during this year, because one of the oddities of being a third year medical student is becoming a "patient advocate". We really get the most time to be with each patient, since we have (far) fewer duties than any of the actual MD's or nurses: we generally only carry 3-4 patients at a time, and we are only marginally useful in doing actual work, AND we are inefficient at conducting H&P's, so the combination gives us the most time to spend with the patients. I've had patients tell me I'm the only person who answered their questions. Most residents and doctors I've worked with cared about the patients, answered questions, and tried to keep patients informed. Yet, the perception was one of confusion

and lack of information on the part of the patients. As I'm getting ready to go back to the county hospital for internal medicine, I'm trying to get back into that mindset, to remind myself that it's so busy at this place that questions get lost and patient care may be cursory. We'll see how well I do.

Thursday, January 11, 2007

Breaking Bad News, Part II

Since making this post about the lecture we had on giving bad news, followed by a standardized patient encounter (in which I did fairly well), I've had lots more experience with it. I've seen a couple of different styles of news-giving.

My second medicine attending, Dr. C, was a heme/onc specialist. After examining her neck CT, I saw him tell a woman that her chemotherapy hadn't worked, that her tumor had continued to grow, and that it was now her decision whether to continue chemo or call home hospice. She cried. He repeated himself a lot, spoke calmly but empathetically; I believe he even held her hand.

My first call night on neurology, a man came in with a massive pontine hemorrhage. Virtually his entire brainstem was wiped out. I walked in to find the resident talking to his wife. We walked out to look at the CT, then we walked back in, the resident said simply "It's really bad. If there's anyone who needs to come see him, I'd have them come see him tonight, because it's possible he won't make it through the night." His wife cried. The resident apologized for giving her such news, and then we walked out.
My first neuro attending had to explain why he put a medical DNR on a comatose patient. He repeated himself over and over, because the family didn't understand at first. They thought we meant "we're withdrawing care", not "we won't resuscitate in case his heart stops again." Even though we were in the middle of rounds on a Saturday (and we wanted to get the hell out of there!), even though we were in the middle of a hallway, he continued the discussion until the family appeared to understand. They thanked him.

****

There will always be bad news in medicine. I'm not sure I can be as *cool* as these doctors in the face of such raw emotion. Every time I see a radiology report with cancer, it's almost like I hear the "DUNH-DUNH" from Law & Order, or church bells, or some other very somber sound. I appreciate these doctors' examples, and I want to learn this skill. I just hope it's possible to learn this skill of communicating effectively and sympathetically, without either continuing to bring it all home, or going the opposite direction and becoming hardened by it all. I am inspired by these doctors, however, not to run from such things. All of them took it upon themselves to deliver bad news; none of them tried to run away, or shirk this responsibility. I admire that, and I think that if I can learn how to do this, I can be a good doctor.

Rubric Example

Author: Dr. Laurie Anderson, Department of Botany/Microbiology, Ohio Wesleyan University

Each trait is to be scored on a scale of 1 to 4. An explanation of the scale appears below each trait. Scores of 3 for each trait are what I would expect and hope to achieve for the majority of students in an undergraduate class. Scores of 4 could be expected of the top 5% of students.

Critical Thinking Trait	1	2	3	4
The experimental design tests the hypothesis of interest.	The data that will be collected are not relevant to the hypothesis	Some of the data that will be collected are relevant to the hypothesis, and some are not	All the data that will be collected are relevant to the hypothesis, with some additions needed for the experiment to be maximally effective	All the data that will be collected are relevant to the hypothesis, and all data necessary for a thorough investigation of the hypothesis are proposed in the experimental design
The student can envision and explain the graphs/tables/ figures that constitute the predicted outcome of the experiment, and their relevance to the hypothesis.	The student does not know or understand the predicted outcome of the experiment	The student can explain some aspects of the predicted outcome.	The student can explain most aspects of the predicted outcome.	The student can explain all aspects of the predicted outcome of the experiment and its relevance to the hypothesis.

Working with Students Experiencing Professional Difficulty

The CALMER Approach

Catalyst for change
The Serenity prayer reminds us that wisdom is required to identify what we can and can't change in other people. You cannot control student's behaviour only the student can do that, but you can act as a catalyst for that change, so begin by identifying where the student is on the Stages of Change grid on the next page.

Alter Thoughts
Identify how you feel when you are with this student. Is your response to their behaviour creating a barrier? Are you taking the students behaviour personally? What can I do to change my feelings of anger, frustration or disappointment in this situation?

Listen, and then make a diagnosis
Sit down with the student and try in a non-judgmental fashion to figure out the problem. What is going on in the student's life that might be contributing to the situation? Is there something about the clinical rotation that is contributing to the problem?

Make an agreement
This is the point where you and the student decide to continue the relationship or not. The student needs to agree that they want to work on the behaviour or you need to accept that the behaviour is not going to change in order to continue the relationship.

Education and Follow-up
If you are going to work with the student on changing the behaviour, hold off your own agenda and look at where the student is on the Change Grid again. What will help him/her move to the next level? How much time should the person be given to make that movement?

Reach out and discuss your feelings
Where do the feelings go when you put them aside to focus attention on the student? You need to take care of yourself in this situation and talking to a trusted colleague, friend, coworker can release your tensions around the situation. You might also want to talk to people at the university about the situation.

Based on Pomm, Pomm and Shahady 2004
http://www.stfm.org/fmhub/fm2004/July/Heidi467.pdf

CanMeds Roles Assessment

Medical Expert - knowledge

1. Direct observation
2. Written Examination
3. Oral Examination
4. OSCE's
5. Simulation

Medical Expert - procedures

1. Simulation
2. Direct observation and In-Training Evaluation Reports (ITERS)
3. Logbooks
4. OSCE's

Communicator

1. Direct observation and In-Training Evaluation Reports (ITERS)
2. OSCE's and standardized patients
3. Multi-source feedback (360° assessment)
4. Portfolios and logbooks

Collaborator

1. Written tests
2. In-Training Evaluation Reports (ITERS)
3. OSCE's
4. Simulation
5. Multi-source feedback

Manager

1. Multi-source feedback and peer evaluation
2. Simulation
3. Portfolio
4. Direct observation

Health Advocate

1. Essays
2. Short answer questions
3. Direct observation and In-Training Evaluation Reports (ITERS)
4. OSCE's and standardized patients
5. Multi-source feedback and peer evaluation
6. Portfolios

Scholar

1. Portfolios
2. Short answer questions
3. Direct observation and In-Training Evaluation Reports (ITERS)
4. Multi-source feedback and peer evaluation

Professional

1. Direct observation and In-Training Evaluation Reports (ITERS)
2. Multi-source feedback
3. Portfolios

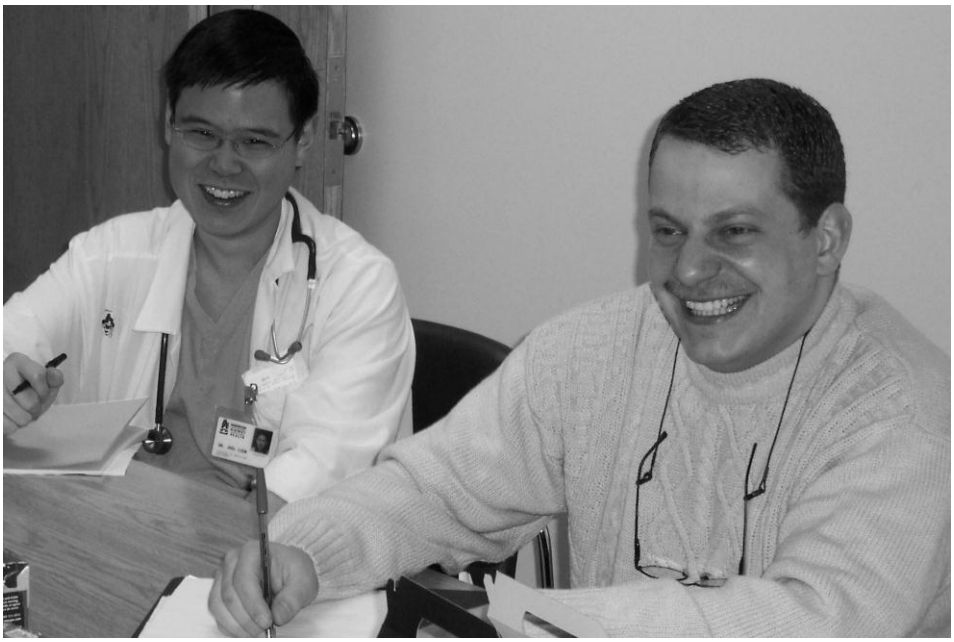
CanMeds Assessment Tools Handbook
G. Bandiera, J. Sherbino, J. Frank (Editors)
The Royal College of Physicians and Surgeons
2006

Your Assessment Plan

Strengths of current plan

What I would like to change

Preparing Your Second Microteaching Session



Microteaching Lesson Plan

Topic: _____ Date: _____

Objectives (**S**tudent-centered **M**easurable **A**chievable **R**elevant **T**imely):

_____

_____

_____

Set (**M**ood **M**otivation **O**bjectives **R**oles): Materials I need

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Body (**C**ooperative **A**ctive **S**elf Directed **E**xperiential) Materials I need

(or Skills Step 2)

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Closure (**R**eview **R**elate **A**ccomplishments **N**o **N**ew): Materials I need

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

TIPS Teaching Observation Form

Name: _____ Date: _____

Session Title: _____

Objectives: (**S**tudent-centered **M**easurable **A**chievable **R**elevant **T**imely)

_____

Set: (**M**ood **M**otivation **O**bjectives **R**oles)

_____

_____

_____

Body: (**C**ooperative **A**ctive **S**elf Directed **E**xperiential) or (Skills Step 2)

_____

_____

_____

_____

Closure: (**R**eview **R**elate **A**ccomplishments **N**o **N**ew material)

_____

_____

Instructional Media:

loud / large enough _____

clear / legible _____

uncluttered / focused _____

Follow-up

We believe that one single workshop experience, no matter how inspiring and dynamic, is inadequate to help teachers transform the way that they teach. We therefore recommend two follow-up mechanisms to assist TIPS participants to become better teachers. One of these we control. At some point, we will contact you to ask how teaching is going and inquire how and if we can be of additional assistance to you. We will also ask about your goals as outlined in the Commitment to Excellence Form (found at the back of this manual). Second, we hope that you will attend other sessions offered by Educational Support and Development on teaching and learning.

Commitment to Excellence

One of the many effective strategies that faculty developers and CME facilitators use to help participants improve and strengthen their practice is a Commitment to Excellence Form such as the one on the next page. We have included one here in the pre-reading package so that you can begin thinking about changes that you might want to make and so you will not be surprised when we ask you to complete one of these Forms after the TIPS course. After you complete it we will collect the forms and then make a copy for ourselves and return the original to you in the mail. We will check with you as you indicate on the form and thus provide support for your efforts and desire to teach well.

Commitment to Excellence: Enhancing Teaching

Memo to Myself

One thing I learned at this workshop was…

_____

_____

_____

I have decided to try this as a result of what I have learned:

_____

_____

_____

I expect to have completed this project by

_____

Another thing I learned was …

_____

_____

_____

I have decided to try this as well:

_____

_____

_____

I expect to have completed this project by

_____

Today's Date:_____

Evaluation of TIPS

COLLEGE OF MEDICINE, UNIVERSITY OF SASKATCHEWAN

ASSESSMENT OF TIPS COURSE AND TEACHING

Department: _____

Please rate the value to your learning of the individual sessions by circling the responses which best reflect your impressions.

SCALE:	**0 = Not Observed**
	1 = Very Poor
	2 = Poor
	3 = Fair
	4 = Good
	5 = Very Good
	6 = Excellent

Pre-Reading for Day 2

1.	Written material	**0 1 2 3 4 5 6**
2.	Web resources	**0 1 2 3 4 5 6**

Day Two

3.	Clinical teaching techniques	**0 1 2 3 4 5 6**
4.	Clinical assessment techniques	**0 1 2 3 4 5 6**
5.	Practicing instructional plans (small group)	**0 1 2 3 4 5 6**
6.	Critiquing microteaching	**0 1 2 3 4 5 6**
7.	Preparation for microteaching (individual preparation)	**0 1 2 3 4 5 6**

COMMENTS:

_____

_____

_____

_____

_____

Using the same scale as on the first page, please rate the teaching of <u>those indicated</u> by circling the responses which best reflect your impressions.

Facilitator's Name: _____

8. Knowledgeable and Analytical (Breadth, analysis and synthesis of ideas)	**0 1 2 3 4 5 6**
9. Clear and Organized (Explains clearly and stresses important concepts)	**0 1 2 3 4 5 6**
10. Enthusiastic and Stimulating (Enjoys teaching and is dynamic, energetic)	**0 1 2 3 4 5 6**
11. Established rapport (Respects learners; listens, is supportive)	**0 1 2 3 4 5 6**
12. Actively Involved Learners (Challenges; questions; answers precisely)	**0 1 2 3 4 5 6**
13. Provided Direction and Feedback	**0 1 2 3 4 5 6**
14. Was Accessible	**0 1 2 3 4 5 6**
15. Overall Teaching Effectiveness	**0 1 2 3 4 5 6**

COMMENTS:

_____

_____

_____

_____

_____

Thank You!

Appendix A

Preparing Your Office for Learners

This module is designed to help the clinical teacher think about the planning required before a student arrives in your clinic.

How do I set up my office for learners?

Toami is a second year resident who arrives at his new rotation with Dr. Smith to discover the office is completely unprepared for his arrival. He doesn't even have a place to hang up his coat. Dr. Smith hands him a pile of files, says, "Go file these.", and rushes away. Toami has no idea where the files are kept and is reluctant to ask the staff to whom he wasn't introduced.

Dr. Smith is very reluctant to take any students into his practice because they take up too much of his time. What do you think Dr. Smith could do to make his time with students more efficient?

Environment	Staff	Patients	Colleagues

Daily Plan Example

Time	**Appointments**	**Physician**	**Student**
0830		Daily plan meeting	
0900	Patient A Patient B	Patient A	Patient B
0915	Patient C	Patient C	
0930		Patient B Together	
0945	Patient D Patient E	Patient D	Patient E
1000	Patient F	Patient F	
1015		Patient E Together	
1030	Patient G Patient H	Patient G	Patient H
1045		Patient H Together	
1100	Patient I	Observe student with Patient I	Patient I
1115		Patient I Together	
1130	Patient J Patient K	Patient J	Patient K
1145	Patient L	Patient L	
1200		Patient K Together	
1215		Lunch	Lunch
1245			
1300-1645	Patients M-Z	Patients M-Z	Community Project
1600		Debrief	

Teaching in Your Office Checklist

Before the Learner Arrives Preparatory Checklist

One Week Before the Learner Arrives

- ☐ Review the institution's learning goals and objectives
- ☐ Review the institution's orientation materials
- ☐ Review the student's information or application (if available)
- ☐ Have a reliable number for the institution's contact person in case of problems
- ☐ Have staff confirm that dates and times of the instruction in your office with the sponsoring institution
- ☐ Send any information the learner should know about the practice to the sponsoring institution for distribution to the learner
- ☐ Identify a parking place for the learner
- ☐ Identify a workspace for the learner
- ☐ Schedule a 30-minute orientation for the learner
- ☐ Schedule time midpoint at the end of the experience for learner evaluation and feedback
- ☐ Consider making a poster for patients stating that this practice is a teaching site (on CD)
- ☐ Consider setting up a schedule

Two to Three Days Before the Learner Arrives

- ☐ Remind staff and partners of the impending arrival of the learner
- ☐ Distribute copy of the learner's application or personal information (if available) to staff and partners
- ☐ Brief the staff on the learner's responsibilities
- ☐ Review with the staff their role with the learner
- ☐ Coach the staff on how to present the learner to patients
- ☐ Equip the workspace with needed references, paper, and writing utensils
- ☐ Gather forms (e.g. laboratory, physical therapy, radiology, consultation) for learner orientation
- ☐ Generate list of staff, their office locations, and a short description of their responsibilities (save in file)
- ☐ Make a list of what to cover during learner orientation
- ☐ If the learner will dictate notes, prepare instructions (save in file)

When the Patients Arrive Checklist

- ☐ Have the receptionist inform patients that you have a learner in the office today
- ☐ Distribute brochure or handout about the learner to patients, if available
- ☐ Ask the patient's permission before bringing a learner into the examination room
- ☐ Couch your request positively, e.g., "I have a medical student/resident working with me today. If it's okay with you, I'd like him/her to talk to you and examine you first. I will come in and see you afterwards."
- ☐ If you teach frequently, inform new patients that you work with learners
- ☐ Have the office staff inform you about any positive or negative feedback from the patients about the learner
- ☐ Consider measuring your patients' satisfaction with the learner by using a *Patient Satisfaction Form*

From: Teaching in Your Office: A Guide to Instructing Medical Students and Residents
http://www.amazon.com/Teaching-Your-Office-Instructing-Office-Based/dp/1930513070

My Preparation Plan