UNIVERSITY OF SASKATCHEWAN

College of Medicine

TIPS for Residents

Teaching Improvement Project Systems

Manual Created by:
Dr. Marcel D'Eon
Ms. Deirdre Bonnycastle
Dr. Kalyani Premkumar
Mr. Sean Polreis

Faculty Development
College of Medicine
University of Saskatchewan

Contact Information

Faculty Development
medicine.facultydevelopment@usask.ca
306-966-5171

Sean Polreis (facilitator)
sean.polreis@usask.ca
306-966-1311

For additional medical education resources please see:

College of Medicine Medical Education Wiki:
https://wiki.usask.ca/display/db/Medical+Education+Wiki+Home

Clinical Teaching Tips: Resources for Family Physician Teachers:
https://medicine.usask.ca/documents/faculty-affairs/development/ClinicalTips.pdf

Clinical Teaching Tips: Resources for Royal College Specialists in Community Practices: https://medicine.usask.ca/documents/faculty-affairs/development/ClinicalTips_specialists.pdf

Fundamental Teaching Activities in Family Medicine: A Framework for Faculty Development
http://www.cfpc.ca/uploadedFiles/Education/_PDFs/FTA_GUIDE_TM_ENG_Apr15_REV.pdf

KeyLIME - Key Literature in Medical Education Royal College podcast
http://www.royalcollege.ca/rcsite/canmeds/keylime-podcasts-e

10 tips on Mastering teaching as a resident.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4501626/

Overview & 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, & evaluate selected instructional techniques.

TIPS stands for **T**eaching **I**mprovement **P**roject **S**ystems & was originally developed & 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, & in 1993 made its way to the University of Saskatchewan. The second day of the manual was extensively revised with the assistance of the Department of Family Medicine.

Doctors have several roles including:

1. Professional/role model
2. Clinical supervisor/coach
3. Teacher/scholar/patient educator
4. Physician/team member
5. Leader/facilitator/advocate
6. Medical education researcher

Please see the following for comprehensive descriptions of these roles:

Royal College CanMEDS framework

CanMEDS - Family Medicine framework

Fundamental Teaching Activities in Family Medicine

The emphaisis of this manual is on the third role above but touches on many of the others.
We anticipate that by the end of TIPS, **you will be able to meet the following objectives:**

* Write outcomes-based learning objectives
* Plan an instructional session with an appropriate Set, Body, & Closure
* Deliver a planned instructional session
* Use audiovisual aids effectively
* Critique instructional sessions
* Give & receive effective feedback
* Apply TIPS techniques to different types of teaching environments & contexts
* Choose to continue to strengthen your teaching skills &
* Advocate for better teaching & learning at the College of Medicine.

Agenda

Day 1 Preparation

1) Page 6-27 of the manual.
2) Watch this video for an example of a microteaching session:
https://usask.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=3d79f7d3-4596-4ede-bb26-a88e0101a4f5s
3) Prepare for your microteaching session (at least arrive with some idea of what you want to do as you will only be given a half hour during the TIPS course to prepare)

Ambiance is relaxed - the course involves a high degree of group discussion.

Day One

8:15	Gather (Light breakfast - provided)
8:30	Official Start: Welcome/housekeeping items
	Presentation skills
	Teaching fundamentals
	How people learn - remembering & applying
	Objectives, set, body, & closure
	Planning a teaching session using TIPS framework
	Lunch – provided
	PowerPoint skills
	Preparing for your first microteaching session
	Microteaching
4:30	Day 1 evaluation - link sent via email

Day 2 Preparation:

1) See Page 37

Day Two

8:15	Gather (Light breakfast - provided)
	Official Start: Welcome/housekeeping items Review Day 1
	Clinical teaching techniques
	Positive Learning Environment
	Assessment & Feedback
	Lunch – provided
	Cognitive biases
	Preparation for your second microteaching session
	Microteaching
	Day 2 evaluation - link sent via email
4:30	

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Preparation for DAY 1

Overview of Teaching & Learning

The Central Purpose of Teaching is to:

- aid the process of learning
- help the learner move from one state of mind to another
- facilitate learning
- help someone to make a permanent change in their thinking/behavior

What the central purpose of teaching is NOT primarily about:

- providing facts & information
- telling students what to do
- giving handouts & notes
- telling everything you know

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What is a Microteaching Session?

A microteaching session, as the name suggests, is a mini instructional session lasting **5-10 minutes**. You will present **TWO** microteaching sessions, one on each day of the workshop. These sessions will be used to practice, analyze, & evaluate instructional techniques. You are given this opportunity to immediately apply what you have just learned.

The microteaching experience allows you to practice the specific instructional skills that we will introduce in the course. In considering a topic, you need to think of some material, which can be learned in less than 10 minutes. Pick a small part of a larger presentation rather than compressing 50 minutes worth of information into 10! In either case, **we suggest that you choose a medical topic which is simple, straightforward, and with which you feel very comfortable**. You may choose a different topic on the second day or perhaps to repeat or build on your session from the first day. Either approach is fine; both can help you become a better medical teacher. See the following page for examples of teaching topics.

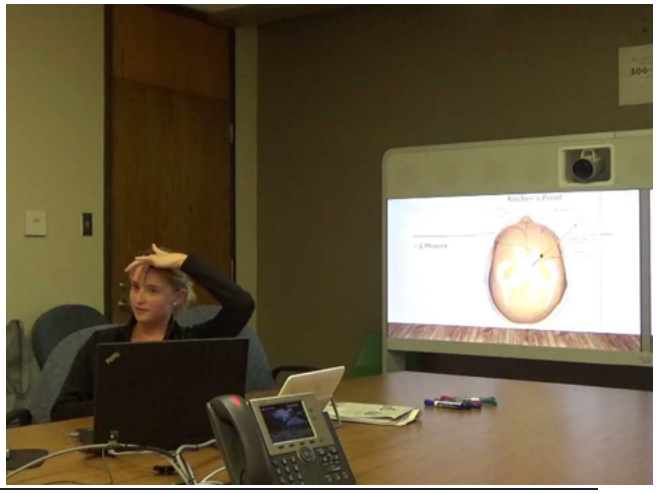
Your presentation can be delivered by any method you like. TIPS is a safe teaching environment so try to go out of your comfort zone. It is an opportunity to practice teaching in ways that might not be very comfortable for you.

You should bring instruments, charts, equipment, etc. that you will need to add realism to your session. We have a computer & whiteboard (possibly a 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 1 to fellow participants in your small group (who will act as learners of any kind & at whatever level you wish). These presentations are recorded for your own personal viewing later. Following your microteaching session, the members of your group & the TIPS facilitator will provide you with a **gentle critique** pointing out strengths & making suggestions for improvement. You will be able to view your session for reflection as part of your preparation for Day 2.

We recommend that you **view the following microteaching** example:
https://usask.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=3d79f7d3-4596-4ede-bb26-a88e0101a4f5

During the TIPS course, we will discuss a variety of ways to enhance your teaching. You will be given a **short** period of time to plan & prepare your session. However, **you should come with at least an idea for a topic and some props, if needed.**



TIPS for Residents Microteaching

For the conclusion of each day of TIPS, you will teach a **relatively short (5-10 minute) session**. You may teach anything you like as long as it is **medically related/relevant**. You may **deliver in any fashion** you like – PowerPoint, white board, table discussion, simulated procedure, etc. (you may want to use a delivery method you are uncomfortable with). You may want to teach something for the benefit of other residents in your TIPS group or practice something you will likely be teaching in the future (your "learners" may be colleagues, medical students, or patients).

While the possibilities for topics are virtually limitless, some residents have difficulty deciding what to teach so the lists below may help – just some ideas to consider:

Disease/Condition (any aspect – presentation, differential, etiology, management, etc. – you likely can't do it all in 5-10 minutes):

Hypertension in pregnancy
Fever
Insomnia
Fractures
Febrile seizures
Dehydration in children
Radial head subluxation
Upper GI bleed
Alcohol withdrawal
Nephrolithiasis
Melanoma
Kawasaki disease
Renal colic
Compartment syndrome

Procedure/Skill:

Pediatric lumbar puncture
Epley maneuver
Pulmonary function test
Sensitivity calculation
Pain assessment
IV catheter placement
Writing prescriptions
X-ray interpretation
Sedation
Communicating bad news to patients
Consult
Fracture reduction
Suturing
Removing a fish hook

Information/Knowledge:

SMA medical-legal guidelines
Prescription review program
Contraception
Informed consent
Physician wellness (ex: meditation)
Surviving R1
Sun safety
Preparation for 1st call shift
Cranial nerves
E-health
Knee ligaments
Screening
Jones criteria
Use of alternative therapies
Primary survey
Inhaler/pharmaceutical education with patient

Examples of Teaching Topics based on CanMEDS Roles

Scholar
Presenting at a conference
Using Google scholar search engine
How to do a quality abstract

Professional
Ethical issues
What defines professional behavior in medicine?
CMA Guidelines in recommending patients

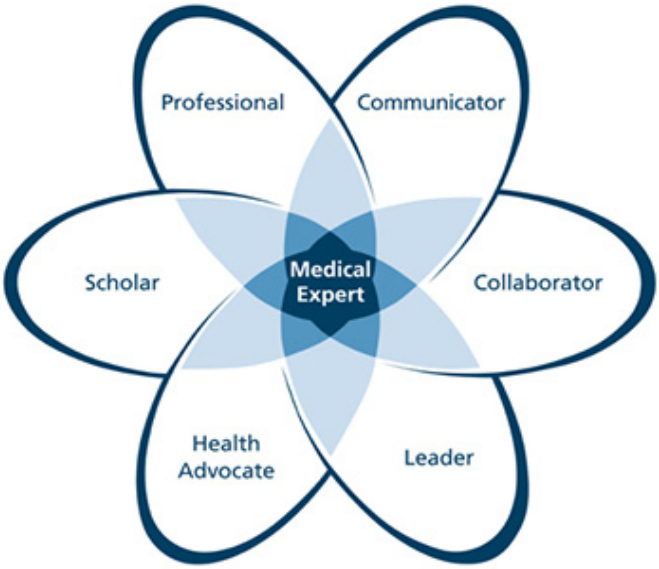
Communicator
Presenting bad news
Talking to people from other cultures
Using a translation app

Collaborator
Valuing the roles of interprofessional teams
Handling conflict
How to write a good consult

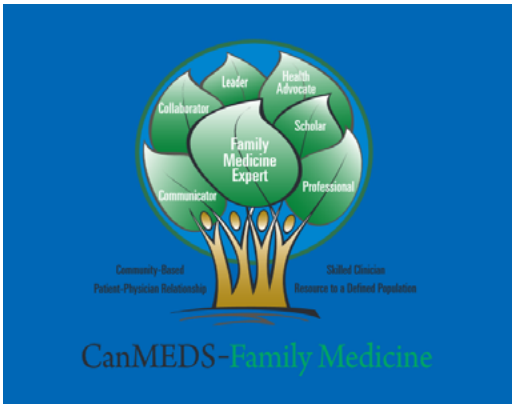
Leader
Quality improvement
Resource management & allocation
Patient safety

Health Advocate
Teaching about determinants of health
Responding to the needs of the community
Role of the media

Medical Expert
My favorite technique
A medical theory I'm interested in



CANMEDS



Why Do/Should Residents Teach?

Medicine has a long tradition of precepting

Altruistic

- Senior physicians mentor younger physicians into the profession
- "*Docere*" the Latin origin of doctor means teacher
- Hippocratic oath
- Improves patient safety
- Perpetuate knowledge & skills - give back to others
- CanMEDS scholar/communicator role
- Expectation for teaching patients
- Practice of medicine is more than personal knowledge

Practical

- Improves the health team relationship
- Allows busy physicians more time with patients & residents
- Provides variety in work day for resident
- Prepares residents for academic faculty positions
- Residents are closer in age to students (shared culture, language, experience)
- Provides practice for teaching patients
- Large number of students
- Fun & rewarding
- Career development

Cognitive Benefits

- Residents become more knowledgeable
- Residents improve their research, organizational skills
- Residents' communication skills improves
- Residents, who are consciously competent, may be better able to explain concepts & procedures than those who are unconsciously competent (explained during TIPS)

Metacognitive Benefits (Reflecting on thinking)

- Residents examine their thinking about communication & teaching
- Residents analyze the thinking process of others in order to teach & provide feedback
- Residents practice being reflective physicians

Key Principles of Learning

Focused question for guided reading:

1. Describe the nature of intelligence presented here.

Intelligence: This is more like knowing a lot about something than having superior innate & 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 & readily accessible information about the subject. Intelligence is, to misquote Edison, 10% inspiration & 90% perspiration (see K. Anders Ericsson's research on deliberate practice).

Being able to solve a problem, even in medicine, is based more on knowing a lot about the context & 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, & attend lectures: they derive some comfort in being able to recognize terms & words in familiar contexts. They become lulled into thinking that they are prepared & come out of exams wondering why they did not do well. Reading does not help people to recall the information or use it in a useful context. Only when the mind &/or body are engaged in learning does it occur.

Learning in Medicine

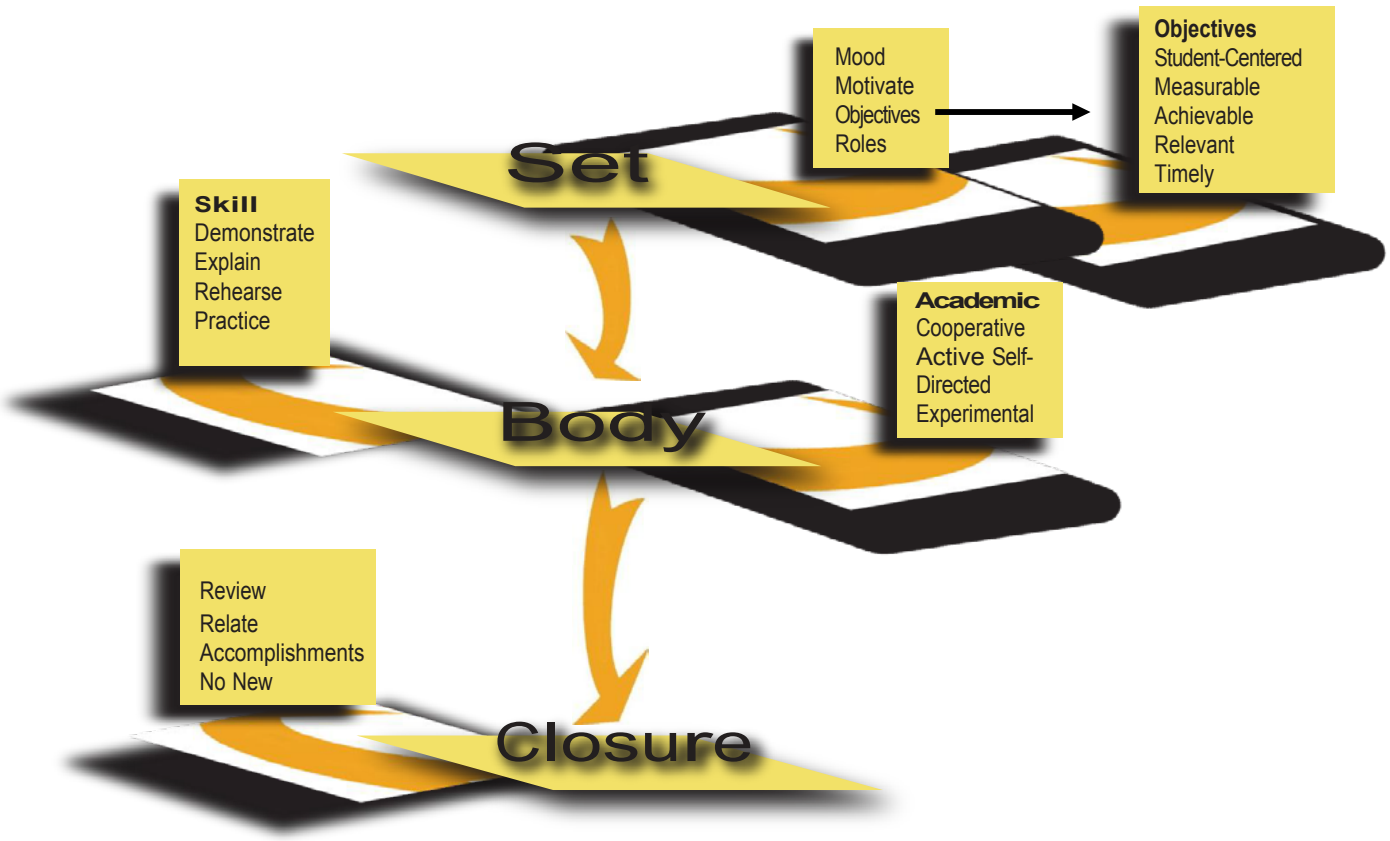
Learning is viewed here as developing a way of thinking & acting that is characteristic of an expert community. Such a way of thinking consists of two important elements:

1. The knowledge that represents phenomena in the subject domain.
2. The thinking activities that construe, modify & use this knowledge to interpret situations & solve problems.

Effective Learning: Effective learning is the process of embedding knowledge, skills, & attitudes into long term patterns; 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. Experienced physicians have tens of thousands of these patterns in their memory & are continuously adding new information to them. Use of this existing knowledge structure is a key to teaching.

Practice Organizing an Instructional Session

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



The following information & exercises will help prepare you for the TIPS course.

Writing Learning Outcomes/Objectives

Click Here to open the Coral Collection Concepts as Online Resources for Accelerated Learning.

Verbs for Writing Learning Outcomes and Determining Appropriate Level of Assessment

Cognitive Domain

Knowledge Ability to recall information	**Comprehension** Interpret information in one's own words	**Application** Use knowledge in a novel situation	**Analysis** Break down knowledge into parts and show relationships	**Synthesis** Bring together parts of knowledge to form a whole and solve a problem	**Evaluation** Make judgments on the basis of criteria
Define List Name Recall Record Relate Repeat Underline	Describe Discuss Explain Express Identify Locate Recognize Report Restate Review Tell Translate	Apply Demonstrate Dramatize Employ Illustrate Implement Operate Practice Schedule Shop Sketch Use	Analyze Appraise Calculate Categorize Compare Contrast Criticize Debate Diagram Differentiate Distinguish Examine Experiment Inspect Interpret Inventory Question Relate Solve Test	Arrange Assemble Collect Compose Construct Create Design Formulate Manage Organize Plan Prepare Propose Set Up	Appraise Assess Choose Compare Estimate Evaluate Judge Measure Rate Revise Score Select Value

Verbs for Writing Learning Outcomes and Determining Appropriate Level of Assessment

Affective Domain

Receiving Selectively attend to stimuli	**Responding** Respond to stimuli	**Valuing** Attach value or worth to something	**Organization** Conceptualize the value and determine interre-lationships with other values	**Characterisation** Integrate values into a value system that controls behavior
Accept Acknowledge Attempt Attend to Follow Listen Meet Observe Receive	Agree Allow Assist Attempt Choose Comply Communicate Conform Demonstrate Describe Discuss Display Exhibit Follow Give Help Identify Locate Notify Obey Practice Relay Reply	Apply DemAdopt Care (for) Complete Contribute Compliment Encourage Endorse Enforce Evaluate Foster Guide Interact Join Justify Praise Preserve Propose React Respect Seek Share Subscribe Suggest Support Uphold	Adapt Anticipate Collaborate Confer Consider Coordinate Design Direct Establish Facilitate Investigate Judge Lead Manage Modify Organize Plan Qualify Recommend Revise Specify Submit Synthesize Test Weigh	Act Administer Advocate Aid Challenge Change Commit (to) Counsel Defend Dispute Empathize Excuse Forgive Influence Motivate Negotiate Persist Praise Profess Promote Question Reject Resolve Serve Solve

Verbs for Writing Learning Outcomes and Determining Appropriate Level of Assessment

Psychomotor Domain

*Perception Sense cues that guide motor activity	*Readiness Ready to Act	Imitation/ Practice Imitate and practice skills	Independant Performance Perform skills with increasing proficiency	Automatic Performance Perform skills automatically	Problem Solving Adapt skill sets to solve a problem	Origination Create new patterns for specific situations
Detect Hear Listen Observe Perceive Recognize See Sense Smell Taste View Watch	Assume a stance Achieve a posture Clasp Hold Sit Stand Station	Copy Duplicate Imitate Manipulate Repeat Try	Align Assemble Build Calibrate Complete Conduct Construct (build) Demonstrate Dismantle Execute Grind Make Operate Perform Produce Repair Sand Sharpen Sketch Type Use	Control Direct Guide Manage Master Organize Perfect Perform Proceed	Adapt Alter Apply Change Correct Design Reorganize Revise Test Troubleshoot	Arrange Combine Compose Construct Create Design Devise Interpret Map (out) Originate Plan

***these are trivial levels and most psychomotor learning outcomes require assessment at a higher level**

Additional Notes:

Optional Exercise 1

Given the following situation, **write one outcomes-based learning objective** using the guidelines & suggestions in this manual:

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

Ensure that you objective is:

Student Centered
Measurable
Achievable
Relevant
Timely

Learning objective - At the end this session, the student you will be able to:

_____

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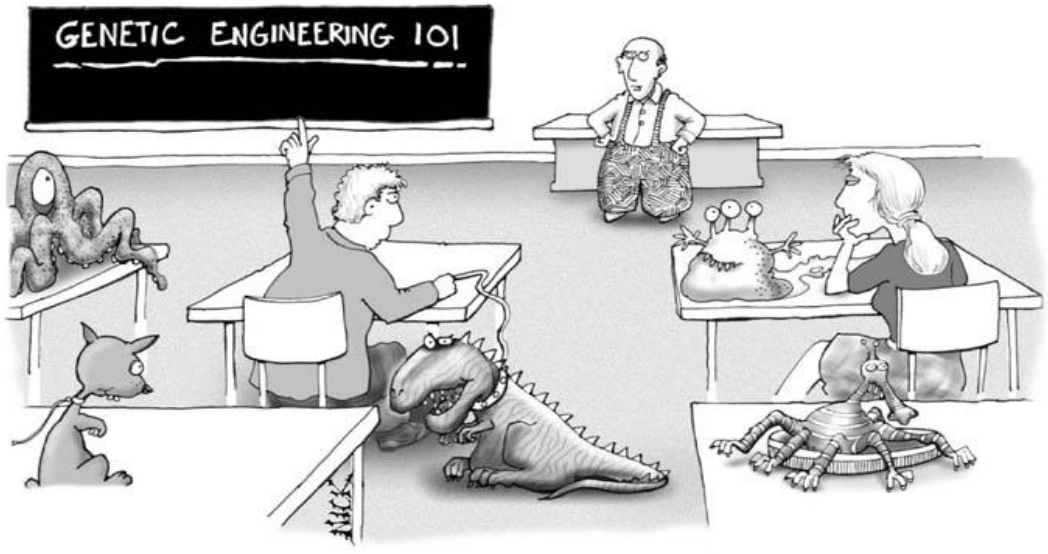


"Okay...is there anybody ELSE whose homework ate their dog?"

An instructional session can be divided into three components:

1. Set
2. Body
3. Closure

Set

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 so in the Set, the teacher focuses the learners' **attention**, orients them to the objectives, & prepares them to participate in instruction.

Mood:
People generally learn best in a relaxed, comfortable, non-threatening situation that has high expectations & standards. Threatening students & intimidating are counter-productive as would be a too friendly or casual approach. A positive environment is one that is both challenging & supportive.

Motivates:
The teacher motivates by including some unusual way to get the attention of learners, displaying enthusiasm for the content, &/or arousing curiosity with a clinical problem. Letting learners know why they are learning something enhances motivation. Even if you think the value is obvious, ensure your learners understand the **purpose & utility** of the lesson. Teachers can simply tell learners why they are learning something, but more effectively, teachers can involve learners 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.

Objectives:
Most importantly, in the Set, let the learners know what the objectives for the session are. People learn best if they know what is expected of them. Either explain the objectives verbally, write them on the board, 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).

Roles:
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 learners know the roles 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 learners 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, & prepares the learners for their **R**ole during the session. Your Set should make learners want "**MMOR**" of what you have to teach them. Including a well-developed Set will have a huge & immediate effect on the teaching & learning process.

Optional Exercise 2

Directions: Identify the well-developed SET & 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 & less 'cross-examination' techniques. What would you do if you were confronted with an angry & 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 & will make a huge difference in how well the patient responds to & 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, & 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 communications 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."

Optional Exercise 3

Given the following objective, outline an appropriate Set (ensure that your set creates the **M**ood, begin to **M**otivate the learners & prepares the learner for their **R**ole during the sessions).

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

Body

The Body of your instructional session is the core. This is where you present the material & allow students to practice to help them learn the material that they need to know. Day 1 of Tips will focus on a Body appropriate for academic teaching while the body in Day 2 will look at teaching skills/procedures & clinical reasoning.

C.A.S.E. Curriculum Model

To help our learners to transfer their knowledge, skills, & attitudes (become strong problem-solvers) we are committed to teaching knowledge, skills & attitudes in clinically relevant contexts, using integrative patient scenarios, or cases. As students learn & progress, the tasks they face will grow with them until the cases & practice exercises are real, authentic situations. This will allow our students to build on success, reinforce prior learning, & become prepared to transfer their learning to new & different situations. The University of Saskatchewan, College of Medicine has adopted the C.A.S.E Curriculum Model in order to achieve this goal.

The body of your lesson should be built using 2 or more of the following elements of the model:

Cooperative Learning
Active Learning
Self-Directed Learning
Experiential Learning

For more information about teaching techniques in each of these elements, see the Medical Education Wiki: https://wiki.usask.ca/display/db/Medical+Education+Wiki+Home

The C.A.S.E Curriculum is focused on Competencies

As you read in the objective section, competencies represent the knowledge, skills & attitudes students should exhibit upon completion of each level of study (course/year). Class & rotation objectives help students move towards achieving competency.

The C.A.S.E Curriculum incorporates Cooperative Learning (CL)

Providing medical services is a group effort & CL has been shown to facilitate developing the skills to work in teams. We believe in best-practice CL (Johnson, Johnson, Smith, 1998; Nilson, 1998) which has five important & necessary features:

1. positive interdependence
2. face-to-face promotive interaction
3. individual & group accountability
4. interpersonal & small group skills
5. group processing.

Positive interdependence: Positive interdependence is successfully structured when group members perceive that they are linked with each other in a way that one cannot succeed unless everyone succeeds. Group goals & tasks, therefore, must be designed & communicated to students in ways that make them believe they sink or swim together. When positive interdependence is solidly structured, it highlights that (a) each group member's efforts are required & indispensable for group success & (b) each group member has a unique contribution to make to the joint effort because of his or her resources &/or role & task responsibilities. Doing so creates a commitment to the success of group members as well as one's own & is the heart of cooperative learning. If there is no positive interdependence, there is no cooperation.

Promotive interaction: Students need to do real work together in which they promote each other's success by sharing resources & helping, supporting, encouraging, & applauding each other's efforts to achieve. There are important cognitive activities & interpersonal dynamics that can only occur when students promote each other's learning. This includes orally explaining how to solve problems, teaching one's knowledge to others, checking for understanding, discussing concepts being learned, & connecting present with past learning. Each of those activities can be structured into group task directions & procedures. Doing so helps ensure that cooperative learning groups are both an academic support system (every learner has someone who is committed to helping him or her learn) & a personal support system (every learner has someone who is committed to him or her as a person). It is through promoting each other's learning face-to-face that members become personally committed to each other as well as to their mutual goals.

Individual & group accountability: Two levels of accountability must be structured into cooperative lessons. The group must be accountable for achieving its goals & each member must be accountable for contributing his or her share of the work. Individual accountability exists when the performance of each individual is assessed & the results are given back to the group & the individual in order to ascertain who needs more assistance, support, & encouragement in learning. The purpose of cooperative learning groups is to make each member a stronger individual in his or her right. Students learn together so that they subsequently can gain greater individual competency.

Interpersonal & small group skills: Cooperative learning is inherently more complex than competitive or individualistic learning because students have to engage simultaneously in taskwork (learning academic subject matter) & teamwork (functioning effectively as a group). Social skills for effective cooperative work do not magically appear when cooperative lessons are employed. Instead, social skills must be taught to students just as purposefully & precisely as academic skills. Leadership, decision-making, trust-building, communication, & conflict-management skills empower students to manage both teamwork & taskwork successfully. Since cooperation & conflict are inherently related, the procedures & skills for managing conflicts constructively are especially important for the long-term success of learning groups.

Group processing: Group processing exists when group members discuss how well they are achieving their goals & maintaining effective working relationships. Groups need to describe what member actions are helpful & unhelpful & make decisions about what behaviors to continue or change. Continuous improvement of the processes of learning results from the careful analysis of how members are working together & determining how group effectiveness can be enhanced.

The C.A.S.E Curriculum uses Active Learning (AL)

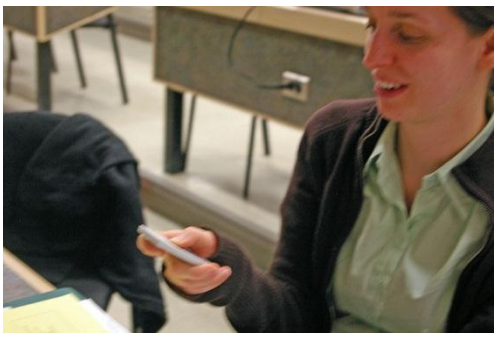
Active Learning (AL) engages learners in relevant & authentic tasks in a supportive environment. It is an approach to teaching that incorporates one or more of the following five behaviours:

1. talking & listening
2. reading
3. writing
4. creating
5. reflecting

Compared to a traditional approach of passive information transmission, AL produces better learning, including concept formation; increased motivation; discovery of misconceptions; & the acquisition of knowledge, critical thinking, attitudes & values, & interpersonal skills. Case discussions are one example of active learning approaches.

Therefore, the College of Medicine will incorporate into all courses, programs, & individual teaching sessions, opportunities for students to engage in AL. This does not mean that all teaching & 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.

Learning occurs when learners are actively involved in the process. Examples of teaching to promote active learning:



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 medical classrooms

A group of medical students organizing hormones into classification systems

Medical students playing Jeopardy in an anatomy class

Can you think of other techniques that actively engage learners?

The medical education wiki https://wiki.usask.ca/display/db/Medical+Education+Wiki+Home has lists of medical websites that can assist you & your learners. Look under Active Learning.

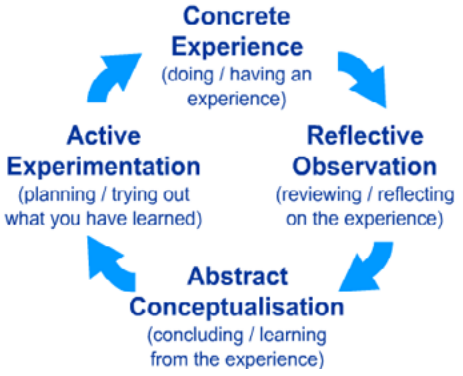
The C.A.S.E Curriculum incorporates opportunities for Self-Directed Learning (SDL)

The practice of medicine requires lifelong learning, & incorporating opportunities for students to seek out & evaluate information helps students develop the habits of mind that promote this. The medical education wiki has lists of medical websites that can assist you & your students in this process. Look at this site http://www-distance.syr.edu/sdltools.html for techniques, tools, & resources for the self-directed learner.

The C.A.S.E Curriculum is based on Experiential Learning (EL)

Experiential education (or "learning by doing") is the process of actively engaging students in an authentic experience that will have benefits & consequences. Students make discoveries & experiment with knowledge themselves instead of hearing or reading about the experiences of others. Students also reflect on their experiences, thus developing new skills, new attitudes, & new theories or ways of thinking. Students participate in a real activity with real consequences for the purpose of meeting learning objectives. It is particularly effective due to its holistic approach of addressing cognitive, emotional & the physical aspect of the learner. For example, beginning with a particular experience such as a patient encounter or paper case, students first plan a response to the situation & then carry out their plans. The cycle moves on to an observation or data collection stage, & finally to reflection & the creation of general rules & principles. This simple cycle (plan, act, observe, reflect) is a process that will help students approach & learn from experiences they encounter.

Kolb theory of experiential learning

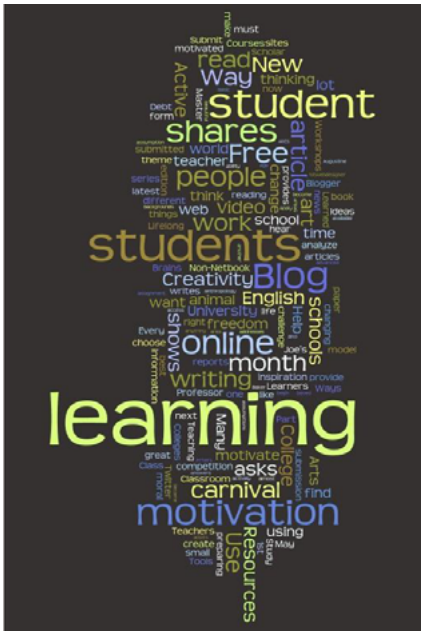


Keep in mind when delivering your Body

Do it, do it, do it. Active learning is generally better than passive. Choose cases & examples that are stimulating & 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 & allow time for thinking & reflection.

Start small & build big. Prior learning is one of the chief determinants of future learning. It is important, therefore, to find out what students already know & do not know & 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 learner. Use a variety of approaches depending on the stage of the teaching & learning situation & the needs of the students. Remember that students' progress from relative dependence to relative independence as they become more familiar with, & 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.

Linking Objective, Learning Activity, & Assessment

Bloom's Level	Knowledge (Remembering)	Comprehension (Understanding)	Application (Applying)	Analysis (Analyzing)	Synthesis (Synthesizing)	Evaluation (Evaluating)	Creation (Creating)
Instructional Objectives: **The Learner will be able to ...**	List Define Describe Recognize Identify Name Match Retrieve Record Repeat Locate/Find	Explain Summarize Paraphrase Classify Convert Defend Attribute Discuss Express Restate Translate	Implement Carry out Use Execute Operate Demonstrate Employ Illustrate Interpret Practice Perform	Compare Contrast Calculate Debate Deconstruct Integrate Differentiate Distinguish Inspect Relate Infer	Arrange Categorize Combine Collect Compose Formulate Organize Manage Plan Prepare Propose Compile	Appraise Assess Discriminate Hypothesize Critique Value Judge Measure Select Revise Detect Monitor	Design Construct Plan Produce Invent Devise Make Build Set up
Learning Activities: **Teaching Methods**	Mnemonics Crosswords Puzzles/Games Note taking Flash cards Drill & Practice Graphic Organizers Illustrations Analogies	Concept Mapping Short case Cooperative Task Write, pair, share Role Play Matching games Discussion Review	Simulation Lab Discussion Rounds Cases Standardized Patients Virtual patients Chart review Field trips Demonstrations Projects Role play Microteach	Problems (PBL) Research Project Case studies 5 minute preceptor Critical incidents Wiki writing Reflection Collaborative Tasks Open ended questions Concept mapping	Projects Problems Case studies Simulation See Analysis	PBL Complex Case study Research project Discussion Critical thinking exercises Error identification Reflection Critiques Appraisals	Produce a video, art, animation, photograph, concert, game, practice guidelines, role play Build a model or simulation Publish a blog, journal, article, poster session
Assessment Methods	MCQ True/False Matching Fill in the blank Label diagram	Presentation SAQ Blog/Journal Graphing Poster session MCQ with vignettes	Demonstration Case study SOAP Exercises Project 360 assessment OSCE MCQ with vignettes	Survey report Project report Group presentation Grand rounds Create mind map Reflective writing Complex case study	See Analysis	Peer review Create rubrics Comparison Reports Criteria selection Tasks Error Identification	Final product rubric Peer review Expert review Creativity rubric

Lower Order Thinking Skills ⟶ **Higher Order Thinking Skills**

Based on the work of Andrew Church: SLO Workbook

Optional Exercise 4

Given the following objective, what could you do in an instructional session that would incorporate the above elements of a great Instructional Body:

Objective: The learner will be able to compare 6 symptoms of diabetes mellitus.

Ensure that your instructional session incorporates:

Cooperative Learning

Active Learning

Self- Directed Learning

Experiential Learning

Closure

Closure is the part where you wrap up your instructional session. It should only take a few minutes, & it is never time wasted! During closure, you will reinforce key components, remind students of the topic's importance/ relevance, & keep them motivated. **Always** set aside time for closure, even if it is only a brief moment.

Review:
This is a chance to make sure that the students have picked up the main points & understand how everything is connected. You can provide the review, or you can ask students to recall the key points & construct a review themselves. 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. It may not be readily apparent to the learners how useful the information could be nor how much they have learned.

Accomplishment:
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, & 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 **N**ew Material:
Often teachers are so pressed to deliver a huge amount of content that they feel they don't have enough time. Closure is often rushed or even omitted. Put aside a few minutes to provide an appropriate Closure, & do not fill the time with new material you didn't have time for in the body of your session. If you are teaching in a classroom setting, don't end with the interrogative statement, "Are there any questions?" To students this means, "Class is over, gather your books, & get out of here." Students who actually respond to your request may suffer from negative peer pressure. You can ask this question near the end of the body, **before** you begin your closure.

Gagne, R., Briggs, L., & 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.

Optional Exercise 5

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

Objective: The learner will be able to describe 6 symptoms of diabetes mellitus.

Ensure that you:

Review

Relate

provide a sense of:

Accomplishment & have:

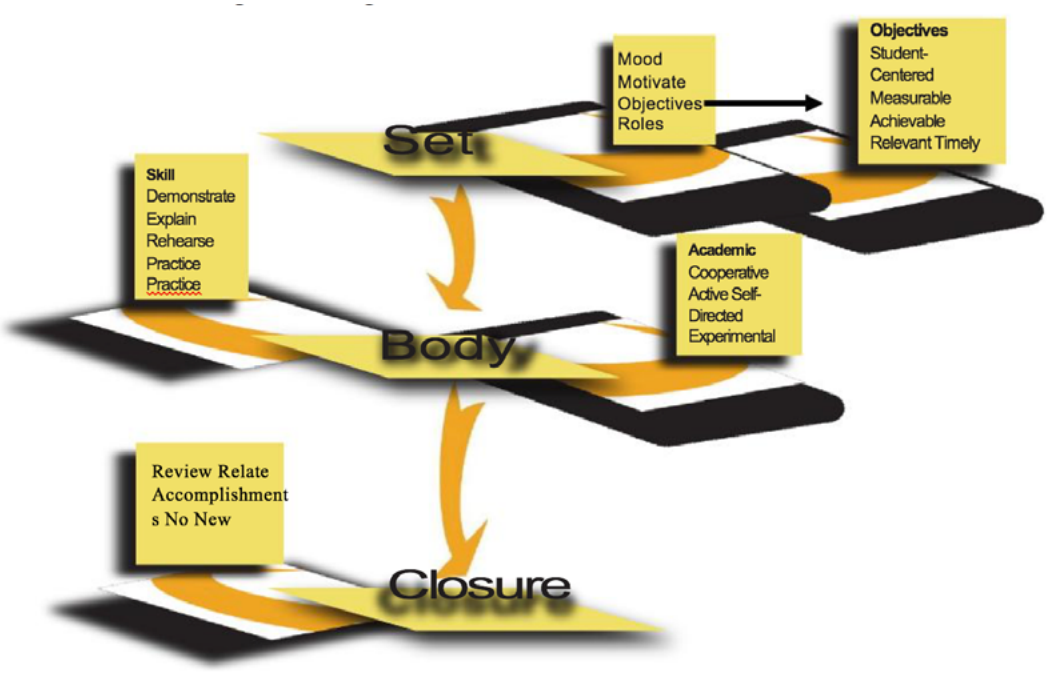
No **N**ew material

The next section includes resources for Day 1 of the TIPS course

No need to read ahead

Day 1 Resources

Practice Organizing an Instructional Session



Group Task

Given an assigned competency which medical students are required to achieve upon graduation, create a teaching session, including appropriate rotational objective(s), set, body, & closure that will help the learner develop the knowledge, skill, or attitude they require.

Note: Remember that objectives are steps to achieving the competency (See pages 12 - 14).

Ensure that your objective is:

Student Centered

Measureable

Achievable

Relevant

Timely

Practice Organizing an Instructional Session
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 New): Materials I need

Additional lesson plans are provided in the Appendix.

Preparing For Your Microteaching Session

Before your teaching

Prepare	Know your material thoroughly.
Organize	Know your outline & presentation.
	Mentally rehearse the sequence of the presentation detail.
	Imagine a positive, successful presentation.
Visualize	Stand just as if your audience was in front of you & practice.
Rehearse	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 & 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 teaching

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!

Critiquing a Microteaching Session

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 & weaknesses

Objective:
- Focused on learner performance
- Describe specific actions
- Avoid personal opinion & biases
- Honest & based on performance as it was

Well Organized:
- Use some pattern of organization which is logical & makes sense to both the instructor & learner (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, & content of critique to the occasion & student
- Allow for variables
- Determine what to say at the proper moment

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

Constructive:
- learner must profit from the critique
- Praise is used to inspire improvement
- Positive guidance for correcting fault & strengthening weakness

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

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

Critiquing a Microteaching Session

This form can be used to critique a microteaching session. We record your day 1 microteaching session & ask that you watch it before day 2 & come prepared to share your reflections. This form may be useful as you watch your microteaching session. It will remind you of the important components to focus on.

	Not Done		OK		Complete
Objectives	1	2	3	4	5
Set	Not Done		OK		Complete
	1	2	3	4	5
Body	Not Done		OK		Complete
	1	2	3	4	5
Closure	Not Done		OK		Complete
	1	2	3	4	5

Critiquing a Microteaching Session

TIPS Teaching Observation Form

Teacher: **Session Title:** **Date:**

SET (Mood; Motivation; Objectives – Learner-centered, Measurable, Achievable; Roles)

BODY (Cooperative; Active; Experiential; Organization; Content; Pace)

CLOSURE (Review/Summarize; Relate to objectives; Accomplishment; No new material)

VERBAL & NON-VERBAL SKILLS (Voice, Eye contact, Room position, Facial expression, etc.)

INSTRUCTIONAL MEDIA (Large enough, Clear/legible, Uncluttered, Effective animation, Images, etc.)

PowerPoint Tips

Fonts

- Select sans-serif fonts such as Arial or Helvetica. Avoid serif fonts (serif fonts – like the ones you are reading in this manual, have additional lines or tails at the tips of letters or symbols) 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 24 point. Titles should be 40+.
- Use a single sans-serif font for most of the presentation. Use different colors, sizes & styles (bold, underline) for impact.
- Avoid italicized fonts as they are difficult to read quickly.
- Be consistent with font style throughout your presentation.
- For bullet points, use the 6 x 6 Rule. One thought per line with no more than 6 words per line & no more than 6 lines per slide
- Use dark text on light background or light text on dark background.
- Do not use all caps except for titles.

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

Graphics & Design

- Keep the background consistent & subtle.
- Use only enough text when using charts or graphs to explain. Clearly label the graphic.
- Keep the design clean & uncluttered. Leave empty space around the text & graphics
- Use quality clipart & use it sparingly. The graphic should relate to & 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 & noisy animation effects unless they relate directly to the slide.
- Limit the number of transitions used. It is often better to use only one so the audience knows
- what to expect.

Color

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

General Presentation

- Check the spelling & 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.

More tips for media use in medical education in the appendix.

Preparation for Day 2

1) Read pages 38-44: Understanding the Learner Experience & Cognitive Biases.

2) Complete the CORAL Cell Methods of Assessment: An Introduction at https://teaching.usask.ca/articles/methods-of-assessment.php

3) Prepare for your assigned clinical teaching technique using the information provided at https://wiki.usask.ca/display/db/Clinical+Teaching+Techniques

4) Using one of the microteaching critique forms (page 34 & 35) watch & assess your day 1 microteaching session video.

5) Come to Day 2 prepared for another microteaching session (you will have half an hour to work on it during TIPS).

Understanding the Learner Experience

Sara is a first year resident in family medicine. She graduated from Dalhousie with Honours & arrived in Saskatchewan with high expectations. She has just received her first Quarterly Review & has had feedback that she is not performing well.

Sara's Story

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

She was born and grew up in a working class neighbourhood in Montreal and is now far from family and friends. She is somewhat gregarious and has some interests outside of medicine that include yoga and weight training. She lives downtown within walking distance of RUH but is dreading winter. It did not help matters that in her second month she caught a nasty cold and missed three days of work (and a full weekend). She felt guilty that other residents had to take her patients and one call shift.

Preceptor's Story

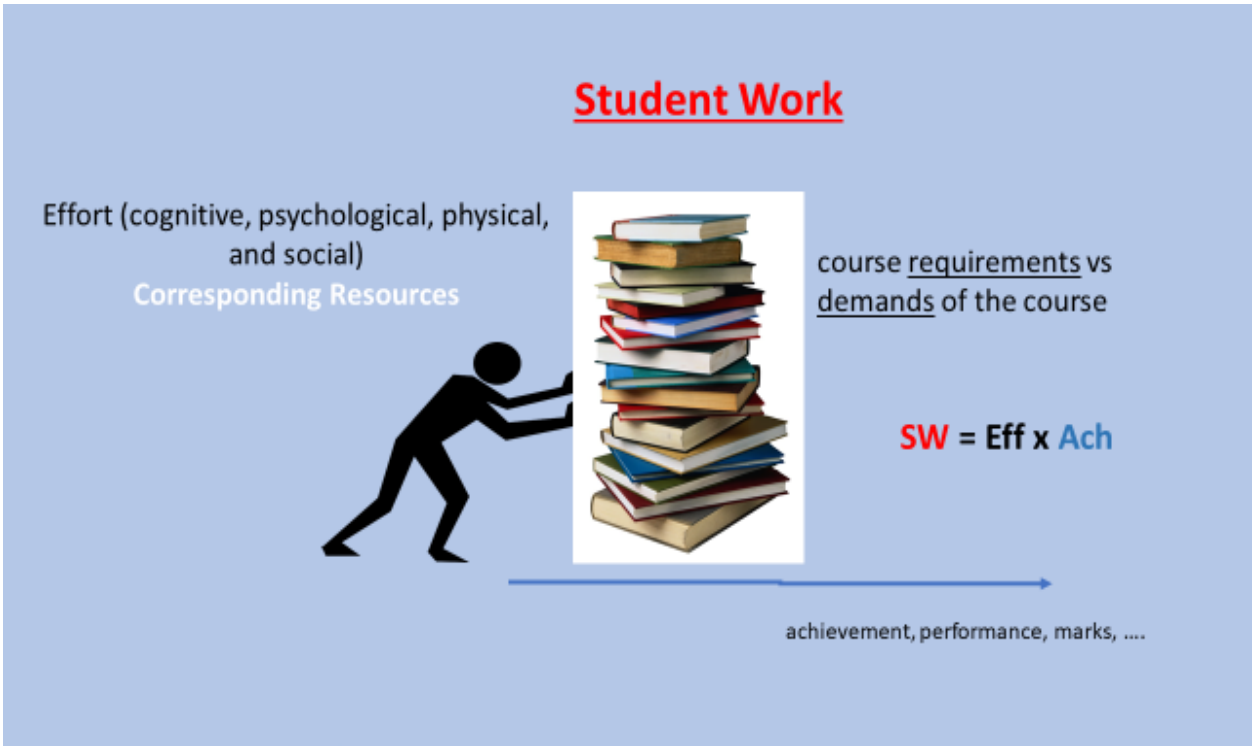
Dr. Willis trained in Saskatchewan over 30 years ago. He expects his residents to have mastered the basic and clinical biomedical sciences when they arrive in his clinic. His feedback to Sara has been somewhat negative since she obviously lacked basic biomedical knowledge & he had to spend a lot of time answering her questions. He has serious concerns about her ability to complete training successfully.

What do you think is happening here?

The experience of learning is unique to an individual

While we recognize that the course requirements or the stipulated objectives and activities associated with a learning task are the same for everyone, each individual comes to those tasks with a unique set of resources. It is these personal resources that enable learners to generate effort in meeting the course requirements. With more resources students are able to generate more effort and hence the demands of the course may be less; with fewer or less developed resources other students may have difficulty generating sufficient effort to meet the course requirements and hence for those learners the course demands are greater.

This matters and **it matters a lot**. High course demands negatively affect one's non-academic life reducing psychological well-being and participation in physical activity; increasing stress, anxiety, depression and burnout; and reducing overall quality of life. Excessive course demands also affect academic performance generating surface and rote learning, plagiarism, and procrastination while decreasing motivation.



The academic effort that learners generate can be grouped into four domains: intellectual or cognitive, physical, psychological, and social. The resources that students bring to a learning situation can be similarly classified. They are described in more detail in the table below.

Domains	Cognitive	Physical	Psychological	Social
Effort	Understanding the material, solving problems	Attending class on campus or otherwise, staying awake, paying attention	Motivation, organization	Interacting with instructors and classmates and staff
Corresponding **endogenous resources**	Prior learning, as well as general intelligence and academic aptitude	Mobility, health and vitality, other abilities, finances, time to devote to course activities	Executive function: being able to organize oneself to accomplish daily tasks	Social skills and dispositions such as team work, managing conflict, negotiating, etc.
Exogenous resources that support effort across domains	Social support and networks (social capital); teacher effectiveness; quality of course design; physical environment; student help and health centres; learning climate and environment; family and friend wealth, etc.			

Here we have so far highlighted the unique personal resources available to help students generate effort in addressing the requirements of a course or learning task. There are also institutional or social support services available to all or many students to help them generate the academic effort required. Universities may offer such supports as bursaries, child care, learning centres, health centres for students, and ramps and elevators for those with mobility issues. Very importantly, the quality of teaching is a powerful resource for learners and therefore the emphasis that universities place on teaching will affect learning. Friends and families also offer various forms of support that may supplement or develop resources within students. **Each learner is unique in terms of the personal resources they bring and the supports beyond themselves that they can tap into**.

Student Work

Having laid out many of the elements, let's address the concept of student work. This is a different concept than student workload. Student workload is not well defined. Researchers have conflated many factors blurring distinctions and obfuscating important relationships. Student workload seems to be a blend of effort and course requirements that creates stress. We prefer to speak about student work.

We define student work as the **product of student academic effort (acting on the course requirements) and the degree of achievement or success in the course**. In the physical world, we define work as the product of force (acting on a mass) and distance. In the world of learning, we define student work as the product of effort and achievement. While the course requirements are the same for everyone as outlined in the syllabus, the course demands depend on both the resources available that allow students to generate effort and the their expectations for success in the course. Those who only want to pass may experience less course demands than those learners who want to excel (given approximately equal levels of resources). Similarly, learners with comparable expectations and goals for success (however defined) but with different levels of resources will find that the course demands are different for them.

What does this mean for me as a teacher?

What are the implications for this model of student work, effort, and resources? What does it mean for teachers that each individual experiences learning differently? How do we as teachers respond to better help people learn? Learning the fundamentals of effective teaching will help everyone: clear objectives, well organized content and delivery, opportunity and encouragement to apply what one is learning, and fair and effective assessment. Beyond that, teachers need to be good clinicians: What is the issue? What's slowing or preventing the learning? What can be done about it? And teachers need to be patient with learners who may not have all the resources or resources to the same extent as other learners and may need some additional support to be successful. In other words, you need to carefully "diagnose" your learner and create a unique, evidence-based "management plan" to support their learning.

How do you now see this situation differently?

Sara is a first year resident in family medicine. She graduated from Dalhousie with Honours & arrived in Saskatchewan with high expectations. She has just received her first Quarterly Review & has had feedback that she is not performing well.

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Learning Experience: what do you think is happening here?

Dr. Tomalty is in her second year of residency. She is facilitating small group case studies with four clerks. Dr. Tomalty is very actively involved in discussing the cases with the clerks, but uses few visual aids as she finds them distracting & too time consuming - she values lively dialogue & debate. She is quick to praise those in the group who are very rapid with their differential diagnoses & who contribute the most to the discussion. She also feels it is important for her learners to discover how to reason clinically on their own - she has always found the best methods for her have been trial & error. As long as her learners have the "big picture" she feels they will find their way through the cases. Because of her extensive knowledge base, Dr. Tomalty often digresses from the case discussion to give her learners interesting theoretical concepts in her field & anecdotal stories.

Two of Dr. Tomalty's clerks give her extremely high ratings & find her a wonderfully engaging educator. However, the other two clerks seem unmotivated, rate Dr. Tomalty poorly, & are very discouraged with their learning experience.

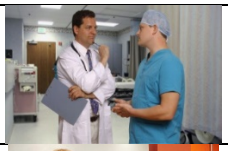
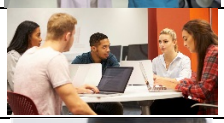
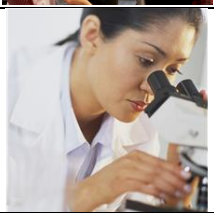
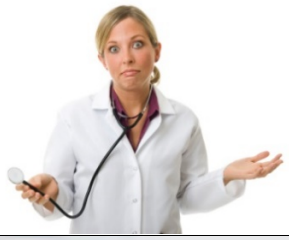
1. What are some possible reasons why two clerks are so positive about Dr. Tomalty while the other two are disappointed with her teaching?

2. What are some ways Dr. Tomalty could improve the learning experience for the two frustrated clerks without creating a less positive experience for the others?

Cognitive Biases

Adapted from the Canadian Medical Protective Association & Dr. Pat Croskerry

Potential Error	Type		Example	Feedback or Learner Lesson
Over-attachment to a particular diagnosis	**Premature closure**: Accepting a Dx before it has been verified			
	Anchoring/Framing: Focusing on one or maybe two signs, symptoms, or pieces of information			
	Diagnosis momentum: Accepting a previous diagnosis without proper skepticism			
Failure to consider alternative diagnoses	**Search satisfaction**: Feeling good about coming to a conclusion - stops the search once something is found			
	Zebra retreat: Backing away from a rare diagnosis			
	Confirmation bias: Seeking evidence to confirm your diagnosis			
	Attribution error: A form of stereotyping: Explaining a patient's condition based on their disposition or character			
	Previous condition: Insistence that a new symptom is related to a previous condition			

Inheriting someone else's thinking	**Authority bias**: Declining to disagree with an expert			
	Bandwagon effect: Believing things because others do			
Prevalence perception or estimation	**Availability bias**: Overemphasis on what comes quickly to mind (ex: recent, frequent, vivid, emotional, etc.)			
	Playing the odds: With ambiguous presentations, opting for a benign diagnosis rather than a serious one			
	Cognitive dissonance: A new thought or piece of information seems inconsistent with previous beliefs or attitudes			
Inconsistent action	**Commission bias**: Doing something which is unnecessary or contrary to what you believe is the correct course - overuse			
	Omission bias: Failure to act in accordance with what you believe should be done - underuse (possibly to avoid errors)			

Small group discussion:

1. Describe 2 examples of any of these potential errors in Medicine.
2. Describe teaching techniques you could use to help learners recognize & avoid this kind of error; i.e. describe the type of feedback you could give.

Below are some references & additional resources:

Croskerry, P. (2003) *When diagnoses fail,* The Canadian Journal of CME: 79-87.

Croskerry, P. (2003)*The importance of cognitive errors in diagnosis & strategies to minimize them*. Academic Medicine: 78(8):775-780.

Groopman, J. (2007) *How doctors think*, Houghton Mifflin.

Mazor, K. et all (2005) *Teaching & 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. I

Wade, M. (2007) *26 Reasons What You Think is Right is Wrong.* http://www.alloy.com/well-being/26-reasons-what-you-think-is-right-is-wrong/

TED Talks on cognitive biases:

Daniel Simons: Seeing the world as it isn't.

Dan Ariely: Are we in control of our own decisions?

Michael Shermer: Why people believe weird things.

Laurie Santos: A monkey economy as irrational as ours.

Mike Hartmann: Unpacking the biases that shape our beliefs.

Dushaw Hockett: We all have implicit biases. So what can we do about it?

The next section includes resources for Day 2 of the TIPS course.

No need to read ahead

Day 2 Resources

Clinical Teaching

The following material has been included largely as a future reference when you will be working as a physician & decide to teach. Some will be addressed during TIPS.
Day 2 is divided into the following:

I. Clinical teaching techniques

II. Assessment & feedback

III. Cognitive biases

IV. 2nd microteaching session

The Appendix includes additional resources including a section on preparing your office for learners.

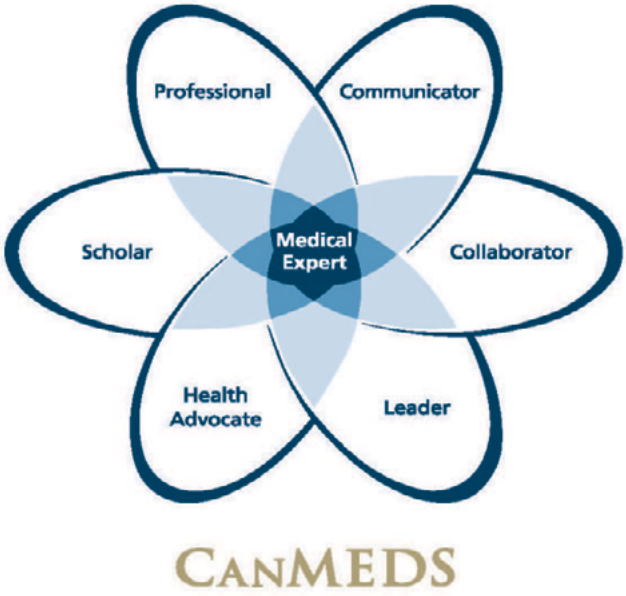
I. Clinical teaching techniques

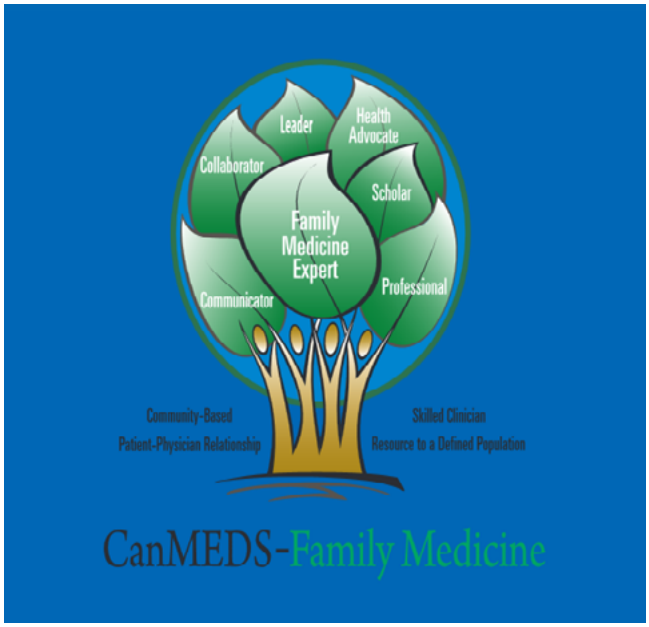
Upon completion of this section, you will be able to:

1. Describe the characteristics of excellent clinical teachers
2. Encourage deliberate practice
3. Describe clinical teaching techniques to use in different environments with different levels of learners.

As mentioned near the beginning of this manual, physicians fulfill many roles.

Please see the following documents for a full description of physician roles:





Characteristics of Excellent Clinical Teachers

Case
James Swann is a first year resident & 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 & 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
I have a very busy clinic & 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 learner 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 & carry, personal tasks for the doctor)
- I received feedback that was too vague to be useful
- I have no idea what my assessment was based on.

Please rate yourself on the following:

Characteristics of Excellent Clinical Teachers	Poor 1	2	3	4	Excellent 5
Establishes mutual expectations					
Sets priorities (time & efficiency)					
Role models (Knowledge, Skills, Attitudes)					
Stimulates reflection					
Stimulates self-directed learning					
Gives timely & effective feedback					
Creates a supportive learning environment					

What do you think are the characteristics of an excellent clinical teacher?

_____

_____

_____

_____

_____

Deliberate Practice

Deliberate Practice is a lifelong habit of continually evaluating & improving your knowledge, skills & 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.

Most daily teaching in a clinical setting serves two purposes:

Teaching how to think like a physician
Teaching how to act like a physician

Teaching how to think like a physician

The teaching strategies that serve this purpose are:

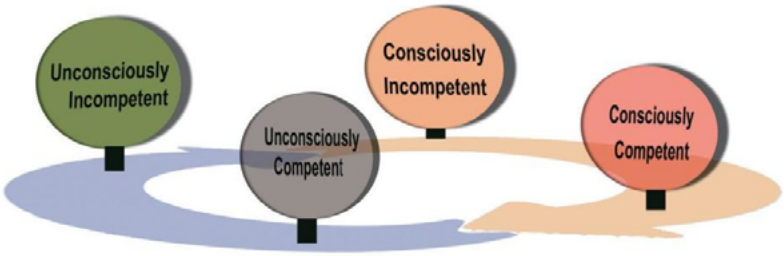
1. SNAPPSS
2. Precepting Using Microskills
3. Illness Scripts or patterns
4. Questioning
5. Chart Stimulated Recall
6. Case Reviews
7. Intentional Role Modeling (Being observed/shadowed by learner)
8. Microteaching (mini lectures)
9. Rounds
10. Mentoring student projects
11. Learning with students (looking 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/Professionalism (Being observed/shadowed by learner)
2. SOAP(E); E = education/what did you teach the patient?
3. 5 Step Approach for Teaching Skills & Procedures
4. Observation & Feedback
5. Independent Performance

What is the Skill Learning Cycle?



Before you learned to ride a bike, you were completely unaware of what bike riding was all about *(Unconsciously Incompetent),* then you climbed on the bike for the first time & you were very aware of 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 & your body would remember how to ride *(Unconsciously Competent.)*

After learning to ride, you might have decided to learn how to skate & the cycle begins again.

Stages of Change		**Needs**
Unconscious Incompetence	Unaware Denial or minimizing of problem Belief the task is easy Belief the task is irrelevant	Role Model
Conscious Incompetence	Knows there is a problem Ready to be taught	Teacher
Conscious Competence	Makes daily effort to change but attempts look & feel artificial, clumsy May confuse steps	Supervisor
Relapse	Returns to previous behaviour accompanied by guilt, denial or challenge	Encourager
Unconscious Competence	Change has occurred & become automatic Forgets the steps	Mentor

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

For some great resources on clinical teaching please see:

Clinical Teaching Tips: Resources for Family Physician Teachers

Clinical Teaching Tips: Resources for Royal College Specialists in Community Practices

Medical Education Wiki

The problem with automaticity is, I see someone walking down the street & I've diagnosed their gait problems before they pass me - physiatrist

CLINICAL THINKING TOOLS

1. **Illness Scripts** or patterns
2. **Teaching Differential Diagnosis**
3. **SNAPPSS**
4. **Precepting Using Microskills**
5. **Chart Stimulated Recall**
6. **Teaching Skills & Procedures**
7. **Using Questions to Stimulate Thinking**

Steps in Learning Clinical Thinking

i. Focused History, Examination & Investigations

Some medical schools teach this, some don't; even if taught some students are weaker in this area than others, so always start a rotation with assessing this step. Observe & talk about how different conditions & diseases reveal themselves through good questions followed by physical examination & relevant investigations. Talk about the problem with the18 seconds before a patient is interrupted by the doctor. Talk about the use of Subjective/Objective questions. Talk about how different specialties approach this task differently. Your automaticity in this area means a patient is in your office 5 min. & 8 times out of 10, you know the diagnosis. Your learner is not at that level & if you push them too quickly to emulate your skill, they will make diagnostic errors, & they will cover up those errors. Avoid encouraging the development of this habit by giving them reasonable time to develop this ability.

ii. Using Differential Diagnosis

Medical students have been rewarded for twenty some years for quickly coming up with the correct, memorized answer. Now you are going to ask them to stop doing that & learn to problem solve. Some of them will probably feel awkward, reluctant & embarrassed because they will be using a type of thinking they probably have very little experience with. Again, hold your automaticity in check & force yourself to go over the differential with the learner by using techniques like Illness Scripts or SNAPPS until the learner does a differential easily. Talk to them at this stage about how cognitive errors impact on developing the differential & help them learn to identify when they are making this type of error. Help them understand why medical error is the 7th leading cause of death in Canada.

iii. Patient Management

Clerks can in many cases be trusted with simple management plans such as stitching simple cuts, ordering standard tests & giving shots. As their diagnostic skills improve in resident years, your trust in their management skills will also improve & your teaching strategy can change to 5 Minute Preceptor, then Chart Simulated Recall for the most independent students.

Clinical Thinking Teaching Techniques

Think of how you will incorporate these techniques into your teaching. Which one(s) will work in various situations with learners with varying levels of experience & knowlege? How will you modify them to work well in a particular context?

Illness Scripts or patterns

Teaching Differential Diagnosis

SNAPPSS

Precepting Using Microskills

Chart Stimulated Recall

Teaching Skills & Procedures

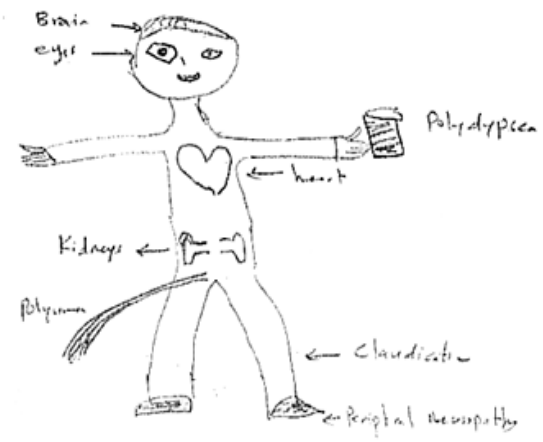
Using Questions to Stimulate Thinking

1. Illness Scripts or patterns

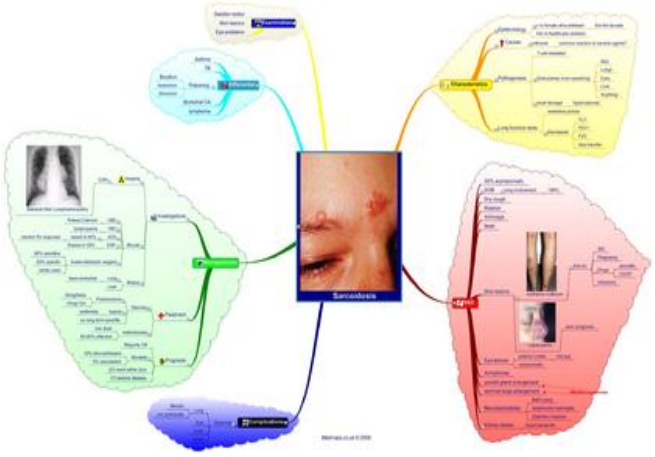
Expert physicians have hundreds of thousands of mental patterns that they use to diagnose illness/conditions, & part of your job is to help students develop their own patterns. Note the use of "*their own*"; the pattern will not be as sophisticated as yours, & it may look very different from the way you remember information. This is a homework/self-directed assignment that you give the learner & you need to check to see if it is being done but don't expect it to look like how you would do it.

Medical Student/Clerks

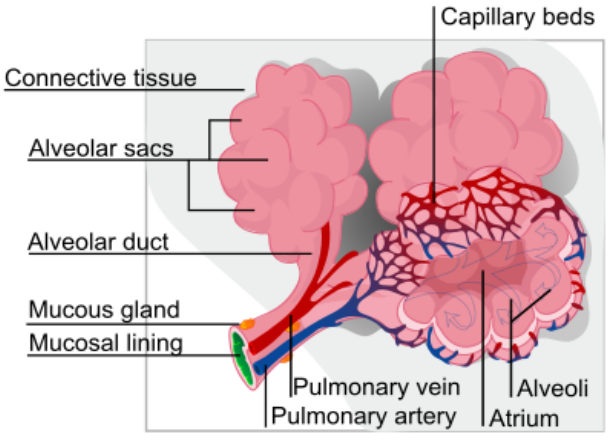
At this stage of development, you start by asking students to keep an illness book/app in some form that is useful to them. Start with common occurrences such as diabetes & get the student to list symptoms. Highly visual students might create a visual representation like the example below on the left. Don't worry if this visual script doesn't appear complete; images act as complex cues for visual learners & often make no sense to text based people. Occasionally you will encounter a student with very poor visualization skills & they might need to use auditory prompts such as mnemonics or songs instead of visual cues.
Please visit the Medical Education Wiki for more Illness Script resources - https://wiki.usask.ca/display/db/Begin+by+Using+Illness+Scripts.



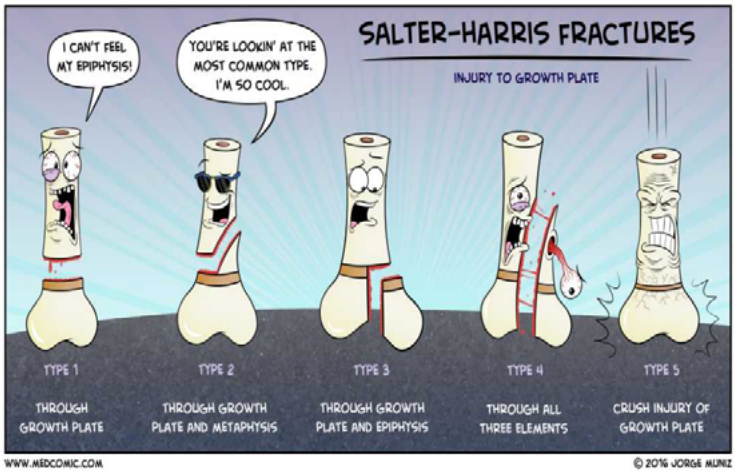
Used with permission of Mohammad Al Reshir



(c) MedMaps



Public Domain by LadyofHats;
https://commons.wikimedia.org/w/inde.php?curid=3222341



(c) Jorge Muniz www.medcomic.com

2. Teaching Differential Diagnosis

Differential Diagnosis is a process that must be taught. It is not an intellectual skill that people are born with. Medical schools may or may not have taught students this skill in their undergraduate training, & they certainly haven't learned how to do a differential in your specialty, so always start by assuming the clerk or resident doesn't know how to do this.

How do you teach the process?

This is one of the most important procedures the clerk/resident needs to develop. It is well worth your time near the beginning of a rotation to teach this process.

Demonstrate & deconstruct

In this step, you will be acting as a deliberate role model/medical expert moving the learner from unconscious incompetence to conscious incompetence by walking the learner through each step as you perform it. If time with the patient is limited, do the deconstruction in a later debriefing session.

Ask your students to take notes using the 6 steps on the table to the right as a guideline. Some key points to emphasize with the learner are:

- use key words from the presenting complaint to develop 3 hypotheses (most dangerous, most common?)
- use the hypotheses to ask questions in the directed history
- use the information obtained to refine the differential
- review the relevant anatomy/physiology to inform the physical exam
- use the results to determine further investigations required.

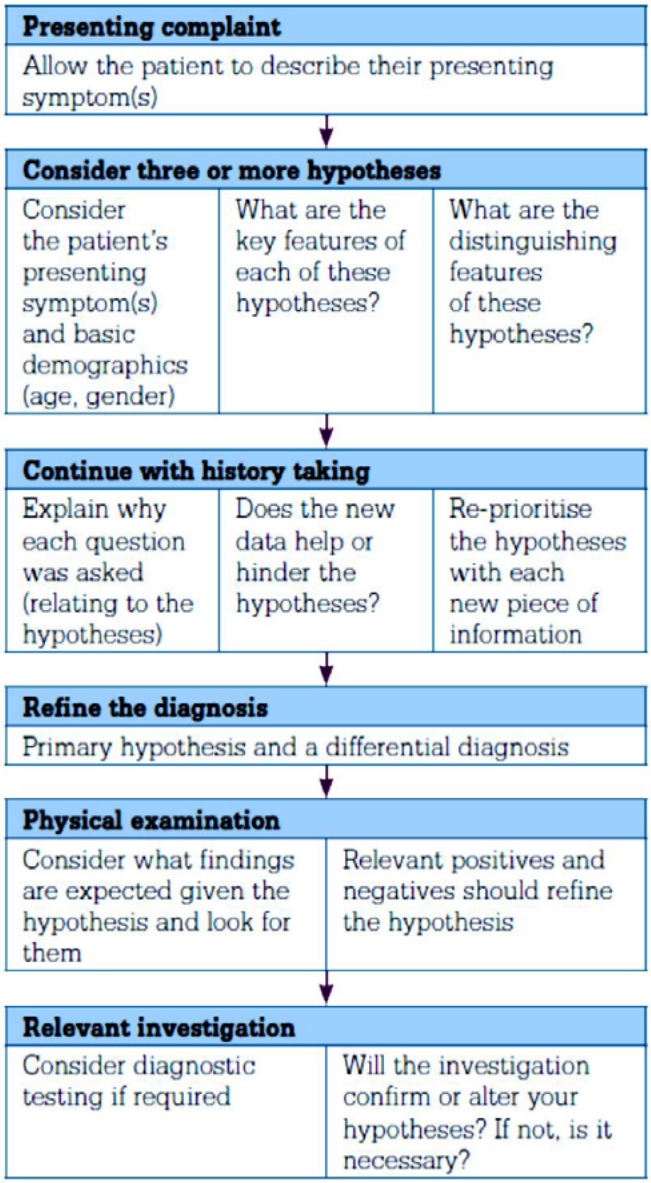


Figure 1. Flowchart of a teaching consultation with a focus on clinical reasoning

from Clinical Reasoning, a guide for improving teaching & practice

Comprehension

In this step, you will be acting as a coach, moving the learner from conscious incompetence to conscious competence. Demonstrate the process again without explanation, but have your learner take notes about how they would approach each step in the diagnostic thinking process. Go over their notes with them.

Performance

In the final step, you act as a clinical supervisor giving students direct feedback on their diagnostic thinking. The combination of practice & feedback moves the learner towards unconscious competence. Very few students truly reach the unconscious competence stage except for the most common diseases & conditions during their post graduate training.

3. SNAPPSS

SNAPPSS is a learner-centered technique that focuses on the clerk or first year resident who has a basic understanding of differential diagnosis & plan management, but needs to practice these skills. It takes 10-20 minutes of uninterrupted time, so only select one or two cases per meeting. The learner presents the patient in the following format, which they were given information on in the orientation.

Summarize the history & findings

- including physical exam & relevant test results
- level of detail expected depends on student's level
- the S & O of **SOAP** might be a useful presentation model

Narrow the differential

- learner lists 2-3 relevant possibilities
- may involve creating a problem list or illness script for complex patients

Analyze the differential

- learner uses evidence to compare & contrast possibilities
- allows learner to verbalize their problem solving process

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

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

Select a case-related issue

- learner identifies an area for further self-directed study

Solicit Feedback

- learner works with preceptor to identify areas of strength & areas for improvement

For More Information

SNAPPS: A Learner-centred 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: Introduction - teaching SNAPPS to a learner

Video: SNAPPS in action

4. 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. Its primary purpose is to **assess & improve the Senior Resident's decision making skills.**

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 & integration.

Video: One Minute Preceptor in action

Get a commitment

After the learner has examined the patient, ask the learner 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 learner 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 learner reveals the learner needs/wants more knowledge about a particular topic, provide general rules, concepts, metaphors or considerations. Don't provide the learner with a direct solution to the problem. Don't provide lengthy explanations. Ex. "*Patients with hypothyroidism often exhibit cold intolerance, weight gain & constipation.*"

Reinforce what was done well

Tell the learner exactly what they did correctly & the effect it had on the patient &/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 & find out the following:

- Is the learner aware of the mistake & what to do, then you need to reinforce the correction
- Is the learner aware of the mistake & unsure what to do, then this is a teachable moment
- Is the learner unaware of the error, then you need to highlight the consequences of the error
- Is the learner refusing to admit the error, you may want to discuss the general consequences of medical error. If this becomes a pattern with this particular learner, 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 & integration

Students become consciously competent by reflecting on the consequences of their actions & 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?"* & *"Was there anything that you didn't expect to experience?"*
- Asking the learner 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/preceptor/microskills.html

5. CHART STIMULUATED RECALL (CSR)

Unlike simple chart review that focuses on how well the learner has completed the task of chart notation, this process uses the chart to discuss patient cases after the fact. You use this technique with a resident who is performing quite well independently.

The Process of CSR
1. Case selection can be random or selected by resident or preceptor
2. Preceptor reviews the chart note
3. Preceptor guides resident to reveal thought processes during the clinical encounter
4. A CSR worksheet with sample questions & space for recording comments is valuable

Look for the following issues:

Premature diagnostic closure
- What features of the patient's presentation led you to your top three diagnoses?
- Is there anything else you wish you would have asked?

Inappropriate management choices
- Were there other tests that you thought of but deferred or ruled out?
- What did you decide was appropriate for follow up?

Patient – centeredness
- What did you learn about the patient's concerns about the illness?
- Do you feel you reached common ground with the patient?

Comprehensive care skills
- Did you discuss any preventive interventions, such as quitting smoking, with the patient?

Video: Description & example of Chart Stimulated Recall

Article: Structured teaching & assessment, Shirley Schipper & Shelley Ross

CSR Work Sheet Example

Resident or Student:		**Date of CSR:**
Preceptor:	**Chart # or Patient Initials:**	**Date of Visit:**
Comments & Feedback from the Chart Note		
May include some or all of the following: 1. Record keeping & legibility 3. Follow-up documented	2. Information documented is pertinent & relevant 4. General comments	
Comments & Feedback from Case Review		
May include some or all of the following: 1. General comments about case presentation 3. Approach to management 5. Demonstrated patient-centered care 7. Evidence of reflective practice	2. Synthesis & analysis of information 4. 4. Use of evidence-based medicine 6. Comprehensive care	
When completing the CSR below, please refer to the list of CSR questions.		

When learners are asked to present a patient case to you in a teaching session, or when you are asked as a resident to present to your supervising physician, the following chart may help you adopt a more evidence-based approach using the Patient Centred Clinical Method. Various approaches to case reports can be taken depending on the scenario (such as handover, rounds, teaching sessions) or depending on the teaching approach used such as the CSR or SNAPPSS, etc.

TABLE 12.1 Comparison of the Conventional and Patient-Centered Case Presentations

Conventional Case Presentation		**Patient-Centered Case Presentation**	
1.	Chief Complaint	1.	Patient's Chief Concern or Request
2.	History of Present Illness	2.	Patient's Health and Illness Experience Quotes from the patient: meaning of health and aspirations, feelings, ideas, effects on function, expectations
3.	Past Medical History *Medications *Allergies *Observations	3.	Disease *History of Present Illness *Past Medical History *Review of Systems *Physical Exam *Laboratory, etc.
4.	Family History	4.	Person *Patient Profile *Individual Life Cycle Phase
5.	Patient Profile	5.	Context *Proximal (for example: - Family History -Genogram) *Distal (for example: - Culture - Ecosystem)
6.	Review of Systems	6.	Patient-Doctor Relationship (the Clinical Encounter) *The Dyad Itself *Transference/Countertransference Issues *Finding Common Ground - Problems - Goals - Roles
7.	Physical Exam	7.	Assessment (Problem List)
8.	Laboratory Database	8.	General Discussion *Illness Experience – Literature (pathographies, poetry) *Medical Literature (Clinical Epidemiology, Pathophysiology, other case reports, medical anthropology)
9.	Problem List	9.	Proposed Management Plan
10. General Assessment			
11. Proposed Plan			

From Patient-Centered Medicine: Transforming the Clinical Method, 3rd Ed. Stewart, M. et al.

Case Review – Possible Interview Questions

(Note which questions were asked)

1. General Case Review

a. Clinical assessment:

i. Can you give me an outline of the case?
ii. What features of the patient's presentation led you to your top two (or three) diagnoses?
iii. Did you inquire about the patient's illness experience (feelings, ideas, effect on function & expectations) & what did you learn?
iv. If there was ambiguity or uncertainty about the case, how did you deal with it?
v. Is there anything else you wish you would have asked?

b. Investigations & referrals

i. Why did you choose the investigations that you did?
ii. Were there other tests that you thought of but deferred or ruled out?
iii. How did you decide whether to refer to a consultant?

c. ***Treatment & Management***

i. What features led you to choose the treatment that you did?
ii. What were the patient's expectations for treatment?
iii. Do you feel you reached common ground with the patient?
iv. Were there other treatments that you thought of but didn't offer? If so, why did you decide against them?

d. Follow-up

i. What did you decide was appropriate for follow up?
ii. What factors influenced your decision?

2. Comprehensive Care

a. Monitoring Chronic Disease

i. In your care of this patient, did you discuss his/her chronic disease/progress?
ii. On reflection, do you think there are some monitoring strategies that would be appropriate?

b. Health Promotion & Prevention

i. In your care of this patient, have you discussed preventive interventions? (e.g. BP, mammography, smoking cessation, alcohol use, lifestyle change, diet, exercise, etc.)
ii. On reflection, do you think there are some interventions that would be appropriate?

c. Patient Factors

Patient characteristics sometimes influence decision-making.

i. 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)
ii. On reflection, is there anything about this patient you wish you knew more about?

d. Practice or System factors

i. 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)
ii. On reflection, what changes would improve your ability to deliver care to this patient?

6. Teaching Skills & Procedures

Teaching Skills: Effective Practice

- Assure learners know what capabilities they need to practice
- Model & 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".

FIVE STEP APPROACH

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 learner an idea of how long the skill or procedure normally takes, it role models patient interaction & 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 & 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 & 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 & 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 learner 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's hands to help them transfer the knowledge from their brains into their hands (adapted from Peyton 1998, 174-77). The more guided practice the learner 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.

For some short video examples, please visit:
https://usask.cloud.panopto.eu/Panopto/Pages/Sessions/List.aspx?folderID=031247e9-cf73-461d-9738-a88d013ba0ba

7. Using Questions to Stimulate Thinking

Asking effective questions is essential no matter which clinical teaching technique you are using. 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 …?

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 …?

Video: Example of ineffective questioning

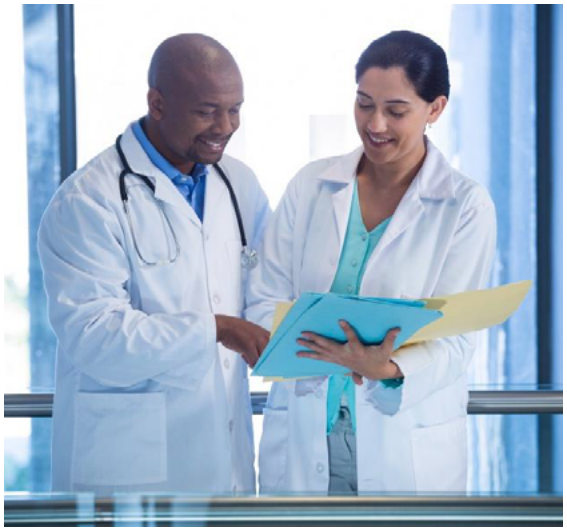
Video: Example of effective questioning

Teaching on the run tips 7: effective use of questions http://www.mja.com.au/journal/2005/182/3/teaching-run-tips-7-effective-use-questions

Lake, Vickery & Ryan, 2005.

Safe & Positive Learning Environments

Learners thrive when they feel supported & encouraged. When you teach, you can help to create an environment that is conducive for learning or detrimental to it (as the images below attest).



There is simply no excuse for shaming, intimidating, demeaning, or ignoring your learner. There are numerous ways you can help create a positive & safe learning environment including:

- Greet your learner by name & take time to get to know their interests & goals
- Eye contact & caring facial expressions
- Encourage them to ask you questions
- Give them autonomy with encouragement
- Give a variety of opportunities for learning
- Give constructive, timely feedback
- Provide honest & fair assessment
- Treat co-workers & patients with respect
- Show enthusiasm

Additional Resources

Creating and Supporting Safe Clinical Learning Environments: What can I do?, Dr. Preston Smith & Dr. Anurag Saxena.

Curriculum, environment, climate, quality and change in medical education-a unifying perspective, J.M. Genn.

What is educational climate?, Sue Roff & Sean McAleer.

U of S Standard Operating Procedure

U of S Student Services

U of S Policy Procedures on Discrimination & Harassment

Some Key Roles of Clinical Teachers & Teaching Techniques

Role	Explanation	Teaching Technique
Professional/role model	• Demonstrates exemplary professional characteristics • Demonstrates effective patient interaction • Models decision making skills	• Deliberate Practice • Mentoring
Clinical Supervisor/coach	• Protects patient health & sensibilities • Structures the work & learning environment for opportunities for safe practice • Observes objectively & offers constructive feedback	• SOAP Presentation • Microskills(Precepting) • Feedback
Teacher/patient educator	• Sets the goals & objectives for the learning experience • Organizes the learning activities that will result in a change in behaviour or thinking • Promotes problem solving & critical appraisal • Assesses the student's performance • Supports & encourages the learner	• Orientation • Microteaching • Procedural Skills Teaching (Concept Mapping) • Bedside Teaching • Assessment

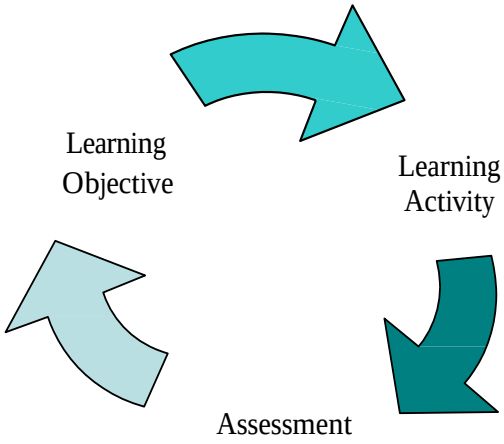
Teaching techniques that I would like to try:

II. Assessment & Feedback

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

1. Describe the relationship between objectives, teaching technique, & assessment
2. Describe effective feedback techniques & strategies
3. Identify formal tools to assess clinical performance.

The Relationship between Objectives, Teaching Technique & 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.

Formative vs. Summative Assessment

Formative assessment is part of the learning process; helping students revise their path from incorrect to correct is an unwritten role of teaching that needs further exploring here. Formative assessment is like a gift of gold, not a punishment. Feedback is the most common form of formative assessment in clerk/resident teaching. It is a required element in coaching students' practice of skills & you should be setting aside weekly private time to engage the learner in this process.

Feedback Requirements

Before looking at the process, there are some prerequisite knowledge, skills & attitudes that need to be examined.

Behavior vs. Assumptions

When you give feedback, all you can legitimately comment on is the behavior you observe. Unfortunately, we tend to link assumptions to our observations. For example:

- We see a driver swerve into another lane & we assume he is on his cell phone.
- We see two people with raised voices having an animated conversation & we assume they are angry.

- We see a resident not completing paperwork & we assume they are lazy.

In all of these situations, obviously something else could be happening. When giving feedback, avoid making assumptions because it decreases the validity of what you are saying. Describe the behavior only.

Specific vs. Vague
Saying good job! isn't feedback; it's being encouraging, it's making an emotional connection. Feedback is part of the learning process & you only learn from feedback when you are told specifically what you did well & what you need to do differently.

Timely vs. Out of Date
Feedback is always more effective the sooner after the event it is given. When people have to depend on an old memory, you frequently end up in "he said/she said" conversations.

Relevant vs. Future Expectations
It's easy to forget that this person is in the process of becoming a physician; they aren't a colleague. Feedback needs to be relevant to the stage of their training, not to where they will be in a year or five years. Good objectives help you identify this.

Coach vs. rewarder/punisher
When a learner has done something fantastic or terrible, your emotional response can override your teacher brain. Wait until you can concretely describe why X was fantastic or terrible before giving feedback.

Feedback Process

Pre-planning
Pick or ask the learner to pick what skill they want feedback on (student centered). Try to only give feedback on one or two objectives per feedback session or the learner will feel overwhelmed.

1. Positive self-assessment
Begin by asking **What went well? or What did you feel happy about doing?** These questions usually elicit a behavioral response that will help you identify where they are in the learning cycle.

Stage	Needs
Unconscious Incompetence	Awareness
Conscious Incompetence	Teaching
Conscious Competence	Practice
Unconscious Competence	New Challenges

2. Instructor positive assessment
Use the criteria listed previously to describe what specifically they did well or simply agree with them & give an example "I agree, when you ..., you were showing very good ... skills." You want the learner to continue doing X, so it's important to identify X as correct.

3. Improvement self-assessment
Begin with asking **"What would you do differently next time?"** This is important phrasing because it is aimed at the logical brain & less likely to elicit an emotional or defensive response. Again, the response will tell you what stage of the learning cycle the learner is at & how you need to respond.

4. Instructor assessment

Begin by either agreeing with the learner & giving a specific example of what they need to improve or, if you don't agree, think about which stage they are at. If they have no idea what they did incorrectly, take a deep breath & accept the challenge of not responding emotionally.

5. Plan

The final step depends on which stage the learner is at. Whatever you decide, make sure you set up a time to assess that they have followed through with the plan. Otherwise, many students won't do it.

Stage	Plan
Unconscious Incompetence	Videotape, observe another resident, ask for assistance from university
Conscious Incompetence	Teaching session, online assignment, library assignment
Conscious Competence	Quick review, teach someone else, practice, practice, practice
Unconscious Competence	Next objective, special project, more independence

Coaching in Medicine

With a competency approach to medical education, there is a renewed focus on teachers as coaches who guide, support, & offer specific, helpful feedback to learners. RX-OCD is a useful framework (see below) for coaching learners. The Royal College has a wealth of resources on coaching.

1. Rapport

Your job is to help the learner progress. Show an intereste in your learner & createa safe, positive environment.

Key here is that this 'partnership' relationship is made explicit & that learners perceive it that way.

2. Expectations

There needs to be a shared understanding of the Entrustable Professional Activities (EPAs), milestones, & other related competencies.

3. Observe

You need to ensure the activity - workplace or simulated - is appropriate for the skills & abilities you are teaching & assessing. Consider both the benefits & possible pitfalls with both direct & indirect observation. Ask yourself if what you are observing will helpfully inform your coaching role.

4. Conversation

Your coaching is a 2-way street. You should be frequently exploring your learner's awareness of their own strengths & weaknesses. They should be involved in planning for future improvement. Ensure your conversations is directly related to the observed activity. Also ensure the learner is clear on an actionable plan moving forward.

5. Documentation

Forms will vary depending on your specialty (daily encounter card, field notes, etc.) - but it is essential that you capture the feedback you give the learner. This is necessary for administrative staff & Competence Committees as well as residents monitoring their progress. This should be a summary which is brief but concise & comprehensive.

CanMEDS Roles Assessment

Medical Expert - knowledge

1. Direct observation
2. Written Examination
3. Oral Examination
4. OSCEs
5. Simulation
6. Oral Case Presentations

Medical Expert - procedures

1. Simulation
2. Direct observation & In-Training Evaluation Reports (ITERS)
3. Logbooks
4. OSCEs

Communicator

1. Direct observation & In-Training Evaluation Reports (ITERS)
2. OSCEs & standardized patients
3. Field Notes
4. Workplace Based Assessments
5. Multi-source feedback (360° assessment)
6. Portfolios & logbooks

Collaborator

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

Leader

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

Health Advocate

1. QI projects
2. Choosing Wisely project
3. Essay
4. Short answer questions
5. Direct observation & In-Training Evaluation Reports (ITERs)
6. OSCEs & standardized patients
7. Multi-source feedback & peer evaluation
8. Portfolios

Scholar

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

Professional

1. Direct observation & In-Training Evaluation Reports (ITERS)
2. Multi-source feedback
3. Field notes
4. Portfolios

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

Your Assessment Plan

My assessment plan: _____

Strengths of current plan:_____ _____ _____ _____

What I would like to change:_____ _____ _____ _

Formal tools can also be used to assess clinical performance. Here is an example of a marking rubric. Although the example is for evaluating abstracts, a similar rubric can be constructed for any clinical assessment.

Example of a Marking Rubric

Attribute The following are questions that reviewers are asked to consider when grading abstracts.					
Originality – How original are the ideas presented in this Abstract?	Confirmatory 1	2	3	4	New Highly Original 5
	☐	☐	☐	☐	☐
Significance - How significant are the abstract's conclusions for increasing the understanding of a disease process or in improving the diagnosis or treatment of a disease state?	Insignificant 1	2	3	4	Highly Significant 5
	☐	☐	☐	☐	☐
Timeliness - How relevant is the abstract for internal medicine today?	Not timely 1	2	3	4	Opportune 5
	☐	☐	☐	☐	☐
Logical – Are the ideas presented in this abstract well-reasoned?	Poorly reasoned 1	2	3	4	Well-Reasoned 5
	☐	☐	☐	☐	☐
Quality of Writing - How clearly written & free of significant grammatical problems is this abstract?	Poorly written 1	2	3	4	Well Written 5
	☐	☐	☐	☐	☐
Interesting - How interesting is the manner of presentation?	Boring 1	2	3	4	Fascinating 5
	☐	☐	☐	☐	☐
Suitable - If applicable, how suitable is the research design for the stated objectives, & how appropriate are any statistical techniques applied?	Inappropriate 1	2	3	4	Highly Suitable 5
	☐	☐	☐	☐	☐

American College of Physicians

III. Cognitive Biases

Upon completion of this section you will be able to:

1. Describe a variety of cognitive biases in medicine
2. Describe feedback methods to help learners who are making cognitive errors.

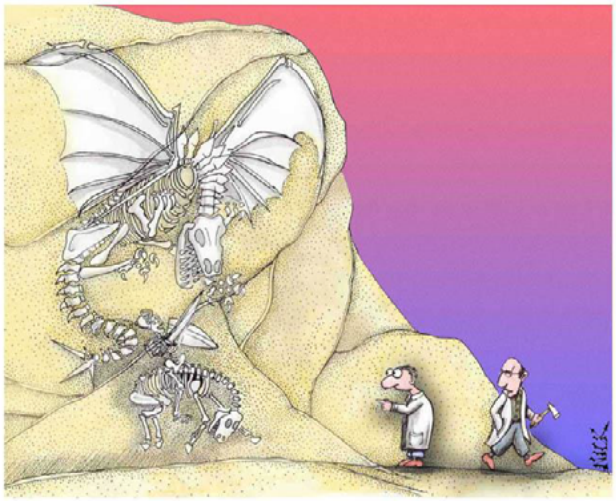
How can I assist students to improve their clinical reasoning?

Case

Terry Jones is a 3rd year resident & makes the following statement in a very sarcastic tone during rounds. "If she's overweight & 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?



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

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

Pat Croskerry's Biases & Cognitive De-biasing Strategies to Reduce Diagnostic Error

Strategy	Mechanism / Action
Develop insight / awareness	Provide detailed descriptions & thorough characterizations of known CDRs & ADRs together with multiple clinical examples illustrating their adverse effects on decision making & diagnosis formulation.
Consider alternatives	Establish forced consideration of alternative possibilities, e.g., the generation & 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 & reflect on the thinking & affective processes.
Develop cognitive forcing	Develop generic & specific strategies to avoid predictable CDRs & ADRs in particular strategies clinical situations.
Provide specific training	Identify specific flaws & biases in thinking & 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 & ADRs to be made & their consequences to be observed. Construct new scenarios or clinical training videos contrasting incorrect (biased) approaches with the correct (de-biased) approach.
Decrease reliance on memory	Improve the accuracy of judgments through cognitive aids: mnemonics, clinical practice guidelines, algorithms, & hand-held computers.
Make task easier	Provide more information about the specific problem to reduce task difficulty & 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 & follow-up for decisions made.
Improve feedback	Provide as rapid & reliable feedback as possible to decision makers so that errors are immediately appreciated, understood, & corrected, resulting in better calibration of decision makers.

P. Croskerry Diagnostic Failure: A Cognitive & Affective Approach from Advances in Patient Safety: From Research to Implementation. https://www.ncbi.nlm.nih.gov/books/NBK20487/

IV. Preparing Your Second Microteaching Session

Use the lesson plan form below to prepare your second microteaching sessions.

Microteaching Lesson Plan

Topic:_____ Date:_____

Objectives (**U**nderstandable **S**tudent-centered **O**bservable Achievable **R**elevant):

_____

_____

_____

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 New): Materials I need

_____ _____

_____ _____

_____ _____

Appendix

Preparing Your Office for Learners

This information is designed to help the clinical teacher think about the planning required before a learner 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.", & rushes away. Toami has no idea where the files are kept & 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	learner
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 learner 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 & 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 & 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 & 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 & partners of the impending arrival of the learner
- □ Distribute copy of the learner's application or personal information (if available) to staff & 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, & writing utensils
- □ Gather forms (e.g. laboratory, physical therapy, radiology, consultation) for learner orientation
- □ Generate list of staff, their office locations, & 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 & examine you first. I will come in & 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 & Residents

My Preparation Plan

Learning Plan – Sample 1

Sample Teacher – learner Learning Plan*

1. Student's Goals:

2. Teacher's Goals:

3. How will these goals be achieved? (i.e. What resources will be used to achieve these goals? When will these goals be achieved?)

4. Evaluation:

- **Method** (what will be done to demonstrate whether the objectives have been reached?)
- **Criteria** (What constitutes "acceptable" or "unacceptable" performance?)

5. Is this plan "SMART"?

___ **S**pecific – does it define "what, how, when, where, with whom & how long?

___ **M**easureable – Will I know if I have done it?

___ **A**cceptable – Will I feel good about doing this?

___ **R**ealistic – Am I able to do this?

___ **T**ruthful – Do I really want to do this?

* Adapted from a Faculty Development Workshop, Department of Family Medicine, McGill University

Learning Plan – Lesson 2

Learning Plan – Sample 2

Resident/Clerkship Learning Plan*

Resident: _____ Rotation: _____

Preceptor: _____ Block #:_____ Start Date: _____

This Learning Plan is to be completed within the first week of a rotation. Its purpose is to maximize the learning opportunities of each particular rotation. It should be completed with the teacher so that there is agreement as to what is feasible, what areas need attention & what is available.

Important: Mid-rotation formative evaluation of my progress to date is scheduled for __/__/__.

Resident **strengths** (& areas already adequately covered):

_____

_____

Areas requiring **further development**:

_____

_____

I wish to increase my **knowledge** in the area(s) of:

_____

_____

I wish to develop these **diagnostic skills**:

_____

_____

I wish to develop these **therapeutic & procedural skills**:

_____

_____

Preceptor recommendations & general comments:

_____

_____

Resident Comments:

_____

_____

Resident's Signature: _____

Preceptor's signature: _____ Date: ___/___/___ (MM/DD/YYYY)

*This plan is used by the University of Calgary's Family Medicine Department.

Orienting Learners to Clinical Experience

The Learning Contract

Objective: Create an educational plan with the learner.

Case

James has just completed his residency with Dr. Willis. His feedback was frequently very positive.

Preceptor's Story
Dr. Willis is very pleased with James. He has worked independently & required very little of his time. He wishes more students were like James.

James's Story
James is happy with his experience, 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. However, most of what Dr. Willis had him doing was routine. He only spent a brief time with his preceptor & 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 & 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 learner done in previous rotations (learner 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 & special skills
- determine what will be learned (rotation objectives)
- determine case presentation format
- decide on meeting times & dates (daily recommended)
- assessment methods

Two samples of learning plans are given in the appendix.

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 & students are encouraged to ask questions.

ABC Primer for Practicing Physicians

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

UNIVERSITY OF SASKATCHEWAN
College of Medicine
DEPARTMENT OF ACADEMIC FAMILY MEDICINE
MEDICINE.USASK.CA

Entrance Interview Checklist / Orientation
Family Medicine Clerkship Rotation

* Topics that can be handled by staff

Introduction to your practice – aka "The Tour"

Learner work space, reference materials, computer access*
Dress code* and expectations around privacy and confidentiality
Hours / days patient care provided* - office, ER, house call, nursing home, in patient, OR assists, Intrapartum maternity care, etc.
Parking, phone system, and mail *
Introduce staff, describe each one's role and responsibilities*
Unique learning opportunities (clinical activities, provider interests, etc.)

Introduction to the community

Community characteristics*
Opportunity to meet with high school students or other groups
Community and Health Region resources, arranging visits to various community services
Where to buy groceries, do laundry, etc. (rural rotations)*

Introduction to learner (see New Clerk Introduction Form)

Rotations completed to date; "How have they been doing?"
Career plans
Specific knowledge, skills, and attitudes to develop on this rotation:

- _____
- _____
- _____

Previous difficulties / areas of concern or gaps they want to address:

- _____
- _____
- _____

Relate rotation to learner's career plans. If interested in FM, need enthusiastic positive role models. If interested in other specialties, needs to see fit with primary care and importance of this role.

Expectations of University

Professionalism and conduct
Course objectives (see Year 3 syllabus)
Family Medicine / Community Project
Criteria included in evaluation form

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- _____
- _____

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- _____
- _____
- _____

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Preceptor Expectations

Daily routine:

Hours/ days that the learner is expected in the office
Learner's level of responsibility and autonomy in providing patient care
Hospital rounds and night/weekend call
Times preceptor is off; what to do then; options for added learning
Amount of reading expected
Opportunities to work in settings with other providers
Daily feedback opportunities

Office policies:

Directions for writing chart notes – using SOAP, dictating, writing scripts, making referrals, EMR training, billing, form completion
How are patients selected for learner to see?
Length of time to spend with each patient, number of patients per day

Hospital policies:

Introduction of services and programs*
Introduction to staff*
Parking, pagers*
Hospital orientation*

Preceptor/learner interaction:

Establish format for case presentations and any handovers
Arrange time for formal formative and summative feedback (if not already done); book midway and final evaluation meetings early
Clarify preceptor criteria to evaluate learner performance
Encourage learner self-assessment and reflection before discussing preceptor's evaluation (SNAPPSS)
Encourage 2-way feedback on the learning environment

If a problem arises:

Absentee policy, how to notify office if sick
Contact for questions or problems:
How to reach preceptor in an emergency; share contact numbers.

Rotation Objectives:

Required activities based on practice's unique learning opportunities (i.e. management of chronic back pain, workers' comp system, attend hospital patient management meetings, conduct quality improvement chart audit, develop patient education resource, etc.)

New Clerk Introduction Form

Clerk's Name: _____Preceptor's name: _____ _____

Placement: _____Date of Placement: _____

Emergency Contact Information: _____

Will you be living in the community during your placement? Yes No

Phone (cell): _____ Email: _____

Pre-rotation:

Rotations completed to date:

Other clinical experiences/background:

Clinical interests or special areas of interest:

Personal interests:

Career plans:

Family Medicine Rotation:

Specific knowledge, skills and attitudes wanting to develop:

Previous difficulties/areas of concern

Do you have any expectations particular to the rotation?

How do you learn best/what is your learning style?

What is your introduction preference with patients?

Is there any other information that might be helpful for your preceptor?

New Clerk Introduction Form
Department of Academic Family Medicine
University of Saskatchewan
Ver2 (April2017)
(Adapted from: Preparing for New Learners, PBSG-ED, program for Faculty Development, McMaster University)

Here is a checklist that can be used by preceptors as they prepare to teach in the clinic/ office.

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 & 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 & attempt to resolve them
Review how to contact office in case of personal emergency or unanticipated schedule conflict
Review office rules & policies (eg., parking, dress code, meals, telephone & computer use)
Orient the learner to his or her personal workspace
Review contents of examination room & where equipment, supplies, & forms are located
Introduce learner to staff (including their responsibilities) & to partners
Review when & how teaching will occur
Review when & how feedback will be provided
Review scheduling & which patients the learner will see
Review how much time should be spent with patients
Review what parts of examination should & should not be done in your absence
Review how to organize the learner's time with the patient & you
Review how you want patients presented to you
Review how you want notes written or dictated
Review which clinical tests are performed in the office
Review how to order imaging studies & 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 & Residents
http://www.amazon.com/Teaching-Your-Office-Instructing-Office-Based/dp/1930513070

Patient Education

Resident as Patient Educator

As you progress in your TIPS course, one teaching area we would encourage you to develop involves your role as a patient educator. The following are some tips and strategies you may find useful when having these conversations with patients.

What is patient education?

- Patient education encompasses - health promotion, prevention, disease specific information, tools, communication and guidelines and
- Includes **more than the transfer of information**; patient education facilitates behaviour change and encourages self-management**.**

Task Force on Patient Education CFPC 2008

Patient Education fits well with the CanMEDS roles such as communicator, collaborator, scholar, and professional. You can explore specific patient education skills documented in the roles at http://www.royalcollege.ca/rcsite/canmeds/canmeds-framework-e.

What opportunities exist to provide patient education?

- Teachable moments during a clinic visit, ER visit or hospitalization or follow up
- Following any assessment and especially when engaged in shared decision making / finding common ground
- During a physical exam
- When the patient or family has information from a website
- With any new diagnosis
- When prescribing a new medication
- Health promotion / prevention opportunities; when discussing risk
- For Chronic Disease Management

Why should physicians apply effective patient education in their day to day work?

- We are credible sources of information.
- We have opportunities to assess patient understanding and address gaps.
- We have access to team members and supports to reinforce learning.
- Applying effective strategies can result in better shared decision making.
- Adherence to medications can improve. For example, think about poor asthma or COPD control when patients don't know how to properly use their inhalers.

There are several resources that can help you evaluate written materials and tools such as the DISCERN Instrument at http://www.discern.org.uk/discern_instrument.php or using

Health on the Net (HON) https://www.hon.ch/

Areas that you can consider in critically appraising any source of patient education information include:

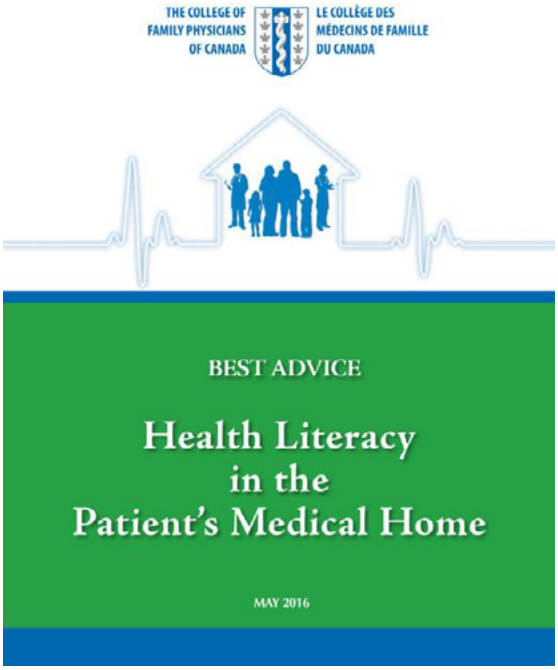
- Accuracy – is the information up to date and accurate?
- Appropriateness – is this the right information for this patient at this time?
- Ethnicity/language choice – is the material inclusive and in the patient's preferred reading language?
- Numeracy – are numbers clear and the risk description easy to understand?
- Consistency – Is the information compatible with the advice being given?
- Authorship/sponsorship – can you tell where the information has originated? Is it a Canadian source?
- Active links work – are there dead links?
- Ease of use – can you access and navigate the information easily and intuitively?
- Animation/illustration – are their diagrams to explain content and white space to help with readability?
- Interactivity – does this material facilitate active learning?
- Literacy Level – is it appropriate and has plain language been used?

Health literacy

i. Literacy is a determinant of health
ii. Know the literacy levels of your population/patient
iii. Use plain language
iv. Avoid medical jargon
v. Literacy assessment tools
vi. Cultural sensitivity
vii. Consider numeracy issues as well

For more resources and tips on health literacy go to the following resources:

The Health Literacy Universal Precautions Toolkit – http://www.ahrq.gov/professionals/quality-patient-safety/quality-resources/tools/literacy-toolkit/ or a Canadian resource such as



http://patientsmedicalhome.ca/resources/best-advice-guides/best-advice-guide-health-literacy-patients-medical-home/

Numeracy article to review-
http://www.cfp.ca/content/cfp/64/3/181.full.pdf
Bottom line: "Patient and physician understanding of the magnitude or effect size of benefits and harms is improved when they are expressed as natural frequencies or in absolute terms such as absolute risk reduction with baseline risk. Visual displays of measures of magnitude or effect size such as 1000-person diagrams increase understanding for both physicians and patients."

Bell, Neil and James A. Dickinson, Roland Grad, Harminder Singh, Danielle Kasperavicius and Brett D. Thombs. Understanding and communicating risk: Measures of outcome and the magnitude of benefits and harms. Canadian Family Physician, March, 2018, p.181-185.

See resources by the Canadian Task Force on Preventative Health Care for examples of tools to explain risk on various topics. https://canadiantaskforce.ca/tools-resources/

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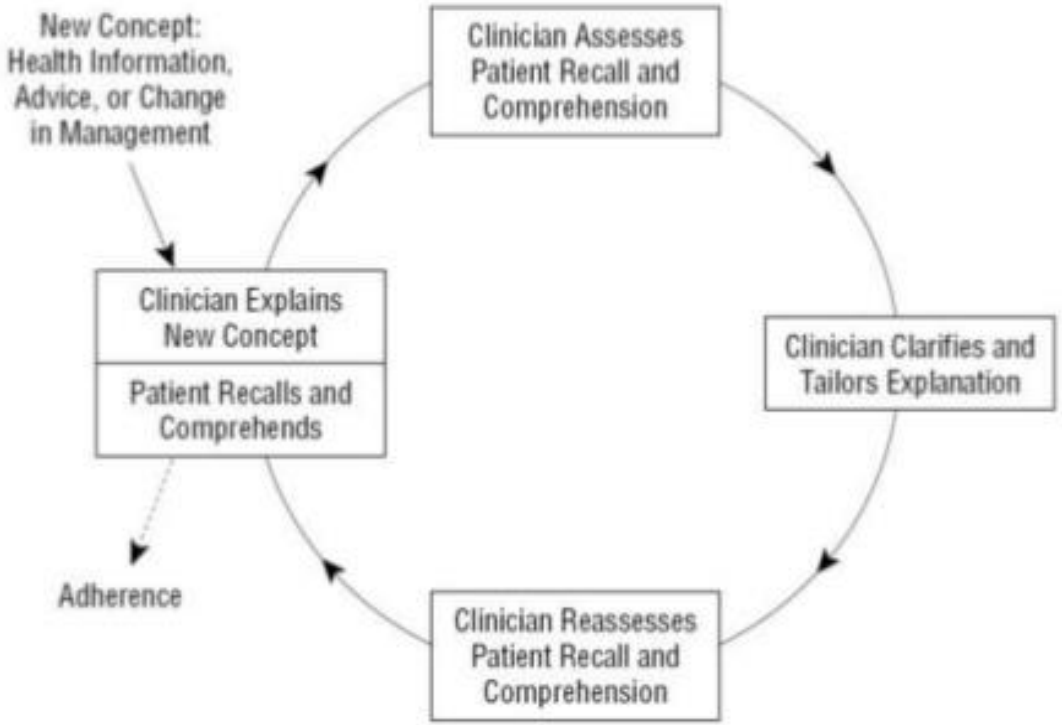
Residents as Teachers - Patient Education Tips

Helpful tips for dealing with patients considering health literacy:

- Use simple/ plain language – use words with less than 3 syllables, avoid jargon and define medical terms in plain language when needed. Use short sentences.
- Hand out printed materials that reinforce what you are saying or recommend a specific reviewed website that can provide the information needed.
- Speak slower and check in for understanding.
- Write out instructions and read the instructions out loud.
- Present only 2 or 3 concepts at a time.
- Ask if patient would like a family member to be present or there to take notes.
- Ask patient to repeat information or describe what they will do when they go home. (See "Teach Back" below)
- Underline or highlight key points in any patient information handout.
- Follow-up with team members to review instructions and reinforce messages.
- Draw pictures or provide diagrams; can access many online or use an app. You can also use models and do demonstrations or have the patient practice.
- Ensure mutual understanding and agreement on the nature of the problem, next steps and the specific roles (for you and the patient), ie who does what and why?
- Use a variety of approaches to explain things.
- Show videos such as YouTube or others through recommended sites.
- Prescribe a website prescription and then follow up.
- Prescribe an app – follow the CMA policy https://www.cma.ca/Assets/assets-library/document/en/advocacy/cma_policy_guiding_principles_for_physicians_recommending_mobile_health_applications_to_patients_pd1-e.pdf

Adapted from American Medical Association Foundation & AMA Health Literacy program

Teach-Back: Closing the Loop



Schillinger D, Piette J, Grumbach K, Wang F, Wilson C, Daher C, Leong-Grotz K, Castro C, Bindman A. Closing the Loop Physician Communication With Diabetic Patients Who Have Low Health Literacy. Arch Intern Med/Vol 163, Jan 13, 2003

5 Strategies for **Improving Communication** with Patients

1	Approach the process as a **2-way conversation** between parties seeking mutual understanding and consensus on the best way forward [to a 15-year-old female patient] "*Now that you have decided you would like to go ahead with starting on the pill I want to tell you a bit more about exactly how to take it. Once I've done that, I'll double-check the key points with you at the end of the visit to be sure that I have explained it well. Is that ok with you?"*
2	When speaking, use **plain language**, break the message down into **short statements**, and focus on **2-3 most important concepts** *"You need to take the pill every day for it to work. If you miss a pill, you could get pregnant. If you do happen to forget a pill, it should be easy to spot because the package has the day of the week on it. If you see yesterday's and today's pills in there, take them both at once."* *"Even if you take your pill every day, it can't protect you from sexually transmitted infections. You still need to use condoms all the time. And, if you have missed a pill and had to take two at once, it becomes especially important to use condoms to prevent getting pregnant, too, since there is a risk for the entire rest of that month that you could get pregnant – not just on the day you missed a pill."*
3	Use a **combination of instructional methods** (verbal, demonstration, patient practice) and **high-quality resources** (written, video, audio, web-based, etc) *"Here is a sample pill pack - yours will look just like this. You can see here where the day of the week is marked. That will help you keep on track. Some people I know also set reminders on their phone to help them remember. What do you think might work best for you?"* *"Scarleteen.com is a pretty good website you can go to if you have questions. I know things with 'teen' in the name are often really bad, but it has reliable information and is written especially for a teenage audience. Do you want to write the site name down somewhere?"*
4	**Tailor** instruction and resource material to patient literacy levels, cultural values, and personal preferences *"I know you don't want you parents to know that you're going on the pill. I just want to remind you that everything we talk about is confidential – I can't tell your parents, even if they asked me about it (ie. it's the law). In my experience, parents usually do find out at some point, though. If that happens, how do you think they might respond?"*
5	**Assess** for understanding and effectiveness of educational approach *"We just covered a lot of information and I want to make sure I have explained everything well.* *Can you remind me what we said about taking your pill every day?"*

From UBC Resident as Teachers Patient Education Module

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 New): Materials I need

Sample Lesson Plan

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Critiquing a Microteaching Session

TIPS Teaching Observation Form

Teacher: **Session Title:** **Date:**

SET (Mood; Motivation; Objectives – Learner-centered, Measurable, Achievable; Roles)

BODY (Cooperative; Active; Experiential; Organization; Content; Pace)

CLOSURE (Review/Summarize; Relate to objectives; Accomplishment; No new material)

VERBAL & NON-VERBAL SKILLS (Voice, Eye contact, Room position, Facial expression, etc.)

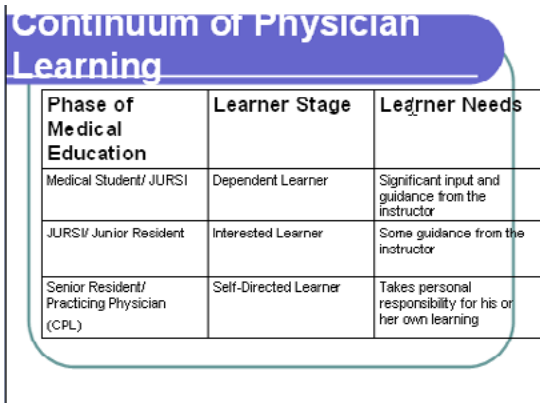
INSTRUCTIONAL MEDIA (Large enough, Clear/legible, Uncluttered, Effective animation, Images, etc.)

Media Use in Medical Education

Media	Best Use	Improper Use
White & chalkboards	Prewritten with key points, objectives, new terms, diagrams	Writing with your back turned to the class for a long period of time Messy, poor handwriting or drawing Spending large amounts of class time writing/drawing Removing content before students can copy or assimilate the information
	Working through formulas with students	
	Active learning where students create answers, diagrams, formulas on personal/group whiteboards	
Flip Charts	Prewritten with key points, objectives, new terms, diagrams	
	Active learning where students create answers, diagrams, formulas	
	Information that can be left on wall for extended period	
Overhead projectors	Diagrams that have several layers of overlays	
	Progression of formulas	
	Multi-coloured displays	
35 mm slides	Depicting a single concept visually	Complex images Poor resolution
	Illustrating disease progression	
	Compare/contrast slides	
	Illustrating rare or unusual presentations	
PowerPoint	Chunking information into key points	Turning back to audience Putting your entire lecture on the slides Reading slides to audience Not formatting your content to fit the slide
	Preparing learner handouts	
	Posting on web for review	
	Showing pictures, diagrams, video	
	Review Games	
	Planning class activities	
Film	Illustrating procedures	Talking Heads –recording a lecture that only shows the person talking
	Illustrating professional practice	
	Illustrating problems or issues for discussion	
Blog (online journal)	Up-to-date learner news	Repository for students to print large amounts of text (its less expensive for students to buy a printed package)
	Audio recordings of lectures	
	learner reports, ideas, comments	
Online	Supplemental material that is highly interactive or visual	
	Discussion space	
	Private group assignment space	
Wiki (online, group document)	Weekly class question	Undirected, unfocussed writing assignments
	Shared links to resources	
	Group project reports	
	Sharing of papers	

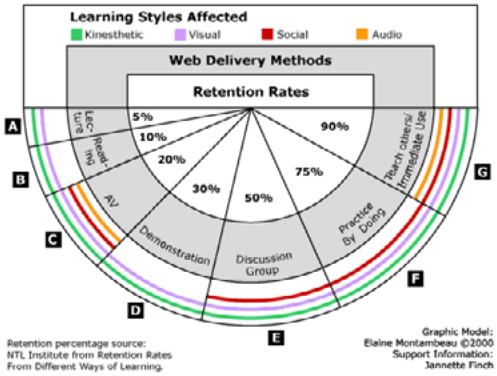
Examples of Poor Media Use

Poorly formatted PowerPoint slide • Incorrect font size • Too much content (better to use a handout) • Poor fit with background template	Image is too small to read relevant information • Too much content for the size • Colours aren't available in black & white print format



Continuum of Physician Learning

Phase of Medical Education	Learner Stage	Learner Needs
Medical Student/ JURSI	Dependent Learner	Significant input and guidance from the instructor
JURSI/ Junior Resident	Interested Learner	Some guidance from the instructor
Senior Resident/ Practicing Physician (CPL)	Self-Directed Learner	Takes personal responsibility for his or her own learning



For More Information on presentation skills:

See :

Videoconferencing as a Teaching Tool at:

https://wiki.usask.ca/display/db/Videoconferencing

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College of Medicine

TIPS for Residents

Teaching Improvement Project Systems

Additional Resources

UGME TEACHING TIPS

New to Teaching

If you are new to teaching and are not sure where to start, consider the following resources offered free through College of Medicine Faculty Development. You can also browse the full calendar of **Faculty Development Events**.

Would you like to work on your own through online modules that will introduce you to core teaching concepts?

> Try the New Medicine **Faculty Orientation to Teaching**

Do you enjoy learning in a group, in short workshops typically 1-2 hours?

> Check out the College of Medicine **Faculty development workshops.**

Unsure where to start?

> Get some one-on-one advice from the **Faculty Development Team**
> (Cathy MacLean, Director or Sean Polreis, Coordinator)

To access some faculty development resources, and to access the one45 system used for marking student assignments, you will need a U of S username (called an NSID) and password. Unsure what your NSID and password are? Go to **ICT Support**. **We recommend you put this information in your phone.**

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Mainpro & MOC credits

Formal programming has credits you can claim. You can also claim for teaching. See MAINPRO and MOC for more details.

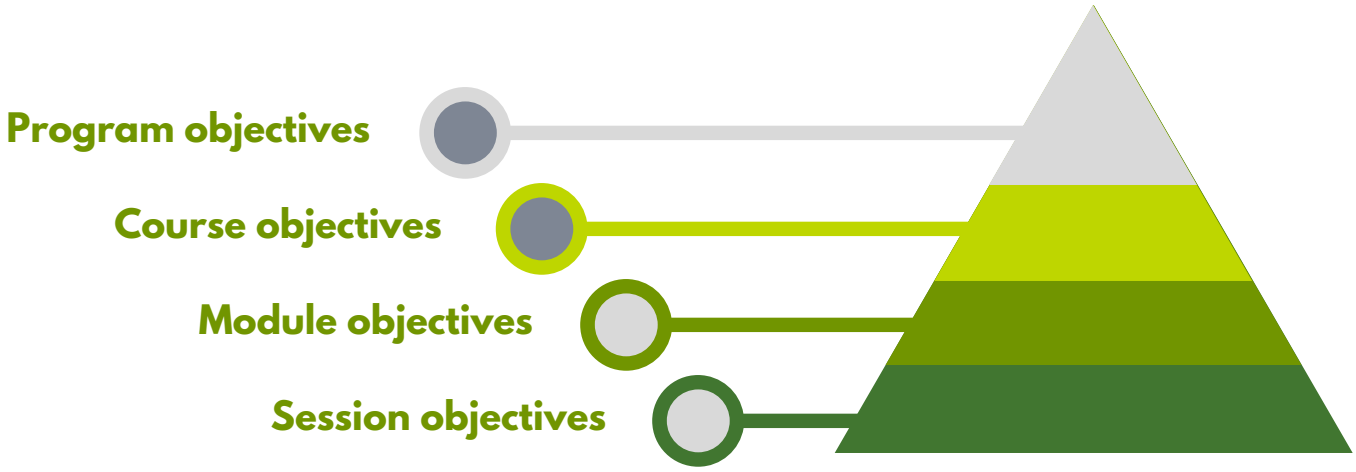
Interested in Medical Education Conferences? To learn more visit Faculty Development

UGME TEACHING TIPS

Use Your Objectives

You received the learning objectives for your session when your session was confirmed with you.

- Learning objectives are statements of what the students will be able to do or will know when they have completed the learning session.
- Please include these objectives at the start of your presentation and ensure that the content of your presentation matches these objectives.
- Assessments (quizzes, assignments, and exams) are designed to determine how well the students have met these outcomes.
- Your session objectives are designed to fit with the overall course objectives. Each session within the module has separate, distinct objectives that, together, build the module with modules building the course.



- The session objectives cannot be changed without consulting your Module or Course Director.
- Become familiar with the content that is being taught before and after your session. You can access this through One45. You are able to view the courses offered to students each year, the modules within your course, and the sessions within your module. To view the objectives for sessions preceding and coming after your session, click on the session title and then click on “objectives”.

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UGME TEACHING TIPS

Preparing Your Presentation

Who are your learners?

- Become familiar with the content that is being taught before and after your session. Go to the **Objectives Link of One45**. View the courses offered that year, the modules within your course, and the sessions within your module. To view the objectives for sessions preceding and coming after your session, click on the session title and then click on "objectives".

- Consider the level of the students (e.g. 1st year vs 4th year). Think about what is most essential for students to learn at this level within the scope of your objectives. We are trying to focus on "teaching less, better" to help students learn core concepts well, recognizing that they will revisit most topics again during their training.

Consider active learning strategies.

- Active learning leads to better understanding and retention. Read more on **Active Learning.**

Prepare your presentation (Well Ahead of Time!):

- Student routinely like to take notes on PowerPoint slides, and benefit from having these posted in advance of your session. Best practices for slides are to:

  - Use a white background on slides to facilitate printing notes
  - Use a modifiable format for handouts (e.g. PowerPoint or Word, not PDF)
  - Submit your slides/handouts at least 48 hr in advance of your session to you Course Administrator for posting to One45.

- If using PowerPoint, there is no simple rule for the number of slides per minute. However if a presenter is using > 1 slide per minute, then students are likely experiencing information overload. **Read more** on effective PowerPoint presentations.

- If assigning pre-reading or other preparation, please ensure pre-reading is focused, specific directions are given (e.g. references, links, page numbers) and the amount of time estimated for pre-reading is indicated. Please send instructions on required pre-reading to your Course Administrator at least 1 week ahead of your session for distribution to students.

Read the CoM Learning Management Guidelines for more useful tips!

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UGME TEACHING TIPS

Get Innovative

Students learn best when they are engaged in the learning activity. For some, this is attending a lecture, taking notes, and going back over those notes to study. For others, a lecture where they sit, listen, and take notes does not meet their learning needs. Lectures remain a part of current medical education. **So, how can you make listening to and learning from lecture time more meaningful for your students?**

If you want to try something other than a standard PowerPoint presentation for your lecture, there are many options:

Break up lecture content with mini learning games or activities. The students have attention spans about 15-20 minutes for their lectures but are sometimes sitting in lectures for four hours. Chunk the content of your presentation into 15 minute segments and then have students engage in an activity that uses the knowledge from that portion of the lectures. Learn more about active learning strategies here:

- **https://wiki.usask.ca/display/db/Active+Learning**
- **Physical exercise can increase student engagement**

Practice clinical decision making (CDM) questions with the group. These questions help the students to apply the factual information they are learning in the lecture to a clinically relevant scenario. These scenarios help the students understand WHY they are learning the material. When information is relevant to them, they will be more engaged in the learning.

- **Students get most excited about a course when they see how what they're learning is relevant to their future goals**

Turning the class into more active learning and putting the lecture portion outside of the classroom is known as flipping the classroom.

- **The "Flipping the College Classroom" podcast series, has a number of great ideas that can help you get started**
- **Flipped Classroom, Medical Education**
- **Flipped teaching, USask**

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When you do use a PowerPoint presentation, allow your presentation to complement the material you deliver. The slides should not be the script you follow. Instead, use the slides to highlight key points. Use photos, illustrations, or videos to bring meaning to the content you are sharing. Use vivid examples, clinical descriptions of the lecture content, and real case scenarios to show the students the real-world application of the content.

Help is available! There are many resources within the College and University and some online.

- **Attend a faculty development session or request an individual consultation about innovative teaching options –** phone (306) 966-5171 or go to **Faculty Development**
- **The Gwenna Moss Centre for Teaching and Learning**
- **A list of practical tips for creating an engaging lecture**
- **FOAM**
- **Making Lectures More Meaningful to Students**
- **Learn more about effective Graphing Tools**
- **Learn more about how to use Visual Scripts**

If you are doing something "out of the ordinary" please notify the A/V support team ahead of time so they can plan for any extra support.

(Thanks to Dr. Eddie Rooke, Division of Social Accountability, for this information).

Notes: