The Role of the Clinical Teacher
- Expertise alone is not enough for good teaching. Need to enjoy teaching and really want to be a good teacher

- Teaching/lecturing and assessment are 2 different skills – may be skilled at one and poor at the other
    - Do poor assessment skills by instructors create more of the stress associated with veterinary school than poor teaching skills?

- Clinical teachers have multiple roles in their interactions with their students.
    - Four roles: Veterinarian, Teacher, Supervisor, and Person. (Schwenk, TL)

        As a ***Veterinarian (expert – gatekeeper for profession),*** clinical teachers serve the role as the expert and the source of all knowledge. There is considerable discrepancy between the veterinarian's level of experience and wisdom and that of the students. The veterinarian is also responsible to school administrators, licensing boards, and specialty boards for evaluating and certifying the competency of students. The veterinarian is the upholder of professional standards and is a socializing agent, a member of a professional discipline.

        As a ***Teacher (transfer knowledge),*** the medical educator is acutely aware of the needs and aspirations of students. The Teacher can listen, question, paraphrase, encourage or doubt students but cannot always provide for them.

        As a ***Supervisor (coach) in clinical/lab settings,*** the medical educator demonstrates procedures, provides practice, observes and assesses performance and provides feedback.

        Finally, as a ***Person (appropriate human interactions with a peer (or near-peer))***, the educator develops an atmosphere of sufficient trust that the students are comfortable sharing ideas, feelings and thoughts. The physician-educator does not necessarily have to like the students but does need to accept their needs and imperfections. The Person may provide significant personal help and support outside the formal teaching setting.

- Listen carefully – probably need to have established yourself as a "person" so that the student feels safe asking for more information (admitting that they don't know – that you know more, etc.)

    - Examples: 'Dang it Dr. Larson – how long did it take for you to learn that…' or 'I don't see how you got to that question'

    - I use stories about my daughters and their running to create a relationship with students outside of my role as veterinarian/expert/teacher - and because I like to brag.

Recognize that … Levels of Understanding. Learners progress through four levels of sophistication as they learn new skills. The four levels of understanding through which learners pass in becoming competent practitioners of a skill are: (Schwenk, TL)

1. unconsciously incompetent (start here – they don't know what they don't know),
2. consciously incompetent,
3. consciously competent, and
4. unconsciously competent (where instructor is – or will be soon)

Teaching by Clinicians to Prepare Clinicians:
Addressing clinical problems is often accomplished through a series of sequential steps, each of which must be performed correctly and in proper sequence. In order to teach these procedures effectively, it is important that they be broken into their discrete components rather than taught as an indigestible lump.

> **1st step:** Obtain accurate signalment, history, and physical exam findings (often accomplished simultaneously – signalment and history inform physical exam and physical exam findings inform history taking questions).

> **Middle steps:**

>> Formulate rule-out list based on knowledge of physiology, endocrinology, pathology, microbiology, immunology, etc.

>> Work through rule-out / rule-in steps to approach diagnosis

>> Select appropriate intervention based on knowledge of magnitude of benefit, risk of adverse events, and cost-effectiveness of benefit

> **Last 3 steps:** Initiate intervention, monitor changes after intervention initiated, re-evaluate diagnostic work-up and intervention

> When lecturing or doing clinical instruction -
> - Tie signalment to "ology" knowledge, intervention strategy/logic, outcome probability (prognosis, side-effects, etc.)
> - Tie history to "ology" knowledge, intervention strategy/logic, outcome probability (prognosis, side-effects, etc.)
> - Tie physical exam findings to "ology" knowledge, intervention strategy/logic, outcome probability (prognosis, side-effects, etc.)

> In **backward chaining,** the last step is demonstrated and practiced first, so as to give learners a sense of the procedure's endpoint and outcome. Each preceding step is then demonstrated and practiced, followed in sequence by the latter steps already learned. This method may be necessary for complicated, multi-step reasoning problems so that students know 'why are we learning this?'.

> **Forward lengthening** works just the opposite of backward chaining. The first step is demonstrated and practiced first, and subsequent steps are added until the last step is reached. This method works well for teaching short procedures, such as venipuncture, which have readily apparent outcomes.

> Which of these methods (**backward chaining** or **forward lengthening**) is most appropriate for each skill/problem/student?

Recognize that the goal is competence/excellence – not accumulation of "points". I don't care how many times the student gets something "wrong" while learning as long as they are experts when they graduate. Example – KSU football: running back is 6th string but gets better through spring drills – moves up to 4th string at start of season – keeps getting better through year – at the end of the year, is the best running back…. Who do you "start" in the bowl game? – The running back who was 1st string at the start of the year? The running back who was 1st string the most weeks of the year? The running back who was the best at the end of the year (even if he made more mistakes early in the year than any other running back)!!!!!!!!

<u>Lecture setting:</u>

- Think about clinical cases – what do you need to know to work up the diagnosis and evaluate intervention options?
    - How much basic physiology, biochemistry, pathology to include?
        - Balanced between: "this is not a technical training program" and "they are not PhD physiologists, biochemists, etc."
    - Spend time thinking about what to include and what to exclude when lecturing about a topic

- Are there non-lecture techniques that can be the primary method of teaching or serve as augmentation of lecture?
    - Assigned reading
    - Computer/online based models
    - Youtube videos

- Five fingers illustration for learning (weakest to strongest):
    - Little finger: Listening – least effective method of learning
        - If this is true – what should be our goal from lecture? To introduce a concept and provide some stories or pictures to show the "end" – i.e. backwards chaining?

    - Ring finger: Reading (lesser extent – watching videos)
        - Clearly indicate what you want them to learn from reading assignment (still need to ask the question – "How much basic physiology, biochemistry, pathology to include?")
        - May need to create your own if no textbook or article fits your goals (usually too heavy on physiology and too light on clinical/critical thinking)
        - Use Mal (illustrations), Kent (videos), resources from specialty colleges or other universities, or YouTube videos

    - Big finger: Studying
        - Main reason to administer exams is to stimulate studying. Try to create exams that stimulate the kind of studying that is most beneficial to master clinical problem solving.

    - Index finger: Doing
        - Laboratory (surgery and clinical skills) and senior clinics

    - Thumb: Meditation – key – meditation means focused thinking about the subject (does not mean clearing your head and not thinking about anything)
        - Socratic teaching – come back the next day and ask "did you think about what we did/saw/talked about yesterday?"
        - I always ask "What did you learn yesterday?"

Clinical setting:

- Focuses on teaching students to become proficient with ….

    - history taking and physical exam skills

    - developing an initial rule-out list – and listing in logical order (i.e. most likely first, greatest public health impact first, shortest intervention window first, etc.)

    - developing a diagnostic plan (rule-in / rule-out) – and planning action steps in a logical order (i.e. able to rule-out several dx, inexpensive/simple to accomplish, rule-in critical dx (i.e. public health concern, short intervention window, etc.), able to rule-in most likely, etc.)

    - comparing alternate intervention options based on cost-effectiveness and severity of adverse events. (Yes, cost-effectiveness is very important – every client and animal has more than one problem and resources over-spent on one problem are not available to spend on other problems. Resources include: time, money, and attention.)

    - committing to monitor effect of intervention over time (short-term and long-term): degree of improvement, presence of adverse events/effects, and client compliance obtained through call-backs and re-checks

    - being flexible and confident enough to re-evaluate diagnostic conclusion and intervention plan based on response to intervention plan

- Requires a full range of communication skills: (Schwenk, TL)

    1. *Attentive Silence* - which communicates that the teacher is paying attention and gives the learner time to think,

    2. *Observation* - which gives the teacher behavioral and nonverbal data about the learner,

    3. *Purposeful Eye Contact* - to engage learners who require special teacher attention,

    4. *Tracking* - the "nods and grunts" that indicate understanding and general approval,

    5. *Open-Ended Encouragement and Advocacy* - to provide a supportive, although not completely anxiety-free, learning environment,

    6. *Surface Paraphrasing and Exploration* - to help the teacher gain additional general information from the learner,

    7. *Self-disclosure* - to strengthen the teacher's image and credibility by revealing personal experiences, "war stories," difficult cases and mistakes,

    8. *Active Listening* - to probe the learner's thinking for purposes of clarification, expansion, justification, and correlation,

    9. *Intense Paraphrasing* - which allows the teacher to more aggressively question the learner for specific information or for specific responses,

    10. *Open-ended Questioning* - to expand the discussion and to stimulate the learner to consider several choices

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http://www.crlt.umich.edu/publinks/occ1.html