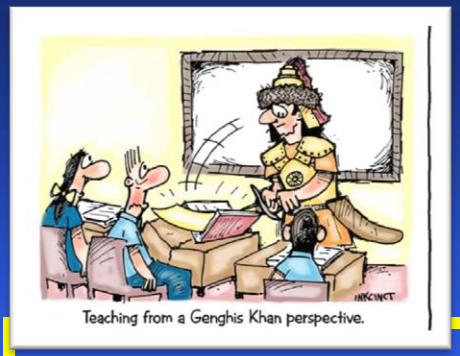
Faculty Development Showcase Week: Engaging Students

(Wednesday – February 26, 2014)



Learner-centered Education from Pedagogy to Andragogy

(Making your conferences & rotations a learning [*not* teaching] experience.)

Lawrence Loo, MD
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CME Disclosures

"All Relevant Financial Relationships"

NONE

"Commercial Interest" is defined by the ACCME (www.accme.org) as "any entity producing, marketing, re-selling or distributing health care goods or services consumed by or used on patients."

Example: A Teaching Experience

Educational Objectives:

(1) Understand key principles and assumptions of Adult Learning.

(2) Compare and contrast key characteristics of learner-centered (Andragogy) and teacher-centered (Pedagogy) education.

(3) Illustrate and practice educational approaches for adult learners.

"Think-pair-share" Exercise

After looking at the following two movie clips of 4th graders learning, turn to a neighbor and discuss (for 1-2 minutes):

Compare and contrast the teaching styles?
What's the same? What's different?
Which classroom would you rather be in? Why?

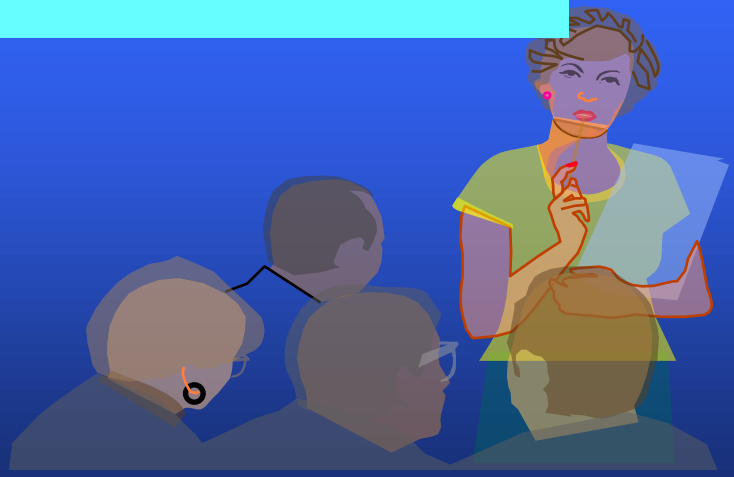
Teaching 4th Graders Social Studies

Teaching 4th Graders Reading

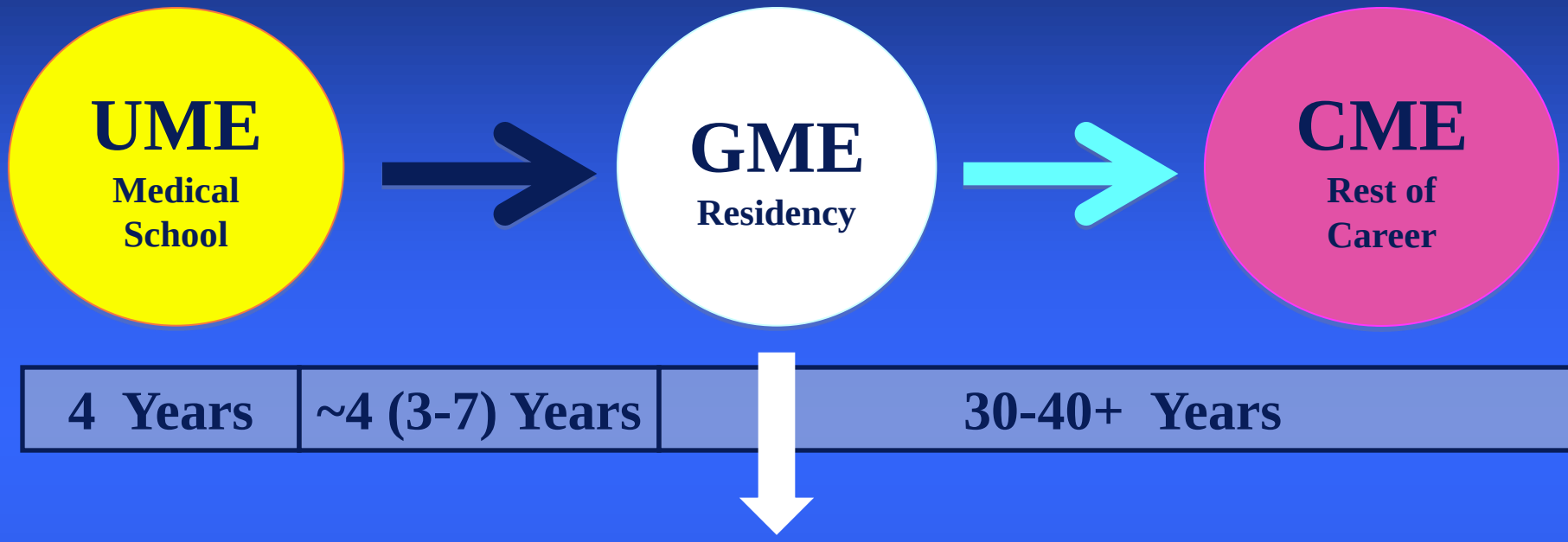
"Think-pair-share" Exercise

After looking at the following two movie clips of 4th graders learning, turn to a neighbor and discuss (for 1-2 minutes):

Compare and contrast the teaching styles?
What's the same? What's different?
Which classroom would you rather be in? Why?



The "Continuum" of Medical Education

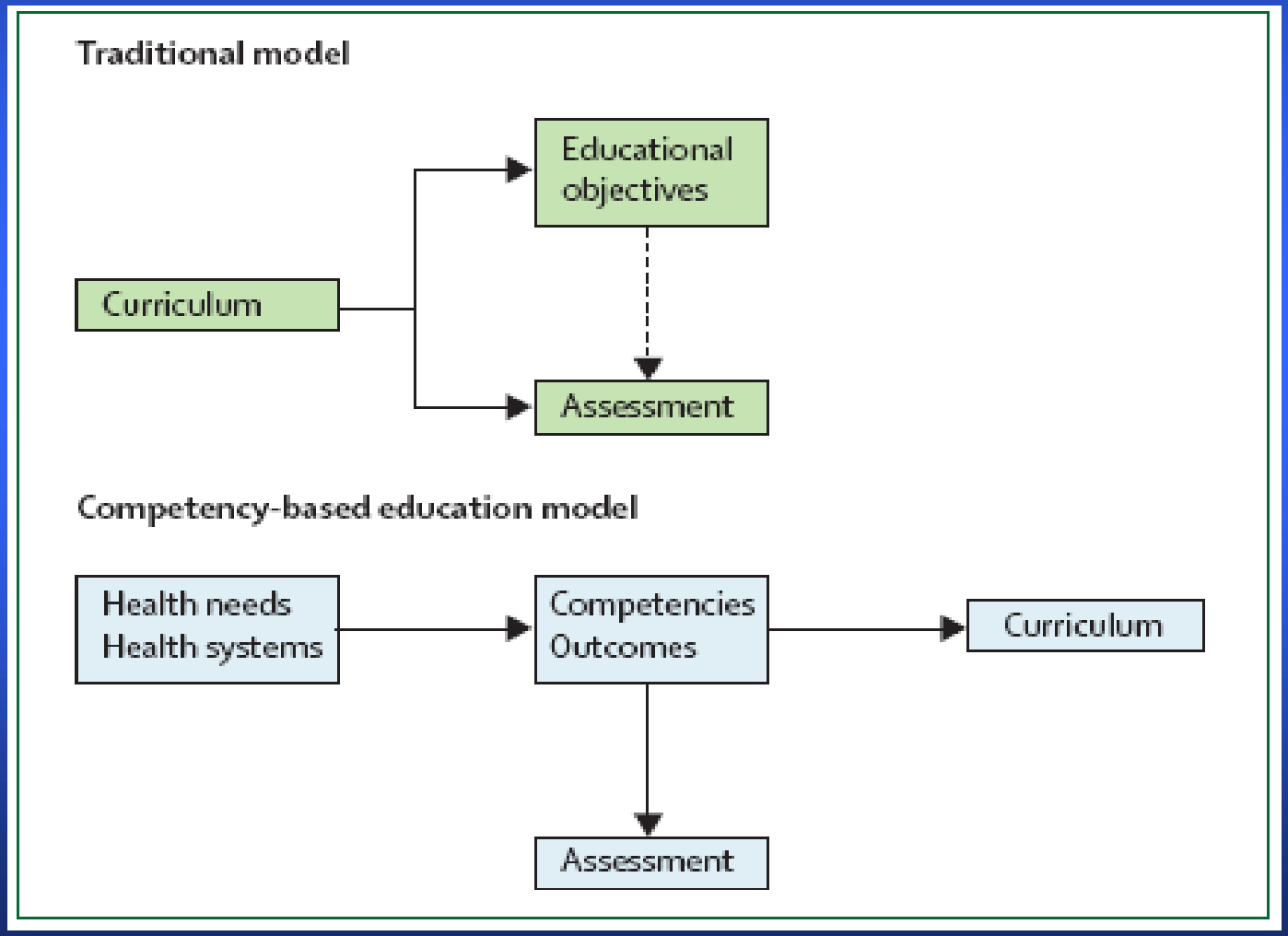


6 General Competencies

Patient Care
Medical Knowledge
Interpersonal Communication
Professionalism
Practice-base Learning
Systems-based Practice

"Health professionals for a new century: transforming education to strengthen health systems in an interdependent world."

(Frenk J, et al. Lancet. 2010; 376:1923-58)



Shifting Paradigms: From Flexner to Competencies

Carol Carraccio, MD, Susan D. Wolfsthal, MD, Robert Englander, MD, MPH, Kevin Ferentz, MD, and Christine Martin, PhD

ACADEMIC MEDICINE, VOL. 77, NO. 5 / MAY 2002

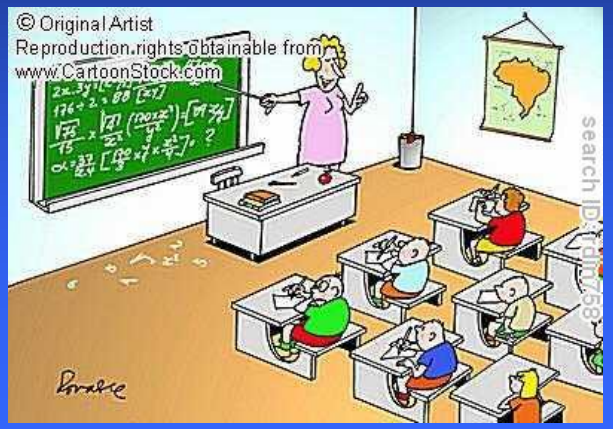
A Comparison of the Elements of Structure- and Process-based Versus Competency-based Educational Programs

Variable	Educational Program	
	Structure- and Process-based	Competency-based
Driving force for curriculum	Content—knowledge acquisition	Outcome—knowledge application
Driving force for process	Teacher	Learner
Path of learning	Hierarchical (teacher ⇒ student)	Non-hierarchical (teacher ⇔ student)
Responsibility for content	Teacher	Student and teacher
Goal of educational encounter	Knowledge acquisition	Knowledge application
Typical assessment tool	Single subjective measure	Multiple objective measures ("evaluation portfolio")
Assessment tool	Proxy	Authentic (mimics real tasks of profession)
Setting for evaluation	Removed (gestalt)	"In the trenches" (direct observation)
Evaluation	Norm-referenced	Criterion-referenced
Timing of assessment	Emphasis on summative	Emphasis on formative
Program completion	Fixed time	Variable time

Key principles and assumptions of Adult Learning!

Applying Education Theory into Practice

- Pedagogy:
  - **"To lead a child"**
  - **Study of being a teacher or the process of teaching *children***
  - **Teacher –centered**



- Andragogy:
  - **"To lead a man (or adult)"**
  - **Study of being a teacher or the process of teaching *adults***
  - **Learner-centered**

Six Assumptions of Adult Learning

(Malcom Knowles : *Andragogy in action: applying modern principles of adult learning.* San Francisco: Jossey-Bass.1984; BMJ 2003;326:213-6)

- Adults **need to know** why they need to learn something.
- Adults are independent and **self-directing**.
- Adults have accumulated a great deal of **experience**, which is a rich source of learning.
- Adults value learning that integrates with the **demands of their everyday life**.
- Adults are more interested in immediate, **problem-centered** approaches than in subject centered ones.
- Adults are more motivated to learn by **internal drives** than by external ones.

Seven Principles of Adult Learning

(Malcom Knowles: *Andragogy in action: applying modern principles of adult learning.* San Francisco: Jossey-Bass.1984; BMJ 2003;326:213-6)

- Establish an effective **learning climate**, where learners feel safe and comfortable expressing themselves.
- ***Involve learners*** **in mutual planning** of relevant methods and curricular content.
- ***Involve learners*** **in diagnosing their own needs** - this will help trigger internal motivation.
- ***Encourage learners*** **to formulate their own learning objectives** – this gives them more control of their learning.
- ***Encourage learners*** **to identify resources and devise strategies** for using the resources to achieve their objectives.
- ***Support learners*** in carrying out their learning plans.
- ***Involve learners*** **in evaluating their own learning** – this can develop their skills of critical self-reflection.

Overall Learning Goal

To stimulate and facilitate participants to become self-directed lifelong learners.

Fostering Active → Lifelong Learning Skills

(LCME: Standards for Accreditation of Medical Education Programs Leading to the M.D. Degree. June 2013)

ED-5-A. A medical education program must include instructional opportunities for active learning and independent study to foster the skills necessary for lifelong learning.

It is expected that the methods of instruction and assessment used in courses and clerkships (or, in Canada, clerkship rotations) will provide medical students with opportunities to develop lifelong learning skills. These skills include self-assessment on learning needs; the independent identification, analysis, and synthesis of relevant information; and the appraisal of the credibility of information sources. Medical students should receive explicit experiences in using these skills, and they should be assessed and receive feedback on their performance.

Accreditation Council for Graduate Medical Education

Practice-based Learning and Improvement IV.A.5.c)

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning. (Outcome)

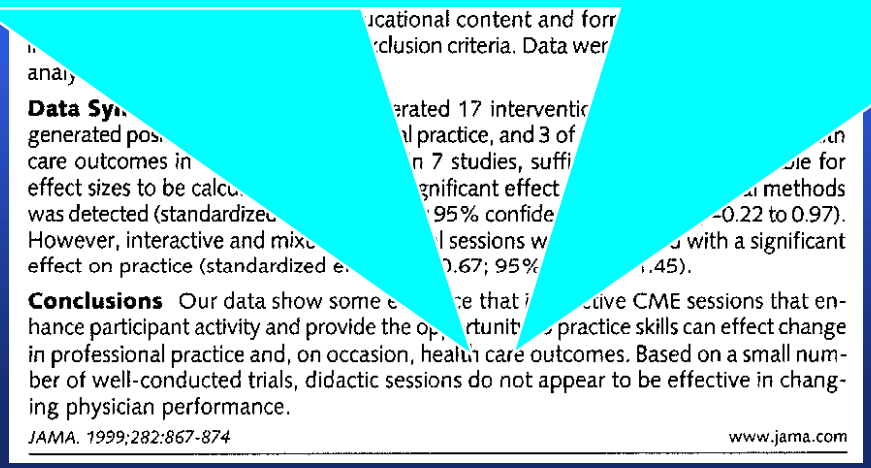
ACGME approved: February 11, 2007; effective: July 1, 2007
ACGME approved focused revision: September 26, 2010; effective: July 1, 2011
ACGME approved categorization: February 7, 2012; effective: July 1, 2013
ACGME approved focused revision: June 9, 2013; effective: July 1, 2013

Impact of Formal Continuing Medical Education

Do Conferences, Workshops, Rounds, and Other Traditional Continuing Education Activities Change Physician Behavior or Health Care Outcomes?

JAMA, September 1, 1999—Vol 282, No. 9 **867**

" . . . some evidence that *interactive* CME sessions that enhance participant activity and provide the opportunity to practice skills can effect change in professional practice . . .



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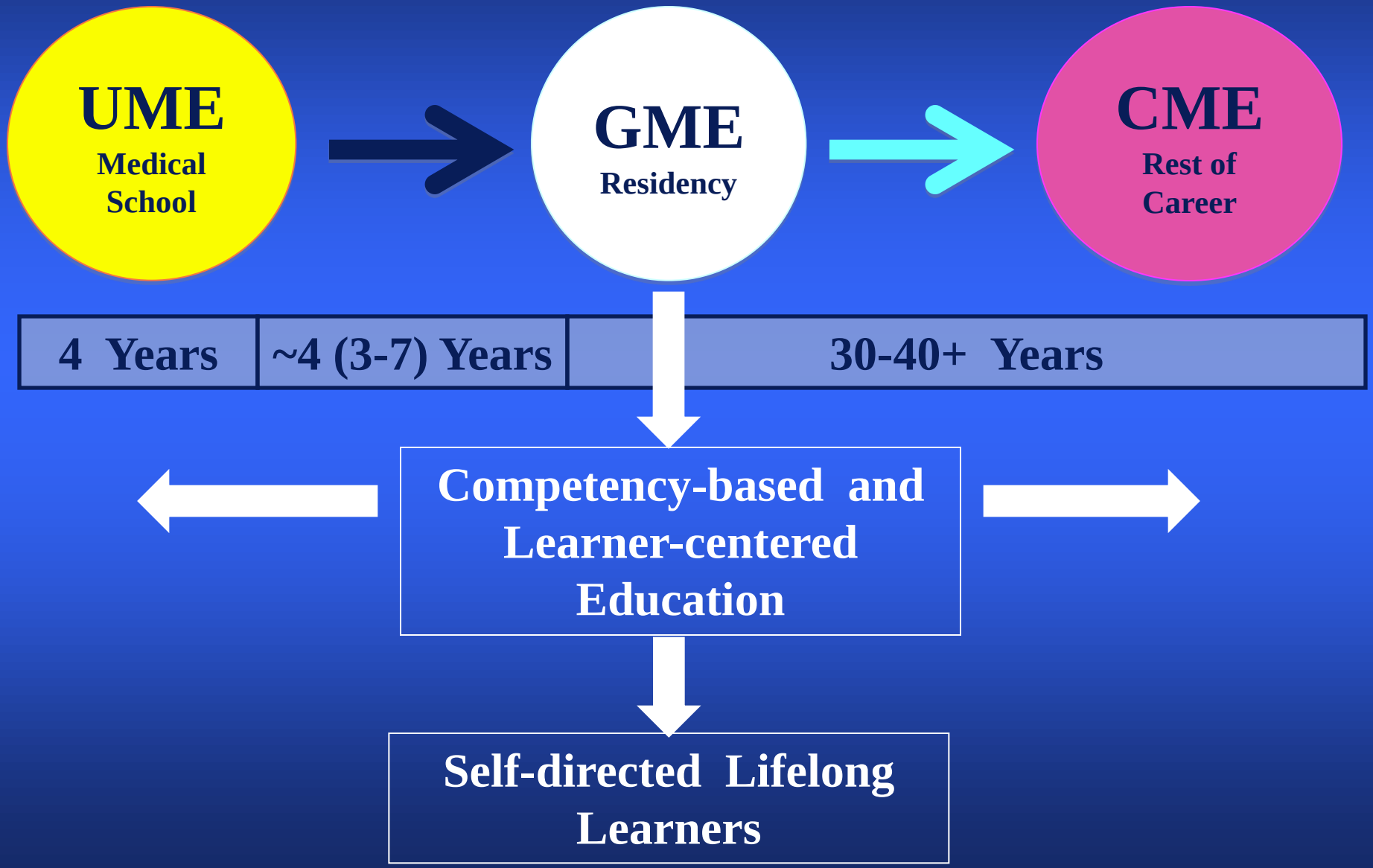
was detected (standardized . . . 95% confide . . . -0.22 to 0.97).
However, interactive and mix . . . l sessions w . . . with a significant
effect on practice (standardized e . . . 0.67; 95% . . . .45).

Conclusions Our data show some e . . . e that i . . . tive CME sessions that enhance participant activity and provide the op . . . rtunit . . . practice skills can effect change in professional practice and, on occasion, health care outcomes. Based on a small number of well-conducted trials, didactic sessions do not appear to be effective in changing physician performance.

The "Continuum" of Medical Education



Lifelong Learning - Defined

(Acad Med 2009;84:1066, LCME Accreditation Standard ED-5-A, & the LLUSM Dean's Office)

- An attribute involving a set of ***self-initiated activities*** and ***information-seeking skills*** with sustained ***motivation*** to learn and the ability to recognize one's own ***learning needs***.
- Lifelong learning begins with **self-reflection** and the recognition of one's own learning needs, proceeds to asking questions, and then having the motivation and skills to find answers to one's own questions.

"Teaching as a Competency": Competencies for Medical Educators

Academic Medicine, Vol. 86, No. 10 / October 2011

Malathi Srinivasan, MD, Su-Ting T. Li, MD, MPH, Fredrick J. Meyers, MD, Daniel D. Pratt, PhD, John B. Collins, PhD, Clarence Braddock, MD, Kelley M. Skeff, MD, PhD, Daniel C. West, MD, Mark Henderson, MD, Robert E. Hales, MD, MBA, and Donald M. Hilty, MD

Faculty in medicine are expected to teach, yet most faculty enter their academic positions underprepared for their roles as medical educators—even when they assume education leadership positions.[1] This lack of formal training in teaching may be due, in part, to a lack of recognition of the complex skills (from techniques in microteaching to meta-skills in program evaluation) necessary to succeed as a medical educator.[2]

Competencies for Medical Educators: 4 Core Values

(Academic Medicine October 2011;86:1211-20)

- **Learner Engagement**
  - Ability to connect and intellectually engage an individual learner or groups of learners
- **Learner-Centeredness**
  - Putting the learner first and tailoring the education program to meet the learner "where the learner is"
- Adaptability
  - Need to change teaching modalities and content over time to respond to learners
- Self Reflection
  - Ability for educators to think critically about their educational encounters and seek ways to improve

Self-Reflection & Group Activity

The Learner-Centeredness Scale

(Menachery EP, et al.: Medical Teacher 2008;30:e137-e144)

How "Learner-centered" Are You?

Learner-centeredness Scale

(Menachery EP, et al.: Medical Teacher 2008;30:e137-e144)

"Learner-centeredness Scale"

Self-assessment takes approximately 3 minutes or less. Be sure to indicate what best describes your current *actual* teaching practices (and not what you think you *should* be doing).

1. How often can the following statements describe your behavior?

a. I ask learners what they would like to get out of our interactions

0	1	2	3	4
Never	Rarely	Sometimes	Frequently	Always

b. I change a learning plan based on a learner's needs.

0	1	2	3	4

"Learner-centeredness Scale"

Self-assessment takes approximately 3 minutes or less. Be sure to indicate what best describes your current *actual* teaching practices (and not what you think you *should* be doing).

a. In precepting or one-on-one teaching encounters, I assess and focus on the learner's needs rather than my own agenda.

0	1	2	3	4
Never	Rarely	Sometimes	Frequently	Always

b. I consider the needs and interest of my intended audience before preparing a lecture or presentation.

0	1	2	3	4
Never	Rarely	Sometimes	Frequently	Always

c. I make an effort to organize lectures and presentations in a way, which will maintain interest.

0	1	2	3	4
Never	Rarely	Sometimes	Frequently	Always

The Learner-centeredness Scale: Menachery EP, Wright SM, Howell EE, Knight AM: Physician-teacher characteristics associated with learner-centered teaching skills. Medical Teacher 2008;e137-e144.

Scoring: Range is from 0 -24 with a median of 18: "Low" scorers < 18. "High" scorers > 18.

Note: The learner-centeredness scale was correlated to teaching behaviors that were reflective of principles of adult learning.

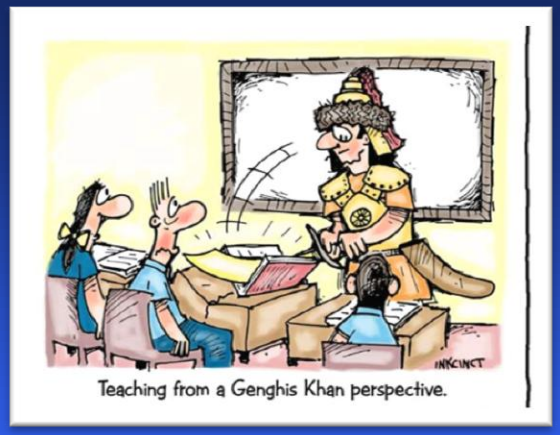
For the interested reader:

1) Srinivasan M, Li ST, Meyers FJ, et. al.: "Teaching as a Competency": Competencies for medical educators. Acad Med 2011;86:1211-20.
2) Kaufman DF: Applying educational theory in practice. BMJ 2003;326:213-6.
3) Spencer JA, Jordan RK: Learner centered approaches in medical education. BMJ 1999;318:1280-3.
4) Knowles M, Swanson RA, Holton EFIII: The Adult Learner: The definitive classic in adult education and human resource development. 7th Edition. 2011. Elsevier Inc. (ISBN-13: 978-1-85-617811-2)

Self-Reflection & Group Activity:

The Learner-Centeredness Scale

(Menachery EP, et al.: Medical Teacher 2008;30:e137-e144)



Learning & Teaching Styles

("Mini-case" Illustration)

Student Feedback on IM Residents as Teachers & Evaluators

(Loma Linda University School of Medicine – Department of Medicine: Revised August 12, 2013)

Name of Resident: _____ _____

Number of days working with this resident: _____

1) Did this resident spend time teaching me?

Name at least one area this resident could improve upon as a teacher and evaluator of medical students?

One of the worst residents I've ever worked with	Below average resident	Average solid resident		...ents I've ever worked with

Name at least one area this resident could improve upon as a teacher and evaluator of medical students: _____

_____

_____

_____

Name at least one strength this resident has as a teacher and evaluator of medical students: _____

_____

_____

_____

I would like to nominate this individual as the outstanding IM resident teacher of the year: ☐ **Yes** ☐ **No**

"Mini-case": Name at least one area this resident could improve upon as a teacher and evaluator of medical students?

I think this resident needs to be more in tune with what the students' needs are. For example, she would usually keep us for an extra hour to "teach", but she would normally pick the topic to be taught, and the topic was usually something very basic.

He is very knowledgeable and willing to teach, but he should choose the topics to teach rather than leave it up to the students as he is more knowledgeable of what is relevant for the patients.

Who is right? Who is wrong?

What programmatic intervention (if any) would you recommend?

Staged Self-Directed Learning Model

(Grow GO: ***Teaching Learners to be Self-directed.*** Adult Educ Q 1991;41:125-49)

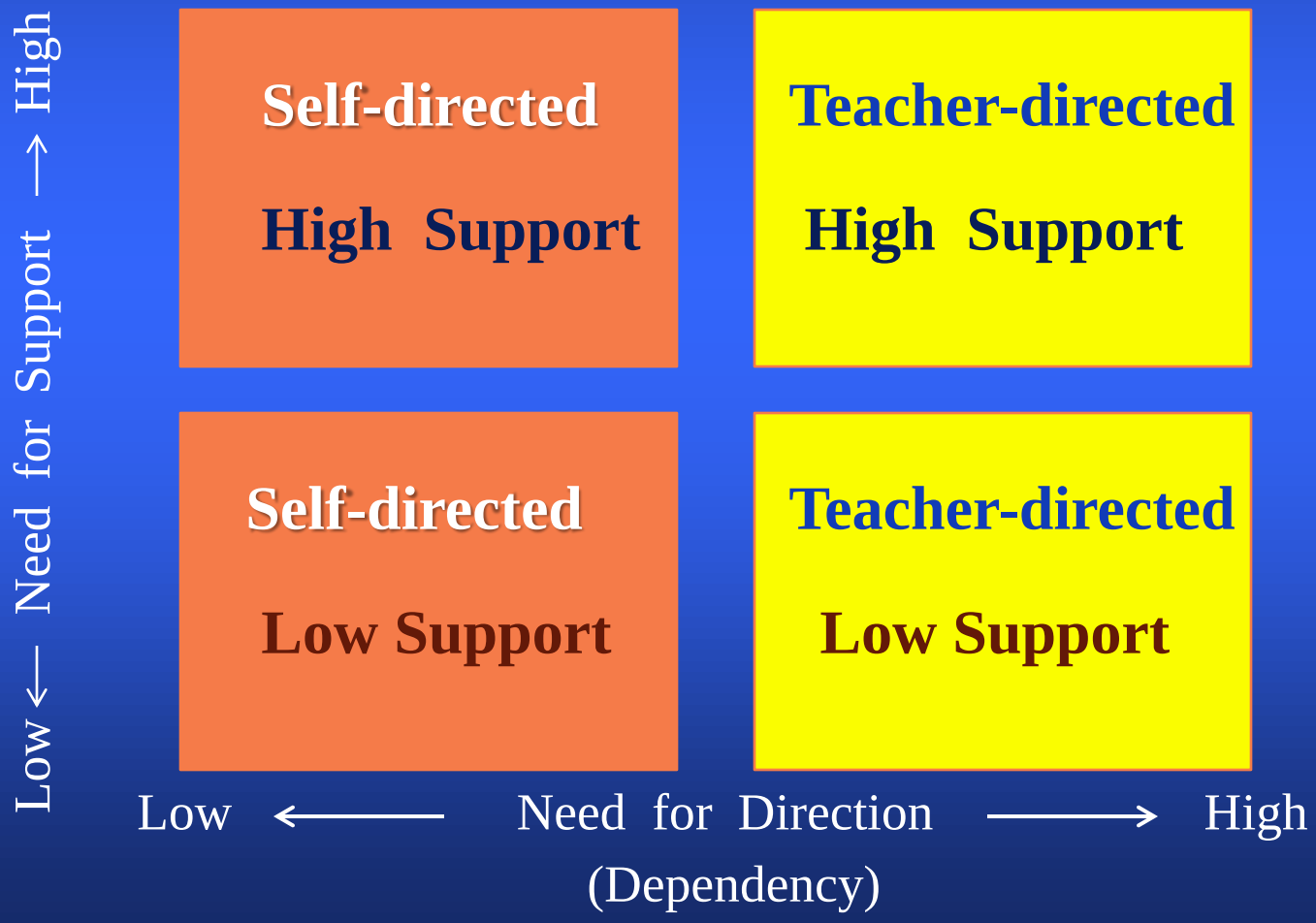
Which teaching style fits best for this learner in this context?

"Styles" of Learning & Teaching	Authority, Expert	Motivator, Inspiration	Facilitator, Guide	Delegator, Consultant
Self-Directed Learner	**Severe Mismatch**	Mismatch	Near Match	Match
Involved Learner	Mismatch	Near Match	Match	Near Match
Interested Learner	Near Match	Match	Near Match	Mismatch
Dependent Learner	Match	Near Match	Mismatch	**Severe Mismatch**

Pratt's Model of High and Low *Direction* & *Support*

(Pratt DD: ***Andragogy as a Relational Construct.*** Adult Educ Q 1988;38:160-181)

Which teaching style fits best for this learner in this context?

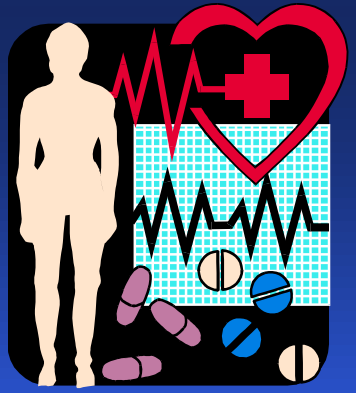


Self-Directed Lifelong Learning

(Schon DA: *Educating the reflective practitioner: toward a new design for teaching and learning in the professions.* San Francisco: Jossey-Bass.1984; and BMJ 2003;326:213-6)

- Organizing teaching and learning so that learning is within the ***learners control***.
- A goal towards which learners strive so that they become able to ***accept responsibility for their own learning.***

Expanding Your Educational Tool Kit



Examples of Learner- centered Approaches in Education

(BMJ 1999;318:1280-3)

- **Asking questions to identify learners' needs:**
  - One –minute Preceptor (OMP) model
  - SNAPPS model
  - Aunt Minnie model
- Problem based learning
- Discovery learning
- Task based learning
- Team based learning
- Experiential & reflective learning
- Portfolio based learning
- Peer evaluation and learning contracts

Examples of Learner- centered Approaches in Education Using Technology

(From Tami Thomas, MD – January 14, 2014)

- Discussion boards, blogs, wiki
- Podcasts
- Simulation Cases/Games
- Flipping Classrooms
- Faculty Learning Communities
- Innovations in Education

"Applying Knowles' Andragogy to Resident Teaching"

Academic Medicine
January 2012;
vol. 87: page 129

Applying Knowles' Andragogy to Resident Teaching

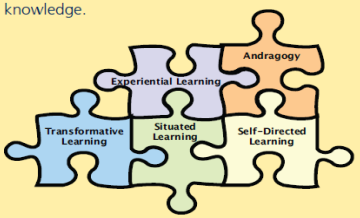
Elisabeth E. Bennett, PhD, director, Education Research and Development, Rebecca D. Blanchard, PhD, assistant professor, Education Research, and Kevin T. Hinchey, MD, program director, Internal Medicine Residency Program, Baystate Medical Center

Developing teaching skills in residents is a critical component of medical education because residents spend up to 20% of their time teaching junior learners.[1] They often rely on the traditional pedagogical approaches that they observed during their years of formal schooling, but these often do not translate well with their adult learners.

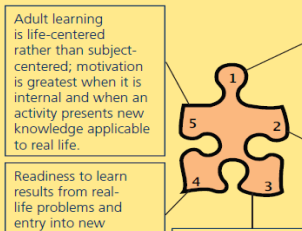
One way to develop residents' teaching skills is to frame teaching goals from the perspective of andragogy, or the "the art and science of helping adults learn."[2 (p61)] Andragogy, popularized by Malcolm Knowles,[3] offers principles that describe how adults learn differently than children. These principles can help residents improve their teaching, place more control of the learning process into the hands of their students, and provide insight into their own learning processes.

Adult Learning Theory

Adult learning theory is a complex phenomenon. Andragogy is one set of foundational principles, one model within a field of interconnected learning models, that address how adults acquire knowledge.



Malcolm Knowles' Five Tenets of Andragogy[2]



1. Adult learning is life-centered rather than subject-centered; motivation is greatest when it is internal and when an activity presents new knowledge applicable to real life.
2. Adults have a high need to know why they need to know something, and they learn best through self-discovery with real and simulated experiences.
3. Adults have an independent self-concept, take responsibility for their lives, are increasingly self-directed, and have a deep need to control learning.
4. Readiness to learn results from real-life problems and entry into new developmental stages and changing social roles.
5. Adults enter into learning with a great number and variety of experiences, which provide resources for learning and relating to new material.

Guiding Residents to Incorporate Andragogy

The table below demonstrates some teaching goals developed in line with Knowles' tenets of andragogy that residents can apply to junior learners and adult patients. Many of the teaching methods described below encourage *self-assessment*, the process of evaluating one's knowledge and understanding, and *self-reflection*, the process of making meaning from learning experiences. Both concepts engage learners and motivate them to take control of their own learning, which will more quickly lead to ownership of learning and promote autonomy.

Resident Teaching Goals by Andragogical Tenet	Teaching Methods
1. Encourage continual knowledge development through planning, feedback, and assessment of experiential and applied learning	Assess the learners' needs at the outset and their outcomes after teaching
	Develop specific goals and objectives for the learners, consistent with what they need to learn
	Foster a climate of learner inquiry and accept formative feedback from learners to retool teaching
	Provide constructive feedback that encourages accurate self-assessment and self-reflection
2. Facilitate autonomy by increasing degrees of learner control and promoting a peer relationship	Engage learners and motivate autonomy in a relationship of respect
	Activate learning by seeking learners' input
	Ask learners to articulate their ideas, thereby fostering learner confidence
3. Adapt teaching to learner needs and effectively bridge prior knowledge and new learning objectives	Adjust teaching to different contexts, cultures, and levels of prior knowledge
	Lead large- and small-group discussions, customized to learning needs
	Establish rapport with learners and use examples familiar to them
4. Adjust teaching to individual and collective levels of life development and understand what contributes to a positive climate for change	Evaluate evidence of learning to determine readiness for new roles
	Be a positive role model, recognizing that people adapt in different ways
	Provide supervision and advocacy appropriate to learner level
5. Teach most relevant and immediately applicable content to solve real clinical problems	Summarize teaching into take-home points of most relevant information
	Use case examples and involve multidisciplinary instructors
	Capitalize on "teachable moments"

References
1. Hatem CJ. Teaching approaches that reflect and promote professionalism. Acad Med. 2003:78;709-713.
2. Knowles MS, Holton EF, Swanson RA. The Adult Learner: The Definitive Classic in Adult Education and Human Resource Development. 6th ed. Boston, Mass: Elsevier; 2005.
3. Knowles MS. Andragogy in Action: Applying Modern Principles of Adult Education. San Francisco, Calif: Jossey Bass; 1984.

One-Minute Preceptor:

Five Microskills for Clinical Teaching

If the only tool in your educational toolbox is a hammer,

then every student begins to look like a nail.

Lawrence Loo, M.D.

Vice-Chair for Education and Faculty Development

Chauncey Smith Endowed Chair & Professor of Medicine

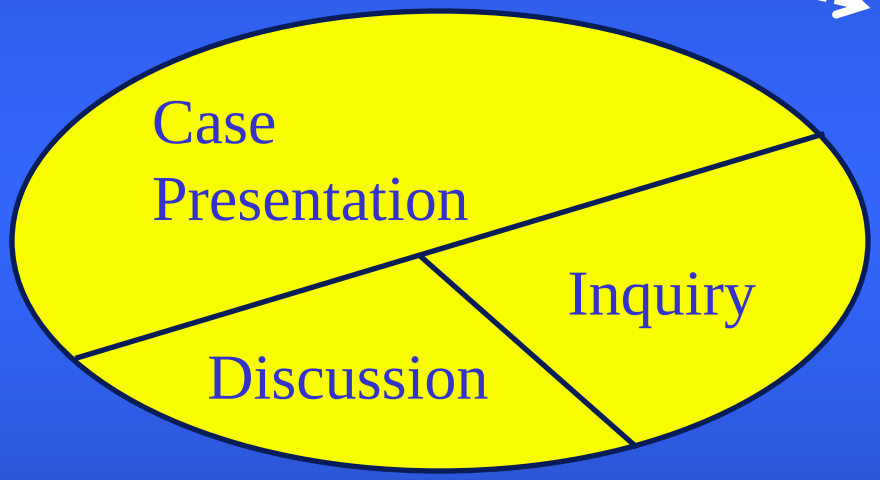
Department of Medicine - Loma Linda University School of Medicine

One-Minute Preceptor:

Five Microskills for Clinical Teaching

(J Am Board Fam Pract 1992;5:419-24; Am J Med Sci 2002;232:124-9; Acad Med 2004;79:42-9)

Diagnose Patient



Teach

(1) Teach general rules
(2) Provide positive feedback
(3) Correct errors

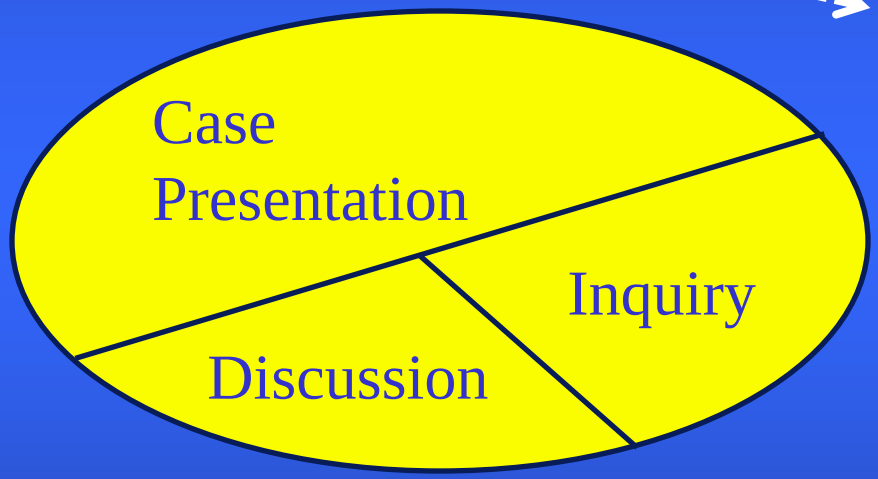
Teacher-Centered Education

One-Minute Preceptor:

Five Microskills for Clinical Teaching

(J Am Board Fam Pract 1992;5:419-24; Am J Med Sci 2002;232:124-9; Acad Med 2004;79:42-9)

Diagnose Patient



Teach

(3) Teach general rules

(4) Provide positive feedback

(5) Correct errors

Diagnose Learner

(1) Ask for a commitment

(2) Probe for underlying reasoning

Learner-Centered Education

One-Minute Preceptor:

Five Microskills for Clinical Teaching

(J Am Board Fam Pract 1992;5:419-24)

1. **Get a Commitment** -
   What do you think is going on?
2. **Probe for Supporting Evidence** -
   What led you to that conclusion?
3. **Teach General Rules** -
   When this happens, do this . . .
4. **Reinforce what Was Right** -
   Specifically, you did an excellent job of . . .
5. **Correct Mistakes** -
   Next time this happens, try this . . .

Measuring Outcomes of a One-Minute Preceptor Faculty Development Workshop

Elizabeth Eckstrom, MD, MPH,[1] *Lou Homer, MD, PhD,*[2] *Judith L. Bowen, MD*[3]

[1]Department of Medicine, Legacy Health System, Portland, OR, USA; [2]Legacy Research, Legacy Health System, Portland, OR, USA; [3]Department of Medicine, Division of General Internal Medicine & Geriatrics, Oregon Health & Science University, Portland, OR, USA.

Measurable Outcomes from the One-Minute Preceptor:

- **Improved student ratings of teaching skills**
- **More teaching focused on the patient's specific illness**
- **Learners more motivated to do outside reading**
- **Faculty greater confidence in rating student performance**
- **Faculty have greater confidence in giving more specific feedback to learners**
- **Faculty spent more time understanding the learner's thinking processes and less time soliciting data from the learner**

The Stanford Faculty Development Program

(Acad Med 1998;73:688-695 and J Gen Intern Med 1988;3:S26-S33)

- Learning Climate
- Control of Session
- **Communication of Goals**
- Promoting Understanding & Retention
- Evaluation
- Feedback
- Promoting self-directed learning (Teacher's knowledge)

Communication of Goals

(The Stanford Faculty Development Program
Acad Med 1998;73:688-695 and J Gen Intern Med 1988;3:S26-S33)

- **The teacher establishes and explicitly expresses the expectations for the learner.**
  - **What will the learner be able to do (especially after the teacher has left)?**
  - **Defined in terms of specific, observable behaviors teachers would like to see in their learners**
  - **Clear goals guides the learner, the evaluation of the learner, and the feedback to the learner.**

Exercise #9:

What is the Value of Orientation?

Attending Rounds: A Successful Formula for Ward Rounds

(J Gen Intern Med 1992;7:68-75; CMAJ 1986;134:902-4; The Hospitalist 2004;8:24-25)

- **Expectations & Evaluation are the two bookends of a rotation.**
- **<u>Orientation</u>: What to include? ("5 Rs")**
  - **R**outine
  - **R**oles & **R**esponsibilities
  - **R**atings (Feedback & Evaluation)
  - **R**ealities
- **<u>Agenda Setting</u>:** Should not be the attending physicians' task alone; learners desire substantial input – Ask them what are <u>*your*</u> learning goals for this rotation?

The Stanford Faculty Development Program

(Acad Med 1998;73:688-695 and J Gen Intern Med 1988;3:S26-S33)

- Learning Climate
- Control of Session
- **Communication of Goals**
- Promoting Understanding & Retention
- Evaluation
- Feedback
- **Promoting self-directed learning**

Promoting Self- Directed Learning

(The Stanford Faculty Development Program

Acad Med 1998;73:688-695 and J Gen Intern Med 1988;3:S26-S33)

- **The teachers role in enhancing the learners' abilities to identify and act on their own educational needs**
  - ***How can the I (the teacher) get you (the learner) to do this without me?***
  - **Teachers who promote self-directed learning are often perceived by learner's as "knowledgeable."**

A Successful Formula for Ward Rounds

(J Gen Intern Med 1992;7:68-75; CMAJ 1986;134:902-4; The Hospitalist 2004;8:24-25)

- **End of the day, rotation or teaching conference:**

One Minute Paper

(OMP #2)

(Learn Curve 1992:2:4-5)

The "Minute" Paper:

A quick guide to assessing learning after a clinical rotation

(Sinclair M, Rowe K, Brown G: NT Learn Curve 1998 2:4-5 – modified by LLoo on 6/9/13)

Name (please print): _____

Date: _____

Clinical Rotation:

Directions:

What was the ***most important thing*** you learned from today?

1. What was

What ***questions remains*** the uppermost in your mind from today?

2. What ***question remains*** the uppermost in your mind at the end of this clinical rotation?

What was the ***"muddiest*** (unclear) ***point"*** *from today?*

3. What was the ***"muddiest*** (i.e. unclear) ***point"*** from this clinical rotation?

A Successful Formula for Educational Conferences & Experiences

(Acad Med 2011;86:415-20; J Pharm Educ 2011;75:Article 96; Acad Med 1994;69:333-42)

Planning Educational Conferences & Experiences

Worksheet: Promoting Principles of Adult Learning

while integrating the "**Neurobiology of Learning**" with "**What Clinical Teachers in Medicine Need to Know**" & "**Active Learning Strategies Primer**"*
(Revised December 5, 2012 – Lawrence Loo, MD)

Date _____ Hospital _____

Name of Attending Physician Coordinator **(please print)**: _____

Name of Senior Resident Physician Co-Cordinator **(please print)**: _____

A) Major Target Audience: ____ Senior Residents ____ Interns ____ Medical Students

B)Learning Goals & Objectives ***(What are the most important points you would like learners to remember?):***

(1) (Senior Residents) _____

_____

_____

(2) (Interns) _____

_____

_____

(3) (Medical Students) _____

_____

_____

C)Interactive Process* ***(How will you actively engage your audience to help facilitate learning? – Please SEE BACK for some "active" suggestions):***

(1) (Senior Residents) _____

_____

(2) (Interns) _____

_____

(3) (Medical Students) _____

_____

D)Audiovisual Aids (e.g. patient present, EKGs & CXRs present to review, handouts, slides, etc.) to ***Promote multimedia, multimodal & multisensory convergent strategies of learning****

_____

_____

F)Learning Climate ***(Does the learner want to be there? Does the learner feel safe to identify & address their own limitations?)***

_____

_____

- Friedlander MJ, Andrews L, Armstrong EG, et al.: **What Can Medical Educators Learn from the Neurobiology of Learning?** *Academic Medicine* April 2011;86:415-20.
- Gleason BL, Peeters MJ, Resman-Targoff BH, et al.: **Active-Learning Strategies Primer for Achieving Ability-Based Educational Outcomes.** *Am J Pharm Educ* 2011;75(9) Article 186.
- Irby DM: **What clinical teachers in medicine need to know.** *Academic Medicine* May 1994;69:333-342.

A Successful Formula for Educational Conferences & Experiences

(Acad Med 2011;86:415-20; J Pharm Educ 2011;75:Article 96; Acad Med 1994;69:333-42)

Gleason BL, et al: Active-learning strategies primer for achieving ability-based educational outcomes.

Am J Pharm Educ 2011; 75(9) Article 186

Knowledge Probe

- Posing questions at the start of a lecture is a good way to stimulate thinking about the content you will cover for the day, it primes the mind to apply concepts. Prepare 2-3 short-answer questions or 5 multiple-choice questions from the lecture content. Have the students work in pairs or individually to answer the questions, have them save their answers. The questions can be readdressed in a mid-lecture or end-of lecture activity (case that applies the concepts), to help students see how their knowledge & understanding has increased.

Think-Pair-Share

- Pose a question/problem. Students spend 1-2 minutes thinking about the problem alone then discuss problem in pairs. Pairs are asked to report to the entire class. Works well in large and small classroom settings at any time during the class. Effective way to involve learners, especially those apprehensive about speaking up in class. Provides instructor with feedback on what learners have/ have not grasped.

Pause and Clarify

- Ask learners to discuss idea with neighbor. Pause lecture for 2 minutes while learners chat with neighbors about their respective understanding of key or difficult conceptual content. Aim is for each student to clarify their own understanding by comparing their perspective with that of their partner. Works best when teacher asks question requiring application of understanding, rather than simply recall of information.

Quick Think

- Every 15 minutes or so insert a "quick think" exercise to increase attention, interest, and learning. Participation options vary: students can record their responses individually and then explain their answers to a neighbor, they can verbally generate an answer with a neighbor, or they can be asked to silently think about a possible response. Provide feedback so that students can hear or share correct or possible answers. Some examples include: Select the best answer, correct the error, complete a sentence starter, compare or contrast, support a statement, re-order the steps, reach a conclusion, paraphrase the idea.

Mini-Case

- Begin the lecture with a realistic case involving the concepts that will be discussed that day. Include a brief question that requires the application of key concepts. Students will each work on the question then report their answers when called upon. Mini-cases are more effective when students are presented the case beforehand (in notes, at the end of previous session or as pre-class material).

Socratic Questioning

- Query students in manner that helps them uncover answers. Ask learners about thought process, probe assumptions, and ask for evidence. Can be used in large and small classes, but learning climate guidelines must be established: respect all around; non-judgmental attitudes.

Minute Writes

- Pose a question about a course concept; ask learners to write a response in 1-2 minutes. Collect responses & without revealing names, share sample responses & give feedback. Works in large or small settings; effective technique for determining learner progress – understanding course material, reaction to course material.

Muddiest Point

- As with "Minute Writes," students are given a couple of minutes to write the "muddiest point" or most confusing concept to understand. Can provide clarification in real time or through email/online discussion.

Critical Thinking Activity

- Provide a small group breakout session designed around a thought provoking question/case that concerns the material just presented and/or builds upon concepts presented in previous lectures. After breakout, select a student from a group to respond to the question or task. Then ask others to participate by adding to the case. Finish session by providing a summary

Jigsaw Learning Activity

- Jigsaw learning requires that students become experts in a subject area and then teach that topic to peers who have become experts in other topics. Steps: 1) divide class into small groups of 4 to 6 students. 2) Assign each group a subject area to learn. 3) Rearrange groups so that there is 1 expert in each group. Experts reciprocally teach their peers.

Concluding Remarks

"Orientations to Teaching and their Effect on the Quality of Student Learning"

(Kember D, GowL: J Higher Educ 1994;65:58-74)

"How teachers understand learning will influence the way they teach . . ."

and how their students learn as well."

Overall Learning Goal

To stimulate and facilitate participants to become self-directed lifelong learners.

Promoting Learner-centered Education and Lifelong Learners

- **Specific Techniques for Immediate Use:**
  - **OMP #1 Case Presentations**: What do you think is going on? What lead you to that conclusion?
  - **Orientation (at the Start of the rotation, day, clinic)**: What would you like to learn?
  - **OMP #2 (at the End of rounds, clinics or conferences)**:
    - » What was the ***most important*** thing you learned today?
    - » What ***question*** *remains* the uppermost in your mind?
    - » What was the ***muddiest point*** from today?

- ***Planning*** **for Learning: Consider using the "Promoting Principles of Adult Learning Planner" (Making your conferences a learning [*not* teaching] experience)**

A Fable About Teaching & Learning

- **A little boy tells his friend,**
  - ***"I taught Rover how to whistle!"***
- **With an ear up to the dog's face, the friend responds,**
  - ***"I don't hear him whistling."***
- **The first boy responds,**
  - ***"I said I taught him. I didn't say he learned it."***

! THANK YOU !


"We must view education as an investment, not an expense."
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SHELLY ESQUE