DONALD AND BARBARA
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AT HOFSTRA/NORTHWELL

Active Learning: A Team Sport

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Is My Teaching Learner-Centered?
By Maryellen Weimer, PhD

Characteristics of learner-centered teaching

1. Does the course contain activities that put students in positions to learn from and with each other?
2. Are students encouraged to discover things for themselves, or does the teacher usually tell them what they should know and do?
3. Are there policies and practices in the course that promote the development of autonomous, self-directed learning skills?
4. Is student input solicited on course topics, policies, assessment methods, and class activities?
5. Is collaboration emphasized more than competition in the course?
6. Is what's being learned, why it's being learned, and how it can be learned discussed more often than grades?
7. Are students voluntarily participating or do they sit silently until called on to answer questions and make comments? Does their nonverbal behavior indicate they'd rather not speak?

Is my Teaching Leareer-Centered? Cont.

8. Do students talk more than the teacher during class discussions? Do students respond to each other or only to the teacher?

9. Is it a course where questions play a more prominent role than answers?

10. Are students being taught how to answer their own questions?

11. Are mistakes handled as learning opportunities for the teacher and the students?

12. Are skills like critical thinking and problem-solving taught explicitly?

13. Is the teacher modeling how expert learners handle problems, find answers, deal with failure, and celebrate success?

14. Are students being given the opportunity to develop self- and peer-assessment skills?

15. Do students have the chance to practice the principles of constructive feedback (when they provide input about the course and/or about the work of their peers)?

16. Do students regularly comment on evaluations that it was a course where they had to think? Or, was a course where they had to teach themselves (meaning the teacher held them responsible for learning)?

When I say learning culture…

When I say learning culture , I mean the culture in which learning takes place, as distinct from the notion of a culture of learning that organizations are increasingly called upon to develop (as if creating a culture were as easy as writing a policy). Learning culture refers to the shared attitudes, beliefs, practices and values that underpin how an institution or a profession designs the education of its learners.

When I say learning culture..

Learning culture influences, which educational approaches will work well, or poorly, in a particular setting; it may enable an educational strategy's success or doom it to failure.

- When I say . . . learning culture; Christopher Watling MEDICAL EDUCATION 2015; 49: 556–557

Learning Objectives

- Upon completion of this session participants will be able to:
    - Identify the key elements of active learning
    - Distinguish active learning from collaborative learning
    - Align reflection on action, in action and for action with active learning principles
    - Connect active learning as a strategy to educational theory
    - Review instructional frameworks to promote collaborative learning
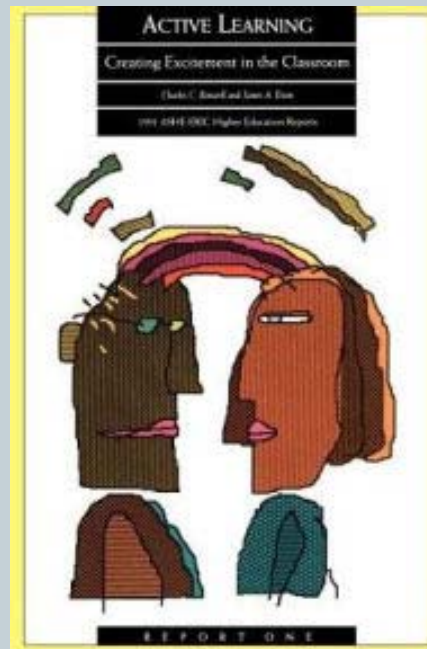   - Reflect on the characteristics and forces that develop the master learner

Disclosure

I am editor of this manual and believe in active learning as a pedagogy
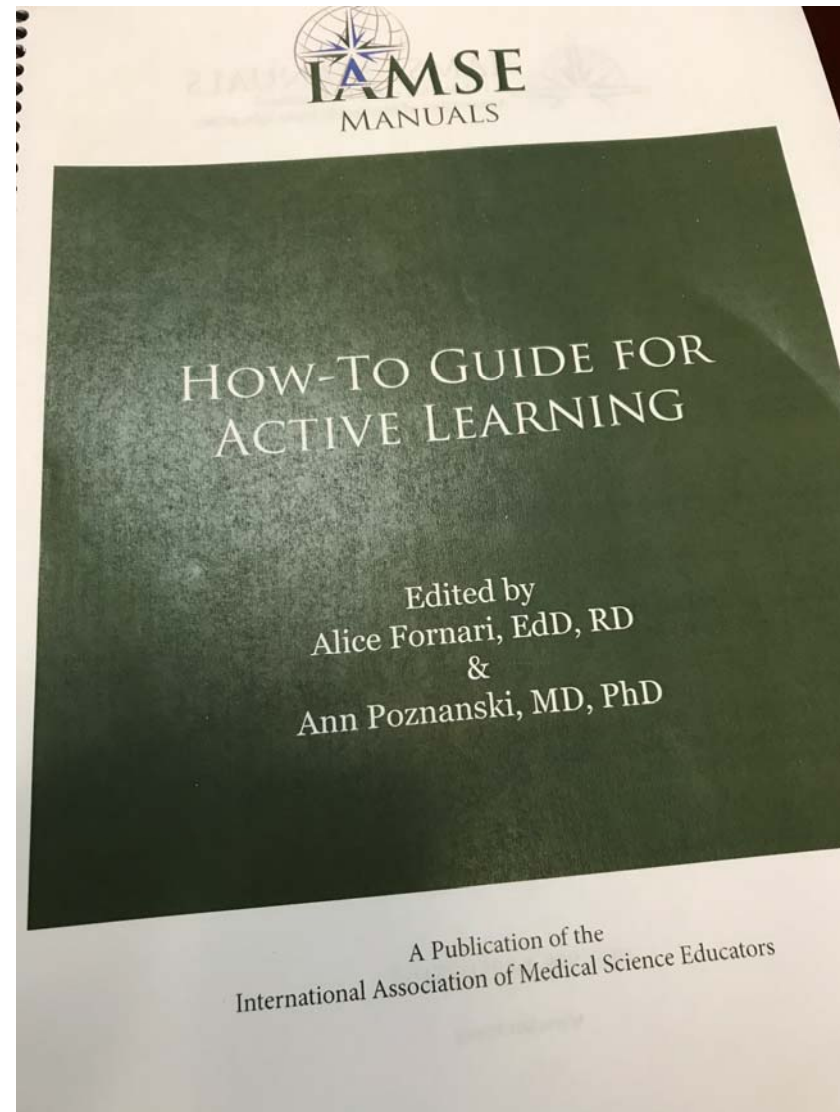
Active Learning: The beginning…

Active Learning: Creating Excitement in the Classroom. 1991 ASHE-ERIC Higher Education Reports.

Active learning is a teaching method that strives to more directly involve students in the learning process.

" *Bonwell (1991)* "*states that in* *active learning*, *students participate in the process and students participate when they are doing something besides passively listening.* "

Active learning *is* "*a method of learning in which students are actively or experientially involved in the learning process and where there are different levels of active learning, depending on student involvement.* "

Eric Mazur

https://youtu.be/Z9orbxoRofI **(2:47 min)**

In education he is widely known for his work on Peer Instruction, an interactive teaching method aimed at engaging students in the classroom and beyond.

I thought I was a good teacher until I discovered my students were just memorizing information rather than learning to understand the material

Lecture is the transfer of the notes of the lecturer to the notes of the student without passing through either.

Think – Pair – Share

- **Think:** What does/would facilitating knowledge-in/for-action look like in your program?

- **Pair:** Turn to the person next to you and discuss 1 or 2 examples in your program:

  1. A passive learning exercise that you wish to improve- how could you do that?

  2. An active learning process you are proud of…

- **Share:** Examples with the group

What's the Active Ingredient in Active Learning?

"Despite the best efforts of curriculum designers who try desperately to fill every waking hour with some required activity, the reality is that most learning, whether it's done morning, noon or night, is done alone."

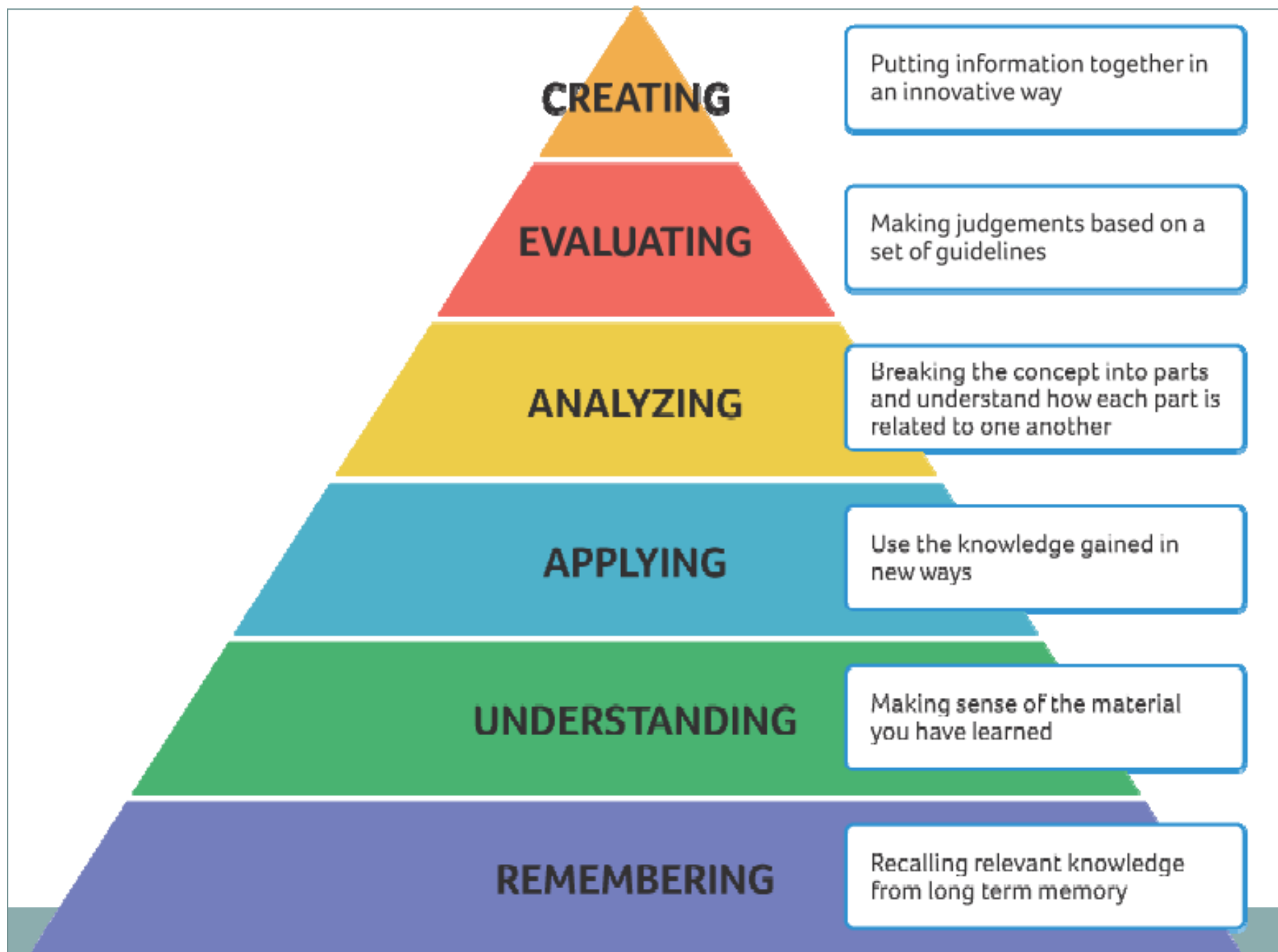**Geoff Norman, Advances in Health Sciences Education 9: 1–3, 2004**

What is going on in active learning anyway? Is it that activity per se leads to superior learning?

- Synthesis of new information into existing knowledge structures

- A dialogue between teacher and learner, controlled, to some degree, by the needs of the learner

- Teacher occupies a central role as conveyor and interpreter of knowledge

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Passive Learning ≠ Integration and interpretation

CREATING — Putting information together in an innovative way

EVALUATING — Making judgements based on a set of guidelines

ANALYZING — Breaking the concept into parts and understand how each part is related to one another

APPLYING — Use the knowledge gained in new ways

UNDERSTANDING — Making sense of the material you have learned

REMEMBERING — Recalling relevant knowledge from long term memory

Active vs Passive Learning in a Large Group Setting

Objective: To compare the effects of active and didactic teaching strategies on learning- and process-oriented outcomes in family, IM, pediatric **residents** at two academic medical centers.

Conclusions:

- Reduced the amount of time spent in teacher-driven content delivery by 50 percent and covered the same amount of content with no detrimental effects on knowledge acquisition or attitude enhancement.

- Teaching strategies that foster learner-to-learner interactions will lead to more active engagement among learners

- Learners may value the session less.

- Further research is needed to explore learner perceptions of the teaching process and other outcomes of active learning in medical education

Medical Student Perspectives of Active Learning: A Focus Group Study

- <u>Insight:</u> Medical students understand the concepts of active learning

- They are generally supportive of active learning concepts

- Frustrated by perceived inefficiencies and lack of contribution to the urgencies of achieving optimal grades and passing United States Medical Licensing Examinations, especially Step 1.

Cognitive Tasks to Support **Active Learning**

- Read, write, discuss, and be engaged in solving problems (aka critical thinking/clinical reasoning).

- 3 learning domains: knowledge, skills and attitudes (KSA) to assure a taxonomy of learning behaviors (Bloom, 1956)

- Active learning engages students in two aspects – *doing things and thinking* about the things they are doing.

- Reflection: *on action, in action and for action*

knowledge for acting/doing
reflection in action

performance

context

forethought ← self-reflection
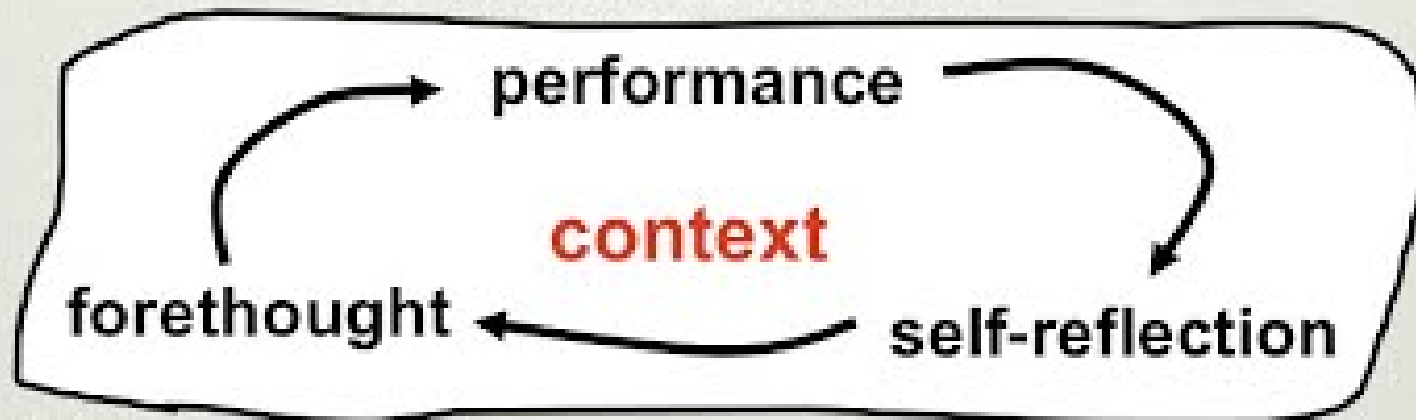
knowledge for planning actions and imagination

knowledge of self derived from doing

reflection for action

reflection on action

Norman Jackson
Higher Education Academy, U.K.

Collaborative Learning

Collaborative learning a learning activity that includes the *coordinated engagement* of two or more learners for the purpose of completing tasks (e.g., solving cases) that lead to desired learning outcomes (e.g., developing deep content knowledge)

✓ **purposeful engagement must also occur.**

✓ **substantial dialogue and co-construction of ideas.**

# Effective use of collaborative learning methods in medical education
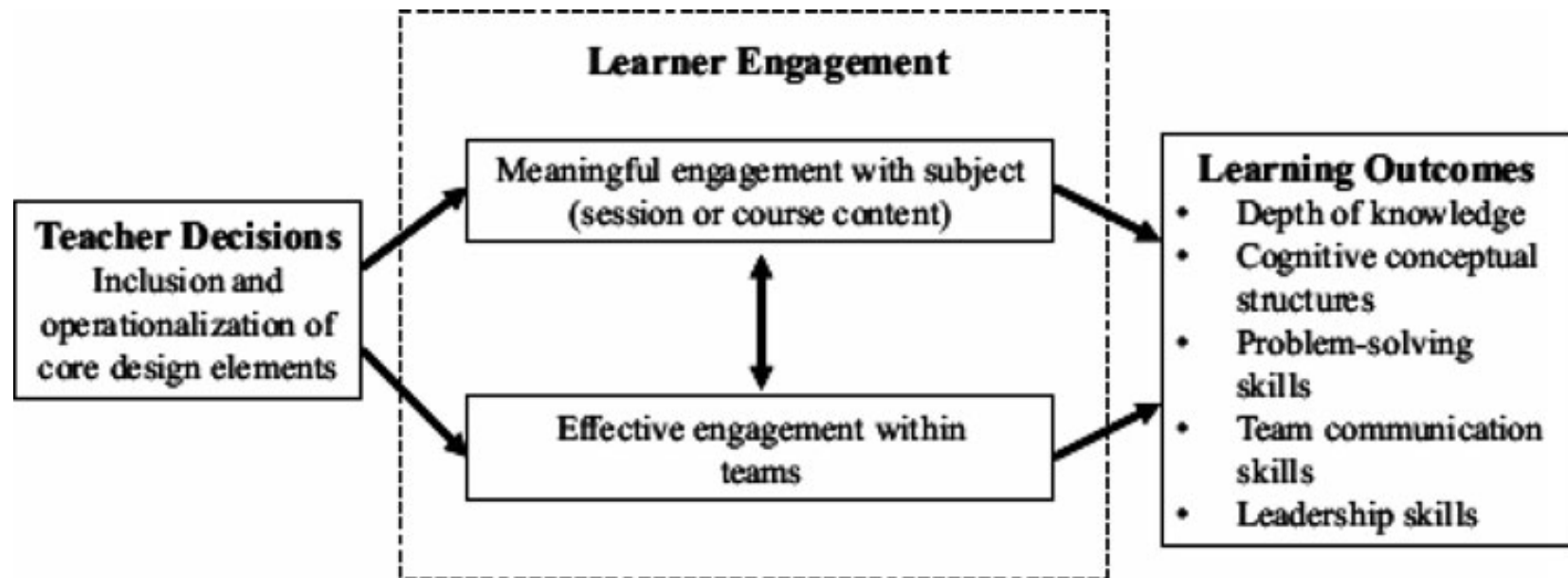
Haidet P, Levine RE, Parmelee DX, Crow S, Kennedy F, Kelly PA, et al. Perspective: Guidelines for reporting team-based learning activities in the medical and health sciences education literature. Academic Medicine 2012;87:292–9.

Connecting Active Learning to Self-Directed learning

- **Self directed learning**
  - 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
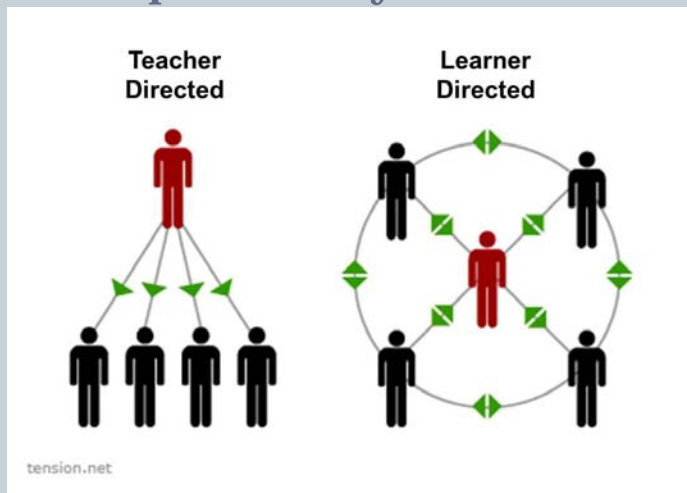
- **Self efficacy—roles for the teacher**
  - Modeling/demonstration
  - Setting a clear goal or image of the desired outcome
  - Providing basic knowledge & foundational skills for the task
  - Providing guided practice with collaborative feedback
  - Giving learners the opportunity to reflect

Theory 101

Situated Theory

- Knowledge, thinking, and learning are situated in experience.
- Experience comprises the participants, the culture, and the physical environment.

Self-Determination

- Defines intrinsic and varied extrinsic sources of motivation
- A description of the respective roles of intrinsic and types of extrinsic motivation in cognitive and social development and in individual differences.

Theory 101

Cognitive Load Theory

- Maintains that limitations of working memory capacity
- Places a severe limit on human cognitive processing
- 3 forms :
  - intrinsic (problem difficulty)
  - germane (learning and development of schema)
  - extraneous (material that is irrelevant to the problem at hand)

Constructivism

- Learners create their own understanding of the material through exploration, discussion, and questioning rather than lecturing.
- The educator probes learners to see whether they are constructing a correct mental model and if not, engages in dialog to help them self-correct their misunderstandings.

Traditional Learning

What Instructors Do

- Find content
- Organize content
- Edit content
- Respond to students

What Students Do

- Everyone gets the same content
- If you miss a concept you are left behind
- Everyone moves at the same pace

Adaptive Learning

What Instructors Do

- Decide what to teach
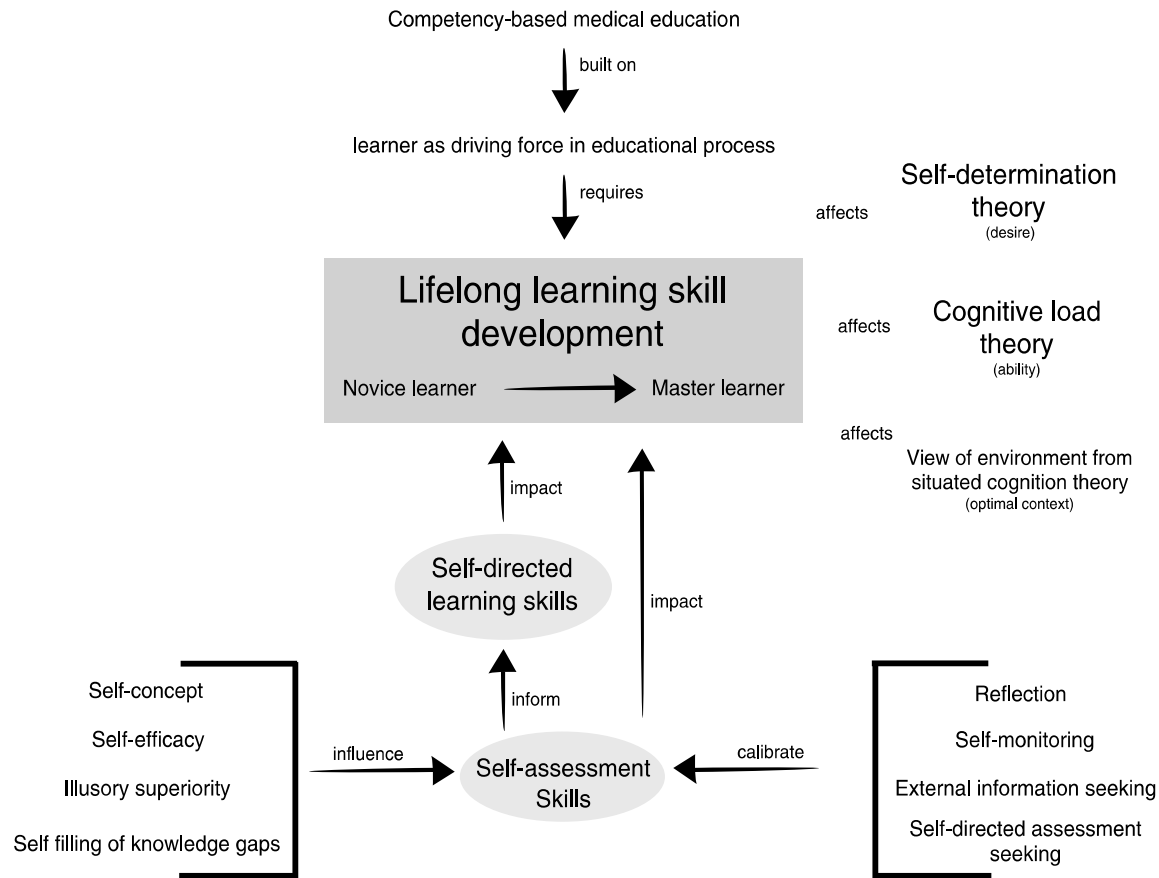- Coach, manage and engage students

What Adaptive Tech Does

- Finds best content
- Links concepts to content
- Adjusts based on content and student success

What Students Do

- Get a learning plan just for them
- Skip concepts they know
- Get recommendations
- Master all concepts

Forces and factors in Developing the Master Learner

Competency-based medical education

↓ built on

learner as driving force in educational process

↓ requires

Lifelong learning skill development

Novice learner ⟶ Master learner

affects → **Self-determination theory** (desire)

affects → **Cognitive load theory** (ability)

affects → View of environment from situated cognition theory (optimal context)

↑ impact

Self-directed learning skills

↑ impact

↑ inform

Self-concept
Self-efficacy
Illusory superiority
Self filling of knowledge gaps

→ influence →

Self-assessment Skills

← calibrate ←

Reflection
Self-monitoring
External information seeking
Self-directed assessment seeking

Figure 1 Forces and factors in developing the master learner.

Instructional frameworks considered to promote collaborative learning

Formalized, Highly Structured	Informal, Less Structured
• **Problem (CBL)-Based Learning**	• **Think-Pair-Share**
• **Team-Based Learning**	• **Case discussions**
• **Just-in-Time Teaching**	• **Flipped Classroom**
	• **Socratic Questioning**

Pluta WJ, Richards BF, Mutnick A. PBL and beyond: trends in collaborative learning. Teach Learn Med. 2013;25 Suppl 1:S9-16.

FIG. 1. Word cloud of phrases used to describe curricula at 128 U.S. and Canadian medical schools, 2010.

Pluta WJ, Richards BF, Mutnick A. PBL and beyond: trends in collaborative learning. Teach Learn Med. 2013;25 Suppl 1:S9-16.

Twelve tips for utilizing principles of learning to support medical education

1. Use the principle of spaced practice to plan study time and enhance learning
2. Use cumulative review strategies to promote long-term retention
3. Make effective use of the testing effect: To increase retention, provide frequent opportunities for self-assessment and cumulative testing with feedback provided
4. Organization effects: To promote integration, synthesis, and more effective learning, reorganize important content and transform it into a new format
5. Self-regulation: Students should be trained and encouraged to plan and monitor their own learning
6. Promote metacognition

Describe an educational strategy in your education world that can supports these principles.

Twelve tips for utilizing principles of learning to support medical education

Describe an educational strategy in your education world that can supports each of these principles.

Maris F. Cutting & Norma Susswein Saks (2012) Twelve tips for utilizing principles of learning to support medical education, Medical Teacher, 34:1, 20-24,

7. Exam expectations: Create a learning environment that includes cumulative and comprehensive examinations to promote long-term retention

8. Structure learning so students engage with material at a desirable level of difficulty

9. Explanation effect and deep questions: Asking deep, conceptually-based questions that generate explanations facilitates understanding and learning

10. Anchored learning: Provide relevant and meaningful contexts for learning

11. Promote cognitive flexibility by using patient-based problems and cases that vary in content and complexity

12. Provide instruction to foster implicit recognition and use of evidenced-based learning principles

Reflection
"Preserve the Passion"

- "Passion, hope doubt, fear, exhilaration, weariness, colleagueship, loneliness, glorious defeats, hollow victories, and all of the above, the certainties of surprise and ambiguity-*how on earth can a single word or phrase begin to capture the multilayer complexity of what it feels like to teach?*"

(SD Brookfield-The Skillful Teacher)

- Add in the complexities and pressures of practicing medicine, simultaneously with teaching...

- What is your passion=word?

Thank You

- Questions?? Thoughts?? Comments??
- Alice Fornari, afornari@northwell.edu

Outcomes   Change   Growth

"abandon dogmatic adherence to one teaching strategy
or another in favor of a more eclectic approach" Geoff Norman

12 Roles of a Teacher

Mentor

Learning facilitator

Student assessor

On the job role model

Facilitator

Curriculum evaluator

Assessor

Role Model

Teaching Role Model

Curriculum Planner

Planner

Informative Provider

Lecturer

Course organizer

Resource Developer

Clinical Teacher

Study guide producer

Resource material creator

Teacher

Information
Provider
Role Model

Planner
Resource
Material
Developer

Assessor

Student

Study guide
producer

Facilitator

**Curriculum and
Learning
Opportunities**