

Introduction to Curriculum Development and Instructional Design

Anjala V. Tess, MD

Hospitalist

Associate Residency Program Director

Assistant Professor in Medicine

Department of Medicine

Beth Israel Deaconess Medical Center

Harvard Medical School, Boston, MA

atess@bidmc.harvard.edu

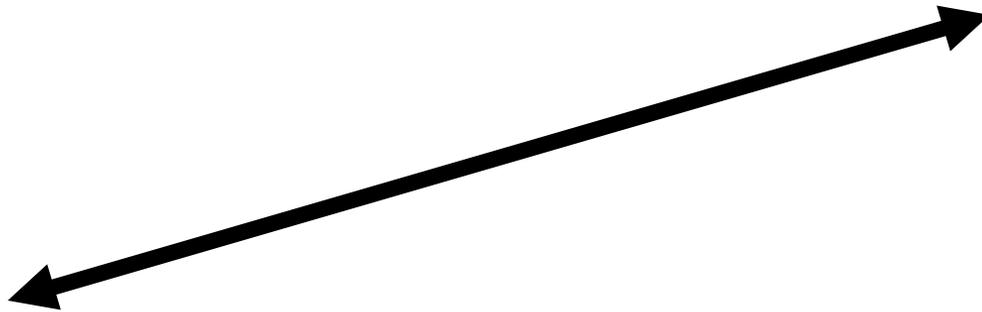
Objectives

- Describe key elements in curricular design and implementation
- Utilize one framework of curricular design to begin planning a quality and safety curriculum
- Explain the difference between assessment and evaluation
- Develop an initial evaluation plan utilizing the Kirkpatrick paradigm

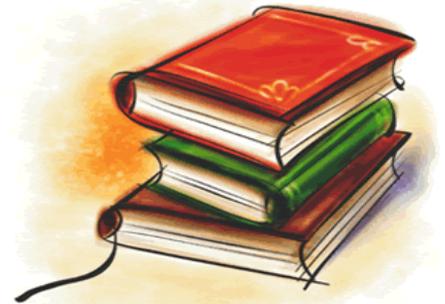
What is curriculum?

Any planned educational experience

**One
session**

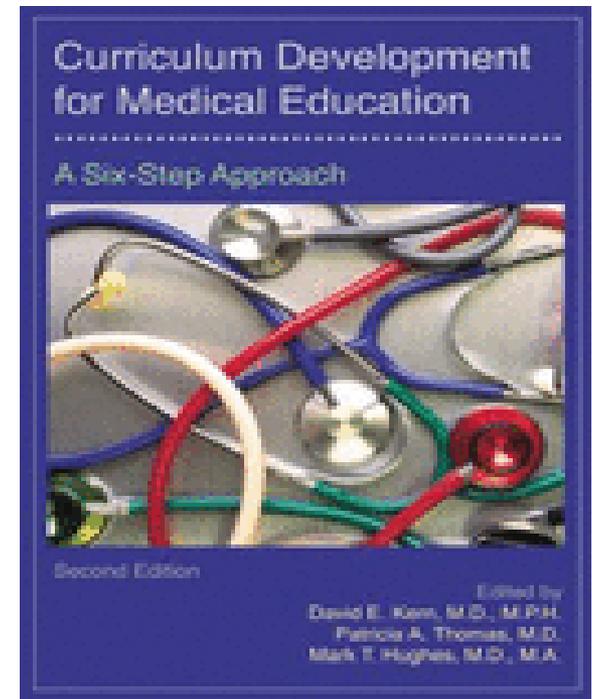


**Entire training
program**



Six “Steps” of Curriculum Development

1. General Needs Assessment
2. Targeted Needs Assessment
3. Goals and Objectives
4. Educational Strategies
5. Implementation
6. Evaluation and Feedback



Kern, et al

Curriculum Template (modified)

- Goals and Resources
- Core Content -> Objectives
- Selecting Teaching Strategies
- Selecting Assessment Tools
- Evaluation
- Implementation

Case

- Dr. Taylor has been teaching at an academic medical center for two years and works with the patient safety office.
- The Residency Program Director asks if Dr. Taylor would be willing to design a mini-curriculum on patient safety for her residents.
- Residents currently come to M&M which occurs quarterly but do not participate. With the recent ACGME mandate she wants to incorporate more QI/PS training into her program.

Case (cont.)

- The end of year program survey shows that residents identify patient safety as an area in which they do not receive adequate training.
- Dr. Taylor knows from her work in the patient safety office that residents seem uncomfortable discussing events and do not understand the systems of reporting at the hospital.
- At M&M many residents seem confused by basic terminology and are unaware of how medical errors can occur or be evaluated.

Case (cont.)

- There are currently 30 residents in the program.
- The program director is willing to give Dr. Taylor three hours from the residents' protected time for curriculum. This time can be used for lectures or workshops.

Basic question

- Who
- What
- Why

- Role???

Curriculum Template (modified)

- Goals and Resources
- Core Content -> Objectives
- Selecting Teaching Strategies
- Implementation
- Selecting Assessment Tools
- Evaluation

Goals

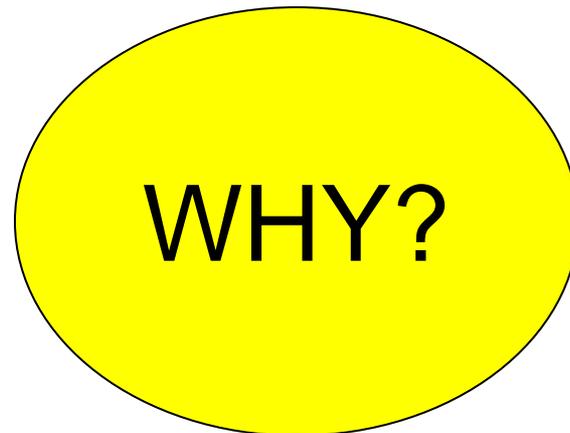
- Delineate overall purpose of the curriculum
- Short, descriptive
- Focus on the teaching program or experience
- Communication tool

Gathering Resources

- People
 - Stakeholders
 - Content experts
 - Teachers
- Time
 - Learner time
- Money
 - Why?
 - Where?

Goals and Resources: Key Points

- Understand your goal and the rationale behind it.
- Have a clear sense of your resources up front.



Building a Core Content

- Core concepts or skills you want to teach
- Sources
 - Needs assessment
 - Other published curricula
 - Content experts
- Domains
 - Knowledge, Skill, and Attitudes

Core Content for Dr. Taylor

- Definitions – adverse events and near misses
- Incident reporting system at the hospital
- How to do a root cause analysis
- Rating interventions as strong or weak
- View error reporting as important

Core Content for Dr. Taylor

- Knowledge
 - Definitions – adverse events and near misses
 - Incident reporting system at the hospital
- Skills
 - How to do a root cause analysis
 - Rating interventions as strong or weak
- Attitude
 - View error reporting as important

Objectives

- Specific, measurable, and performance-based learning objectives
- Focus on the learner
- Not descriptive
- Communication tool

“Residents will be able to...”

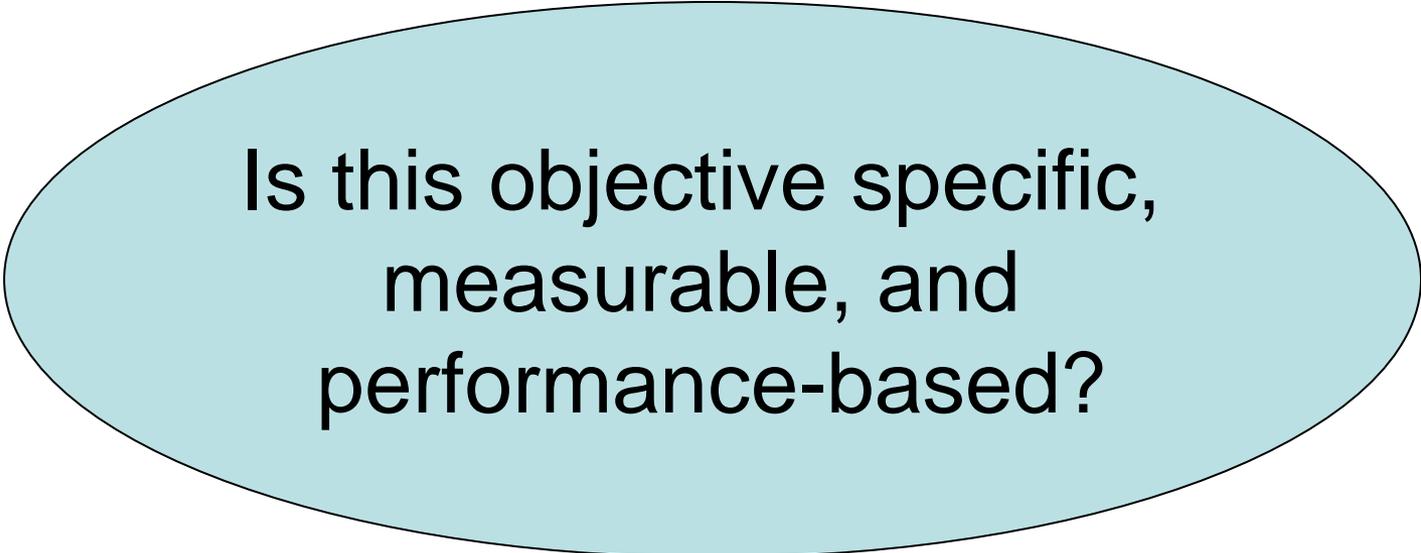
Content → Objective

Knowledge

Adverse Events →

Learning Objective

“Understand the scope of adverse events.”



Is this objective specific, measurable, and performance-based?

Content → Objective

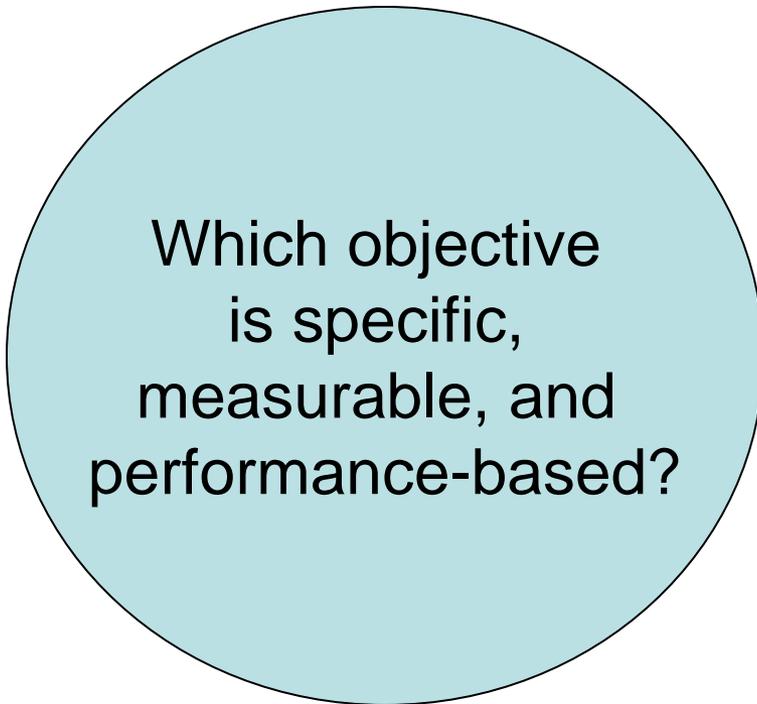
Skill

Root Cause Analysis



Learning Objective

Perform an RCA



Which objective
is specific,
measurable, and
performance-based?



Know how to do an
RCA

Content → Objective

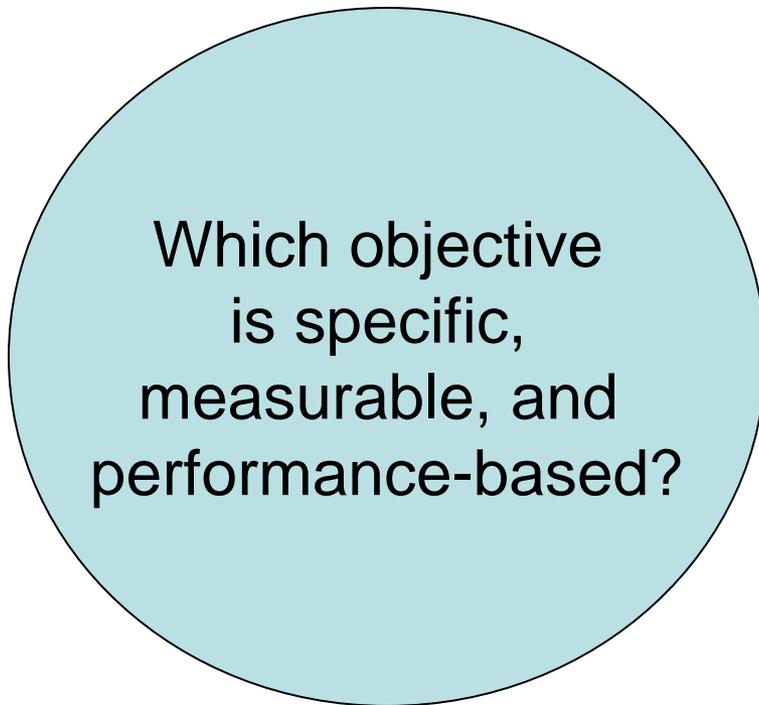
Attitude

Value error reporting



Learning Objective

Incorporate error reporting into their routine practice



Rate error reporting as an important part of their jobs as front line providers

Active verbs

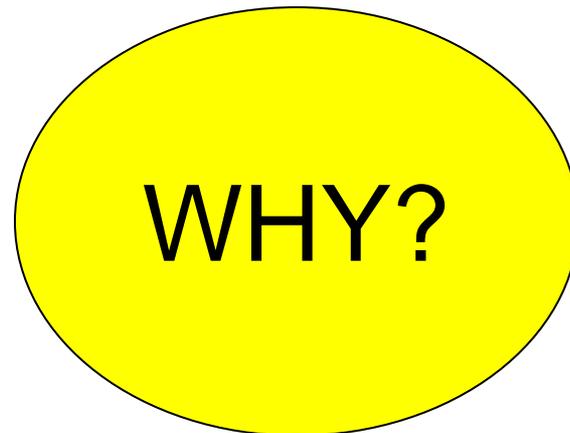
Words that are less specific	Words that are more definitive	
Know Understand	List Recite Sort Distinguish Define Repeat Identify	Describe Give example of Write Solve Compare Contrast Name
Know how Internalize	Demonstrate Incorporate into behavior Practice Illustrate Perform	
Appreciate Believe Learn Teach Enjoy	Rate as valuable or significant Rank Identify or rate as belief	

Writing Objectives - FAQs

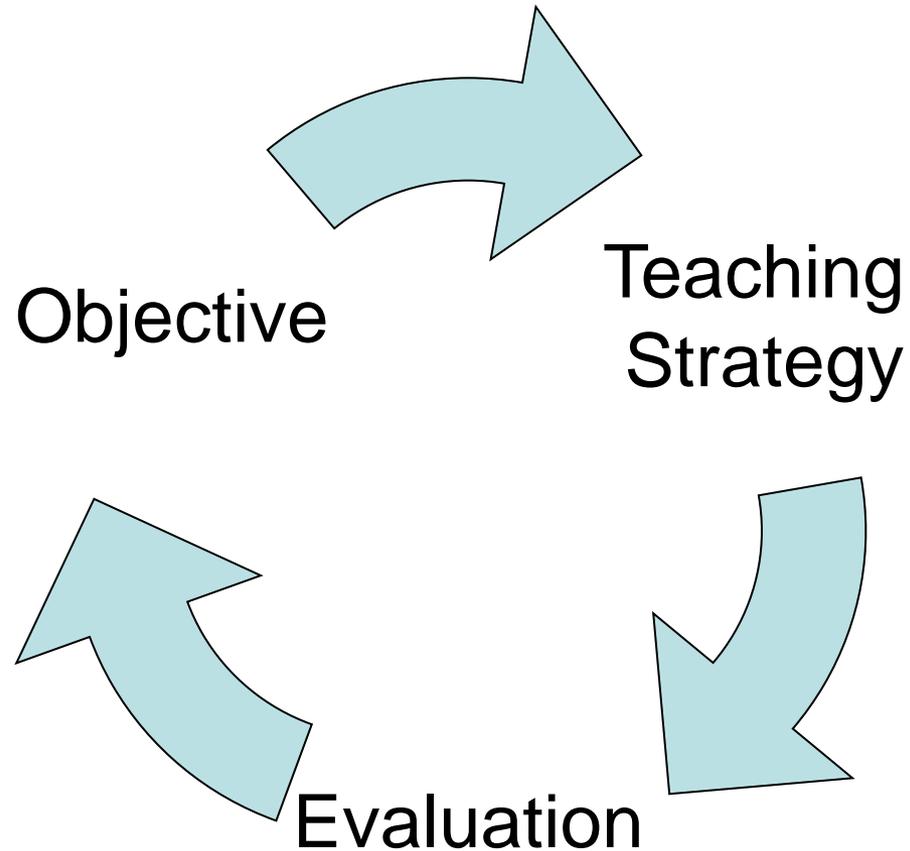
- How do I know whether a content area goes in knowledge and skill?
- How specific do we need to get?

Content → Objective: Key Point

- Don't let the perfect become the enemy of the good.
(Less is sometimes more)
- Writing clear objectives is much harder than it looks but is the most important step.



Key Point



Selecting Teaching Strategies

- Match strategy to content domains to create teaching plan.
- Multiple settings for different types of learners

Selecting Teaching Strategies

- Knowledge
 - Readings
 - Audiovisual aids
 - Case with discussion
 - Lectures
- Skills
 - Simulated
 - Standardized patient
 - Models
 - Role play
 - Clinical experience with feedback
- Attitudes
 - Exposure
 - Openness
 - Role modeling
 - Discussion

Table top exercise

Writing objectives

Selecting teaching strategies

Objective → Teaching Strategy

Knowledge

Objective → Teaching Strategy

Skills

Objective → Teaching Strategy

Attitude

Teaching Strategies: Key Point

- Revisit your resources before you move onto assessment.
- Combine teaching strategies to preserve resources.

Curriculum Template (modified)

- Goals and Resources
- Core Content -> Objectives
- Selecting Teaching Strategies
- Selecting Assessment Tools
- Evaluation
- Implementation

Assessment and Evaluation

Karyn Baum, MD, MSEd
Hospitalist

Associate Chair of Clinical Improvement

Professor of Medicine

University of Minnesota

kbaum@umn.edu

Teaching and Learning: Definitions

“The goal of education, if we are to survive, is the facilitation of change and learning”

-Carl Rogers, 1969

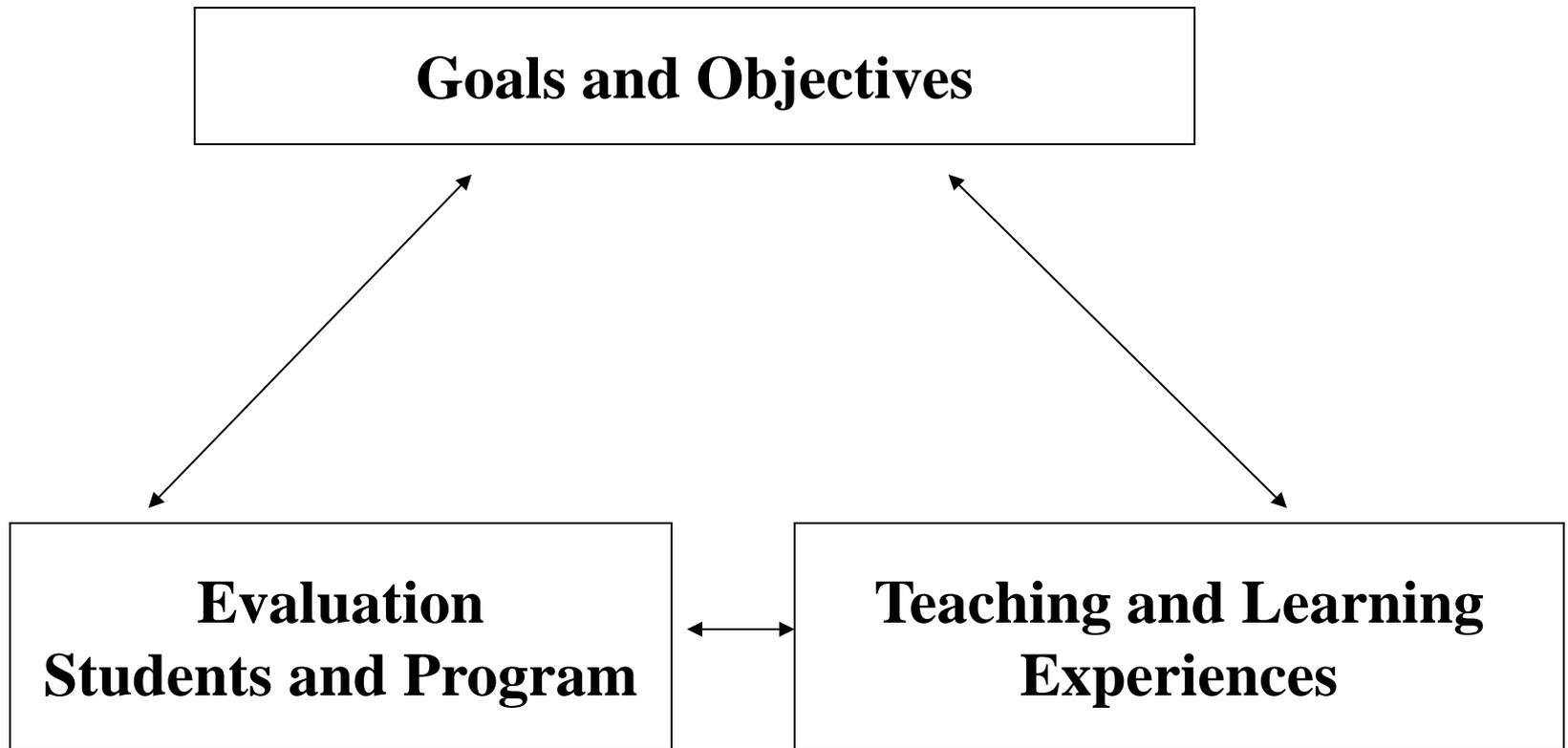




Objectives

- Describe key elements in curricular design and implementation
- Utilize one framework of curricular design to begin planning a quality and safety curriculum
- Explain the difference between assessment and evaluation
- Develop an initial evaluation plan utilizing the Kirkpatrick paradigm

Education Program Design and Lesson Planning

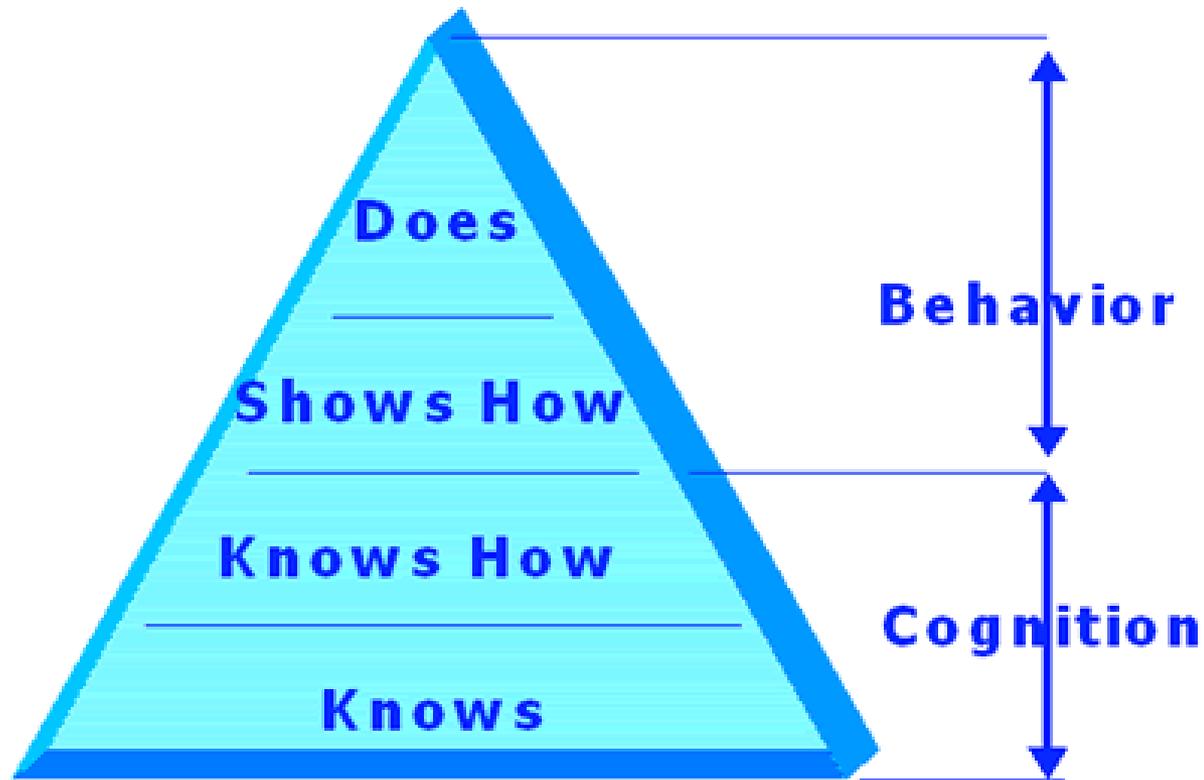


Basic questions to answer

- What difference have we made?
- What is the effect upon learners?
- Did our program work, and why (or why not)?
- Was the “juice worth the squeeze”—did the benefit and change exceed the “costs” of the activity?

Learner Assessment

Miller's Pyramid



Assessment of Learner Performance

- Knows: MCQs, essay, short answer, oral exam
- Knows how: oral exam, demonstrates
- Shows how: OSCEs, simulation, standardized settings
- Does: How learners function in real world



Exercise

- Spend 10 minutes at your tables designing measurement tools for the curriculum you designed
 - At least 2 levels of the triangle
 - Do you have current tools you can share with tablemates?

Where Miller's Model Stops

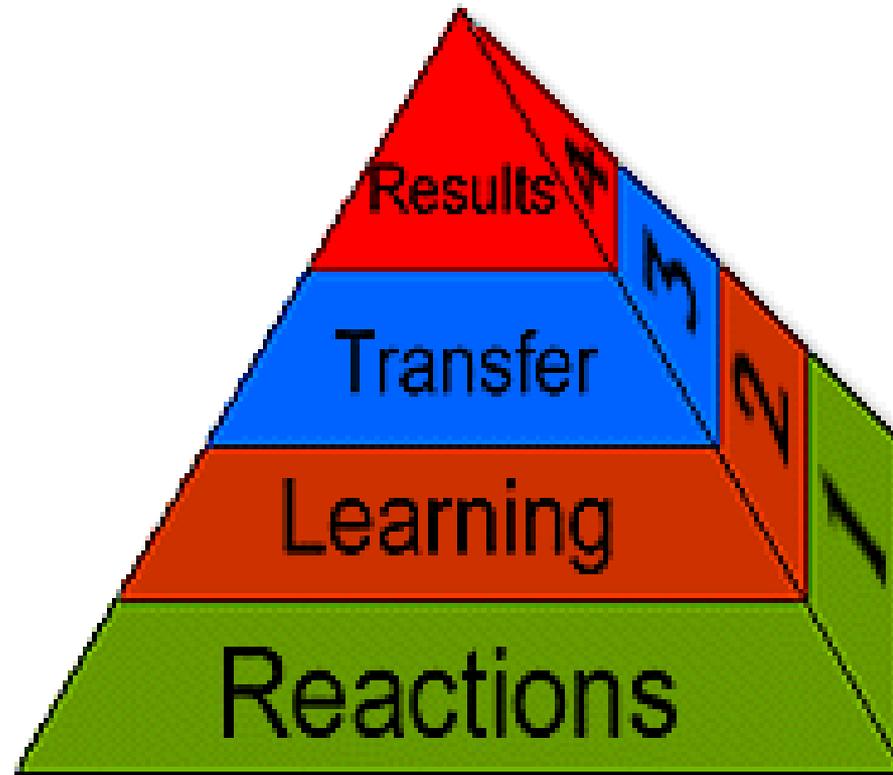
- Learner satisfaction and perceptions
- Effect upon patients and outcomes
- Cost versus quality (ROI)
 - Value-based education?

Program evaluation

- Remember WHY you are evaluating
 - Improve
 - Document
 - Study
- Did the overall program work?
 - What were its effects?
- Kirkpatrick's is a useful paradigm

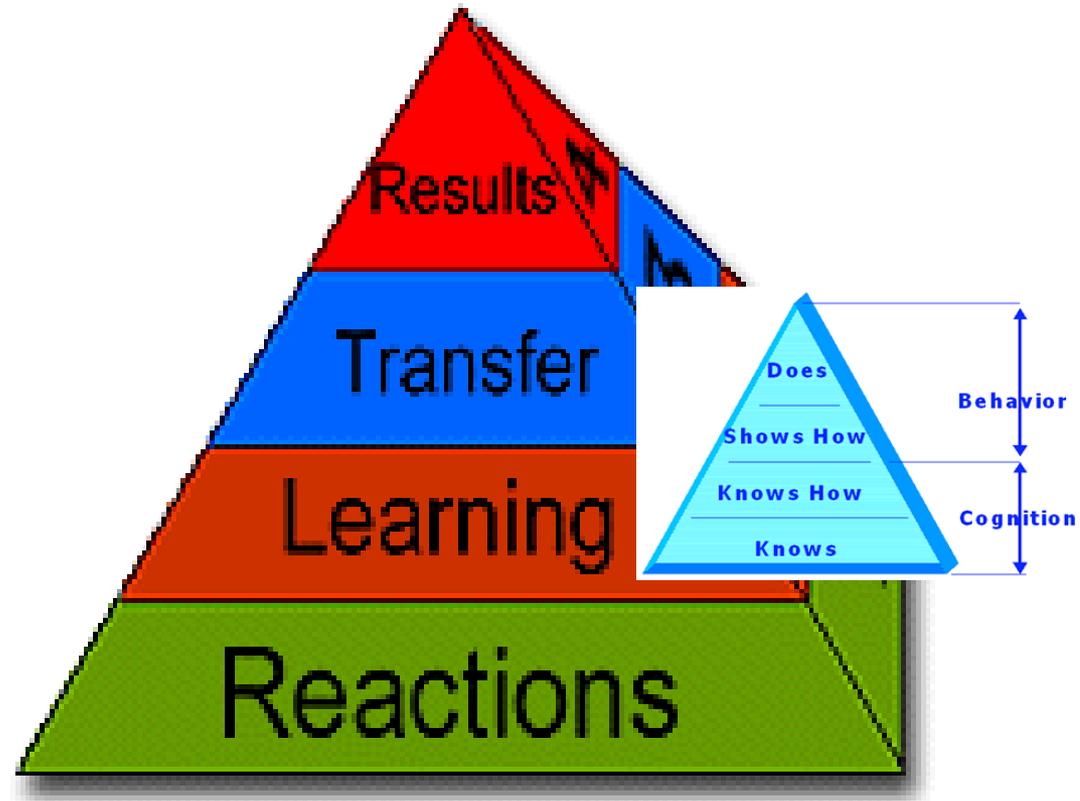


Kirkpatrick's Model of Training Evaluation



- Kirkpatrick, D. L. (1994). *Evaluating Training Programs*. San Francisco: Berrett-Koehler Publishers, Inc.

Kirkpatrick's Model of Training Evaluation



- Kirkpatrick, D. L. (1994). *Evaluating Training Programs*. San Francisco: Berrett-Koehler Publishers, Inc.

Reactions

- “Likes”
- Most commonly measured aspect of program evaluation
 - Survey post-education



Learning

- See Miller' s
- Knowledge, Skills, Attitudes
- How do you measure in QI?
 - QIKAT
 - Examples of other validated tools here?

Transfer

- Do they take this to the workplace?
 - Dr. Taylor's curriculum: do the resident now engage in RCAs properly? Use the incident reporting system?
- Methods to measure:
 - Self-report
 - Observations

Results

- Where the rubber hits the road
- Outcomes, outcomes, outcomes
 - Include balancing measures to assure no harm
- Consider ROI (Value)

Exercise

- Which levels (beyond learning) should you evaluate for this new curriculum?
- How will you do this?
- 15 minutes at your tables

Teaching and Learning

*“Nothing is sold until it is bought,
And nothing is taught until it is learnt.”*

Malcolm Frazer. Promoting Learning: In Ron Barnett. Learning to Effect.
OUP, 1992.

Curriculum Template (modified)

- Goals and Resources
- Core Content -> Objectives
- Selecting Teaching Strategies
- Selecting Assessment Tools
- Evaluation
- Implementation

Implementation

- Pilot as you go!
 - Teaching strategies
 - Evaluation tools
- Leave time for faculty development
- Leave time for evaluation in the session itself

Pearls and Pitfalls

- Including educational and institutional leadership in the planning will help in design, implementation and maintenance of your program.
- Choosing multiple venues will allow you to capture different learning styles.
- Remember that strategies that are most effective at teaching skills are often the most resource intensive – choose wisely.
- Even large group, didactic-type conferences can be ideal venues for role modeling and changing attitudes!
- Housestaff are the most valuable teachers.

Pearls and Pitfalls

- Don't save assessment and evaluation for the night before
- Use already-developed tools whenever possible
- Starting small and evaluating a pilot program can bring rich results and satisfy many core objectives.

Thank you!

Questions?