



# Writing Well-defined Learning Objectives

# Today's Learning Objectives:

- ▶ By the end of the training, participants can:
  - ▶ Construct SMART objectives for their individual lectures, and/or courses. [Bloom's Level - Create]
  - ▶ Critique learning objectives for SMART elements. [Bloom's Level - Evaluate]
  - ▶ Differentiate between specifically written objectives and vague objectives. [Bloom's Level - Analysis]

# Adult Learning (AL) Theory

1. Adult learners bring a wealth of experiences and cultural norms to the learning environment.
  1. This shapes their approaches to learning and their realities.
  2. Emotion is a motivating force in learning, and emotional constructs for learning have been established in the learners.
2. Just-in-Time-Teaching (JiTT) suggests use of pre-class assignments to evaluate for prior knowledge.
  1. Class time should be adjusted to reflect prior knowledge acquisition.
  2. Adult learners resist learning what they already know.
3. Adult learners need to facilitate acquisition of conceptual frameworks.
  1. Automaticity in learning – through repetition of retrieval
  2. Core set of principles and big ideas

# Learning Objectives and the Adult Learner

- ▶ ALs expect clearly stated and relevant learning expectations and desired outcomes
  - ▶ e.g. SMART Learning Objectives
- ▶ Millennial ALs need to know that educational activities and assessment(s) are specifically designed with their learning in mind.
  - ▶ They also have a desire to know from the beginning what is expected of them.
    - ▶ They view mid-course changes in assignments and lack of clearly articulated learning expectations as a sign of a lack of credibility and authenticity on the part of the educator(s), which can lead to academic disengagement.
- ▶ Clearly stated learning expectations equate to ALs ascribing authenticity to educators.
  - ▶ Extremely important for student engagement and buy-in

# Goals vs. Learning Objectives (LO)

## Goals

- ▶ General
- ▶ Overview
- ▶ Global Statements
- ▶ Frame of Reference

## Learning Objectives

- ▶ Precise
- ▶ Measurable
- ▶ Contain an action verb for observable action
- ▶ Define what a learner will accomplish during a set timeframe
- ▶ Guide and align to assessment
- ▶ Set the frame for instructional content

# Purpose of Learning Objectives

1. Creates a structure for the overall instructional process and student learning
  - If the instructional method or learning activity does not align to a well-written objective, it is not needed and should not be utilized.
2. Guides effective and efficient instructional planning
  - These should help to manage time chunking and insertion of relevant, meaningful learning activities.
3. Provides a foundation for authentic assessment
  - All aspects of an assessment should link directly to a stated, well-developed learning objective in order to assess if learning correlates to content and instruction.

# Backwards Instructional Design

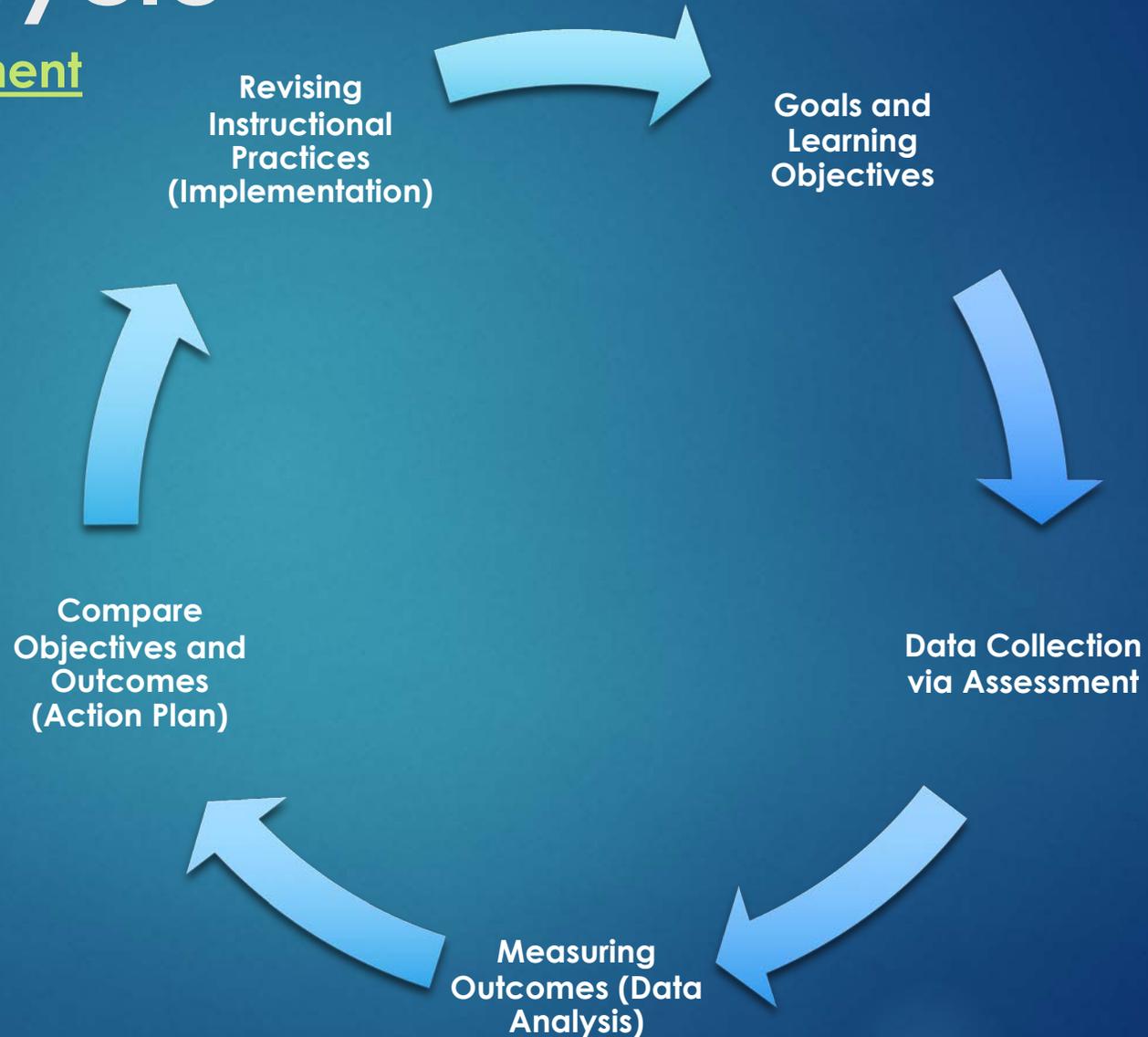


# Instructional Planning Continuum



# Assessment Cycle

## Liberty University Assessment



# SMART Learning Objectives

**S - SPECIFIC**

**M - MEASURABLE**

**A - ACHIEVABLE**

**R - RELEVANT**

**T - TIMELY**

# Types of Learning Objectives:

- ▶ Cognitive
  - ▶ Mental skills
    - ▶ From knowledge to problem solving
- ▶ Affective
  - ▶ Attitudes, Beliefs, and Values
- ▶ Psychomotor
  - ▶ Skill, Performance, and Behaviors

# Bloom's Taxonomy

**create**

Produce new or original work

*Design, assemble, construct, conjecture, develop, formulate, author, investigate*

**evaluate**

Justify a stand or decision

*appraise, argue, defend, judge, select, support, value, critique, weigh*

**analyze**

Draw connections among ideas

*differentiate, organize, relate, compare, contrast, distinguish, examine, experiment, question, test*

**apply**

Use information in new situations

*execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch*

**understand**

Explain ideas or concepts

*classify, describe, discuss, explain, identify, locate, recognize, report, select, translate*

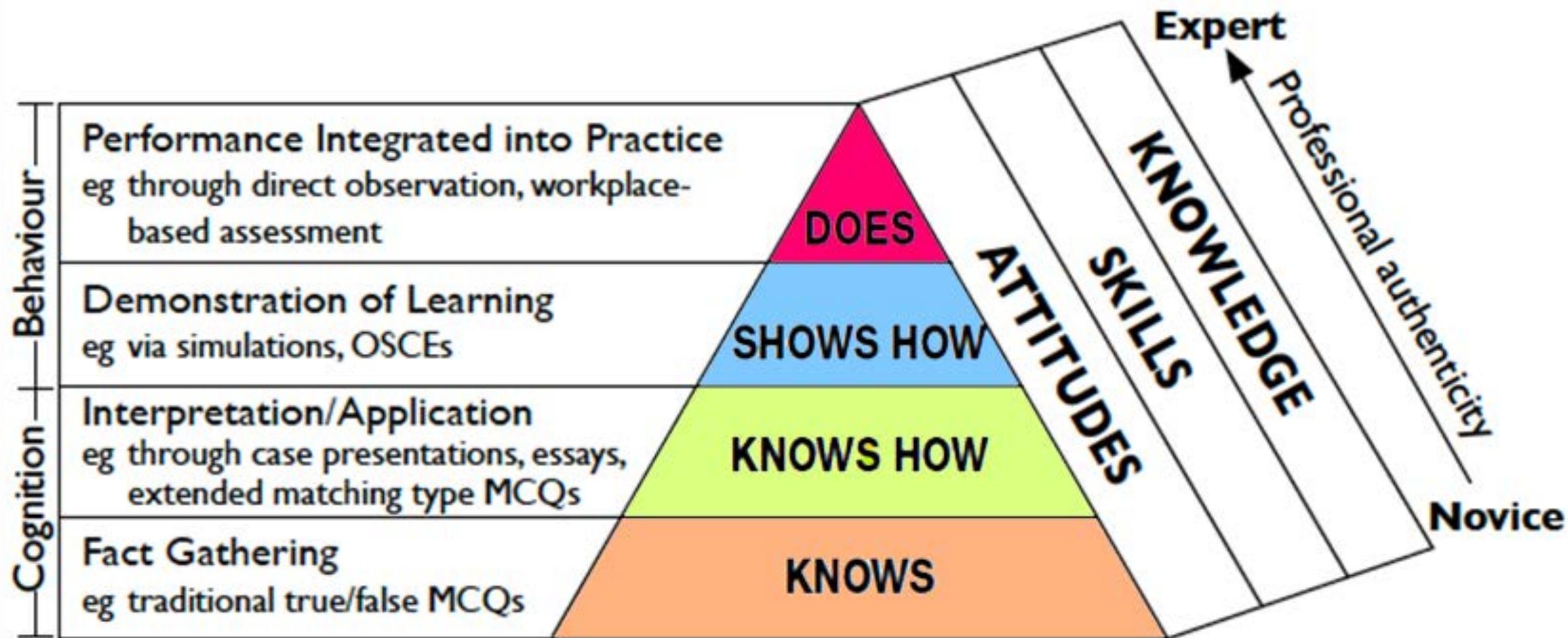
**remember**

Recall facts and basic concepts

*define, duplicate, list, memorize, repeat, state*

[Bloom's Taxonomy](#)





Miller's pyramid for assessing clinical competence

# Verbs to **Avoid**:

## Poorly defined, open to interpretation, and unquantifiable

- ▶ Appreciate
- ▶ Believe
- ▶ Know
- ▶ Learn
- ▶ Understand

## Replace with definable and measurable action verbs

- ▶ Know
  - ▶ Identify, List, Recite, Define, Recognize, Retrieve
- ▶ Understand
  - ▶ Define, Contrast, Interpret, Classify, Describe, Sort, Explain, Illustrate
- ▶ Appreciate (cognitive)
  - ▶ Implement, Execute, Use, Complete, Apply
- ▶ Appreciate (affective)
  - ▶ Rate as valuable, Rank as important
- ▶ Believe
  - ▶ Identify, Rate, or Rank as a belief or opinion

# Using Questions to Formulate Learning Objectives:

- ❑ What do we want students to know?
- ❑ How long will it take students learn it?
- ❑ How will they demonstrate their knowledge?
- ❑ To what degree must they master the expected knowledge?

VCU Health “Writing Meaningful Learning Objectives” – Dr. Mike Ryan

“By the conclusion of the pediatrics clerkship, the third year medical student will identify the most appropriate management plan for hospitalized pediatric patients presenting with community-acquired pneumonia, as measured by achieving a passing score on the NBME shelf exam.”

# Learning Objectives Template:

▶ By time frame, the learner classification will action verb (to what degree)  
what as measured by assessment.

- ▶ Time frame – typically a lecture or course
- ▶ Learner Classification – who is the learner
- ▶ Verb – observable action
  - ▶ *To what degree – how much or how well done*
- ▶ What – the skill or knowledge being assessed
- ▶ Assessment – method of evaluation

# Learning Objectives Examples

## Poorly defined LO

“After participating in this session, attendees should be able to explain change management.”

## Well-defined LO

“After participating in this session, attendees should be able to describe the three essential elements of change management.”

# Learning Objectives Examples

## Poorly defined LO

“After participating in this session, attendees should be able to **explain** change management.”

Open to interpretation –  
Difficult to quantify

## Well-defined LO

“After **participating in this session**, attendees should be able to **describe** the **three essential elements** of change management.”

Time

Measurable Verb  
– Remembering  
Level Blooms

Specific  
Outcome  
Expectation

# Matching Learning Objectives with Appropriate Academic Tasks

Cognitive: Knowledge	Cognitive: Problem Solving	Affective: Attitudinal	Psychomotor: Skills or Competence	Psychomotor: Behavioral or Performance
Readings	Problem-based Learning / Inquiry-based Learning	Discussions (large or small group)	Real-life and Supervised Clinical Experiences	Audio or Video Review of Learner*
Lectures	Team-based Learning	Reflection on Experiences (e.g. writing)	Simulation and Artificial Models*	Behavioral / Environmental Interventions*
Online Learning Resources	Peer Teaching	Role Models	Standardized Patients*	
Team-based Learning		Role-plays	Role-plays	
Peer Teaching			Audio or Video Review of Learner*	

*\*Assumes timely feedback is integrated into the method*

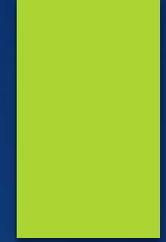
# Best Practices for Effectively Using Learning Objectives

- ▶ Include a **manageable** amount of specific, measureable objectives
  - ▶ Should be reasonable for the students to focus on what they should be learning and obtainable for instruction within a given time period.
- ▶ Repeatedly reference and embed them into course content, instruction, and assessment.
  - ▶ They should not be listed and forgotten, never again to be referenced.
- ▶ Model the use of LO's
  - ▶ Ex: Explaining how factual knowledge about X allows one to develop a treatment plan for Y, using verbal language from a learning objective.
  - ▶ Use of graphic organizers
    - ▶ Especially helpful for visual learners
- ▶ Write LO's with assessment in mind
  - ▶ What do you truly expect students to be able to demonstrate they have learned?
    - ▶ Plan instruction and learning activities with this in mind.

# Learning Activities:

1. Write 1 – 3 broad educational goal(s) (based on your educational content).
  - a) Do these goals relate to a defined competency set for medical education?
  - b) Do these goals support the overall aims of the program mission and goal?
2. Write 1 SMART educational objective of each type (cognitive, affective, and psychomotor) using the provided LO template.
  - a) Does each of your objectives contain the elements of a well-defined learning objective?
  - b) Do your SMART goals support and further define your broad educational goals?
  - c) Can you map these objectives to the defined competency set for medical education?
3. How will your learning objectives, as worded, focus the content, educational methods, and evaluation strategies of your curriculum?

# References:



AAMC. (2016). Writing learning objectives. Retrieved from <https://www.aamc.org/download/469188/data/learning-objectives.pdf>

Assessment at Liberty University. (2019). Retrieved from

<https://www.liberty.edu/administration/institutionaleffectiveness/index.cfm?PID=10457>

Atta, I., & Alqahtani, F. (2018). Matching medical student achievement to learning objectives and outcomes: A paradigm shift for an implemented teaching module. *Advances in Medical Education and Practice*, 9, 227-233. doi:10.2147/amep.s158784

Brookfield, S. (2015). *The skillful teacher: On technique, trust, and responsiveness in the classroom*. San Francisco, CA: John Wiley & Sons.

Ericsson, A., & Pool, R. (2016). *Peak: Secrets from the new science of expertise*. New York, NY: Houghton Mifflin Harcourt.

Faulconer, E. K. (2017). Increasing student interactions with learning objectives. *Journal of College Science Teaching*, 46(5), 32-38.

Fata-Hartley, C. (2011). Resisting rote: The importance of active learning for all course learning objectives. *Journal of College Science Teaching*, 40(3), 36-39.

Materna, L. (2007). *Jump-start the adult learner: How to engage and motivate adults using brain-compatible strategies*. Thousand Oaks, CA: Sage.

Mitchell, K. M., & Manzo, W. R. (2018). The Purpose and Perception of Learning Objectives. *Journal of Political Science Education*, 14(4), 456-472.

doi:10.1080/15512169.2018.1433542

Reynolds, H. L., & Kearns, K. D. (2017). A Planning Tool for Incorporating Backward Design, Active Learning, and Authentic Assessment in the College Classroom. *College Teaching*, 65(1), 17-27. doi:10.1080/87567555.2016.1222575

Thomas, P. A., Kern, D. E., Hughes, M. T., & Chen, B. Y. (2016). *Curriculum development for medical education a six-step approach*. Baltimore: Johns Hopkins University Press.

Writing meaningful learning objectives, Dr. Mike Ryan. (2016). Retrieved from

<https://wp.vcu.edu/iteach/portfolio-items/writing-meaningful-learning-objectives-dr-mike-ryan/>