Keeping it Simple

A No-frills Approach to Developing Outcome Statements, Curriculum Maps, and Assessment Measures

IUPUI Assessment Institute
October 9, 2022

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While We're Waiting…

- Take a few minutes to access the session materials
- Review the note-taking guide and consider what questions you have about assessment - we'll come back to this in a few minutes!

Facilitators

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2-min Activity

Use the below QR code to tell us a little about who you are and what you hope to learn in this session!

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Session Objectives

01 Evaluate the level of cognitive ability (Bloom's/Revised Bloom's Taxonomy) or learning dimension (Fink's Taxonomy) for a set of learning outcomes

02 Evaluate a program curriculum map demonstrating the relationship between program learning outcomes and required courses

03 Describe the purpose and uses of formative and summative assessments

04 Explain the difference between direct and indirect assessment and provide examples of each

05 Evaluate the alignment of assessment instruments/measures with the program learning outcomes they are designed to measure

Outline

Part I: Developing Outcomes & Maps (50 min)

Break (10 min)

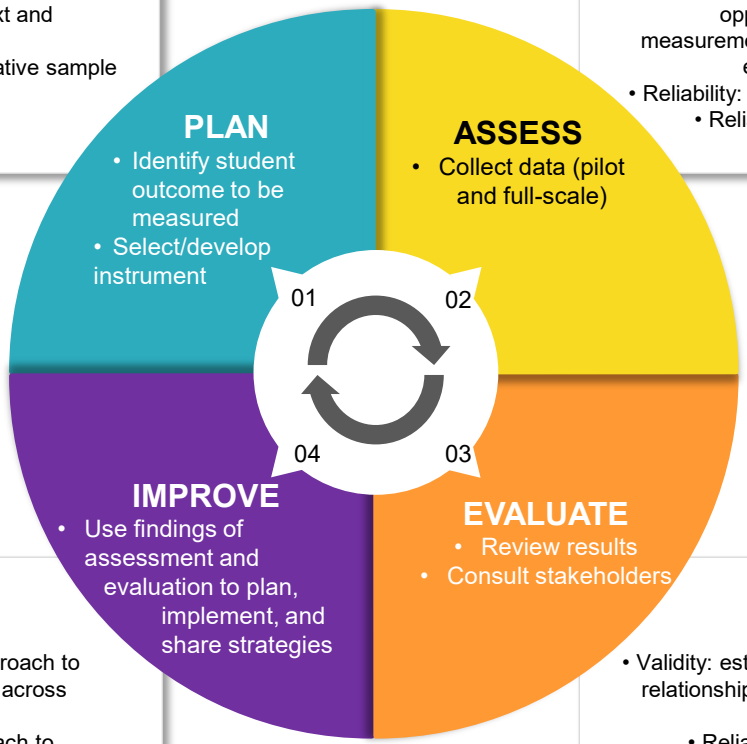
Part II: Building a Plan (50 min)

Break (10 min)

Part III: Practice (30 min)

Wrap-up and Q&A (15 min)

Assessment Cycle



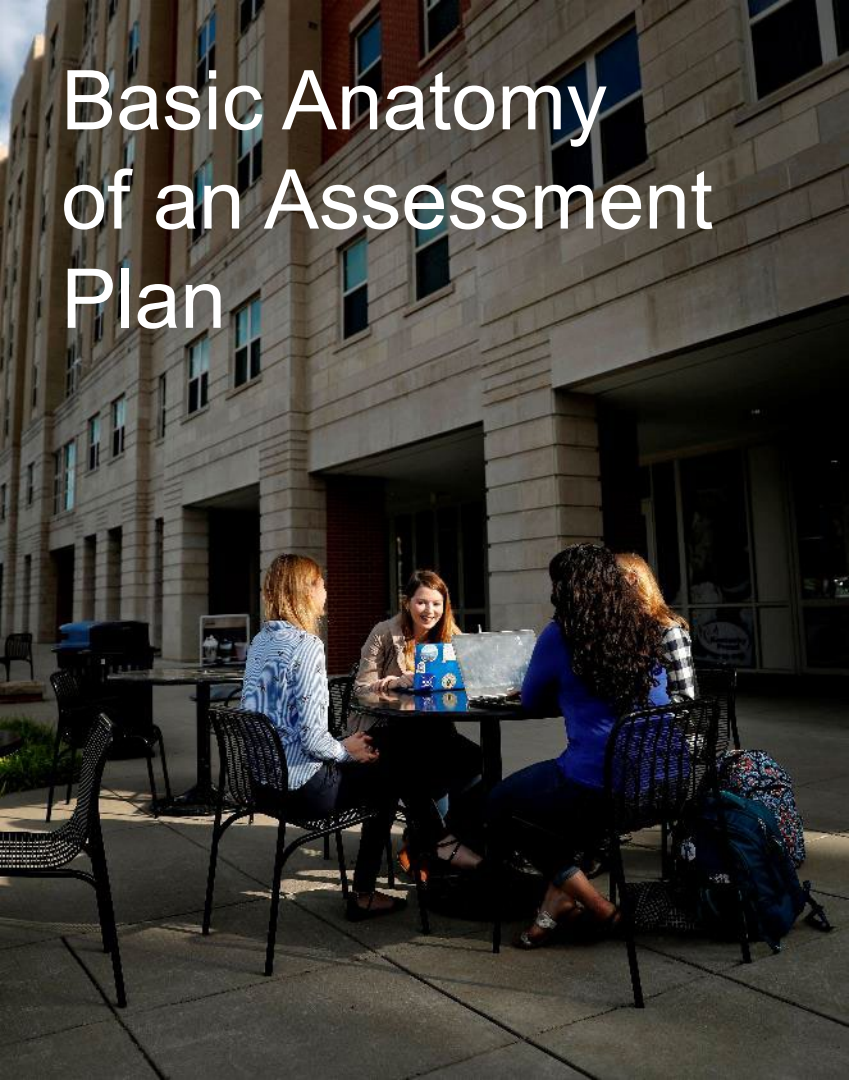
CONSIDERATIONS
- Fairness: consider context and diversity of students
- Validity: select representative sample
- Validity: evaluate
- instrument content

CONSIDERATIONS
- Fairness: ensure students have had opportunity to learn material by measurement date and no cultural bias exists within the assessment
- Reliability: establish interrater reliability
- Reliability: determine instrument reliability

CONSIDERATIONS
- Fairness: ensure that approach to improvement is equitable across population
- Validity: affirm that approach to improvement is data supported

CONSIDERATIONS
- Validity: establish validity by examining relationship between present data and other applicable measures
- Reliability: determine instrument reliability

Adapted from Cumming, T. & Miller, M.D. (2017). *Enhancing assessment in higher education: Putting psychometrics to work*. P. 158. Sterling, VA: Stylus



Basic Anatomy of an Assessment Plan

Learning Outcome Statements

What should our graduates be able to do?

Curriculum Map

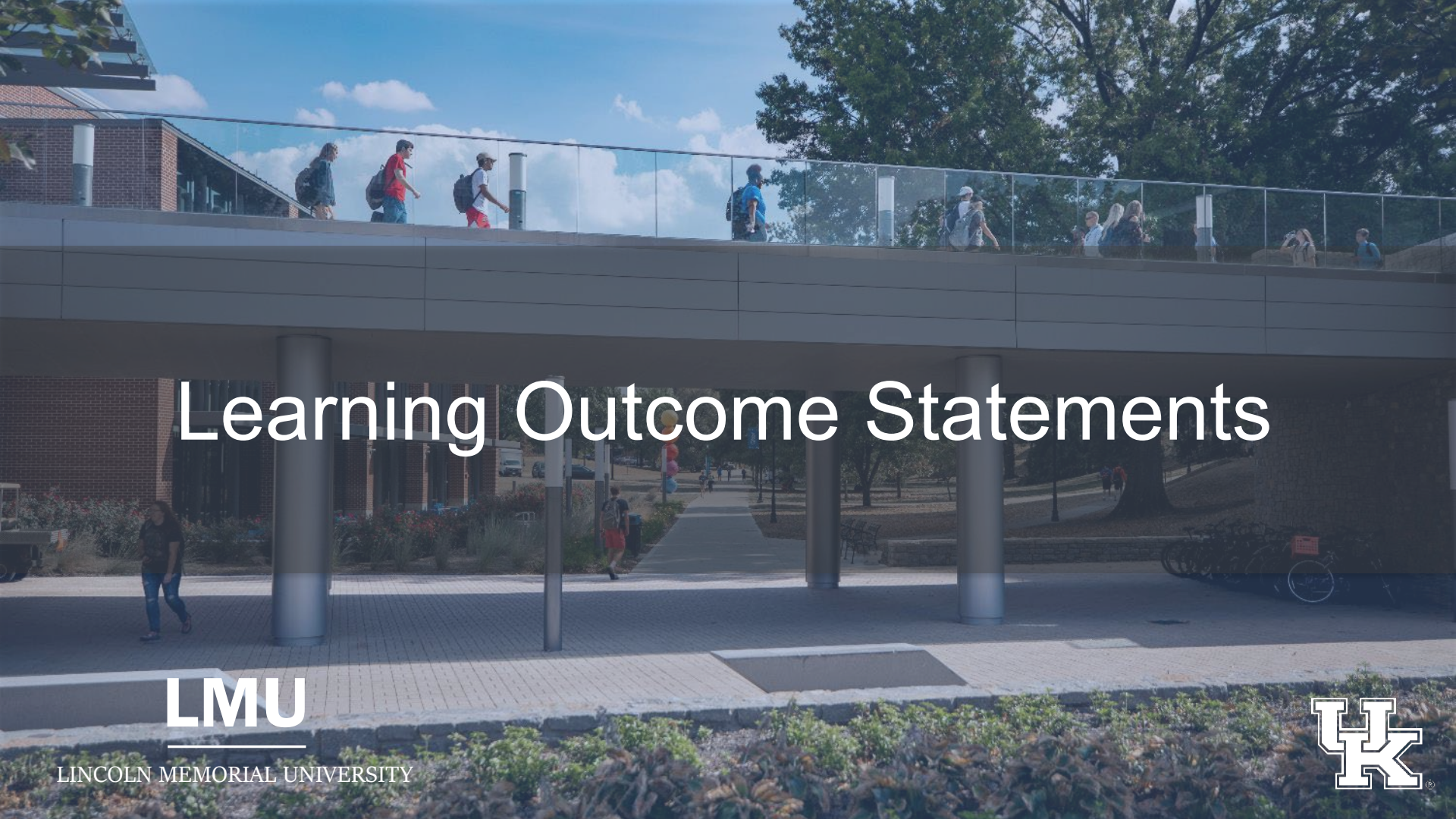
What learning experiences will develop these abilities in our graduates?

Assessment Measures (or Methods)

How will we know if our graduates have acquired these abilities?

Timeline

When will we gather, review, and make changes based on these data?



Learning Outcome Statements

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What Are Student Learning Outcomes?

- Brief, action-oriented statements that describe what students are expected to know/be able to do at the end of a unit, course, or program
- Example:

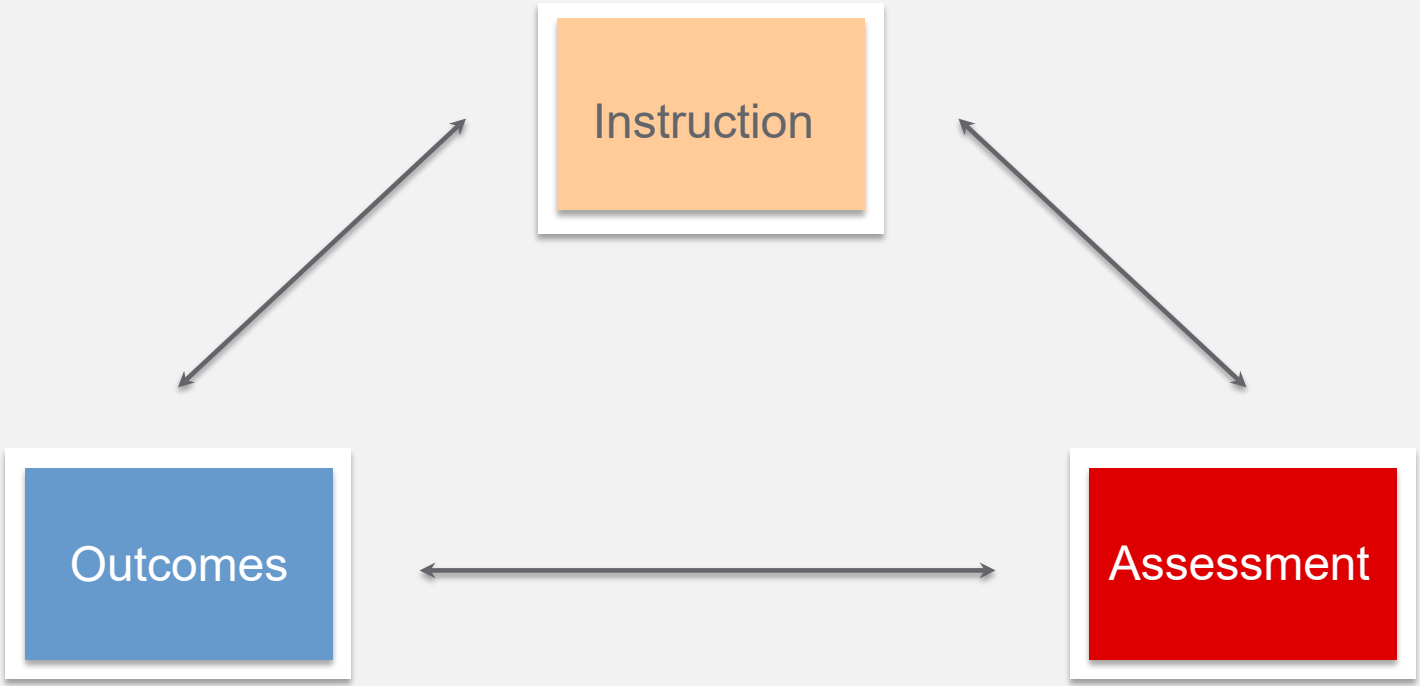
  Students will be able to identify the key elements of design in any work of art (Fink, 2013)

Why Do We Need Outcomes?

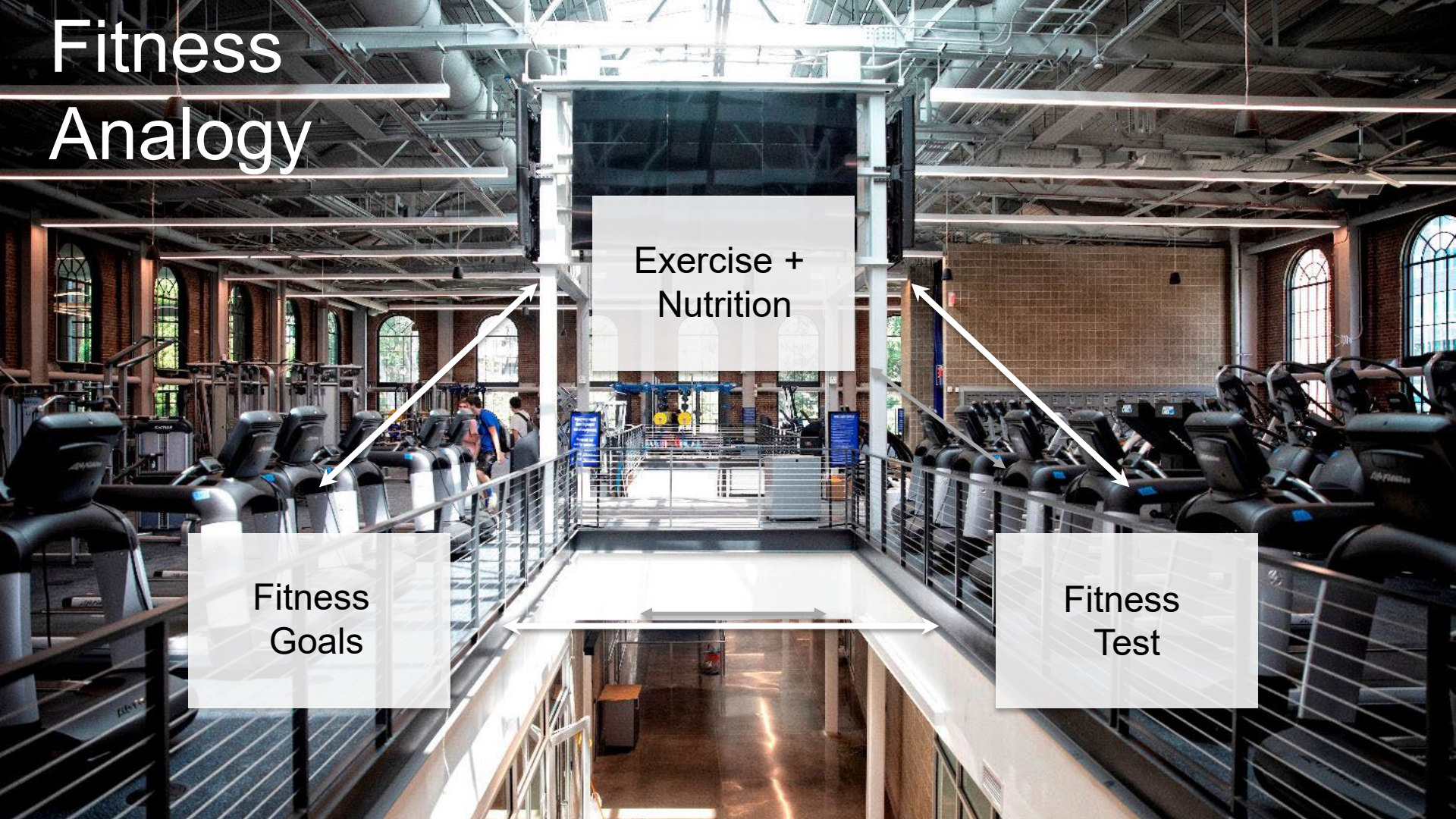
Outcomes help us

- Think about what students should *learn* instead of primarily what content we want to *teach*
- Prioritize content and skills (active vs. passive judgments)
- Organize course and program content, learning experiences, and assessments

Outcomes, Instruction, Assessment



Fitness Analogy



General Outcome Structure

Students will be able to

+ verb (desired action with material)

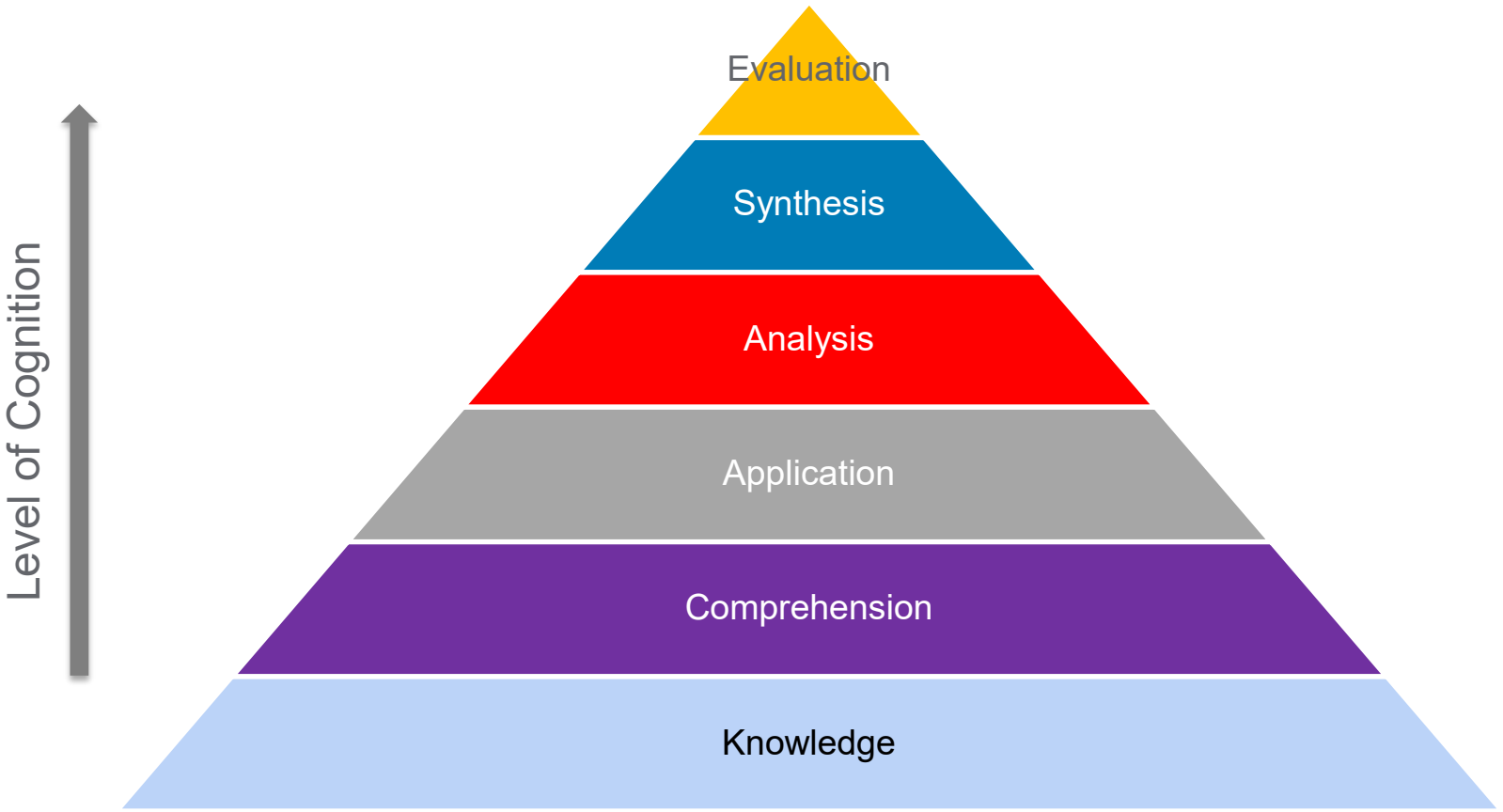
+ noun (material, subject, ideas, theories, etc.)

+ optional modifier (object skill/knowledge applied to)

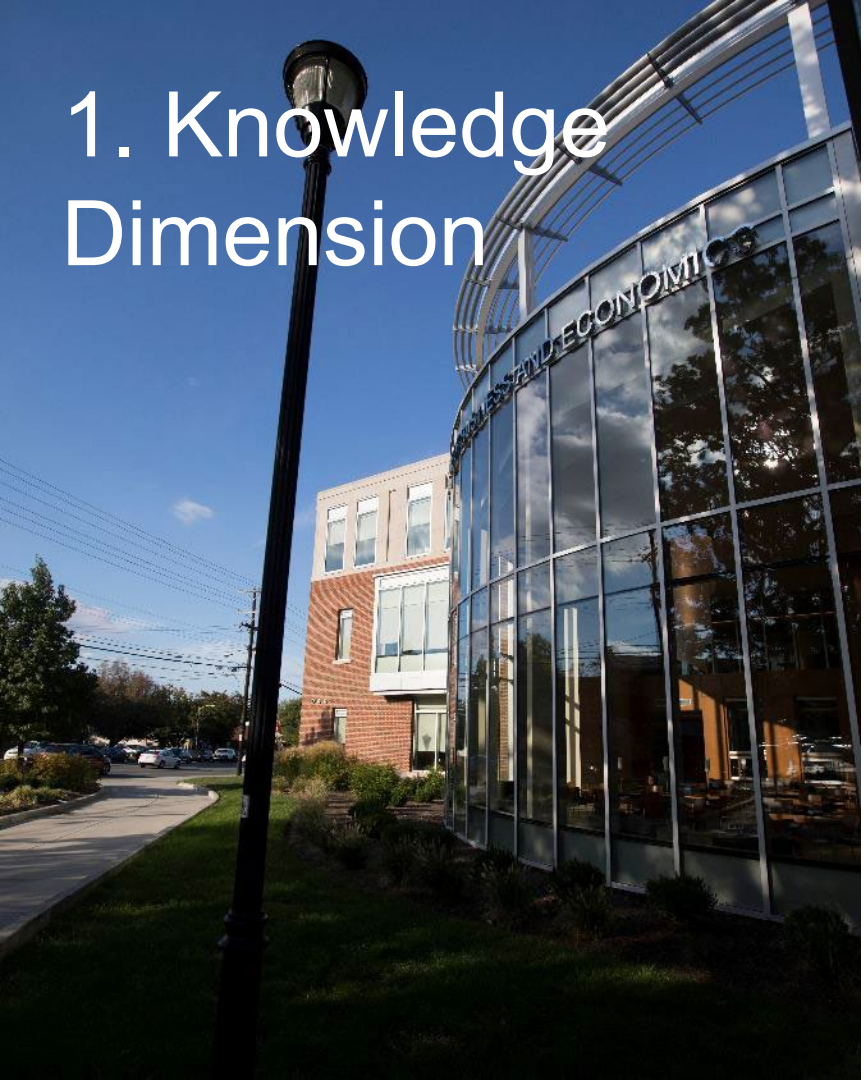
Example

Students will be able to apply legal and ethical principles in business [to organizational decision-making]

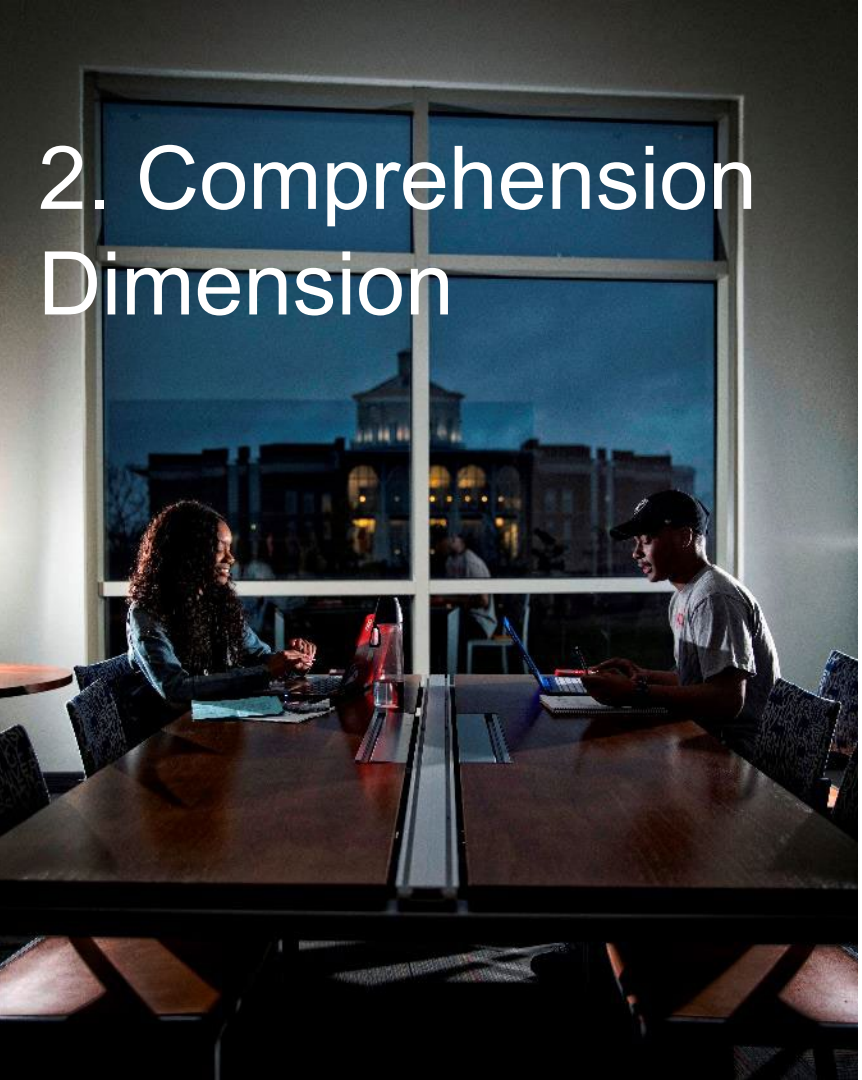
Bloom's Taxonomy (Cognitive)



1. Knowledge Dimension



- **Specifics** (terms, facts)
- **Ways & means of dealing with specifics** (conventions, trends, classifications, criteria, methods)
- **Universals and abstractions** (principles, theories, & structures)



2. Comprehension Dimension

- **Translation** (i.e. paraphrase, representing equation in word form)
- **Interpretation** (i.e. re-ordering of ideas, interpret meaning of data)
- **Extrapolation** (i.e. drawing inferences, using data to predict future events)

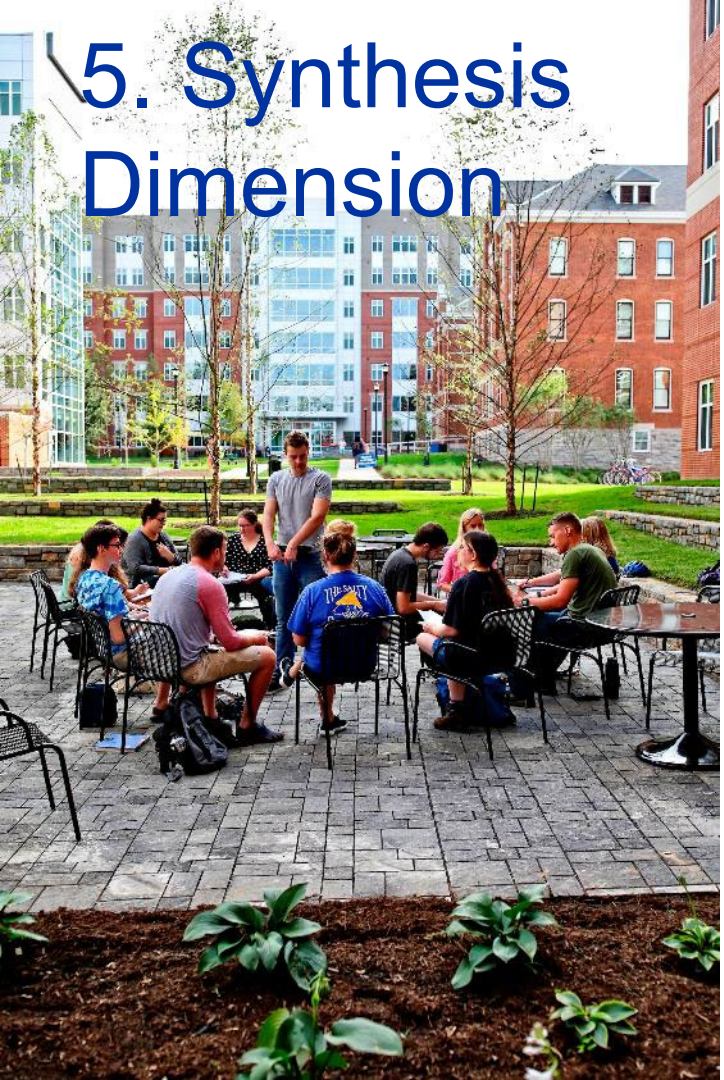
3. Application Dimension

Using ideas, theories, principles, and procedures

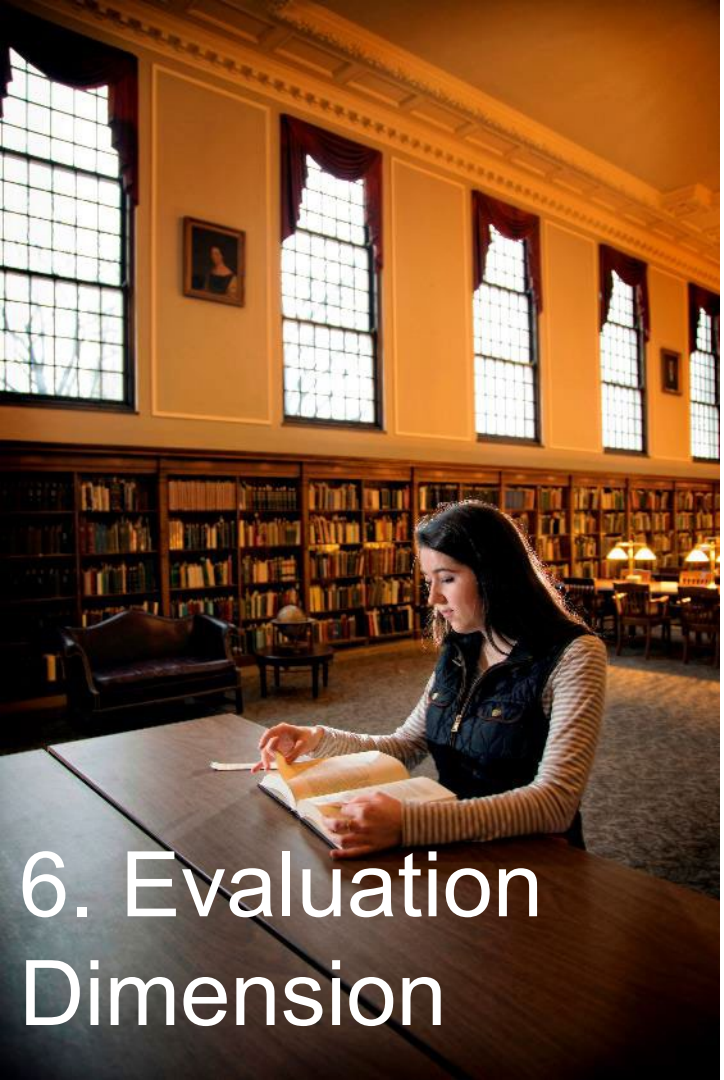
4. Analysis Dimension

- **Analysis of elements** (i.e. distinguish facts from hypotheses)
- **Analysis of relationships** (i.e. comprehending interrelationships among ideas in an article)
- **Analysis of organizational principles** (i.e. patterns in literature or techniques used in advertising)

5. Synthesis Dimension



- **Production of unique communication** (i.e. skill in organizing ideas in writing)
- **Production of a plan or proposed set of operations** (i.e. way of testing hypothesis or a lesson plan)
- **Derivation of a set of abstract relations** (i.e. ability to develop appropriate hypotheses or make generalizations)



6. Evaluation Dimension

Judgments in terms of:

A. **internal evidence** (i.e. judging by internal standards)

B. **external criteria** (i.e. using standards to determine ‘quality’ of work)

Using Bloom's Taxonomy (Cognitive)

Cognitive Level	Sample verbs for writing learning objectives				
Knowledge	• Acquire • Choose • Count • Define • Distinguish • Fill-in	• Find • Group • Identify • Indicate • Label • List	• Locate • Match • Memorize • Name • Outline • Point	• Quote • Recall • Recite • Recognize • Record • Repeat	• Reproduce • Select • State • Tabulate • Trace • Underline
Comprehension	• Associate • Change • Classify • Conclude • Compare • Contrast • Convert	• Demonstrate • Describe • Determine • Define • Differentiate • Discuss • Distinguish	• Fill in • Find • Generalize • Give examples • Group • Infer • Illustrate	• Interpret • Measure • Outline • Paraphrase • Predict • Prepare • Rearrange	• Recognize • Reorder • Represent • Reword • Show • Simplify • Summarize
Application	• Apply • Calculate • Choose • Classify • Collect • Compute • Construct	• Convert • Differentiate • Demonstrate • Develop • Discover • Estimate • Employ	• Expand • Examine • Experiment • Generalize • Illustrate • Graph • Investigate	• Locate • Make • Model • Organize • Operate • Plan • Perform	• Practice • Predict • Present • Produce • Relate • Restructure • Transfer

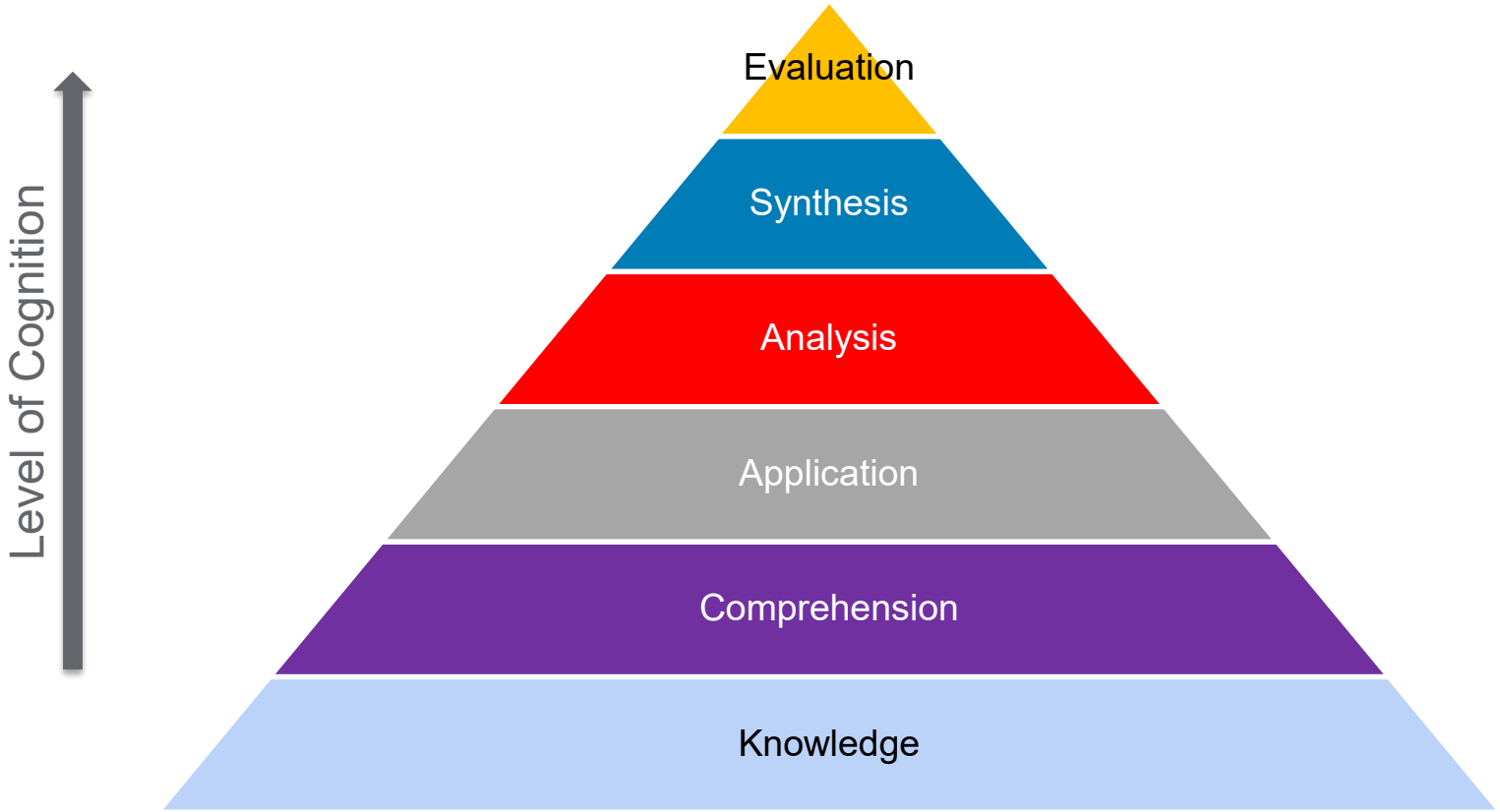
Using Bloom's Taxonomy (Cognitive)

Cognitive Level	Sample verbs for writing learning objectives				
Analysis	• Analyze • Categorize • Classify • Compare • Contrast • Criticize	• Debate • Detect • Determine • Diagram • Differentiate • Discover	• Divide • Examine • Formulate • Generalize • Group • Infer	• Inspect • Order • Outline • Recognize • Relate • Sort	• Transform • Uncover • Search • Select • Separate • Simplify
Synthesis	• Arrange • Blend • Build • Categorize • Combine • Compile • Compose	• Construct • Create • Deduce • Derive • Design • Develop • Document	• Explain • Form • Generalize • Generate • Integrate • Modify • Organize	• Perform • Plan • Predict • Prepare • Produce • Propose • Rearrange	• Relate • Reorganize • Specify • Summarize • Synthesize • Transmit • Write
Evaluation	• Appraise • Argue • Assess • Choose • Compare • Conclude	• Consider • Contrast • Criticize • Decide • Defend • Determine	• Discriminate • Distinguish • Evaluate • Grade • Interpret • Judge	• Justify • Measure • Rank • Rate • Relate • Score	• Select • Standardize • Summarize • Support • Test • Verify

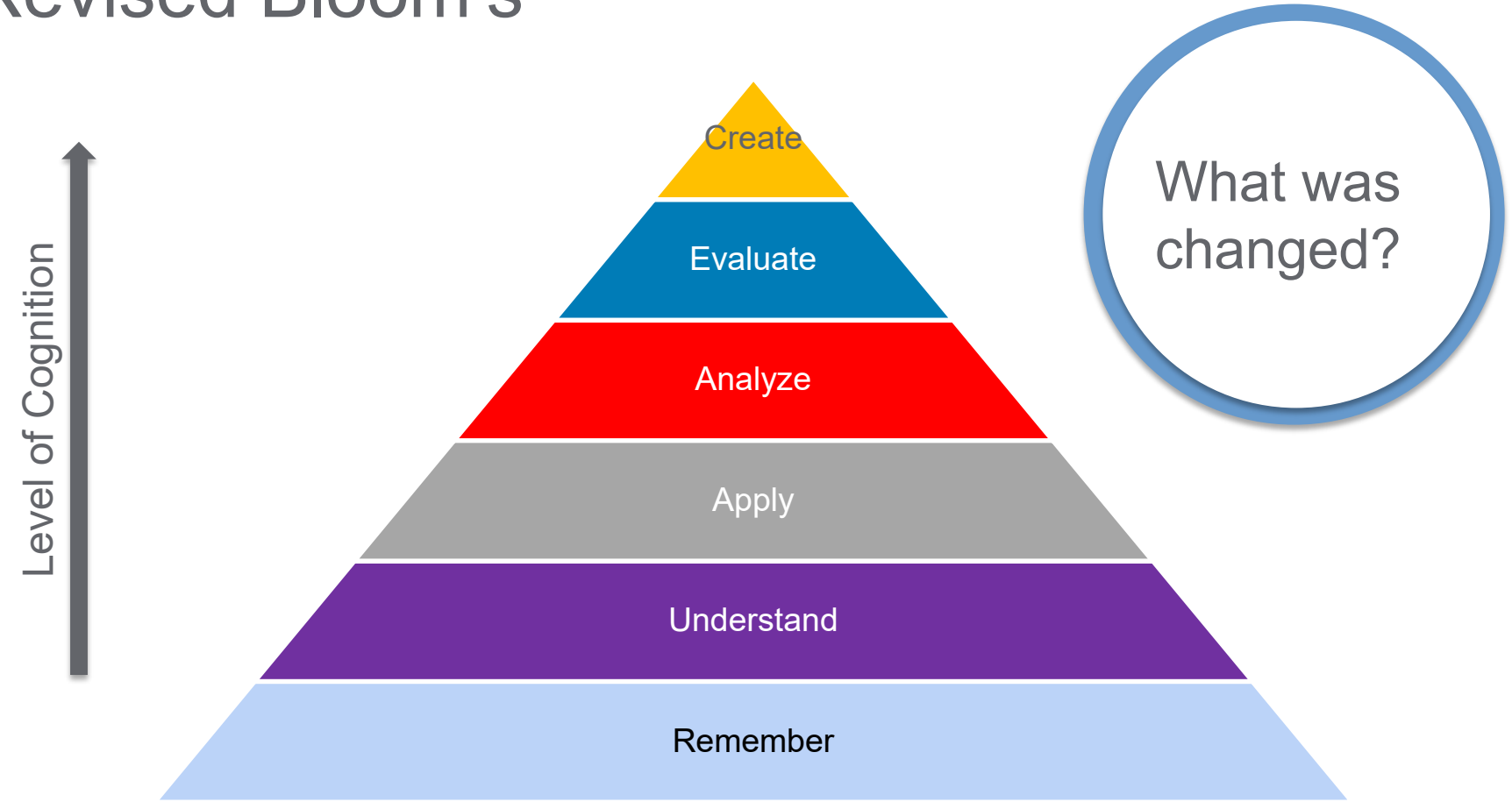
Using Bloom's Taxonomy (Cognitive)

Dimension	Example
Knowledge	Identify the major historical visions of a united Europe
Comprehension	Able to distinguish among confederal, federal, and unitary systems of government
Application	Demonstrate to peers how to resolve conflicts by helping them negotiate agreements
Analysis	Determine the effects of instructional technology on library media programs and school curricula
Synthesis	Develop a valid research hypothesis and design an appropriate experiment to test the hypothesis
Evaluation	Assess the appropriateness of the conclusions from published research studies based on the study design and data presented.

Bloom's Taxonomy



Revised Bloom's



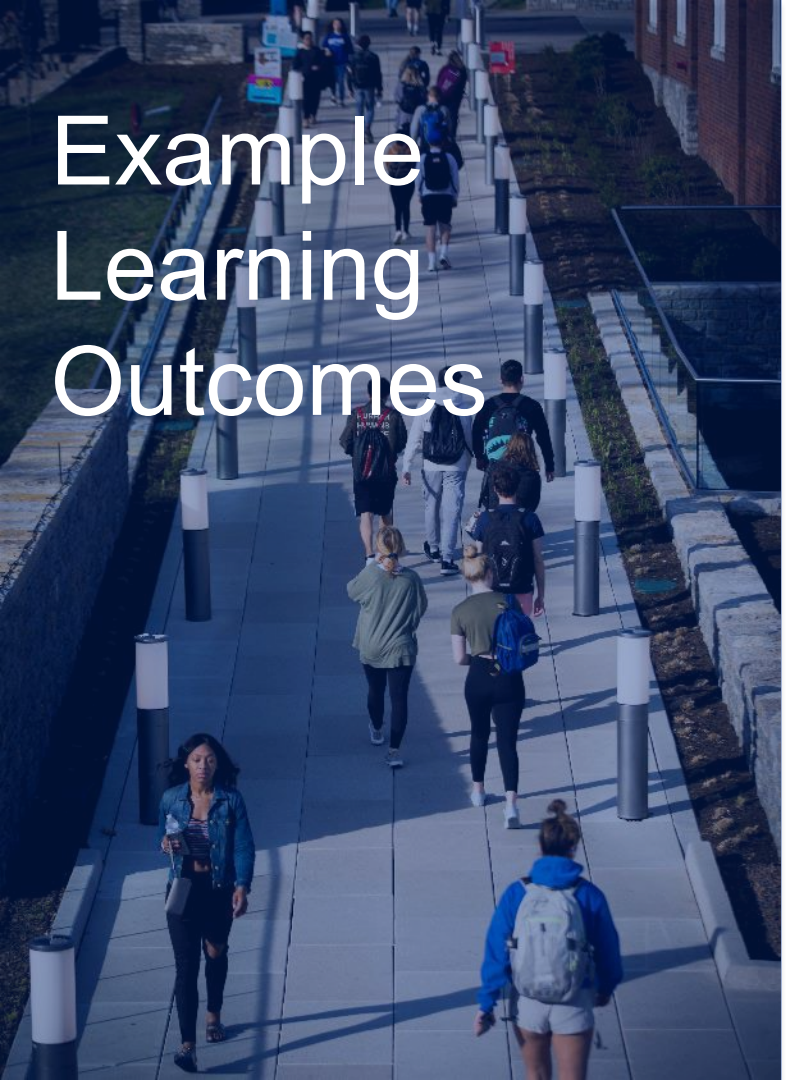
Old v. Revised Taxonomy

- Still a hierarchy
- Nouns to verbs
- "Overlap" between levels is more acceptable in revised taxonomy
- "Understand" replaced "Knowledge" which allowed for creation of 2nd domain for knowledge

5-minute Activity

The next slide presents some example learning outcome statements.

Review the outcomes and then we'll discuss what level (or levels of Bloom's Taxonomy) you think each one addresses.



Example Learning Outcomes

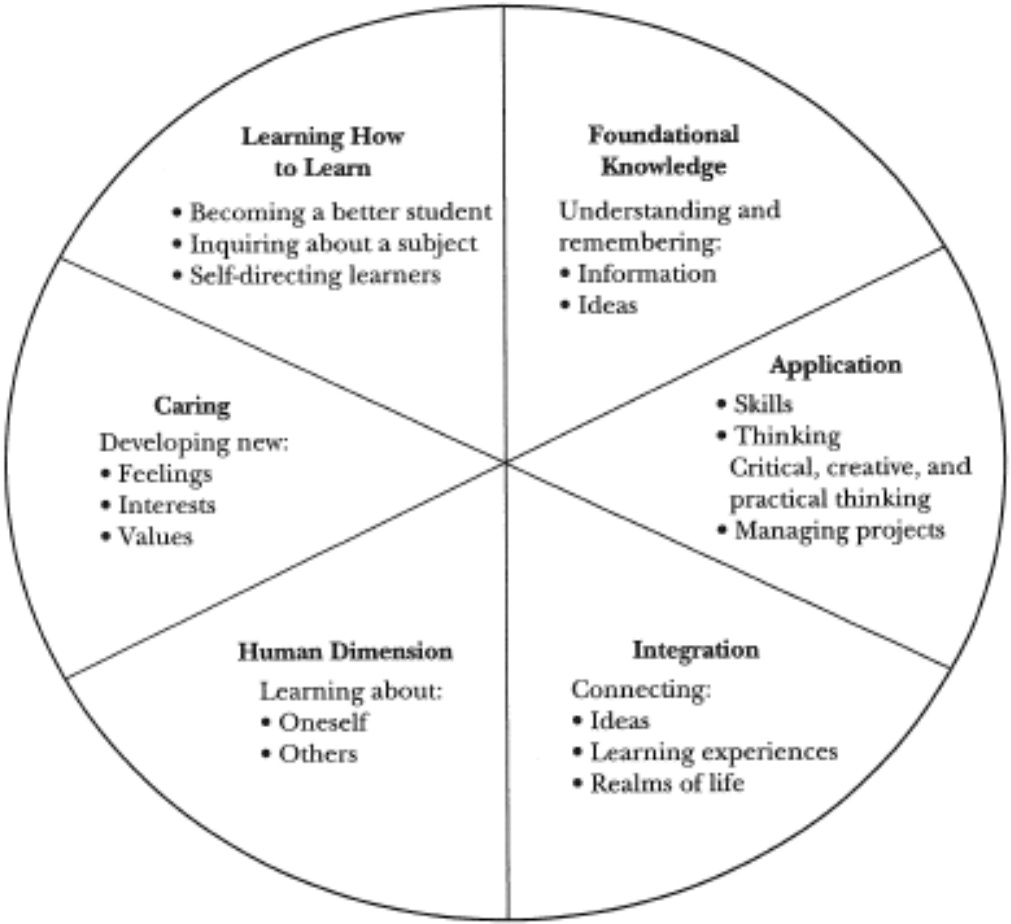
1. Students will be able to demonstrate and evaluate equine handling skills and production management practices.
2. Students will produce effective marketing materials for a nonprofit arts organization by using research techniques, identifying target audiences, formulating strategies, and aligning each one with the organization’s brand.
3. Relate cultural products, traditions, and institutions of their own culture(s) to those of target culture(s)

Taxonomy for Significant Learning

Need For A New Taxonomy

- Fink (2013) suggests learning = some kind of change in the learner
- Bloom's [cognitive] taxonomy restricts the types of learning
- Fink views learning not as a hierarchy but as consisting of interconnections between types of experiences, knowledge, skills

FIGURE 2.1. TAXONOMY OF SIGNIFICANT LEARNING.



Taxonomy for Significant Learning

Foundational Knowledge

- Understand or recall information & ideas
- Basis for other types of learning
- More than accumulation of “random facts”

Application

- Perform some “action” with knowledge
- Applications include
  - Skills
  - Managing complex projects
  - Thinking (critical, creative, and practical)

Integration

- Students can connect different ideas, content areas, theories, etc.
- May be connections between ideas & life experiences

Taxonomy for Significant Learning

Human Dimension

- Learning about self
- Journey toward self-authorship
- Learning about others
- Personal & social competence
- Reciprocity of learning about self/others

Caring

- Learning can change how students view/care about something
- Categories:
  - Feelings, interests, values
  - Focus of caring

Learning to Learn

- Learn about the process of learning
- Categories:
  - How to be better student
  - How to construct new knowledge
  - How to be self-directed learner

Example: Medicine

Dimension	Example
Foundational Knowledge	Explain fundamental biomedical concepts, terms, processes, and system interactions
Application	Propose evidence-based therapeutic treatments
Integration	Connect knowledge of patient populations and health delivery processes in making diagnoses and therapeutic recommendations
Human Dimension	Reflect upon one's personal strengths and weaknesses as a healthcare professional
Caring & Valuing	Engage in the profession by demonstrating a personal commitment to its continual improvement
Learning How to Learn	Develop a personal plan to become a better healthcare professional

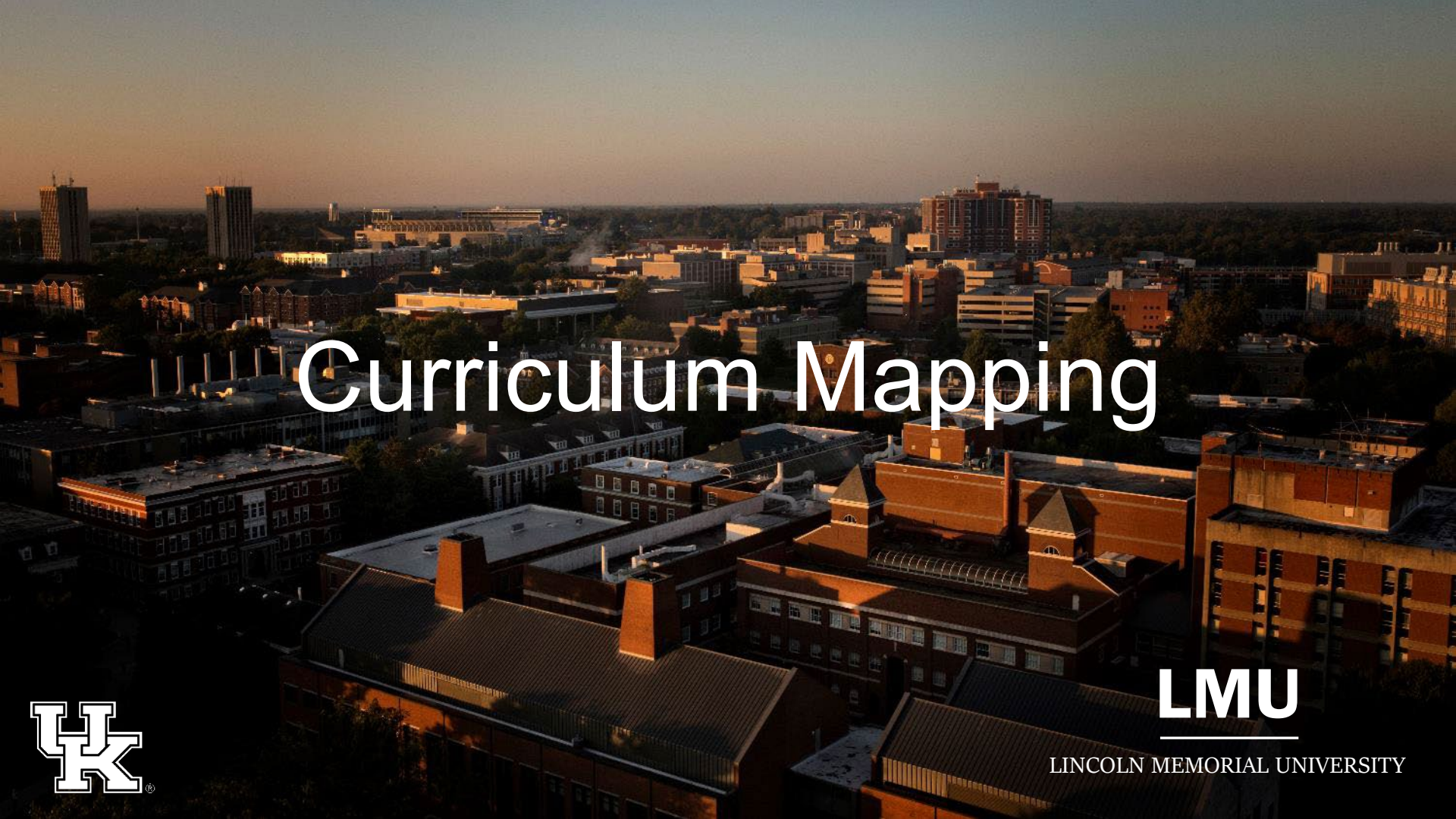
Example: Fine Art

Dimension	Example
Foundational Knowledge	Discuss the ideas, forms, and significant works of art in the traditions developed by cultures from around the world
Application	Produce original artwork using a variety of skills, techniques, materials, and media
Integration	Use historical and cultural knowledge from art history with studio art practice
Human Dimension	Consider the role of art making in the larger social context
Caring & Valuing	Recognize importance of fulfilling ethical and social responsibilities and being an active participant in the community
Learning How to Learn	Critique own work using proper vocabulary to discuss the subject, form, content, and context

Additional Practice (5 min)

Consider how the following outcome statements could be improved:

1. Demonstrate an appreciation of ethical responsibilities
2. Students will demonstrate an understanding of contemporary cybersecurity issues.
3. For this outcome graduates will demonstrate the ability to verify/categorize students' level of learning performance in a defensible way.


Curriculum Mapping
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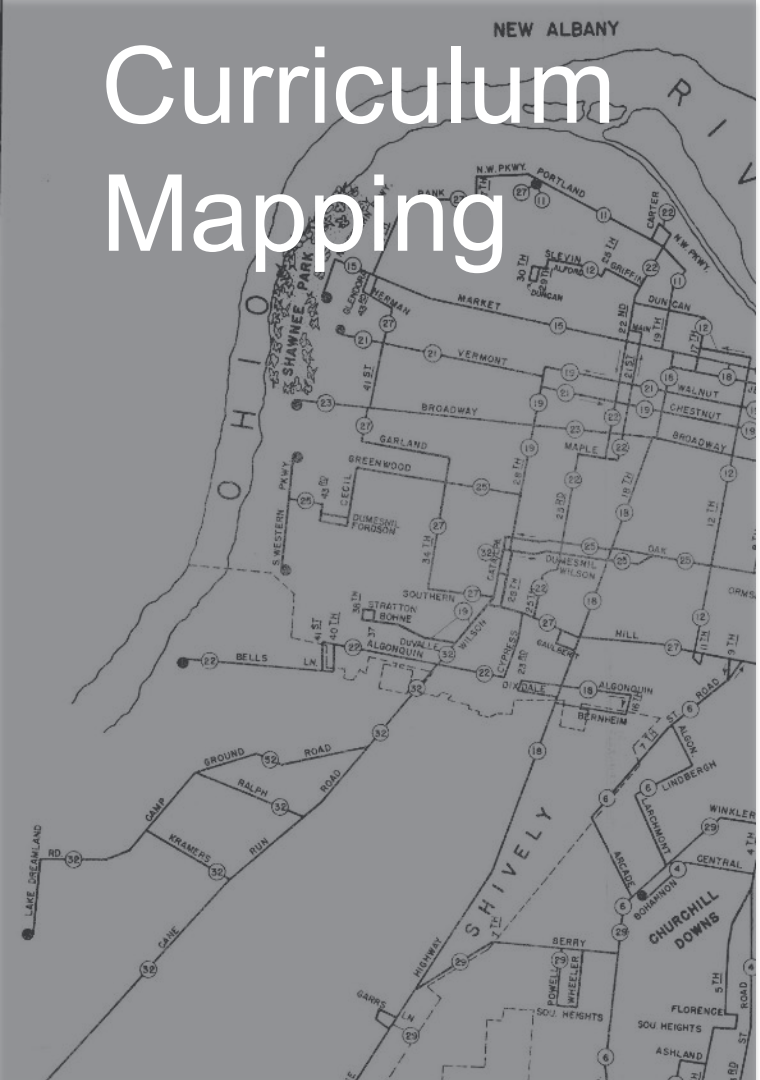
Curriculum Mapping



- Multiple types of mapping
- Common purposes include aligning
  - Course content, learning experiences, objectives, and assessment
  - Course content or objectives to program outcomes
  - Course assessments to program outcomes

Learning Outcome Mapping

- Prepare a “matrix” of courses and outcomes
  - (Optional) can include assessments
  - Indicate if an outcome is covered in a course & level: “introductory,” “reinforced,” or “mastery” level

Course	PSLO1	PSLO2	PSLO3	PSLO4	PSLO5	PSLO6	PSLO7	PSLO8	PSLO9	PSLO10
Example: EDP 548	*I*		*R*			*R*	*I*		*I*	
	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

	PSLO1	PSLO 2	PSLO 3	PSLO 4	PSLO 5	PSLO 6	PSLO 7	PSLO 8	PSLO 9	PSLO 10	PSLO 11	PSLO 12	PSLO 13	PSLO 14	PSLO 15	PSLO 16	PSLO 17
Domain 1																	
Dept 111							I	I									
Dept 212					I	I											
Dept 213					R	M											
Dept 314	I		I														
Dept 315							M	M									
Domain 2																	
Dept 101																	
Dept 151		I		I													
Dept 252		R		R													
Dept 253																	
Dept 354									I	I							
Dept 355									M								
Dept 458																	I
Domain 3																	
Dept 231													I	I			
Dept 332												R			R		
Dept 333												R	M			R	
Dept 434											R						
Dept 435														R			
Domain 4																	
Dept 203	I																

	PSLO 1	PSLO 2	PSLO 3	PSLO 4
Pre-major				
Dept 100	I	I	I	I
Dept 125	I	I		
Dept 215	I	I	I	I
Core Courses				
Dept 218	I	I	I	I
Dept 223	R	R	I	R
Dept 311	R	R	I	R
Dept 312	R	R	I	R
Dept 313	R	R	I	R
Dept 314	R	R	I	R
Upper Elective				
Dept 495	M	M	R	M
Dept 499	M	M	R	M
Dept 500	M	M	R	M
Dept 534	M	M	R	M
Dept 535	M	M	R	M
Dept 561	M	M	R	M
Dept 562	M	M	R	M
Dept 563	M	M	R	M
Dept 564	M	M	R	M
Dept 565	M	M	R	M
Dept 566	M	M	R	M
GCCR				
Dept 427	M	M	R	M
Dept 430	M	M	R	M
Dept 440	M	M	R	M
Dept 456	M	M	R	M
Dept 460	M	M	R	M
Dept 552	M	M	R	M

	Outcome			
	Knowledge Demonstrate knowledge of public health from an interdisciplinary perspective.	Evidence-based problem solving Show competency in ethical issues, social responsibility, and problem solving using evidence-based concepts in core public health areas.	Relationships Show competency in relationship-building and team dynamics to plan and promote public health and reduce health disparities.	Integrated Communications Apply theories and concepts to communicate the interconnectedness among the physical, social, and environmental aspects of population health
Pre-Major for Pre-BPH				
CPH 201 Introduction to Public Health	I			
GRN 250 Aging in Today's World	I			
BST 330 Statistical Thinking for Population Health	I	I		
Core (Major) Courses				
HSM 241 Health and Medical Care Delivery Systems	R		I	I
CPH 310 Disease Detectives: Epidemiology in Action	R	R		
CPH 320 Fundamentals of Environmental Health	R			
CPH 440 Foundations of Health Behaviors	R		R	
CPH 470 Public Health Capstone	A	A		A
CPH 472 Public Health Profession and Practice	A		A	

Legend : I Introduced R Reinforced A Applied X General Alignment

Mapping Considerations

- Discuss with all faculty
- Verify each outcome addressed at each level (I, R, M)
- Examine map for gaps and unnecessary duplication
- If all boxes are checked, may indicate:
  - Map filled out incorrectly
  - Outcomes too broad

10-minute Break

Part II: Building an Assessment Plan

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Recap: Assessment Plan

- Learning outcomes
- Curriculum map
- Assessment measures
- Timeline

What is a “good” assessment?

- Aligned with learning outcomes AND intended purpose
- Lead to reliable and valid conclusions about student learning
- Produce sufficient detail to diagnose student strengths & weaknesses


Types of Assessments
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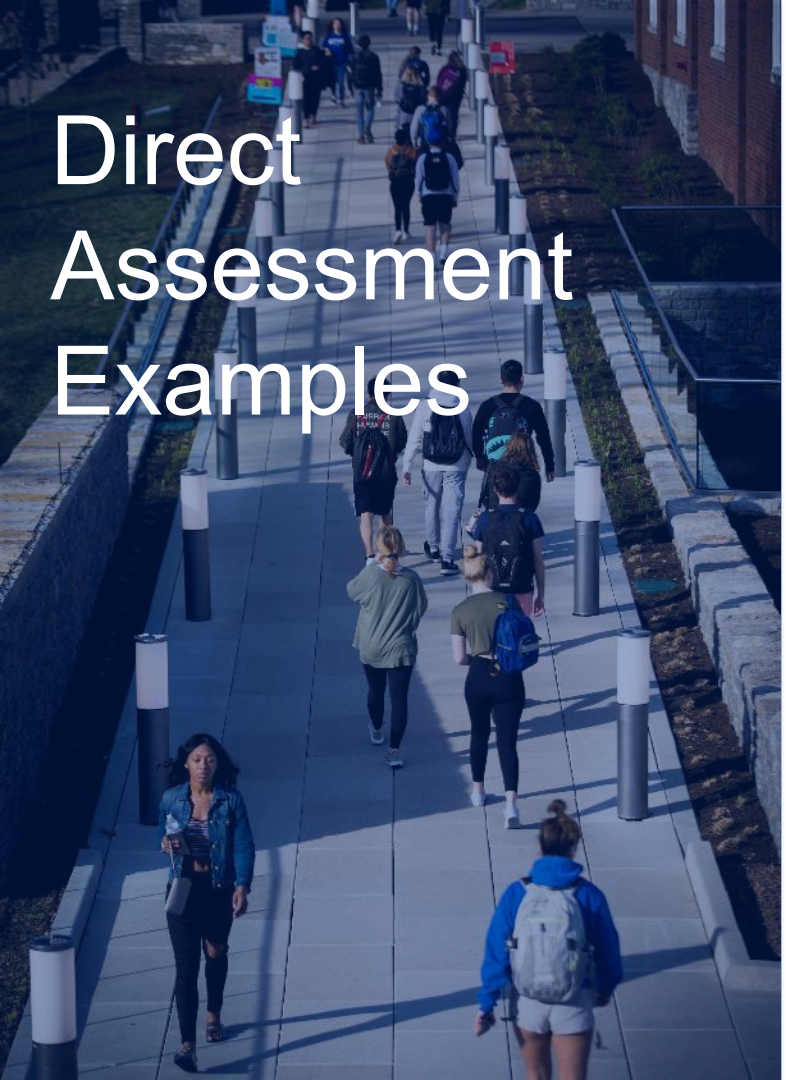
Direct Assessments

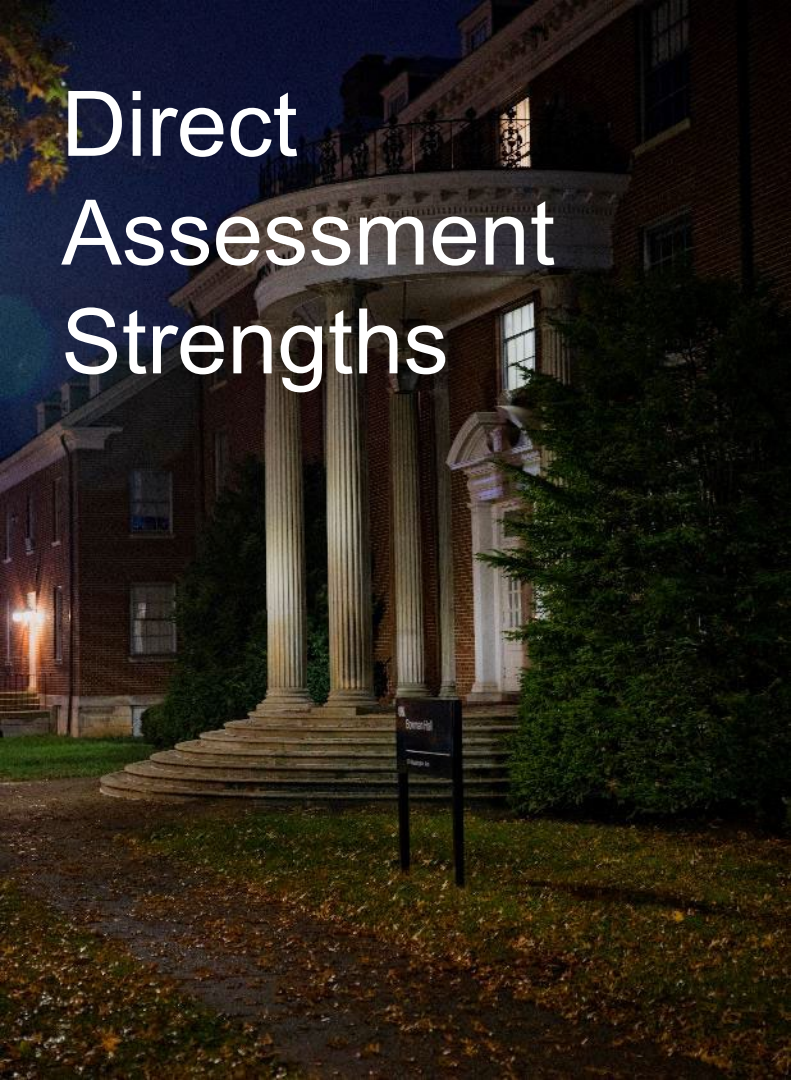
Definition: provides tangible, visible, self-explanatory, compelling evidence of what students have and have not learned

Suskie, L. (2009). *Assessing student learning: A common sense guide.* San Francisco, CA: Jossey Bass



Direct Assessment Examples

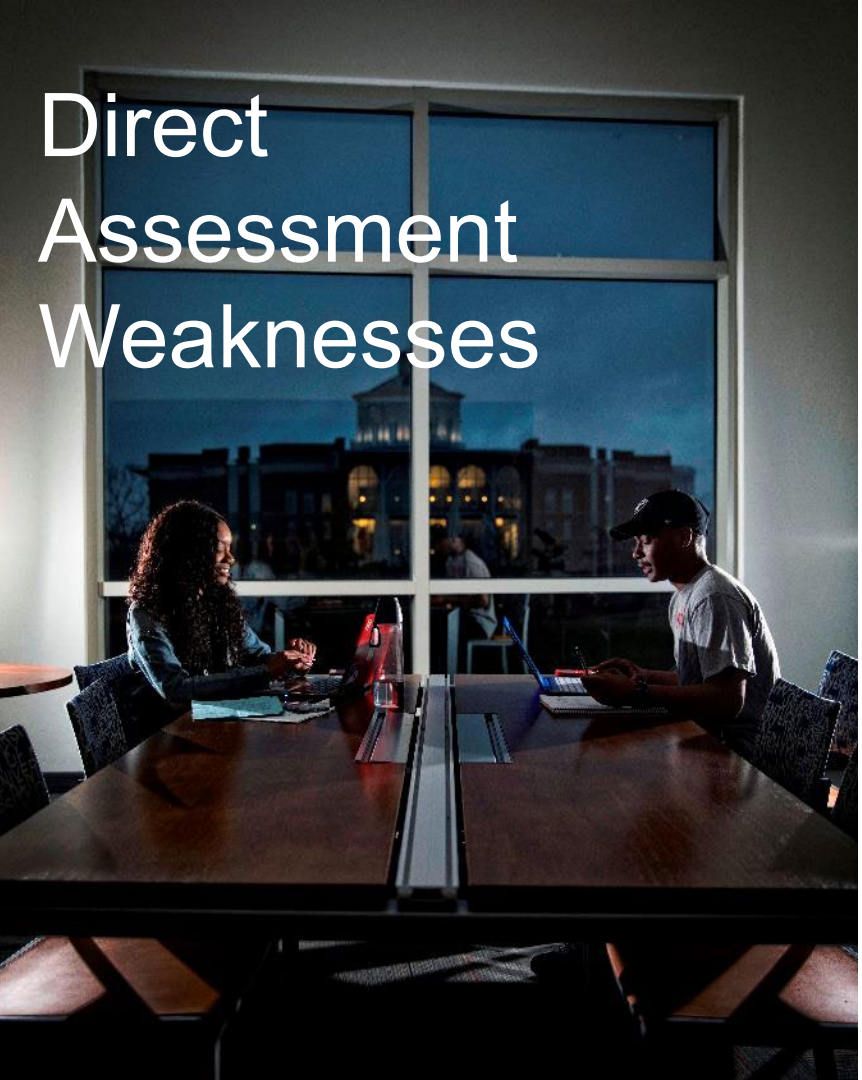
- Traditional assessments
  - Exams
  - Quizzes
- Performance assessments
  - Lab experiments
  - Music or other artistic performance
  - Physical exercise or activity
  - Papers, projects, reports



Direct Assessment Strengths

- Students must actually “show what they know”
- Produce empirical data
- [Relatively] easy to align exams and rubrics to multiple learning outcomes

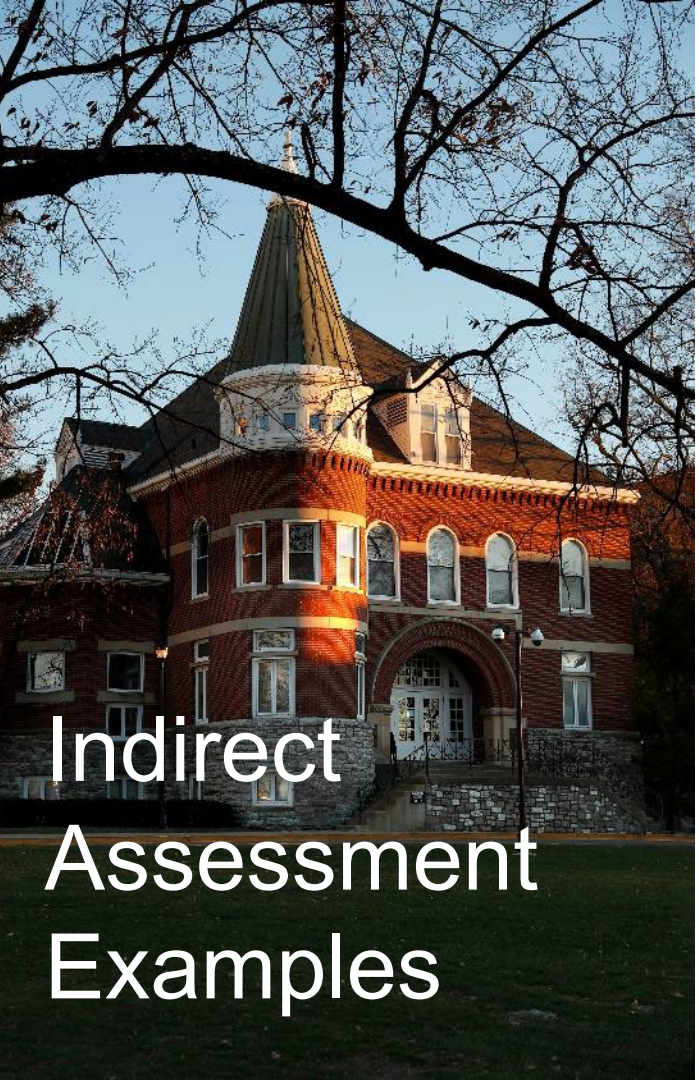
Direct Assessment Weaknesses



- May require significant class time
- Highly structured nature can limit types of learning captured (i.e. factual and procedural v. metacognitive)
- Standardized tests may have poor alignment
- Creating effective exams, rubrics, etc. requires considerable training and skill

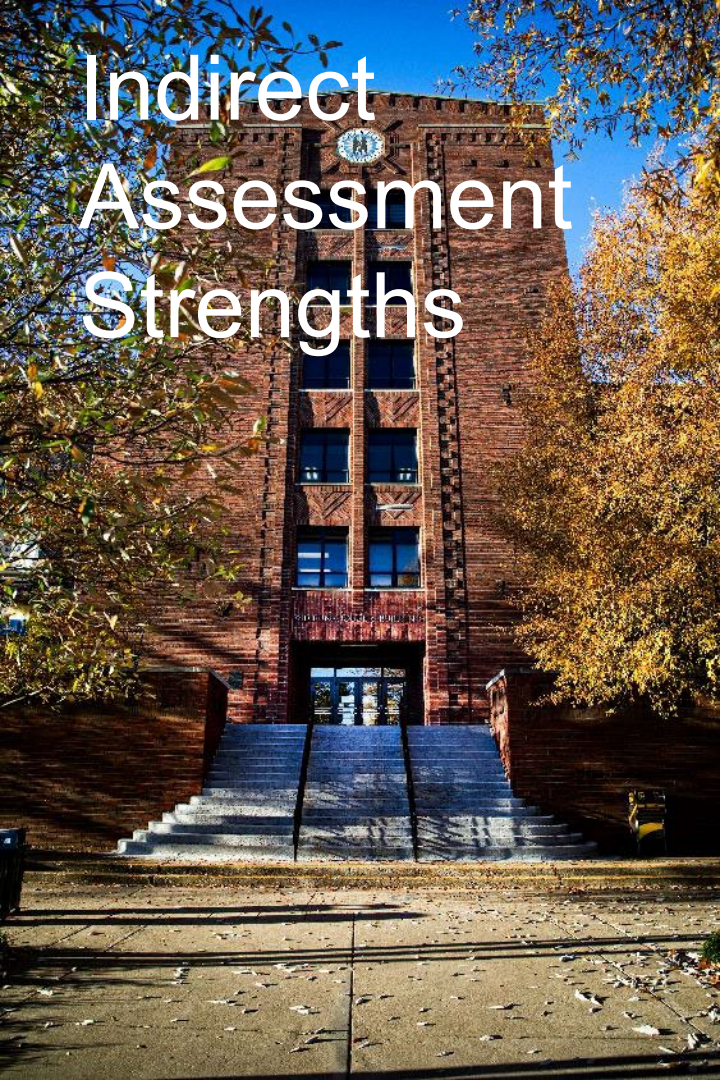
Indirect Assessments

Indirect assessment measures consist of “proxy” signs that students are learning by ascertaining the perceived extent or value of learning experiences.



Indirect Assessment Examples

- Reflections, learning logs, journals
- Self-ratings
- Interviews
- Focus groups
- Informal instructor observations
- Peer assessment



Indirect Assessment Strengths

- Opportunity for reflection about material and own thinking/ learning
- Allows students' voices to be heard
- Can shed light on learning strategies, challenges, & other types of learning
- Can often be completed outside of class time

Indirect Assessment Weaknesses

- Includes impressions, views, attitudes and no “tangible” evidence
- Interpretation can be difficult, time consuming
- Students may respond how they think the teacher wants them to
- May have low participation in some cases (i.e. teaching evals)
- Can be susceptible to bias (i.e. halo effect on surveys)

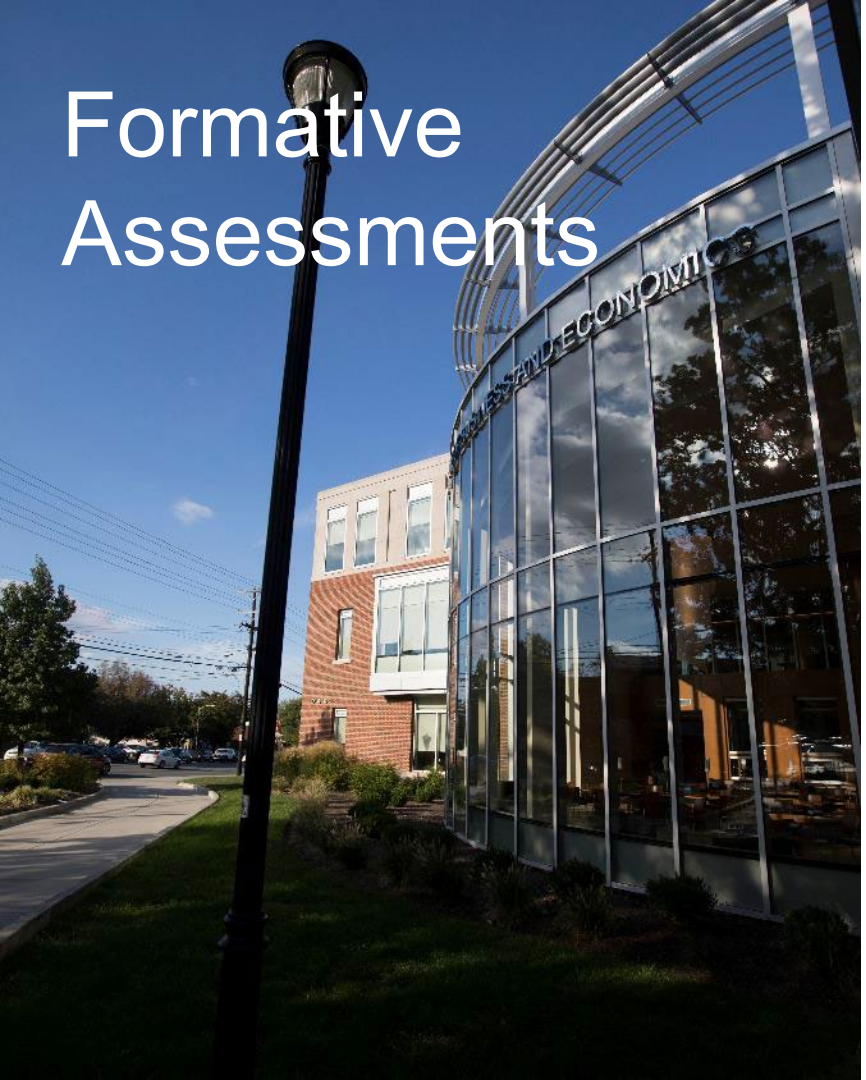
Formative & Summative

Summative Traits

- Occurs after unit is complete
- Provides feedback on whole of teaching & learning for unit
- Often involve judging performance against an established benchmark
- Moderate- to high-stakes

Summative Examples

- Major exams (i.e. mid-terms, finals)
- Standardized tests
- “Term” papers
- Projects
- Performances (i.e. recital)
- Class presentation
- Final learning log or reflection
- Showcase portfolio



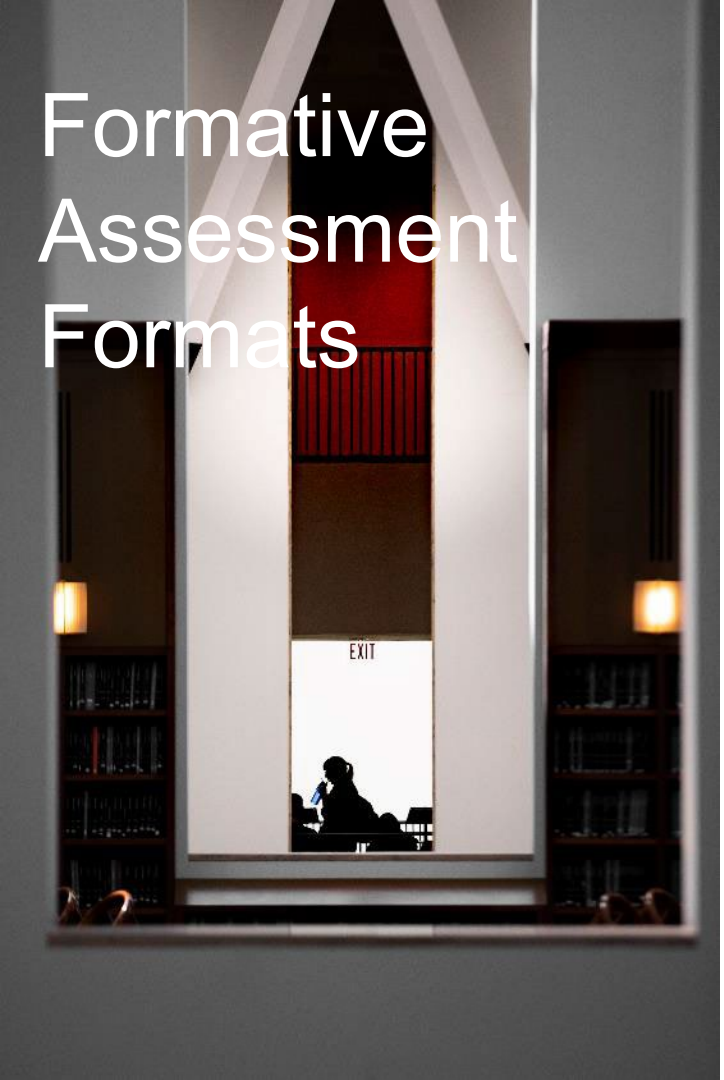
Formative Assessments

Formative assessments are administered during instruction of an educational unit for the purpose of:

- providing feedback on students' strengths and weaknesses
- assisting instructors in planning future instruction
- guiding students towards self-directed learning

Cizek, G.J. (2010). An introduction to formative assessment. In H.L. Andrade & G.J. Cizek, *Handbook of formative assessment*.

Formative Assessment Formats



- Often shorter and less formal than summatives
- Many of the same formats can be used as summative assessments
  - Quizzes
  - Papers
  - Performance tasks
- Could also include
  - Various indirect measures (thumbs up/down, reflections)
  - Homework
  - Assignment drafts

Summative v. Formative

	Formative	Summative
Purpose	Monitor and improve instruction and student learning	Document student performance on a unit; make decisions about student progressions, classification, etc.
Time of assessment	During instruction	After instruction is completed
Assessment techniques	Examples include informal observation, listening/responding to student questions, discussions, quizzes, homework, as well as traditional formats (papers, exams, projects)	Tests, final exams, reports, formal presentations, projects, papers
Use of information	Improve or modify instruction while it is ongoing	Judge what and how much students have learned and identify systematic student errors
Structure	Can be formal or informal; often flexible format	Fixed, formal, standardized for all students

Adapted from McMillan, J.H. (2001). *Classroom assessment: Principles and practice for effective instruction.*

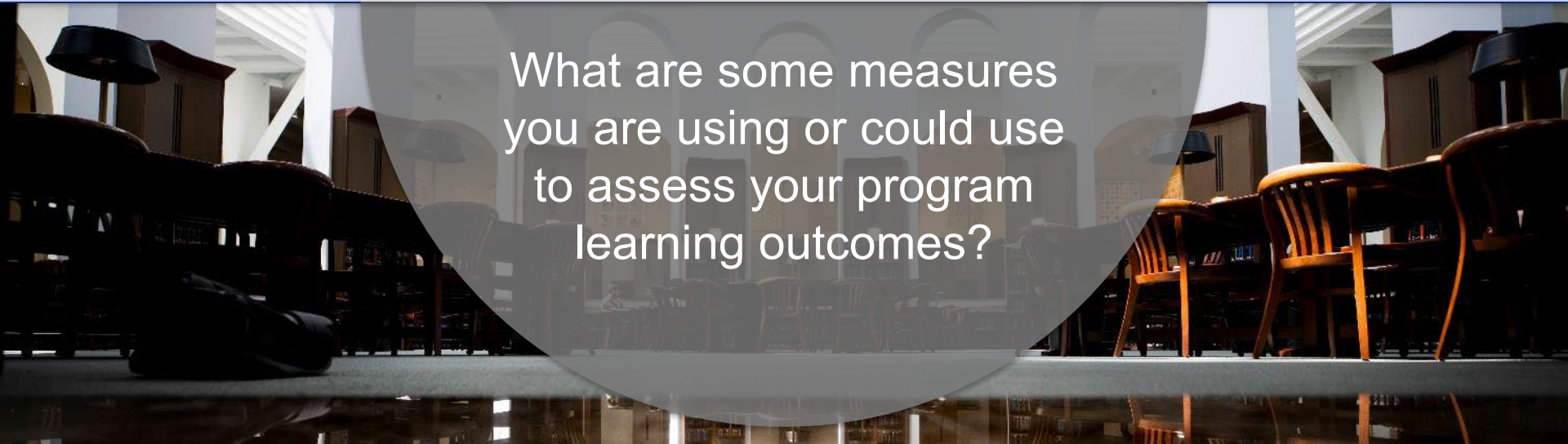
Key Takeaways

- Consider using a combination of direct & indirect measures
- Summative preferred over formative but there are advantages of using both





3-min Activity



What are some measures you are using or could use to assess your program learning outcomes?

Reliability & Validity

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Reliability

Reliability refers to the precision of a measurement procedure.

- Reliability is
  - An important trait of any assessment
  - A necessary *precondition* for validity
- The amount or extent of measurement error present impacts the reliability of the assessment results

Possible Sources of Measurement Error

Individual Student

Examples:

- Test anxiety
- Illness
- Motivation

Environment

Examples:

- Classroom (noise, temperature
- Computer v. paper
- Time
- Calculator access or scratch paper

Instrument

Examples:

- Different versions (i.e. “A” and a “B”)
- Item flaws
- Type of instrument or method

Rater

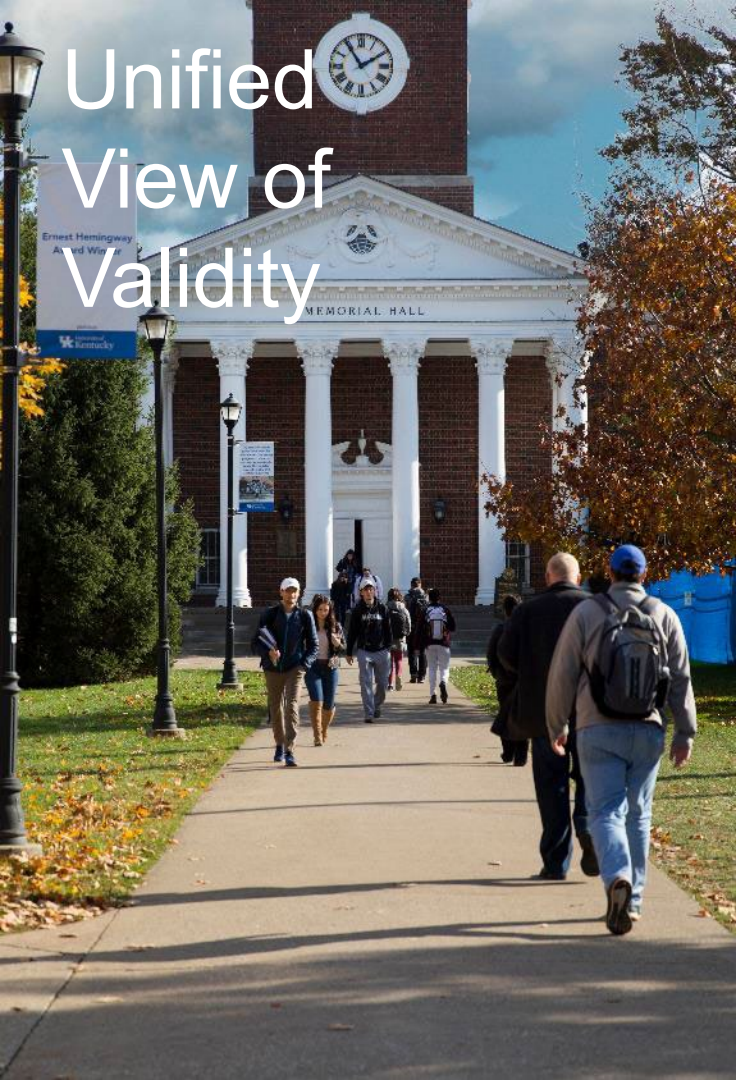
Examples:

- Rater experience & training with rubric
- Rater knowledge & ability to observe
- Rater biases

Validity

Validity has to do with the degree to which test scores provide information that is relevant to the inferences that are to be made from them.

Unified View of Validity



- Validity is not property of an instrument
- Validity is not a binary judgment
  - Gather multiple forms of evidence to make a case validity exists
- Validity is about the appropriateness of the conclusions we draw & decisions we make based on results
- Construct validity is the overarching “type” of validity

Applying Reliability + Validity Theory

1. Ensure proper alignment of each measure with intended outcome(s)
- Examples: exam blueprint, analytic rubric with criteria mapped to specific outcome(s)

Applying Reliability + Validity Theory

2. Use multiple measures of the same outcomes

- Ideally, use different types of assessments
- Scores can be correlated (same students) or, at minimum, compared at aggregate level if benchmarks have been established

Applying Reliability + Validity Theory

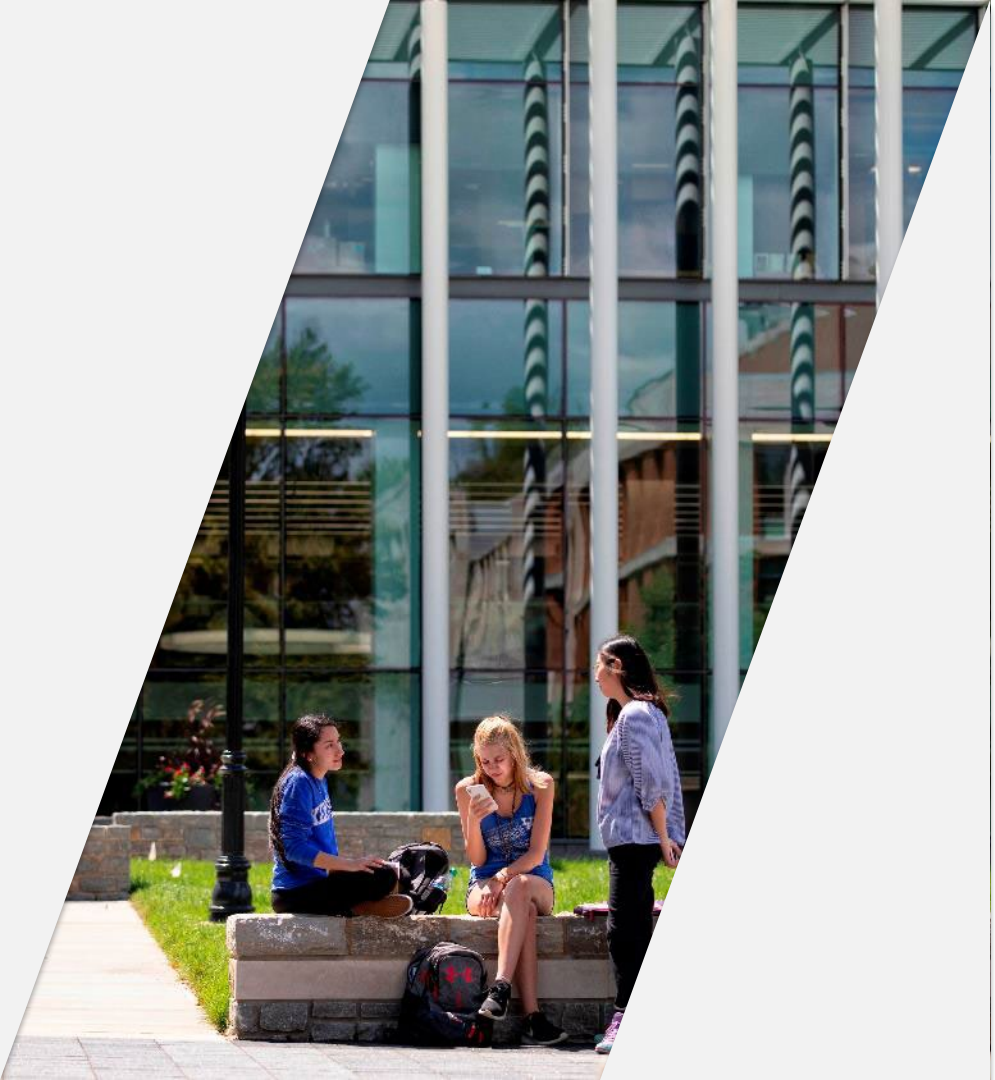
3. Appropriate sampling of student population

- For example, English majors and not History & Philosophy
- Representative of all students in program
- Sufficient number of artifacts

Applying Reliability + Validity Theory

4. Design measures that produce sufficient detail

- Single overall score rarely provides enough insight
- One way to obtain more detail is use an analytic rubric with multiple criteria for each outcome



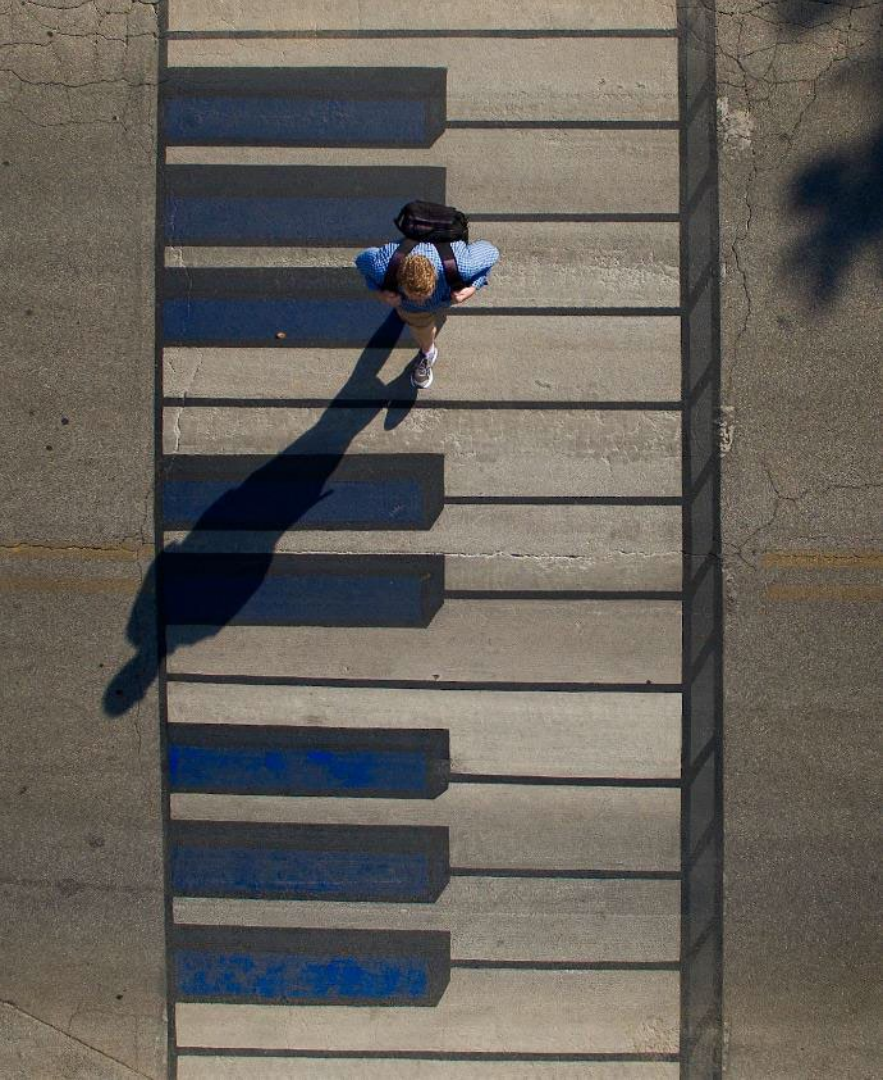
Applying Reliability + Validity Theory

5. Use multiple evaluators for a sample of a performance assessment scored with a rubric

Timeline

Course Considerations

- When is each course from which a measure will be obtained taught?
- How many students are typically enrolled in these courses?
- Are data needed from multiple sections or years of the same course?

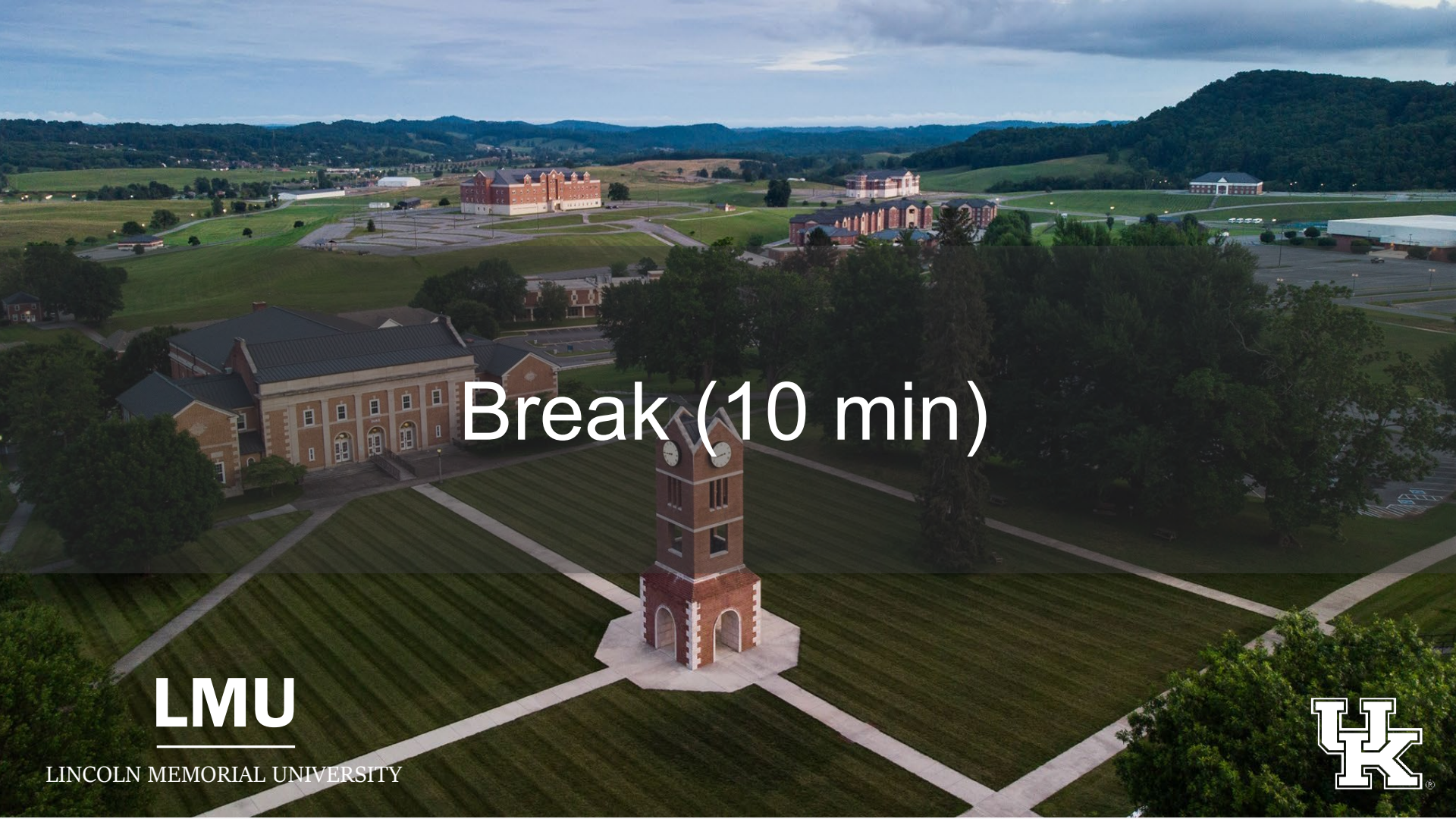


Data Collection

- Should data be collected when available or at end of the year?
- How easy or challenging is it to obtain data for each measure?

Reporting & Review

- How long will it take to analyze the data and create a report?
- With whom should data be shared and when should this occur?
- Who needs to be involved in decision-making?


Break (10 min)
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Practice

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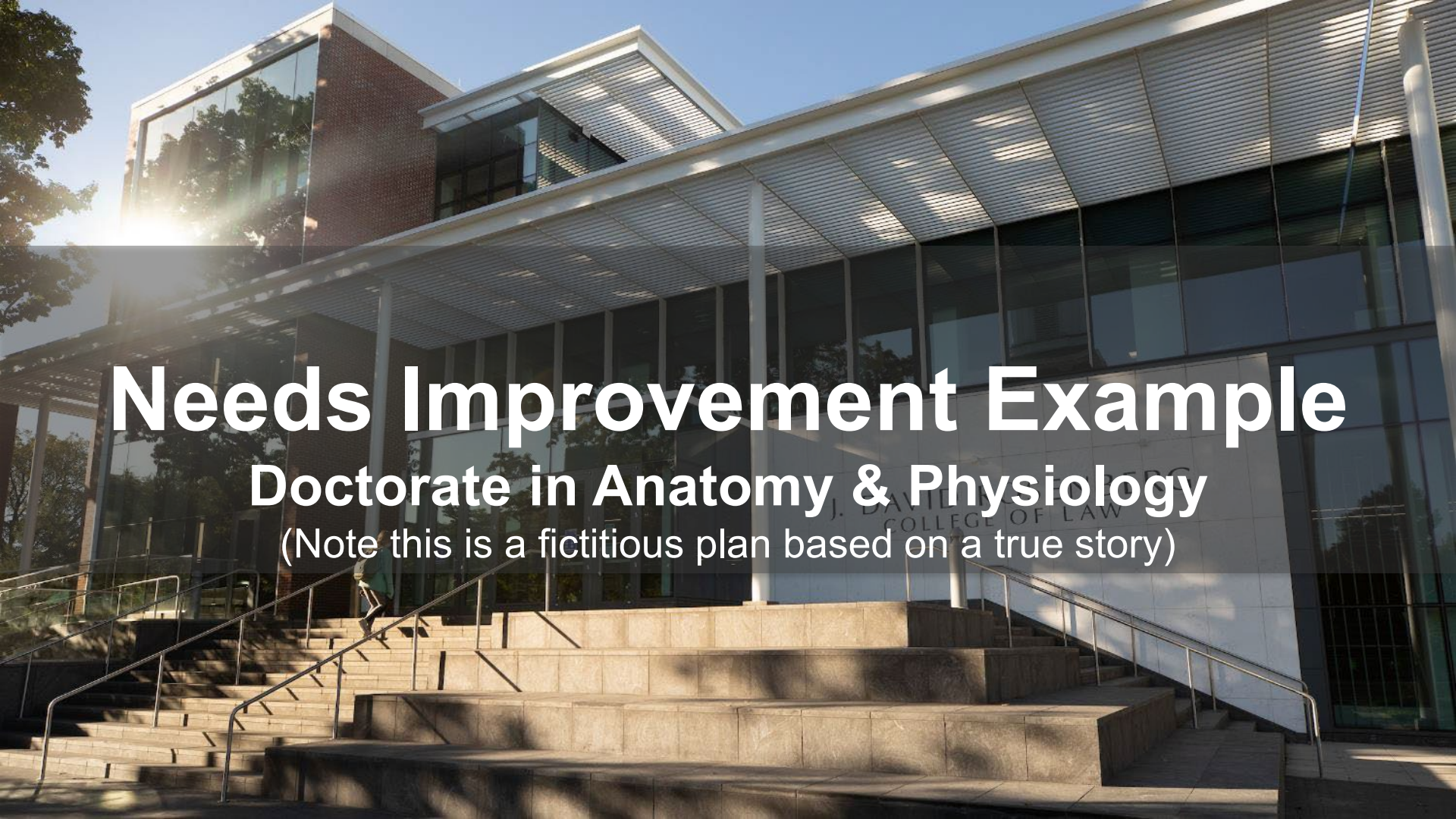
Good Example

Biology



Needs Improvement Example

Doctorate in Anatomy & Physiology

(Note this is a fictitious plan based on a true story)

Questions?

- Return to your original list of questions from today
- Were any of your questions not answered yet?
- What other questions do you still have?

Program-level Student Learning Outcomes Assessment Plan Template

Academic Degree Programs

ABOUT THE PROGRAM

College or School (*example: College of Arts & Sciences*) College of Health Services

Degree Type (*example: BA or MS*) Doctor

Program Name (*example: History*) Anatomy & Physiology (DAP)

Please provide the mission statement for the program. If one does not currently exist, provide the department or college mission statement.

The purpose of the Anatomy & Physiology program is foremost to meet the physiological needs of the state and contribute to global needs overall by developing competent practitioners who are critical thinkers, educators, and professionals.

The Department of Anatomy & Physiology strives to develop patient-centered practitioners who are knowledgeable, ethical, independent and collaborative, adaptable, reflective, effective communicators, and service oriented. This practitioner development is accomplished through a wide variety of mechanisms:

1. Educational programs informed by scholarship and research and designed to provide excellence in instruction as well as accessibility to a diverse student body, including the professional DAP program, post-professional program (PhD Program in Anatomical Sciences), and continuing education courses.
2. Scholarship, research, and creative activities that contribute to the discovery, translation, and expansion of knowledge in the health sciences.
3. Service to the public (in urban and rural communities), to other professional disciplines, and to the profession.
4. Professional socialization through participation in professional activities and organizations.

The goals and objectives of the Anatomy & Physiology program are an integral part of the mission of the institution. They are reflective of and consistent with those of the University and College, and are in congruence and augment those of the University.

ASSESSMENT CYCLE

All programs that do not have specialized accreditation and are not located in a department/college with a specialized accreditation should follow a 4-year PSLO assessment cycle. Programs that have specialized accreditation(s) or are within a college that has a comprehensive accreditation can develop an alternate PSLO and periodic review cycle in consultation with OSPIE.

Which cycle will the program being using?

☐ 4-year cycle [What does this look like?]

☒ Other (accredited programs/departments only)

PROGRAM-LEVEL STUDENT LEARNING OUTCOMES

Please list the program-level student learning outcomes (PSLOs). If applicable, indicate which, if any, outcomes are required by your specialized accreditor(s). Bachelor's degree programs must also indicate which outcome(s) map to the university's GCCR (Graduation Composition & Communication Requirement). The GCCR is not a requirement for certificates, graduate, or professional programs.

PSLO #	**Program-level Student Learning Outcome Statement** (How should these be written?)	**Required by Specialized Accreditor(s)?**	**Mapped to GCCR?** (Undg degrees only)
1	Develop practitioners as analytical thinkers: use problem solving skills to gather data, identify problems and choose among alternatives for successful resolution	☒	☐
2	Develop competent practitioners: display readiness to practice as entry level therapists	☒	☐
3	Develop professional practitioners as health care educators: emulate and assimilate the qualities inherent in professionalism	☒	☐

Please provide a brief description of the process used to develop or revise current PSLOs and the extent to which program faculty were involved. If applicable, provide discussion of any attempts to align PSLOs with professional or accreditation standards, employer expectations and job skills, graduate program curricula, etc. If PSLOs are taken directly from an accreditor, discuss whether (and how) the PSLO statements were reviewed by the faculty to ensure they were comprehensive.

Our PSLOs are an exact match with our curricular goals in our policy and procedure manual for our department. All program faculty support and endorse our assessment efforts and are included during faculty meetings when there is an assessment report or question. Selected faculty assist in providing the metrics required for the PSLOs. Our curricular goals are in alignment with our accreditation guidelines and professional standards.

CURRICULUM MAP

Please create a map of the PSLOs to the curriculum. All required courses should be included in the left-hand column, and all PSLOs should span across the remaining columns. If desired, specific elective courses or elective "tracks" can be included (recommended). The purpose of the curriculum map is to show where each PSLO is emphasized within the curriculum. The level at which each PSLO is taught within a given course should be indicated as follows: introductory (I); reinforced (R); or mastery (M). Each PSLO should have at least an instance of I, R, and M across the curriculum, with the exception of certain graduate programs where introductory knowledge is provided at the undergraduate level. For assistance in developing a curriculum map, please visit the OSPIE website or contact the OSPIE team.

Course	PSLO1	PSLO2	PSLO3
ANP 412G	M	I	I
ANP 804	I	I	M
ANP 854	R	R	M
ANP 834	M	M	M
ANP 801	M	I	I
ANP 770	R	I	R
ANP 802	M	M	I
ANP 652	R	M	M
ANP 831	R	M	M
ANP 835	I	I	M
ANP 676	M	R	M
ANP 825	R	R	M
ANP 826	R	R	M
ANP 887	R	M	I

ANP 651	M	M	M
ANP 655	R	M	M
ANP 668	M	R	I
ANP 827	R	M	M
ANP 838	M	M	M
ANP 814	R	M	M
ANP 811	M	M	I
ANP 603	I	I	I
ANP 805	R	R	M
ANP 645	I	I	I
ANP 836	R	R	M
ANP 650	M	M	M
ANP 654	M	M	M
ANP 847	M	M	M
ANP 628	R	M	M
ANP 676	R	R	M
ANP 860	M	M	M
ANP 850	M	M	M
ANP 686	R	R	I
ANP 888	R	M	M
ANP 839	M	M	M
ANP 867	R	R	R

ANP 815	M	M	M
ANP 856	R	M	M
ANP 877	R	M	M
ANP 604	R	R	R
ANP 837	M	M	M
ANP 686	R	R	I
ANP 821	R	M	M
ANP 830	M	M	M
ANP 669	M	R	M
ANP 840	M	M	M
ANP 890	M	M	M

I = Introduced; indicates that students are introduced to the outcome
R = Reinforced and opportunity to practice; indicates the outcome is reinforced and students afforded opportunities to practice
M = Mastery at the senior or exit level; indicates that students have had sufficient practice and can now demonstrate mastery

ASSESSMENTS

Assessment Instrument/ Measure Name	**PSLO(s) Mapped to**	**Assessment Type** (Direct or Indirect)	**Assessment Instrument/Measure Description** (What is this?)	**Assessment Instrument/Measure Rationale** (What is this?)	**Benchmark or Goal** (If Available) (What is this?)	**Course(s)** (If applicable)	**Rubric or Example Appended?**
Comprehensive Exam (ANP 890)	PSLO #1	Direct	ANP 890 Comprehensive Exam. All DAP students complete the comprehensive exam prior to graduating	Passing the comprehensive exam indicates that students are mastering the program material at the level intended.	All students will pass the exam (minimum score of 70% or within 2 SD		☒

			from the program. The exam is a multiple choice exam consisting of 200 questions. The exam questions are written by the instructors of each course in the program. The questions are constructed to test the ability to problem solve, thus connecting to our learning outcome. The comprehensive exam is delivered via Canvas to model the method of delivery of the national certification exam. It is designed primarily to test mastery of course content from the curriculum. The secondary aim is to assist in preparation of the professional students to sit for the national exam by mirroring the format of the national exam and by setting a similar pass rate.	Mastering the material requires analytical thinking and indicates a certain level of proficiency that is needed to perform in the clinical setting.	of the mean cohort score, whichever is lower). The 70% cut score parallels what has been used historically by the Federations of State Boards in Anatomy & Physiology which administers the national licensing exam.		

National Licensure Exam (Federation of State Boards-DAP) (FSBPT)	PSLO #2	Direct	Anatomy & Physiology National Licensure Exam. All graduates of programs accredited through the Federation of State Boards, must take and pass this exam before they are licensed to practice anatomy and physiology. Following graduation from an accredited program, passing the licensure exam indicates competence to practice. After completing all requirements for graduation, students register to sit for the exam at the next available time. Students are able to take the exam up to 3 times in one calendar year. Students must take the exam at specific testing centers. It is a proctored exam. The Anatomy & Physiology program receives an official	Anatomy & Physiology National Licensure Exam. All graduates of programs accredited through the Federation of State Boards, must take and pass this exam before they are licensed to practice anatomy and physiology. Following graduation from an accredited program, passing the licensure exam indicates competence to practice. The Anatomy & Physiology program receives an official report on pass rates and also purchases the Content Area Report that provides a breakdown on specific sections of the exam. Our accrediting body expects a report each year on the results of the exam. Our faculty values the results and uses the scores to assess the success of our students.	Passing score established nationally. Our goal is that all students will pass using all the allowable attempts. The Content Area Report includes the average score for one graduating class broken out by content areas and body systems from the content outline. The report includes confidence intervals for the mean scores and the mean and standard deviations for students from institutions.		☐

			report on pass rates and also purchases The Content Area Report that provides a breakdown of the scores on specific sections of the exam.		*Our goal for our students is to meet or surpass the passing score nationally but also meet or surpass the mean scores as reported in the Content Area Report.*		
Clinical Performance Instrument (CPI)	PSLO #3	Direct	During clinical activity in ANP 836, ANP 837 and ANP 838, the student and the clinical instructor assess professional behaviors that are expected during the rotations. This assessment is recorded on the Clinical Performance Instrument (CPI). The CPI is a performance tool that is nationally normed and used by the majority of DAP programs in North America. The CPI is an all-electronic document and results can be viewed individually or in	Five of the Professional Practices have been selected to track for this assessment report. These are items 1 (Safety), 2 (Professional Behavior), 3 (Accountability), 4 (Communication), and 6 (Professional Development) on the CPI (see the attached CPI instrument, pages 14-20). Students are rated on a scale from 0 (beginner) to 6 (advanced intermediate). For each of the courses in this	"Entry level" or "Beyond entry level" on a rating scale. Rationale: The level of expectation is set nationally.		☒

			aggregate for each item on the instrument. Students are introduced to the CPI instrument the semester before the clinical experiences begin. Students are educated about the self-assessment component as well as the rating scale used by the clinical instructors. This introduction provides students with a clear roadmap of expectations and requirements during the clinical experiences.	sequence, any score within the range listed for each course is acceptable to successfully complete the CPI. Since the students come to the program with varying degrees of prior experience in physical therapy, the range allows for all students to make progress that corresponds with their previous skill level. In the event that a student scores below the expected level on the CPI, a personal remediation plan is designed to address these deficiencies. ANP 836 occurs during the spring of the second year. ANP 837 occurs during the summer of the second year. ANP 838 occurs during the fall of the third year. Students receive a rating from the Clinical Instructor and also have			

				the opportunity to self-rate their performance. Scoring occurs at the midterm of the clinical rotation and again at the end of the rotation. The end score is the one used for student assessment and for program analysis.			

ASSESSMENT REPORTING CYCLE

Please complete the chart below by providing the requested information for each learning outcome.

PSLO #	Semester/ Year(s) Data Collected	Year(s) Results Submitted to OSPIE	Year(s) Reflection Report Submitted to OSPIE	Year(s) Action Report Submitted to OSPIE
1	Fall, Year 1	Summer, Year 1	Summer, Year 2	Summer, Year 3
2	Fall, Year 1	Summer, Year 1	Summer, Year 2	Summer, Year 3
3	Fall, Year 1	Summer, Year 1	Summer, Year 2	Summer, Year 3

Program-level Student Learning Outcomes Assessment Plan Template

Academic Degree Programs

ABOUT THE PROGRAM

College or School (*example: College of Arts & Sciences*) Arts and Sciences

Degree Type (*example: BA or MS*) BS and BA

Program Name (*example: History*) Biology

Please provide the mission statement for the program. If one does not currently exist, provide the department or college mission statement.

The mission of the Biology Undergraduate Program is to provide a curriculum that enables and encourages students to learn and apply the fundamental concepts and methods of biology. Students should learn to critically evaluate evidence, formulate and test hypotheses, solve problems, and gather, interpret and discuss scientific data.

(Optional) Include any additional information about the program's history, development, or structure that may be beneficial in understanding the curriculum and how student learning is assessed.

Biology is one of the largest majors at the University (with over 1500 students), and attracts students looking for a broad, rigorous education in the life sciences. Many of our majors are interested in pursuing health-related careers (medicine, pharmacy, veterinary, dental, etc.), but we also attract students interested in careers in scientific research, and those interested in industry jobs or natural resource management. The Biology program offers several unique features, such as the hands-on upper division labs in all of our core courses, the opportunity to get involved in research as soon as the first year of school, and the wide array of research-active labs supervised by faculty offering independent research projects.

In 2008-2009, the Biology Department embarked on an ambitious restructuring of its undergraduate curriculum. First, we developed a new Introductory Biology I course that introduces the themes of biodiversity, evolution, and Mendelian genetics in the first semester. This course is followed by a systems level exploration of biological complexity in the second semester. Second, we eliminated the typical freshman introductory wet-lab course, which we found to be largely ineffective and a waste of resources, and replaced this with a computer-based "dry" lab course that focuses on the process of science, scientific literacy, and bioinformatics. This change allowed us to shift laboratory resources to all of our sophomore/junior, 300-level core courses, such that we now have hands-on, meaningful laboratory exercises embedded into our Genetics, Cell Biology, Ecology, and Evolution courses. We also added flexibility to the Biology major by introducing a B.A. option (in addition to the B.S. option), which allows students wishing to minor in a non-STEM discipline more room in their course schedule to take coursework related to their minor. To encourage our students to engage in hands-on research experience, we offer the Mentored Research Course, and allow students to apply up to six credits of independent research towards their upper-level elective

requirements. Finally, to help our students tailor their Biology degree to their interests, in 2018 we began offering the option to declare a track within the Biology degree. To complete a track, students must take 12 upper-level elective hours in eligible coursework for that track.

ASSESSMENT CYCLE

All programs that do not have specialized accreditation and are not located in a department/college with a specialized accreditation should follow a 4-year PSLO assessment cycle. Programs that have specialized accreditation(s) or are within a college that has a comprehensive accreditation can develop an alternate PSLO and periodic review cycle in consultation with OSPIE.

Which cycle will the program being using?

☒ 4-year cycle

☐ Other (accredited programs/departments only)

If the program has selected "other" for the assessment and periodic review cycle, please append a copy of the proposed cycle and a brief justification to this plan.

PROGRAM-LEVEL STUDENT LEARNING OUTCOMES

Please list the program-level student learning outcomes (PSLOs). If applicable, indicate which, if any, outcomes are required by your specialized accreditor(s). Bachelor's degree programs must also indicate which outcome(s) map to the university's GCCR (Graduation Composition & Communication Requirement). The GCCR is not a requirement for certificates, graduate, or professional programs.

PSLO #	Program-level Student Learning Outcome Statement (How should these be written?)	Required by Specialized Accreditor(s)?	Mapped to GCCR? (Undg degrees only)
1	**The nature of science** Students will be able to describe how new scientific knowledge is gained. They will be able to implement the scientific method to formulate and test hypotheses. They will be able to distinguish valid scientific evidence from unsubstantiated opinion.	☐	☐

Program-level Student Learning Outcomes Assessment Plan Template

Academic Degree Programs

PSLO #	Program-level Student Learning Outcome Statement (How should these be written?)	Required by Specialized Accreditor(s)?	Mapped to GCCR? (Undg degrees only)
2	**The conceptual foundations and knowledge base of biology** Students will demonstrate a clear understanding of the most important and fundamental theories and ideas in contemporary biology, such as evolution, unity and diversity of life, structure and function, information flow, exchange, and storage; pathways and transformations of energy and matter; and systems.	☐	☐
3	**The collection and analysis of biological data** Students will be able to gather reliable data for specific purposes using established laboratory and field methods. They will be able to analyze their data statistically, present results in tabular and graphical form, and interpret results accurately.	☐	☐
4	**The analysis and integration of scientific research (GCCR)** Students will be able to critically analyze and integrate scientific research in one or more forms of scientific writing (e.g. traditional research paper, review article, or public science piece) and in oral presentations.	☐	☒
5	**The communication of scientific research (GCCR)** Students will be able to present and discuss the concepts, methods, and results of biological research in writing and oral presentations.	☐	☒
6	**The Value of Science** Students will appreciate fundamental scientific values such as the process of scientific inquiry, ethical action in all stages of scientific practice, and connections across disciplines.	☐	☐

Please provide a brief description of the process used to develop or revise current PSLOs and the extent to which program faculty were involved. If applicable, provide discussion of any attempts to align PSLOs with professional or accreditation standards, employer expectations and job skills, graduate program curricula, etc. If PSLOs are taken directly from an accreditor, discuss whether (and how) the PSLO statements were reviewed by the faculty to ensure they were comprehensive.

Our PLSOs were drafted during our 2008-2009 curriculum restructuring. Faculty were extensively involved in the process. In 2016, our PLSOs were revised by the Biology Undergraduate Affairs Committee after consultation with members of OSPIE. The changes were discussed at a faculty meeting in 2016, and feedback from faculty was incorporated into our current PLSOs. Our program has no professional or accreditation standards.

CURRICULUM MAP

Please create a map of the PSLOs to the curriculum. All required courses should be included in the left-hand column, and all PSLOs should span across the remaining columns. If desired, specific elective courses or elective "tracks" can be included (recommended). The purpose of the curriculum map is to show where each PSLO is emphasized within the curriculum. The level at which each PSLO is taught within a given course should be indicated as follows: introductory (I); reinforced (R); or mastery (M). Each PSLO should have at least an instance of I, R, and M across the curriculum, with the exception of certain graduate programs where introductory knowledge is provided at the undergraduate level. For assistance in developing a curriculum map, please visit the OSPIE website or contact the OSPIE team.

Course	PSLO1	PSLO2	PSLO3	PSLO4	PSLO5	PSLO6
BIO 148	I	I				
BIO 152	I	I				
BIO 155	I	I	I	I	I	I
BIO 303	R	R	R	R	R	R
BIO 304	R	R	R	R	R	R
BIO 315		M	M	R	R	R
BIO 350 or 430G	M	M	M	R	R	M
BIO 325	M	M	M	M	R	M
BIO 425	Choose an item.	M	Choose an item.	M	M	M

CHE 105/107/111/113	I	I	Choose an item.	Choose an item.	Choose an item.	Choose an item.
CHE 230/231/232	R	R	R	Choose an item.	Choose an item.	Choose an item.
PHY 211/213	I	I	R	Choose an item.	Choose an item.	Choose an item.
MA 137/138/123	I	I	Choose an item.	Choose an item.	Choose an item.	Choose an item.
STA 296	I	I	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Biology Tracks (Electives)		M	M			M
Biology GCCR elective				M	M	

I = Introduced; indicates that students are introduced to the outcome
R = Reinforced and opportunity to practice; indicates the outcome is reinforced and students afforded opportunities to practice
M = Mastery at the senior or exit level; indicates that students have had sufficient practice and can now demonstrate mastery

ASSESSMENTS

Assessment Instrument/ Measure Name	**PSLO(s) Mapped to**	**Assessment Type** (Direct or Indirect)	**Assessment Instrument/Measure Description** (What is this?)	**Assessment Instrument/Measure Rationale** (What is this?)	**Benchmark or Goal** (If Available) (What is this?)	**Course(s)** (If applicable)	**Rubric or Example Appended?**
Analysis of Lab Reports in BIO 155, BIO 325 and 350	1, 3	Direct	Samples of students' lab reports from three courses, BIO 155 (Introductory Biology Lab I), BIO 325 (Ecology), and BIO 350 (Animal Physiology), were scored by faculty volunteers using the Lab Report rubric (Appendix A).	In each of the laboratory courses included, students gather reliable data for specific purposes using established laboratory and field methods, interpret their data statistically and present results in tabular or graphical	90% of the laboratory reports written by students in 300 level courses will be rated at 3 or above for	BIO 155 (Introductory Biology I Lab) BIO 325 (Ecology) BIO 350	

			This allows us to directly compare reports from 100-level and 300-level courses. The Lab Report Rubric was developed by the Undergraduate Affairs Committee in 2019.	form. The lab report rubric directly assesses students' ability to collect, represent and explain these data. The rubric also contains sections to evaluate the students' abilities to formulate and test hypotheses. Analysis of reports from students at the 100- and 300- levels give us a snapshot of student learning at multiple points in our curriculum.	each category of the rubric	(Animal Physiology)	
BIO 199 and 395 Poster Presentations	1, 3	Direct	During the University Showcase of Undergraduate Scholars in faculty members evaluate a random selection of the poster presentations of our BIO 199 (Research Experience in Biology) and BIO 395 (Independent Biology Research) students. Students are evaluated using the rubric attached in three general categories - problem/hypothesis, experimental design/procedures, and results/discussion.	The rubric is directly aligned to components of the scientific method. Specifically, the rubric evaluates students' abilities to clearly state a hypothesis/driving principle, describe experimental design and procedures, and discuss results, including whether or not they support the hypothesis being tested. These are all integral pieces of the scientific method. By assessing the student learning outcome at two points in our curriculum, near the beginning and end, we can obtain a clear picture of the strengths and weaknesses of our program and value added. The weakness of this measure is that not all students complete BIO 199 and BIO 395	85% of BIO 395 students will receive a score of accomplished (3) or exemplary (4) for each section of the rubric and BIO 395 students will have, on average, higher scores than BIO 199 students.	BIO 199 BIO 395	

Exam questions in core courses (BIO 148, 303, 304, and 315)	2	Direct	20-30 question multiple-choice questions were developed by the instructors of the BIO 148, BIO 152, BIO 304, and BIO 315 courses to assess major course concepts. Each question was linked to a component of the PLSO. Pre-assessments will be given during the first week of class and reassessed at the end of the semester. Student performance on each questions of the pre- and post-test will be compared to examine student learning gains.	Measure was chosen because questions are directly linked to course learning outcomes, assess knowledge of the foundational concepts described in PSLO2, and provide an objective measures of student knowledge. The assessment of learning in first-year courses (BIO 148 and 152) and in a second or third year course (BIO 303, 304, 315) is advantageous because we can measure student learning in real time as they progress through the curriculum and address strengths and weaknesses in these courses as they are identified.	Students will average above 70% correct for each question assessed	BIO 148 (Introductory Biology I) BIO 152 (Introductory Biology II) BIO 303 (Evolution) BIO 304 (Genetics) BIO 315 (Cell Biology)	☒
BIO 425 Capstone Exam/Instrument	2, 6	Direct and Indirect	25 question multiple-choice exam developed and administered in our capstone seminar BIO 425 (Seminar) course. The assessment instrument was developed by the Undergraduate Affairs Committee in August 2015. The first 20 questions were designed to test core concepts directly pertaining to the PSLO that were addressed and reinforced through multiple courses in the curriculum. Many of the questions addressed common misconceptions identified in earlier courses. The last five questions on the assessment instrument are	The assessment instrument designed for and administered to our upper-level majors in BIO 425 is well-aligned with the PSLO and addresses concepts that are reinforced at multiple points in the curriculum. We will implement the exam as part of BIO 425 because the course is required, serves as a capstone experience, and is usually taken during a student's senior year (77% seniors enrolled in the course).	85% of students will score above 70% on the assessment	BIO 425	☒

			indirect measures to assess students' values in relation to connections between disciplines and their ability to distinguish scientific evidence from opinion.				
Plagiarism/Ethics quiz in BIO 155 and BIO 350	6	Indirect	After a lesson in plagiarism and ethical practices, students completed a quiz in BIO 155 and BIO 350. Questions assessed the ability of students to recognize plagiarism and unethical scientific practice				☒
BIO 350 Exam Questions	1	Direct	As part of an exam in the course, students are asked the following 5 questions: 1. What is science? 2. What are the goals of scientific inquiry? 3. How is scientific knowledge gained? 4. How are new scientific discoveries integrated into existing knowledge? 5. Why is saying something is "just a theory" not correct in the context of what you understand about the scientific process? Answers to these questions will be scored against a rubric that was developed by the Undergraduate Affairs Committee based on the position statement on the Nature of Science by the	The measure is directly aligned with the PSLO and provides an objective measure of students' understanding of the scientific method. Specifically, these questions were developed and evaluated by our Undergraduate Affairs Committee based on the National Science Teachers' Association position statement on the Nature of Science. Therefore, we believe that analysis of these questions directly measures students' understanding of the scientific method as defined by a national organization.	75% of students will score	BIO 350	☐

			National Science Teachers' Association.				
Analysis of Written Assignments in GCCR-approved courses	1, 4, 5	Direct	A sample of student writing assignments representing at least 25% of majors will be chosen randomly from the 8 GCCR-approved courses. All eight courses will be represented. Artifacts will be scored using the modified Written Communication VALUE rubric.	The rubric was modified to measure students' ability to distinguish valid scientific evidence from unsubstantiated opinion and to critically analyze and integrate scientific evidence.	85% of BIO students will receive a score of accomplished (3) or exemplary (4) for each section of the rubric	GCCR approved courses (8 total)	☒
Analysis of Oral presentations in BIO 425	1, 4, 5	Direct	A sample of student oral presentations representing at least 25% of majors will be chosen randomly from BIO 425 sections. Presentations will be scored by the course instructor using the modified Oral Communication VALUE rubric.	The rubric was modified to measure students' ability to distinguish valid scientific evidence from unsubstantiated opinion and to critically analyze and integrate scientific evidence.	85% of BIO 395 students will receive a score of accomplished (3) or exemplary (4) for each section of the rubric	BIO 425	
Percentage of graduating seniors participating in independent research	6	Indirect	Determine whether each graduating senior participated in independent research (BIO 394, 395, 397, 398) through an analysis of student schedules.	Analysis of the percentage of graduating seniors who participate in independent research is a direct measure for the last component of PSLO #3 (Students will have the opportunity to conduct independent research in biological laboratories).	50% of graduating seniors will complete independent research	BIO 394 BIO 395 BIO 397 BIO 398	☐

Analysis of oral presentations (GCCR)	4, 5	Direct	Samples of student oral presentations from BIO 425 were scored by course instructors using the Oral Communication Rubric. The rubric was designed by the Director of Undergraduate Studies (DUS) in Biology in consultation with the Undergraduate Affairs Committee (UAC). It is modified from the Oral Communication VALUE rubric	The criteria evaluated by the rubric is directly linked to the PSLOs and oral GCCR requirement.	75% of students will achieve at least Level 3 for all categories of the Oral Communication Rubric.	BIO 425	☒
Grades in GCCR courses	4, 5	Indirect	Determine the number of students earning an average grade of C or better on designated GCCR assignments	This measure ensured that the GCCR grade requirements are being fulfilled.	95% of all students will earn a C or better on GCCR assignments		☒
Percentage of students presenting research and/or authoring a publication	6	Indirect	Determine whether each graduating senior presented research at a conference or was listed as an author on a publication.				☐

ASSESSMENT REPORTING CYCLE

Please complete the chart below by providing the requested information for each learning outcome. Note: space for up to 10 PSLOs has been provided. If space for additional PSLOs are needed, either insert additional rows into the table or contact the OSPIE staff to receive a customized template.

PSLO #	**Semester/ Year(s) Data Collected**	**Year(s) Results Submitted to OSPIE** (see Results Report Definition)	**Year(s) Reflection Report Submitted to OSPIE** (see Reflection Report Definition)	**Year(s) Action Report Submitted to OSPIE** (see Action Report Definition)
1	Fall, Year 1	Summer, Year 1	Summer, Year 3	Summer, Year 4
2	Fall, Year 1	Summer, Year 1	Summer, Year 3	Summer, Year 4
3	Fall, Year 1	Summer, Year 1	Summer, Year 3	Summer, Year 4
4	Fall, Year 2	Summer, Year 2	Summer, Year 3	Summer, Year 4
5	Fall, Year 2	Summer, Year 2	Summer, Year 3	Summer, Year 4
6	Fall, Year 2	Summer, Year 2	Summer, Year 3	Summer, Year 4