Evidence for Program Learning Outcomes

A rhetorical approach to assessing student learning

Learning Outcomes for Today

Participants will be able to

- Identify evidence appropriate to at least one of their learning goals
- List at least two ways evidence could be obtained for a learning goal
- Identify next steps for planning assessment activities

Source: "How to Construct a Simple, Sensible, Useful Departmental Assessment Process."

- **BARBARA E. WOOLVARD: "…WE NEED A [MORE] FINE-GRAINED ANALYSIS THAT IDENTIFIES STRENGTHS AND WEAKNESSES, THE PATTERNS OF GROWTH, OR THE EMERGING QUALITIES WE WISH TO NURTURE." ASSESSING OUTCOMES TELLS US WHAT TO WORK ON (emphasis added).**

A Framework for Thinking About Learning Outcomes Assessment

Claim or hypothesis	Learning Outcome
Evidence, reasons	Direct and indirect evidence, artifacts
Warrant	Means of assessing evidence and artifacts, linking directly to learning outcome.

Like an effective claim, an effective learning outcome is specific, measurable, and debatable, i.e., the outcome is not trivial or guaranteed.

Structure of an Outcome Statement

Who/what (intended target) **"History majors"** **"Graduate students"** **"Graduates"**	**Change/desired effect** **"Improve"** **"List"** **"Apply"** **"Evaluate"** **"Demon-strate"** **"Generate"** **"Analyze"** **"Proficiency"**	**In What/expected results** **"grammatically correct prose"** **"ability to articulate a thesis and defend it orally"** **"original scholarship"**	**By/when** **"at the completion of their compre-hensive exam"** **"by their senior year"**	By What Means/assessment instrument "as demonstrated by completion of a dissertation" "through student leadership portfolios and exit interviews."

Types of Learning Outcomes: Covert vs. Overt

Covert	Overt
Know the arguments	Summarize the arguments
Reflect on the issues	Share reflections on the issues
Think critically	Interpret, analyze, and evaluate evidence, construct arguments
Envision solutions	Illustrate solutions
Understand principles	Apply principles
Understand methods	Explicate methods
Appreciate art	Choose to attend art events
Appreciate philosophy	Choose to discuss philosophical issues
Know principles of social justice	Advocate principles of social justice

Source: Institutional Assessment and Studies, University of Virginia

Does your outcome statement sound like this?

"We develop graduates who understand Financial Theory, including time value of money, risk preferences, market completeness, the principles of asset pricing, Arrow-Debreu securities and risk-neutral asset valuation."

"We will create student leaders who are engaged in their community."

"Gain an understanding, through both the internship placement and course, of the host country's work culture and of the specific professional context of the organization and its mission, challenges and constraints."

"Develop the competencies in the core functional areas of hospitality management."

"Develop the ability to communicate both [in writing and orally] within their chosen field of expertise, with specialists and non-experts."

How could we modify these statements to be more explicit and specific outcomes?

Types
Aligning with Outcomes

EVIDENCE

Types of Evidence for Program Learning Outcomes

- Direct (factual, direct observation)
  - Papers, theses, dissertations
  - Portfolios
  - Exam grades and other course-level assessment
  - Participation
  - Artistic performances

- Indirect (reported or derived information)
  - Surveys and focus groups
  - Placement and other post-graduation outcomes
  - Course evaluations
  - Completion rates
  - Licensure and related external exams

Types of Evidence for Program Learning Outcomes

Summative assessments – dissertations & theses, capstone projects, licensure exams

Discrete assessments – embedded within program; accumulate along path towards degree

Quantitative assessments – surveys, multiple choice exams, license exams

Qualitative assessments – focus groups, portfolios, performances

Structure of an outcomes statement

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offers clues to selecting evidence

Change/desired effect:

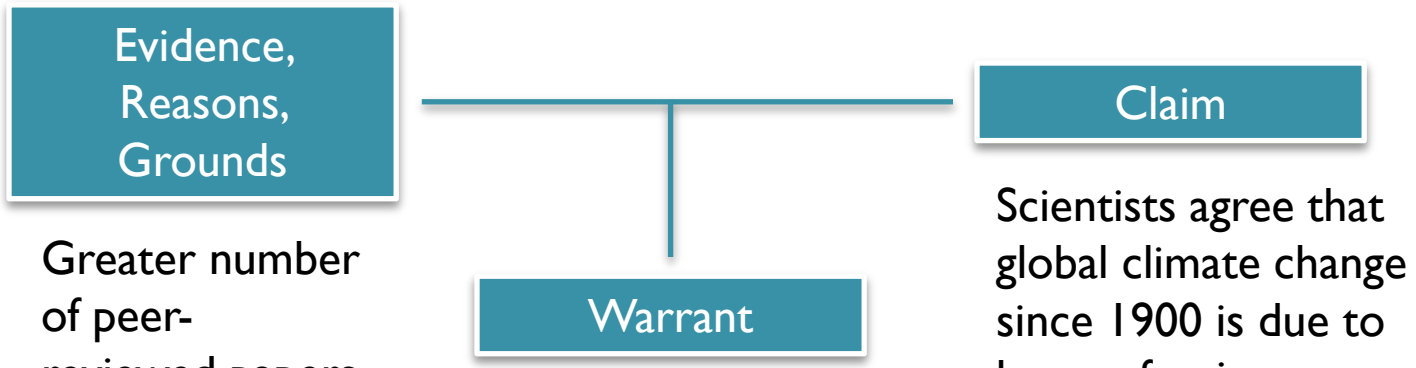
- Growth or Improvement: Survey before/after? Reflective essay? Evaluate each year?
- Proficiency or Application: Licensure? Discrete observation? Survey of employers?
- Demonstrate or communicate: Work product

In what/desired outcome:

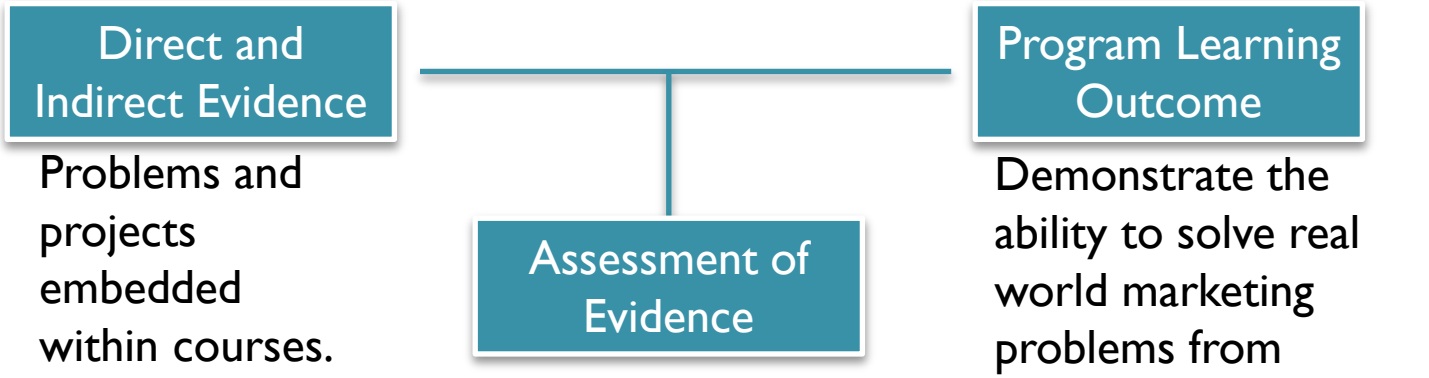
- Grammatically correct prose: papers, articles, theses
- Competency in fundamental areas of chemistry: exams, licensure, placement, employer satisfaction

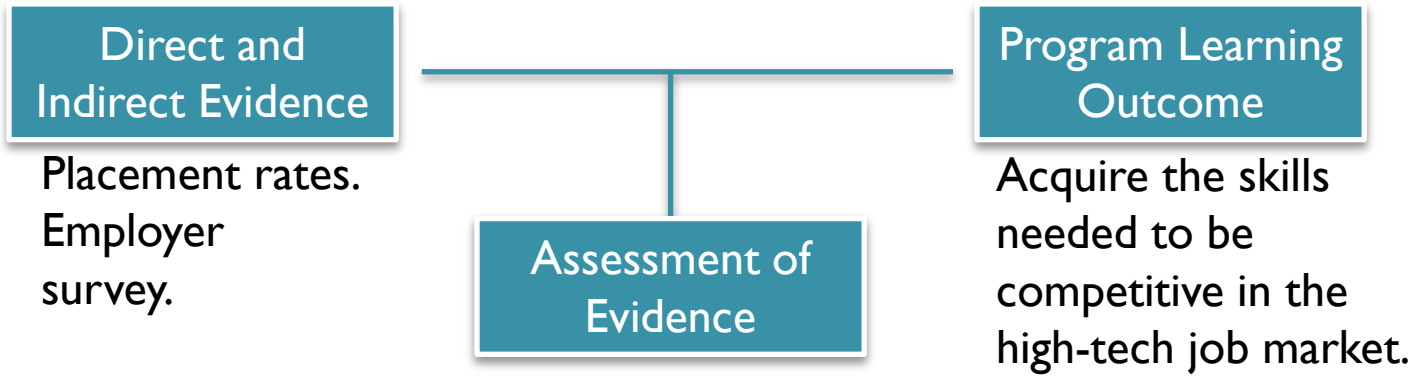
By when:

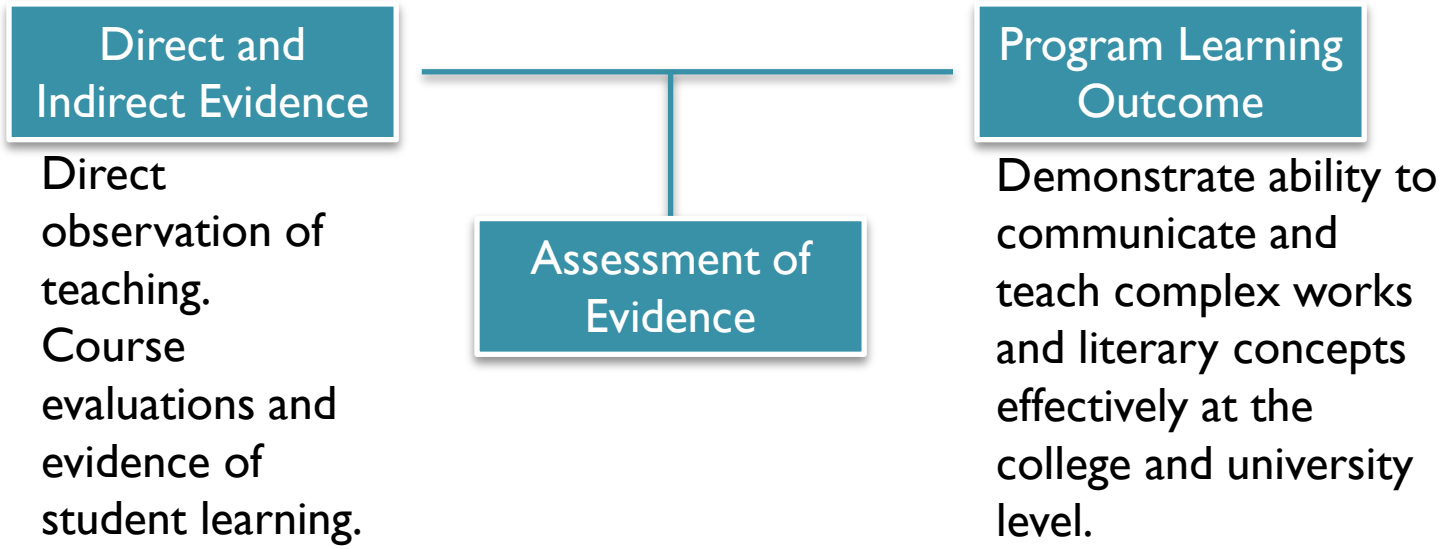
- Program completion: dissertation, placement rate, licensure, senior survey
- Completion of course sequence: portfolio of selected works


Evidence, Reasons, Grounds
Claim
Warrant
Greater number of peer-reviewed papers whose conclusions favor human forcing.
Scientists agree that global climate change since 1900 is due to human forcing.


Direct and Indirect Evidence
Program Learning Outcome
Assessment of Evidence
Portfolio of student essays collected throughout student's career.
Compose lucid, well-researched, and well-argued critical essays about literary texts.


Direct and Indirect Evidence
Problems and projects embedded within courses.
Survey of employers that hire graduates into research, development, and technical jobs.
Capstone project.
Assessment of Evidence
Program Learning Outcome
Demonstrate the ability to solve real world marketing problems from strategic, creative, and technological perspectives.


Direct and Indirect Evidence
Placement rates. Employer survey.
Assessment of Evidence
Program Learning Outcome
Acquire the skills needed to be competitive in the high-tech job market.


Direct and Indirect Evidence
Direct observation of teaching. Course evaluations and evidence of student learning.
Assessment of Evidence
Program Learning Outcome
Demonstrate ability to communicate and teach complex works and literary concepts effectively at the college and university level.

Outcome	Type(s) of evidence that best demonstrate achievement
Students will demonstrate professional skills needed for competent and ethical participation as a member of the legal profession. Generate an original body of work in the biomedical sciences that reflects critical thinking and independent thought. Demonstrate the ability to partner with and advocate for the Deaf World Ability to design a system, circuit, device, software, or process to meet a set of needs or specifications. Demonstrate the communication, interpersonal, team building, and leadership skills required to manage a diverse and global workforce. Growth in personal faith, emotional maturity, moral integrity, and public witness	

Exercise: Aligning evidence with outcomes

Evidence	Outcome
Survey of graduating seniors. Survey of employers. Portfolio of student work. Capstone project. Public presentations. Problem sets. Observations of teaching. Theses and dissertations. Licensure exams. Placement rates. Final exams or papers.	

Exercise: Aligning evidence with outcomes

Assessing Evidence
Assessment Planning

ASSESSMENT

Assessing Evidence

Intentional activity based on agreed upon rubrics and benchmarks

- Rubric: descriptions of the range of performance expected for a given dimension of learning
- Benchmark: minimum standard for acceptable performance

Example of an Assessment Rubric

Outcome: Can explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words)	Provides accurate explanations of information presented in mathematic al forms. Makes appropriate inferences based on that information. *For example, accurately explains the trend data shown in a graph and makes reasonable predictions regarding what the data suggest about future events.*	Provides accurate explanations of information presented in mathematical forms. *For instance, accurately explains the trend data shown in a graph.*	Provides somewhat accurate explanations of information presented in mathematical forms, but occasionally makes minor errors related to computations or units. *For instance, accurately Explains trend data shown in a graph, but may miscalculate the slope of the trend line.*	Attempts to explain information presented in mathematical forms, but draws incorrect conclusions about what the information means. *For example, attempts to explain the trend data shown in a graph, but will frequently misinterpret the nature of that trend, perhaps by confusing positive and negative trends.*

Source: AAC&U Quantitative literacy VALUE rubric

Example of an Assessment Rubric

Civic Identity and Commitment	Provides evidence of experience in civic engagement activities and describes what she/ he has learned about her or himself as it relates to a reinforced and clarified sense of civic identity and continued commitment to public action.	Provides evidence of experience in civic engagement activities and describes what she/ he has learned about her or himself as it relates to a growing sense of civic identity and commitment.	Evidence suggests involvement in civic engagement activities is generated from expectations or course requirements rather than from a sense of civic identity.	Provides little evidence of her/ his experience in civic engagement activities and does not connect experiences to civic identity.

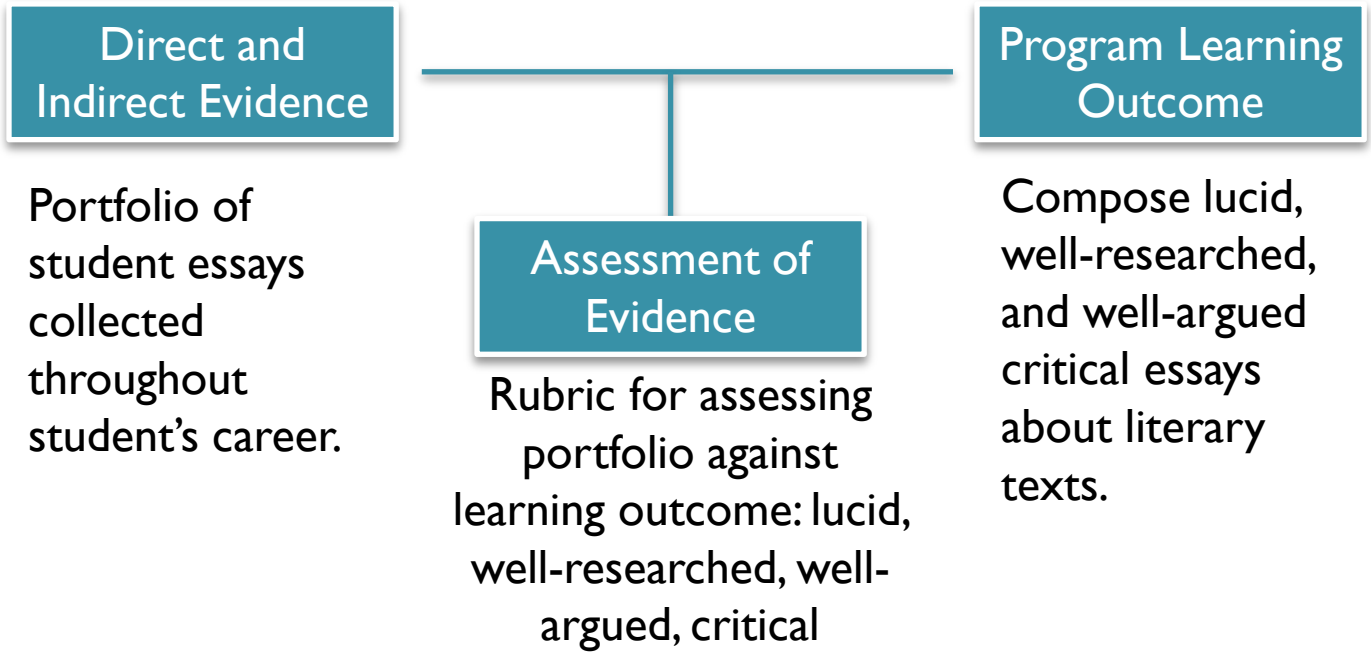
Source: AAC&U Civic Engagement VALUE rubric

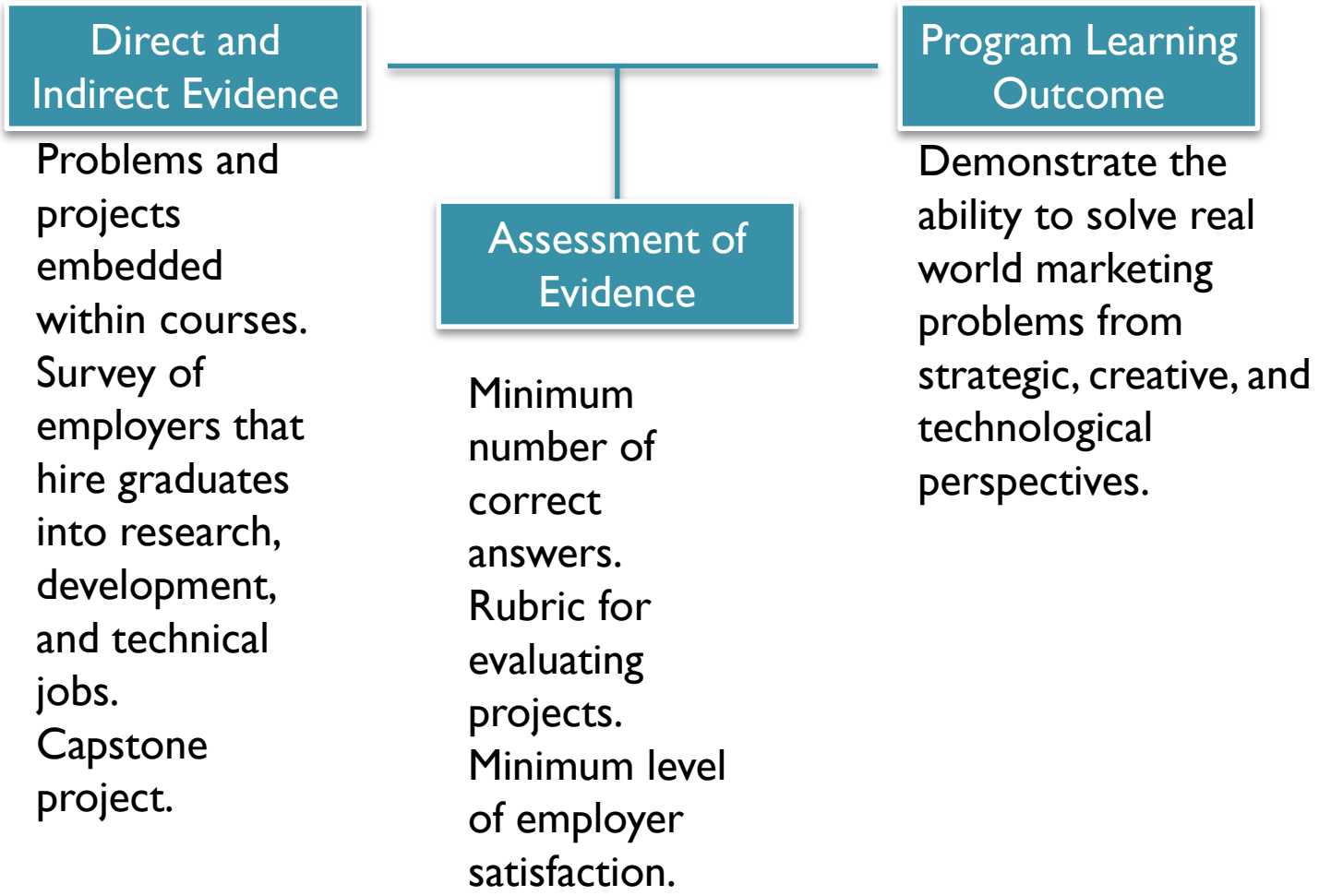
Examples of Benchmarks

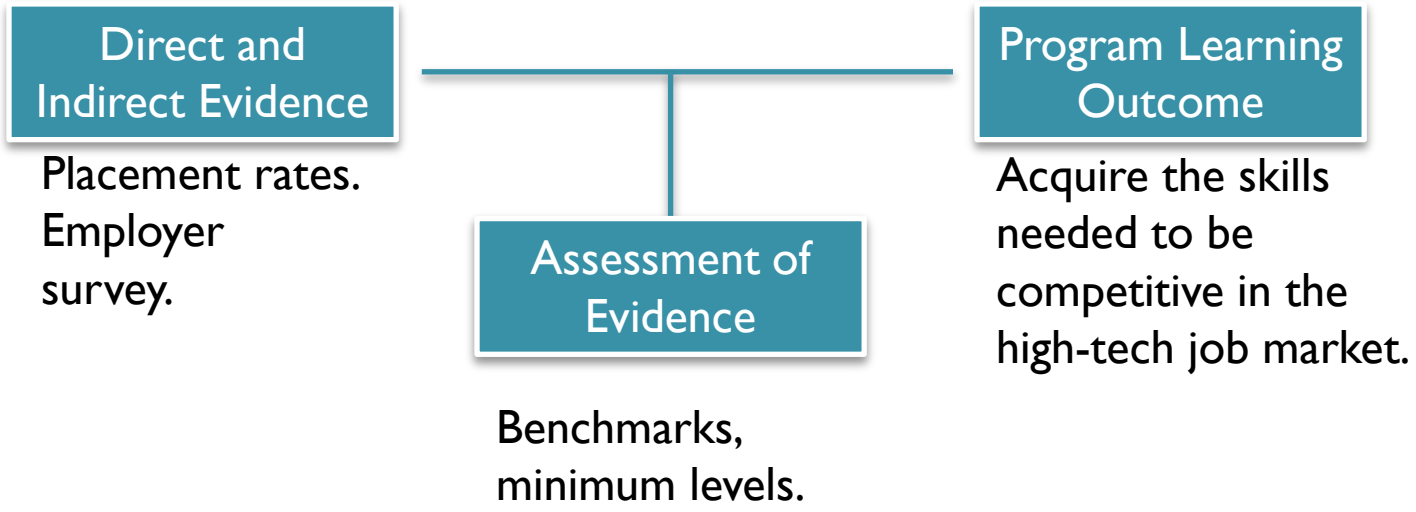
"Graduates pass the state licensing exam with a minimum score of 90%."

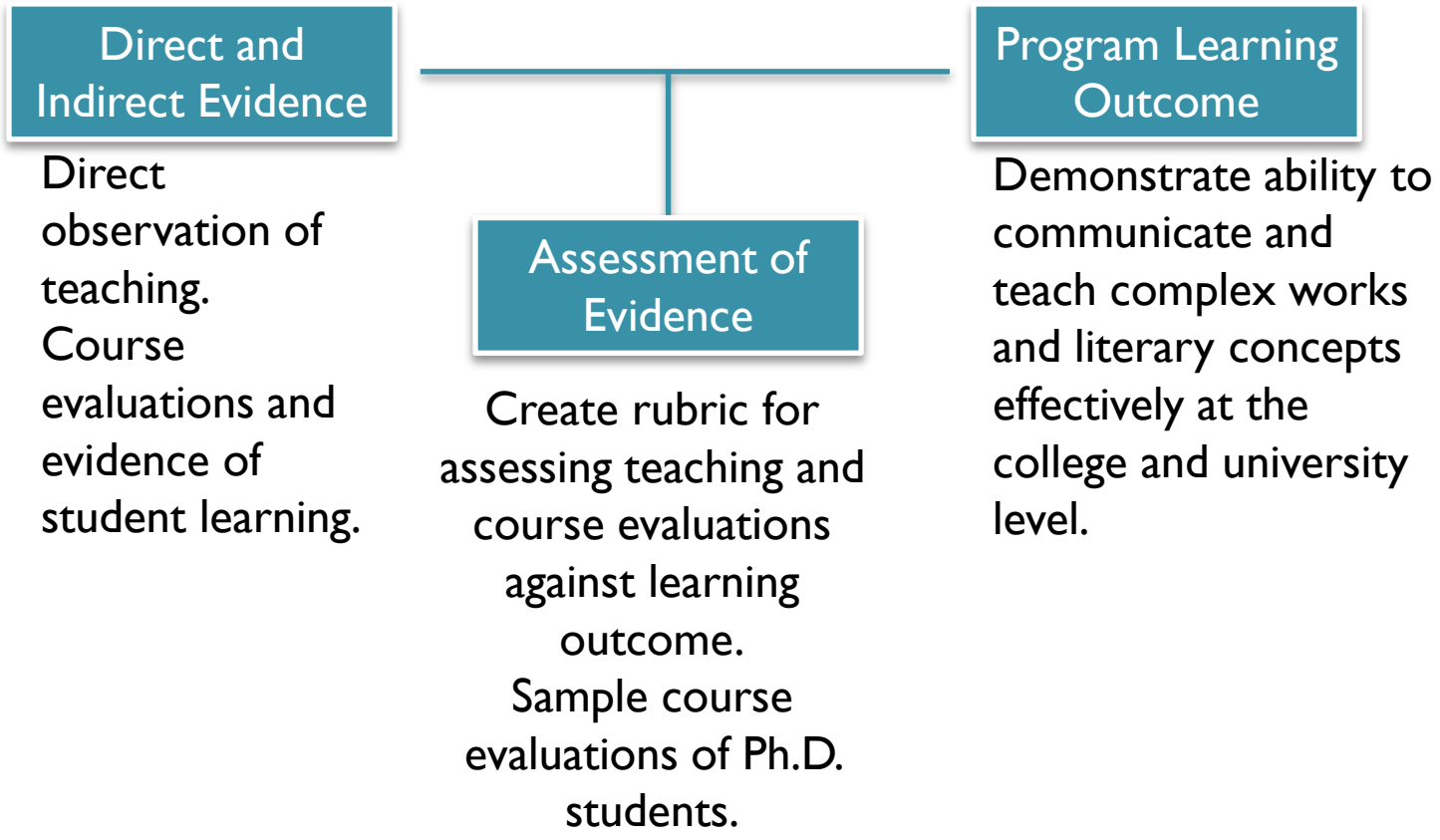
"The majority of theses assessed against [this] rubric will receive a score of 4 or 5 (out of 5)."

"Assessments of civic engagement will exceed those of peer institutions as measured by NSSE."


Direct and Indirect Evidence
Portfolio of student essays collected throughout student's career.
Assessment of Evidence
Rubric for assessing portfolio against learning outcome: lucid, well-researched, well-argued, critical
Program Learning Outcome
Compose lucid, well-researched, and well-argued critical essays about literary texts.


Direct and Indirect Evidence
Problems and projects embedded within courses.
Survey of employers that hire graduates into research, development, and technical jobs.
Capstone project.
Assessment of Evidence
Minimum number of correct answers.
Rubric for evaluating projects.
Minimum level of employer satisfaction.
Program Learning Outcome
Demonstrate the ability to solve real world marketing problems from strategic, creative, and technological perspectives.


Direct and Indirect Evidence
Placement rates. Employer survey.
Assessment of Evidence
Benchmarks, minimum levels.
Program Learning Outcome
Acquire the skills needed to be competitive in the high-tech job market.


Direct and Indirect Evidence
Direct observation of teaching.
Course evaluations and evidence of student learning.
Assessment of Evidence
Create rubric for assessing teaching and course evaluations against learning outcome.
Sample course evaluations of Ph.D. students.
Program Learning Outcome
Demonstrate ability to communicate and teach complex works and literary concepts effectively at the college and university level.

Tips
Next Actions

ASSESSMENT PLANNING

Assessment Planning Rules of Thumb

- ✓ Do not need to assess every goal by every method for every student every year
- ✓ Make sure evidence ties to a specific goal, e.g., if you collect placement information, this is evidence of…?
- ✓ Stay at the program level
- ✓ Determine when to assess – at graduation? At milestones along the path to degree? After certain experiences or course sequences?

Assessment Planning Rules of Thumb

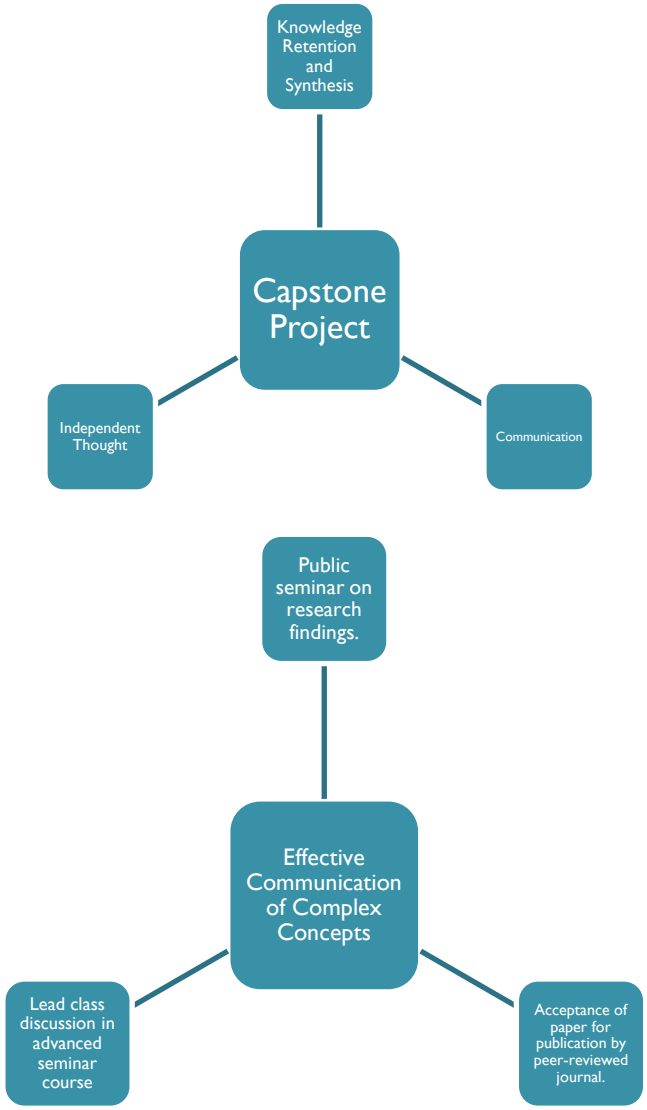
One measure may provide evidence for multiple outcomes.

Multiple, mixed measures help to validate findings.

- Direct and indirect
- Quantitative and qualitative
- Summative and discrete

Students afforded multiple opportunities to satisfy learning outcomes.

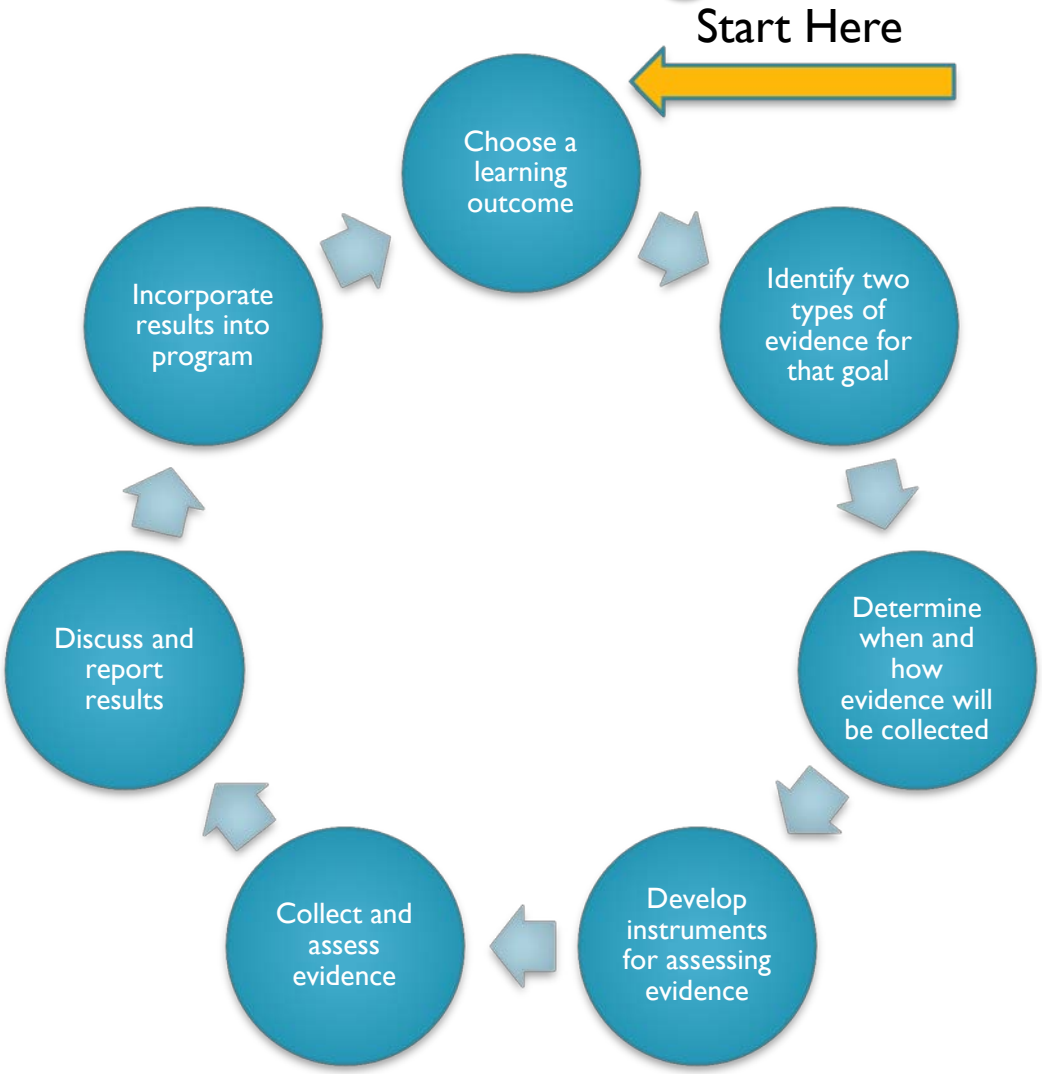
- Program milestones and capstones.
- Individual courses or assignments.



Assessment Planning

Focus on Type of Evidence	Focus on Outcome
Year 1: Senior exit survey	Year 1: Outcome 1
Year 2: Capstone project	Year 2: Outcome 2
Year 3: Evaluations of public presentations	Year 3: Outcome 3
Year 4: Peer assessment/feedback tool	Year 4: Outcome 4

Assessment Planning



Next Steps

The learning outcome we will evaluate this year is:

The means of assessment is:

The rubric or benchmark we will apply is:

What are the next steps we need to take in order to implement this plan?

Samples

Exit survey:
file:///Users/lpohl/Dropbox/BU%20Documents/interviews-surveys.htm

Survey planning document:
file:///Users/lpohl/Dropbox/BU%20Documents/Survey%20Planning%20Document_DRAFT_March%202012.htm

Using Rubrics in Assessment

Developing a rubric

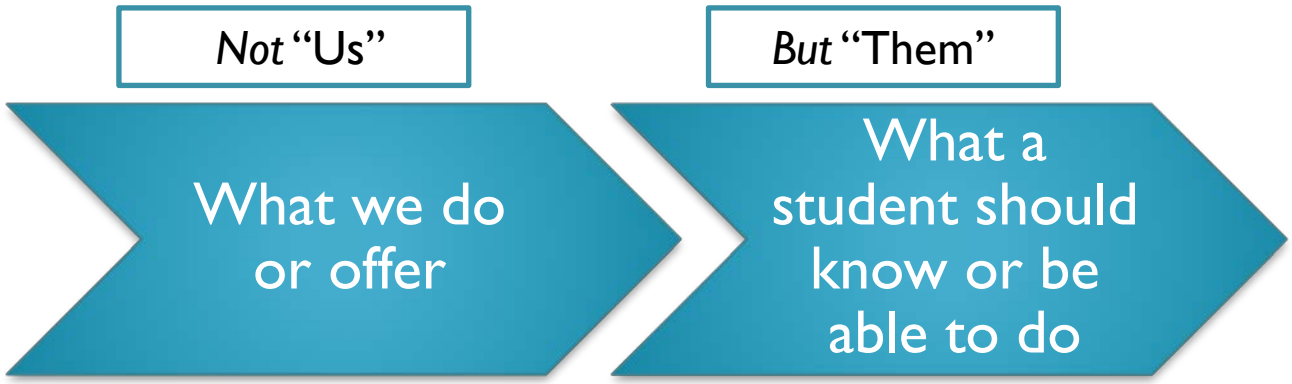
- Clearly define the outcome and the evidence.
- Brainstorm a list of what you expect to see in the student work that demonstrates the particular learning outcome(s) you are assessing.
- Keep the list manageable (3-8 items) and focus on the most important abilities, knowledge, or attitudes expected.
- Edit the list so that each component is specific and concrete (for instance, what do you mean by coherence?), use action verbs when possible, and descriptive, meaningful adjectives (e.g., not "adequate" or "appropriate" but "correctly" or "carefully").
- Establish clear and detailed standards for performance for each component. Avoid relying on comparative language when distinguishing among performance levels. For instance, do not define the highest level as "thorough" and the medium level as "less thorough". Find descriptors that are unique to each level.
- Develop a scoring scale.
- Test the rubric with more than one rater by scoring a small sample of student work. Are your expectations too high or too low? Are some items difficult to rate and in need of revision?

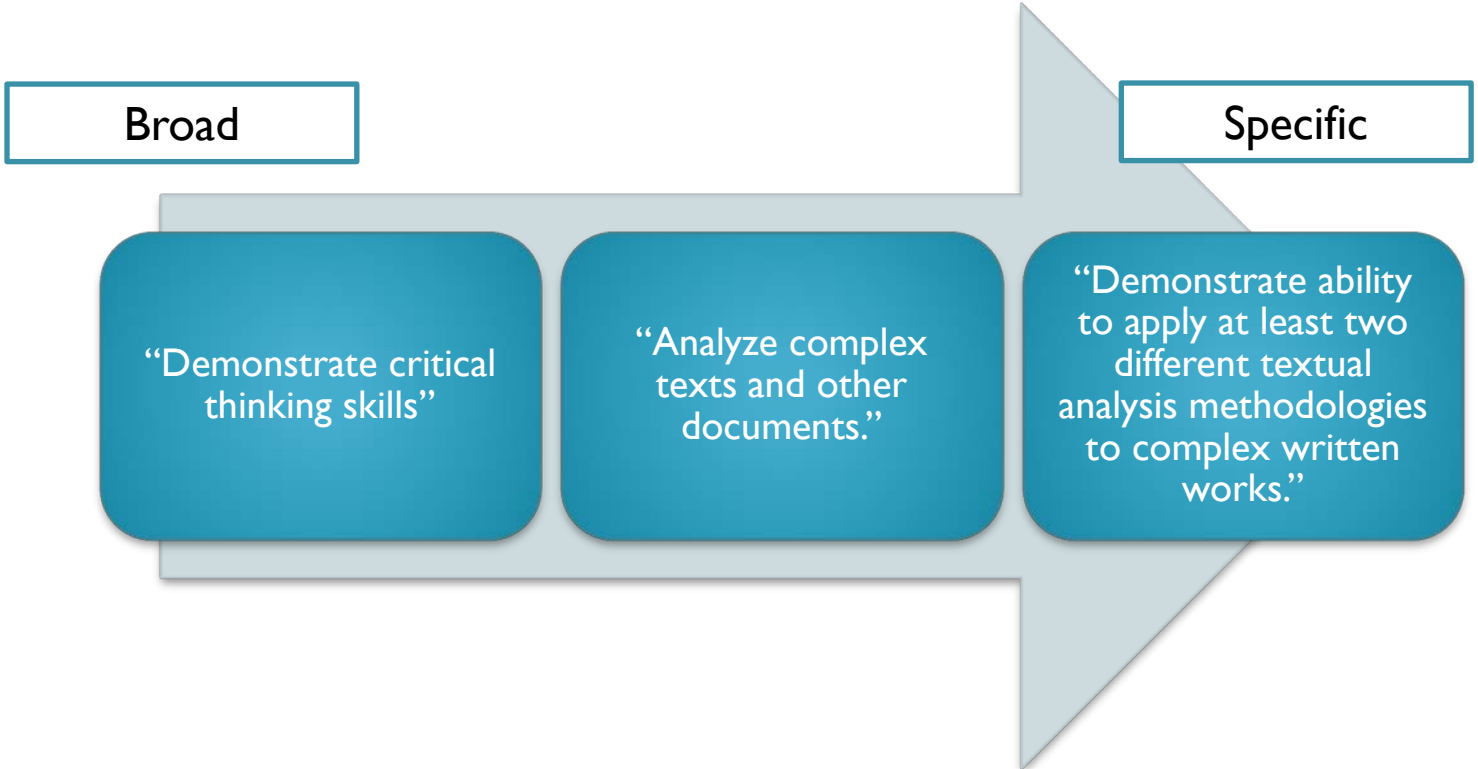
Using a Rubric

- Evaluators should meet together for a training/norming session.
- A sample of student work should be examined and scored
- More than one faculty member should score the student work. Check to see if raters are applying the standards consistently.
- If two faculty members disagree significantly (.e.g. more than 1 point on a 4 point scale) a third person should score the work.
- If frequent disagreements arise about a particular item, the item may need to be refined or removed.

Adapted from: http://web.virginia.edu/iaas/assess/tools/rubrics.shtm

Learning Outcomes





Collecting Evidence

Gather over time

- ➔by outcome
- ➔by measure

Sampling: do I need to collect evidence from all students or only some? Do I need to collect all of their (exams, papers…) or only some?