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Learning Effectiveness Workshop

University of San Francisco

"Evaluating Learning in Your Course"

Presented by:
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Director, Office of Student Learning Assurance

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Learning Effectiveness Workshop

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Learning Effectiveness Workshop

Start with a structured syllabus.

- Purpose statement
- Learning Goals
- Learning outcomes
- Etc.

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Defining a Course Purpose Statement

What does a purpose statement do?

- **Purpose statements clarify the *raison d'être* of the course to all students allowing courses to focus their resources and efforts on issues that are critical to student learning.**

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Defining a Course Purpose Statement

What are the attributes of a well written purpose statement?

- Brief, concise, distinctive.
- Identifies the course's intention.
- Articulates the essential functions/activities of the course.
- Articulates the primary knowledge, skills, and abilities to be learned.
- Aligns with the mission/goals/outcomes of the program.

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Defining a Course Purpose Statement

What is the structure of a course purpose statement?

- "The purpose of the [insert name of course] is to [insert primary intention] by providing [insert essential functions/activities of the course] to [insert stakeholders]".
- Add any clarifying information.

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Defining a Course Purpose Statement

Course purpose statement example.

[POOR]

"The purpose of Hypothetical Biology Course is to provide a broad overview of Cell Biology."

The statement is very vague and does not distinguish this particular course from other similar courses. It lacks information about the primary functions of the course and there is no indication that the course's intent is aligned with the Program mission/goals/outcomes.

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Defining a Course Purpose Statement

Course purpose statement example. [BETTER]

The intent of Hypothetical Biology course is to educate students in the principles of Biology that will prepare them for both current and future professional challenges in their major/field.

This statement is better because it identifies the primary function of the course. However, it still is not a distinctive statement.

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Defining a Course Purpose Statement

Course Purpose statement examples.
[BEST]

The purpose of Hypothetical Biology course is to educate students in the fundamental skills, knowledge, and practice of Cell Biology in order to (1) prepare them for successful completion of the Biology major and (2) prepare them for continuing with advanced degrees in Biology or related disciplines. The course promotes a commitment to continued scholarship and service among students and will foster a spirit of innovation. Also, it promotes an environment that is inclusive and diverse.

This is a very effective purpose statement. The purpose of the course is very clearly defined.

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Defining a Course Purpose Statement

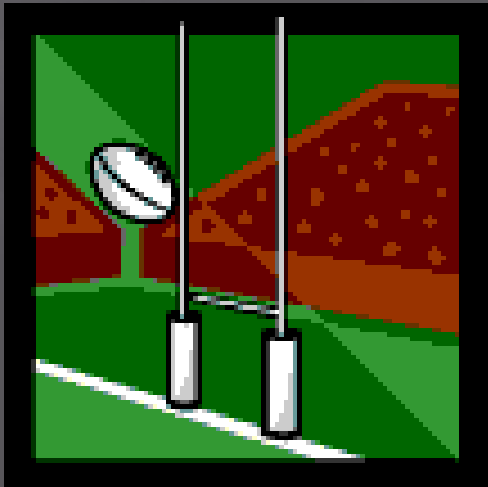
One more example.

"This Strategic Management course is intended to be a challenging integrative capstone course that is about "strategy" and "managing for success". Drawing upon many of the business courses that you have completed in the past, this course integrates, and extends previous learning to provide a "bigger picture" of the organization. It is structured to improve your abilities to think "strategically," and solve real business problems while viewing business processes from the perspective of the total organization rather than from a narrow functional focus."

Corporate executives have told us that this is the most important attribute an undergraduate business student can show beyond their individual expertise in a single functional specialty. Rapid development of new technologies, deregulation, new information media, and globalization of markets has blurred the lines between industries and given rise to unexpected new areas of business. These conditions pose major challenges for corporations, their strategic management, and for analyzing their industries and their organization for the sole purpose in seeking competitive advantage in a high velocity world.

Defining Course Learning Goals

Learning Goals



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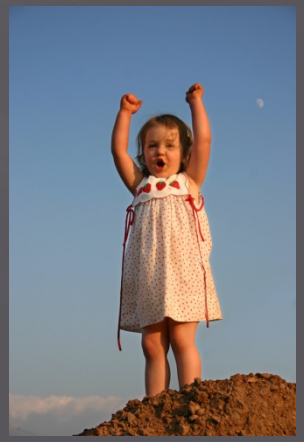
Defining Course Learning Goals

What are course learning goals?

- Goals are broad statements that describe the long-term course targets or directions of development. They state in broad terms what the course wants to accomplish (in terms of student learning) or what it will achieve over the next several weeks.
- "Given the purpose of the course, what do we want students to have learned?"
- "What do we want students to have achieved by the end of the course?"

In order for course effectiveness to be successful, the faculty person must decide on the goals of the course and have an understanding of what the program is trying to accomplish, as well as how the goals are reflected in the curriculum. The goals of a course must be consistent with those of the department, school or college, and ultimately with the goals of the institution.



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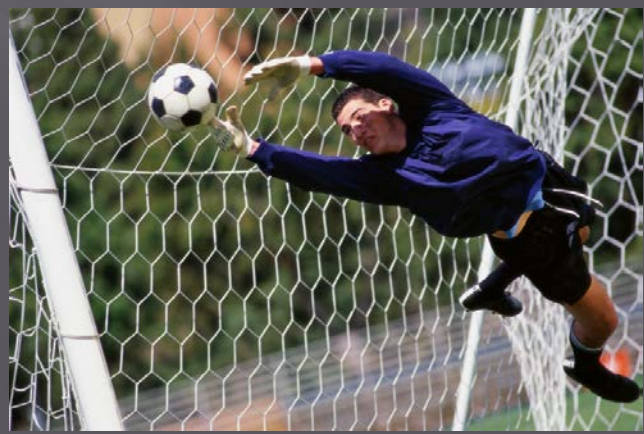
Defining Course Learning Goals

Approach to writing course learning goals.

- Describe an "ideal" student at various phases in the course, focusing on the abilities, knowledge, values and attitudes that you feel the student should have acquired or have been supported as a result of your course.

  Then ask, what are the…:
  - Cognitive skills: What will the student know?
  - Performance skills: What can the student do?
  - Affective skills: What does the student care about?
- Identify three to four goals that are important (i.e., strongly related to the purpose statement and that will help student learning).
- Goal statements should describe the expected performance of the student.
- Do not identify too many goals, particularly when first starting out.



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Defining Course Learning Goals

Course learning goals examples. [POOR]

"To teach students principles of Biology."

This is an inadequate goal statement because the focus is on the teaching rather than on the expected performance of students in the course.

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Defining Course Learning Goals

Course learning goals examples. [BETTER]

"To prepare students adequately in biological principles."

This is better than the first example. Although this statement does not specifically explain the expectations of students, the focus is on student learning and not the teaching activity.

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Defining Course Learning Goals

Course learning goals examples. [BEST]

- To prepare students in the fundamental principles of Cell Biology.
- To prepare students with the primary skills and knowledge to succeed in the field of Cellular Biology.

These are good examples of goal statements that include a brief depiction of the expected learning in the course.

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Defining Course Learning Goals

Course learning goals checklist.

After generating a list of course goals, the following questions can help to determine whether the list is complete and will be of value to your course:

- ❑ Do your goals describe desired aspects of a successful learning experience?
- ❑ Are your goals consistent with your purpose?
- ❑ If you achieve your goals, have you reached your vision for student learning?
- ❑ Are your goals aligned with the program goals?

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Learning Outcomes

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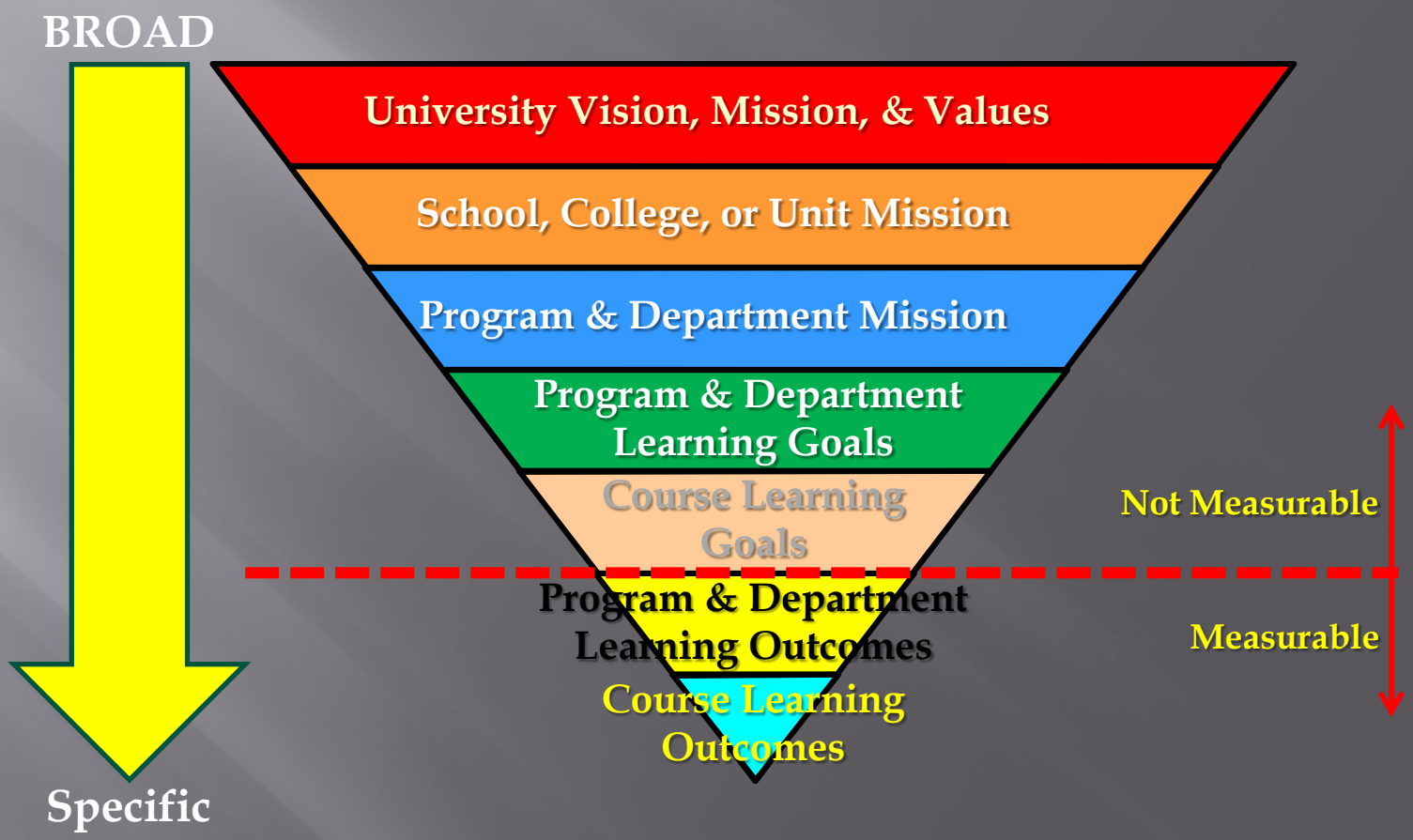
Defining Course Learning Outcomes



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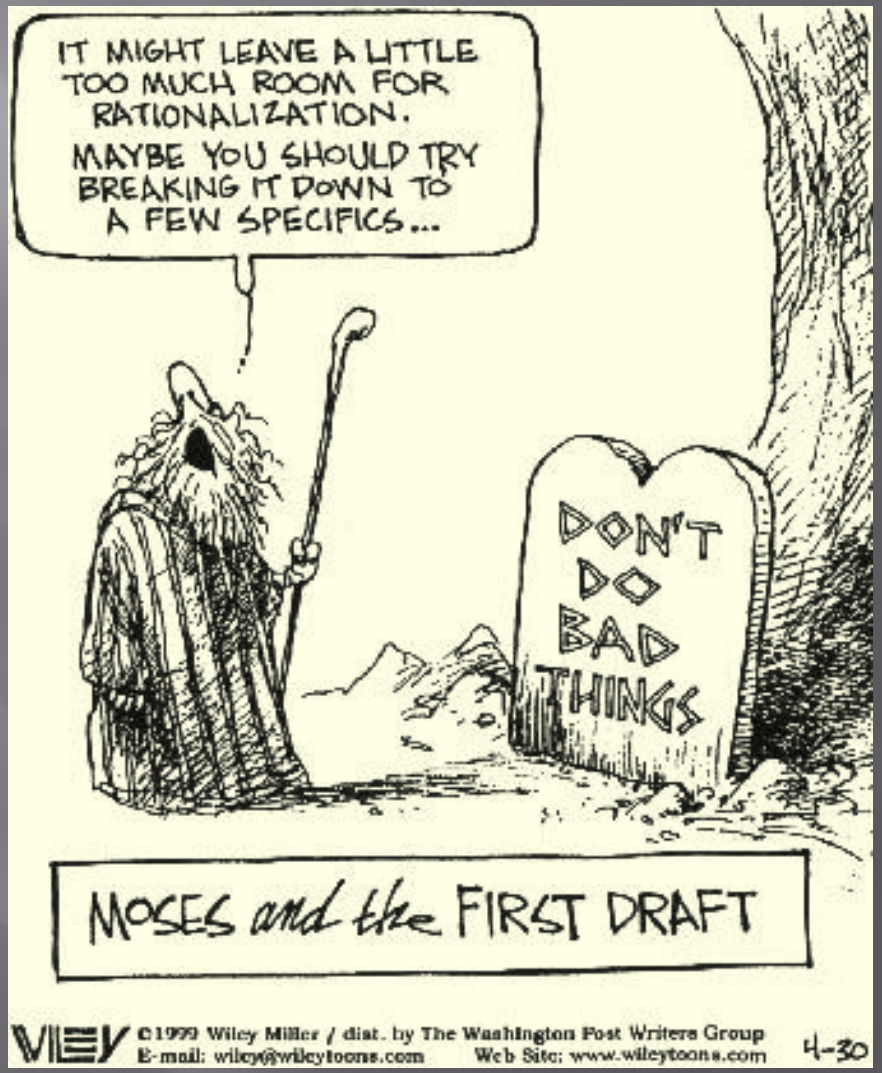
Defining Course Learning Outcomes



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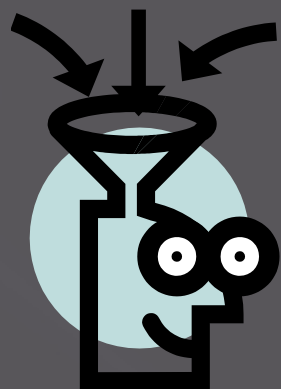
Defining Course Learning Outcomes

What are course student learning outcomes (SLO)?

- They are statements that describe *significant and essential learning that students will achieve* and/or can reliably demonstrate throughout the course.
- They identify what the *student will know and be able to do* by the end of the course – the *essential and enduring knowledge, abilities (skills) and attitudes (values, dispositions)* that constitute the integrated learning needed by a student in your course.
- Outcomes are precise, specific, and "measurable".
- What do we want students to be able to "do?"



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Defining Course Learning Outcomes

Outcomes ≠ Objectives

Objectives are <u>intended</u> results or consequences of instruction, curricula, programs, or activities.

Outcomes are <u>achieved</u> results or consequences of what was learned; i.e., evidence that learning took place.

Do NOT confuse the two!

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Defining Course Learning Outcomes

What are the characteristics of a well-defined SLO?

They are S.M.A.R.T.

- Specific; SLOs should be specific to your course and should be stated in clear, definitive terms.
- Measurable; SLOs must be stated in terms that are clearly measurable either quantitatively or qualitatively. The use of action verbs in SLO statements can maintain a focus on measurability. In addition, Faculty should consider whether data collection for a particular SLO is reasonable and feasible given program resources.
- Attainable; faculty should consider the reality of what they hope to achieve. SLOs should be a reasonable statement of what the course can contribute in terms of student skills, knowledge and abilities.
- Results-oriented; SLOs should focus on the end result rather than an action to be implemented or provided by the course. SLOs should be clearly stated in terms of what exactly a student should know, be able to do, or value.
- Time-bound; SLOs should be framed in such a way that they can be measured within a time period over which the faculty has some control.

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Defining Course Learning Outcomes

What is the structure for writing good student learning outcomes?

In a SLO statement the focus must be on the student and what (s)he will know, do, or value. Possible formats of SLOs are as follows:

- Students will [insert action verb] [describe expected skill, knowledge or value].
- Students are able to [insert action verb] [describe expected skill, knowledge or value].
- Students will demonstrate the ability to (or knowledge of) [insert action verb] [describe expected skill, knowledge or value].

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Defining Course Learning Outcomes

Examples of Student Learning Outcome Statements:

- Students will demonstrate the ability to *organize and deliver* a clear and substantive business presentation.
- Students will demonstrate the ability to *formulate hypotheses, analyze data and draw conclusions*.
- Students will be able to *evaluate their own artistic skills and that of their peers* through critical reasoning about the use of materials, formal elements, and content.
- Students will *investigate basic social scientific concepts* by systematically studying the observational and analytic methods and findings of business management disciplines.

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Defining Course Learning Outcomes

What types of skills/knowledge are appropriate for SLOs?

The most effective way to develop specific learning outcomes is to use a taxonomy of learning domains. These types of matrices provide a standardized framework on which to structure your SLOs. By far, the most well-known and utilized of these taxonomies is Bloom's Taxonomy of Educational *Outcomes* which was first developed in 1956. Bloom's taxonomy recognizes three domains of educational *outcomes*:

Cognitive Learning:

Cognitive Domain	Description
Knowledge	Mastery of subject material; includes observation and recall of information; knowledge of dates, events, places; knowledge of major ideas.
Comprehension	Ability to predict consequences and future trends; includes understanding information; grasp of meaning; translating knowledge into new contexts; interpreting, comparing and contrasting material; ordering, grouping and inferring causes.
Application	Ability to solve problems using required knowledge/skills; includes using information material, methods, concepts, theories, etc. in new situations.
Analysis	Ability to break down material and recognize structure of organization; includes seeing patterns; organization of parts, recognition of hidden meanings, identification of components.
Synthesis	Ability to use old ideas to create new ones; includes generalizing from given facts, relating knowledge from several areas, predicting and drawing conclusions.
Evaluation	Ability to judge and assess value of material; includes comparing and discriminating between ideas; assessing value of theories, presentations, etc., making choices based on reasoned argument; verifying value of evidence, recognizing subjectivity.

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Defining Course Learning Outcomes

What types of skills/knowledge are appropriate for SLOs?

Affective Learning:

Affective Domain	Description
Receiving	Awareness; willingness to participate
Responding	Actual participation in learning activity; demonstrates interest
Valuing	Attaching value or worth to object, person, activity, phenomenon
Organization	Prioritizing values; comparing and contrasting values to build new value system
Characterization by value	Modifies behavior based on new value system

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Defining Course Learning Outcomes

What types of skills/knowledge are appropriate for SLOs?

Skill-based Learning:

Skill Domain	Description
Perception	Use of sensory organs to guide actions
Set	Readiness to act
Guided Response	Imitation; knowledge of steps required to complete task
Mechanism	Ability to repeat complex motor skill
Complex Overt Response	Display complex movement with skilled performance
Adaptation	Modifies motor skill to address changed situation
Origination	Creates new movement pattern in changed situations

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Defining Course Learning Outcomes

What action verbs are associated with types of learning?

It is helpful to use specific actions verbs associated with the various learning domains in the construction of meaningful learning outcomes Use of these verbs helps to explicitly articulate what you expect a student to demonstrate in the course of learning outcomes effectiveness.

Learning Domain	Examples of Action Verbs
Knowledge	Articulate, describe, define, name, indicate, order, recognize, know, repeat, memorize, label, tabulate, quote, etc.
Comprehension	Discuss, explain, interpret, distinguish, suggest, summarize, understand, translate, classify, contrast, etc.
Application	Apply, investigate, experiment, solve, practice, predict, utilize, develop, illustrate, etc.
Analysis	Analyze, categorize, correlate, inform, infer, prioritize, criticize, differentiate, examine, interpret, etc.
Synthesis	Arrange, collect, compose, assemble, compile, create, design, formulate, organize, manage, propose, validate, etc.
Evaluation	Rate, conclude, appraise, evaluate, judge, defend, grade, assess, etc.
Receiving	Identify, select, choose, describe, etc.
Responding	Recite, discuss, present, answer, etc.
Valuing	Describe, explain, differentiate, join, share, etc.
Organization	Order, arrange, combine, integrate, synthesize, generalize, etc.
Characterization by Value	Qualify, practice, listen, influence, share, propose, etc.
Perception	Identify, detect, describe, isolate, etc.
Set	Respond, show, react, display, etc.
Guided Response	Construct, manipulate, assemble, etc.
Mechanism	Build, fix, organize, work, calibrate, etc.
Complex Overt Response	Manipulate, measure, mix, dismantle, etc.
Adaptation	Alter, revise, change, vary, etc.
Origination	Compose, construct, design, etc.

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Defining Course Learning Outcomes

Course learning outcome example. [POOR]

"Students should know the historically important systems of business management."

This is an inadequate student learning outcome because it says neither what systems nor what information about each system students should know.

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Defining Course Learning Outcomes

Course learning outcome example. [BETTER]

"Students should know the behaviorist, financial, marketing, economic, analytical etc. approaches to business management."

This is better because it says what theories students should "know", but it still does not detail exactly what they should "know" about each theory, or how deeply they should understand whatever it is they should understand.

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Defining Course Learning Outcomes

Course learning outcome example. [BEST]

"Students should be able to recognize and articulate the foundational assumptions, central ideas, and dominant criticisms of the behaviorist, financial, marketing, economic, analytical etc. approaches to business management."

This is the clearest and most specific statement of the three examples. It clarifies how one is to determine that (s)he "knows".

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Defining Course Learning Outcomes

Course learning outcomes checklist.

After generating your course learning outcomes for each learning goal, the following questions can help to determine whether the list is complete and will be of value to your course:

- Are the outcomes aligned with the purpose statement, and goals?
- Do the outcomes clearly describe and define the expected abilities, knowledge, values, and attitudes of students taking the course?
- Are the outcomes simply stated?
- Is it possible to collect accurate and reliable data for each outcome?
- Taken together, would the indicators associated with the outcomes accurately reflect the individual key results of the course?
- Are the outcomes distinctive and specific to the course?
- Are they stated so that it is possible to use a single method to measure the outcome?
- Are they stated so that more than one measurement method can be used?
- Can they be used to identify areas to improve?
- Are they written using action verbs to specify definite, observable behaviors?
- Does the language describe student rather than teacher behaviors?
- Does the language describe a learning outcome, NOT a process?

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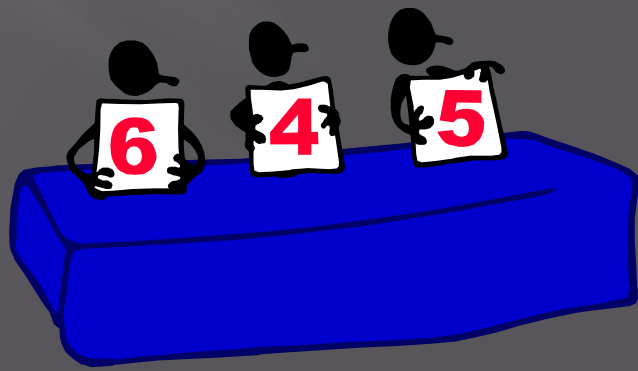
Defining Learning Outcome Rubrics

Rubrics



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Defining Learning Outcome Rubrics

A rubric is a rating scale that makes explicit the criteria and standards for judging students' work on discussions, papers, performance, product, show-the-work problem, portfolios, presentations, essay questions—any student work that involves an evaluation of quality.

One of the most effective ways to evaluate student work products in learning outcomes effectiveness is to use a standardized rubric. A rubric is simply a scoring guide used in learning effectiveness to provide an explicit description of the learning or performance being measured. Some of the benefits of using rubrics in outcomes effectiveness include the following:

- Expected levels of learning or qualities of performance are clearly defined on a pre-determined rating scale .
- Allows faculty to explicitly articulate their criteria for learning to all students.
- Facilitates discussion of the results and their ultimate incorporation into decision-making processes regarding course or curricular changes.

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Defining Learning Outcome Rubrics

Best Practices for Developing and Using Rubrics in Outcomes Learning Effectiveness:

- Identify the skill/knowledge you are assessing.
- Break down the skill/knowledge into its characteristic parts (e.g., if you are assessing the ability to problem solve determine the ideal steps a student would take to successfully demonstrate their ability to solve a problem).
- Develop a scale that would describe low, intermediate and high levels of performance for each characteristic of the skill/knowledge you are assessing (e.g., Beginning, Developing, Accomplished, Exemplary or Beginning, Competent, Outstanding, etc).
- Pilot the rubric on student work with several reviewers and students and obtain feedback.
- Make learning effectiveness rubrics available to students at the beginning of all assignments is given.
- Allow students to use rubrics in peer and self-evaluation exercises.
- Develop process to aggregate results of learning effectiveness using standard rubrics; disseminate results to students and incorporate results into course decision making processes.

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Defining Learning Outcome Rubrics

Best Practices for Developing and Using Rubrics in Outcomes Learning Effectiveness, an Example 1:

	Exemplary 4	Accomplished 3	Developing 2	Beginning 1	Comments
Stated Outcome or Performance	Description of identifiable performance characteristics reflecting the highest level of performance	Description of identifiable performance characteristics reflecting mastery of performance.	Description of identifiable performance characteristics reflecting development and movement toward mastery of performance.	Description of identifiable performance characteristics reflecting a beginning level of performance.	
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Defining Outcome Measurement

Measurement

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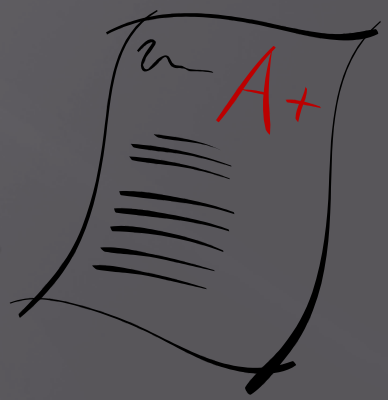
Defining Outcome Measurement



"Grades are global evaluations that represent the <u>overall</u> proficiency of students. They do not tell you about student performance on individual (or specific) learning outcomes."

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Defining Outcome Measurement

A note about grades:

Letter grades are useful for evaluating individual student performance but normally do not provide information that is sufficiently specific for course learning outcomes measurement.

The table below is adapted from Nichols, *The Departmental Guide and Record Book For Student Outcomes*

Intended Learning Outcomes	Student A	Student B	Student C	Student D	Student E	Learning Outcomes Average
Outcome I	3	4	1	2	3	2.6
Outcome II	2	5	3	2	5	3.4
Outcome III	4	5	2	3	4	3.6
Outcome IV	4	3	4	5	3	3.8
TOTAL	13	17	10	12	15	
STUDENT GRADE	C	A	D	C	B	

Typically, grades sum the evaluations of multiple outcomes. Students with the same grade could vary considerably in their ability on a single outcome. Students with different grades could be equal in their ability on a single outcome. If we want to know about student ability related to an outcome, we need to collect information specific to that outcome.

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Indirect vs. Direct Measurement

- Direct:
  - asks students to demonstrate their learning
  - includes objective tests - essays, presentations, and classroom assignments
- Indirect:
  - asks students to reflect on their learning
  - includes surveys and interviews.

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Defining Outcome Measurement

Measurement Tools: Direct

Program:

- Culminating Assignments
- Capstone Projects
- Senior Theses
- Exhibits or Performances
- Subject Area Tests
- Licensure Scores
- Professional Certifications
- ETS Field Tests
- Internship ratings

Course:

- Course-embedded Assessment
- Observations of Field Work
- Task Performance Assessment
- Portfolio Evaluations
- Pre-test/Post-test Evaluation
- Reflective Essays
- Scoring Rubrics
- Standardized Test Instruments
- Research Projects
- Course Activities

Answers what students learn as a direct result of an educational experience, to what degree students learn, and what students did not learn.

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Measurement Tools: Indirect

Program:

- Focus Groups
- Interviews
- Department/Program Review Data
- Job Placement
- Employer/Alumni Surveys
- Student Surveys
- Graduate School Placement
- Retention and graduation statistics

Course:

- Course evaluations
- Number of student hours spent on service learning
- Number of student hours spent on homework
- Reflective Essays
- Journals

Focuses on the learning *process* and the learning *environment* within the course.

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Multiple Measures

- Use a mix of direct and indirect measures to obtain the <u>what</u> and <u>why</u> students learn.
- Choose assessment methods that allow you to assess the <u>strengths</u> and <u>weaknesses</u> of the course.

Learning

Students learn most effectively when:

- ✓ they have opportunities to revise their work.
- ✓ they understand course outcomes.
- ✓ they (and you) reflect on what and how they have learned.
- ✓ assignments and assessments that are directly relevant to course goals are intertwined with learning activities and focus on the most important course outcomes.
- ✓ they understand the characteristics of excellent work.
- ✓ their learning styles are accommodated.

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The End – Thank You