

Guidelines for Developing Course Learning Outcomes
Faculty Senate Curriculum Committee
Spring 2007

The Faculty Senate Curriculum Committee guidelines require that New Course/Course Change applications include a list of learning outcomes in both the application and the sample syllabus. This document attempts to explain the rationale for requiring that all WVU courses establish measurable learning outcomes and to provide assistance in developing appropriate learning outcomes.

I. Rationale

Basically, accreditation bodies for higher education have mandated that learning outcomes be assessable. WVU has a policy of bringing courses and curricula in line with this requirement. Although individual faculty, programs, and departments should play a primary role in developing assessment methods for their courses and curricula, other WVU administrative bodies are charged with examining course-level student learning outcomes.¹ The Faculty Senate Curriculum Committee examines course-level learning outcomes to ensure, to the best of our ability, that they accord with national standards. Therefore, we ask that learning outcomes be measurable.

II. Definition

Learning outcomes state those skills/abilities the instructor expects each student to have mastered at the end of the course.

What is the difference between course objectives and expected learning outcomes?

Course objectives describe the topics and activities provided in the course curriculum. Learning outcomes state those skills/abilities the instructor expects each student to have mastered at the end of the course. Instructors may choose to include course objectives on their syllabus, but this is not required by the FSCC.

¹ The WVU Assessment Council has established the following policies and institutional commitment relevant to assessment of student learning (2-23-06):

West Virginia University is committed to assessment of student learning on both the course level as well as the programmatic level. It is understood that course-level assessment is the purview of individual departments and local and college curriculum committees. The Faculty Senate Curriculum Committee and the General Education Committee are also charged with examining course-level student learning outcomes. Academic program assessment is done every five years by the Undergraduate Council and the Graduate Council. National accrediting bodies review program assessment at various intervals for many colleges and programs.

The University Assessment Council is charged with leading assessment efforts across campus. While it evaluates non-independently accredited programs and collects information from independently-accredited programs, its foundational assessment principles drive student learning outcomes assessment at all levels of the institution.

III. Format

The current standard for writing measurable outcomes adheres to the following format:

- Each outcome begins with the phrase: “**The student will be able to . . .**” (or something like that).
- An **action verb** follows this introductory phrase.

Examples:

By the end of the secondary education program, students will be able to **design** curriculum and instruction appropriate for the cognitive development of all learners.

Design is the “action verb” in this example.

By the end of the chemistry program, students will be able to **apply** knowledge of ions, solutions and solubility to **explain** the formation and properties of homogeneous mixtures.

Apply and **explain** are the “action verbs” in this example.

Here are several examples (with slight format variation) of **complete lists of course learning outcomes**:

Women’s Studies 250: Women in Science

After completing this course, the student will be able to:

- Discuss women’s experiences with science, including personal and social dimensions, and use this knowledge to explain the origins and persistence of current issues facing women in science in the U.S.
- Analyze how gender affects the representation of scientists in popular culture.
- Apply techniques from feminist science studies to a scientific field.
- Present ideas in written formats.
- Find and evaluate information appropriate to research topics.

Marketing 440: Export Management

After completing this course, students will be able to:

- work in a team of business professionals
- work directly with a company interested in venturing into the exporting business or expanding their existing exporting business
- develop an Export Business Plan
- identify existing local, state, and federal exporting resources
- demonstrate an understanding of cultural diversity in the Export Business Plan
- describe the role that governments play in international business transactions

- demonstrate, using the Export Business Plan, how domestic marketing strategies are impacted and may have to change, when doing business on an international scale

Forensic Identification Program 401: Professional Forensic Communications

Upon successful completion of the course, students will be able to:

1. Define and produce legally defensible documentation
2. Demonstrate the proper methods of documenting crime scenes and evidence through notes and logs
3. Demonstrate the proper procedures for creating and maintaining chain-of-custody of evidence
4. Demonstrate the proper procedures for documenting laboratory work using logs and notes
5. Demonstrate preparation of a standard operating procedure
6. Create a professional quality poster presentation
7. Write a report summarizing forensic laboratory results for a non-scientist such as a police officer or attorney

Sample Action Verbs:

Identify	Name	Distinguish	Define
Describe	Classify	Order	Construct
Demonstrate	Translate	Predict	Interpret
Generalize	Explain	Apply	Analyze
Recognize	Specify	Create	Judge
Attend	Volunteer	Participate	Run
Hit	Communicate	Dance	Solve
Perform	Evaluate	Speak	Interview
Predict	Design	Locate	Draw
Conjugate	Others?		

Bloom's Taxonomy—A More Detailed Theory of Learning Outcomes:

Student Learning Outcomes should describe what students should know, be able to do and/or be like (dispositions) by the end of the defined program. These types of Student Learning Outcomes are often linked to Benjamin Bloom's taxonomy of cognitive domains, which classifies cognitive processes from low-order processes such as remembering and understanding to higher-order processes such as analyzing and designing (<http://www.coun.uvic.ca/learn/program/hndouts/bloom.html>). A revision of his taxonomy by Anderson and Krathwohl uses many active verbs to describe these cognitive processes, and serves as a valuable resource in writing learning objectives:

Bloom's Taxonomy of Cognitive Domains as Revised by Anderson and Krathwohl

Lower Order to Higher Order Cognitive Processes

<i>Cognitive Domains of Bloom's Taxonomy as Revised by Anderson and Krathwohl</i>	<i>Definition of Cognitive Processes and a Sample of Associated Verbs</i>
Create	Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure. Create, Design, Formulate, Revise
Evaluate	Make judgments based on criteria and standards. Evaluate, Judge, Defend, Critique
Analyze	Break material into constituent parts and determine how parts relate to one another and to an overall structure or purpose. Estimate, Differentiate, Compare, Plan, Analyze
Apply	Carry out or use a procedure in a given situation. Construct, Implement, Apply, Demonstrate
Understand	Construct meaning from instructional messages, including oral, written, and graphic communication. Explain, Summarize, Understand, Discuss, Describe
Remember	Retrieve relevant knowledge from long-term memory. Identify, Describe, Design, Recall, State

Anderson, L. W. & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives*. New York: Addison Wesley Longman

Please note: "Understand" is a relatively weak verb. The FSCC encourages you to use alternative verbs such as "explain" or "describe" and/or to use verbs associated with higher-orders of cognition when possible.

IV. Other Sources:

Many higher education and professional degree-granting bodies have developed their own guidelines for formulating measurable learning outcomes. For example, the **American Association of Law Libraries** has a helpful on-line document clarifying the rationale for learning outcomes and providing suggestions for how to formulate them: <http://www.aallnet.org/prodev/outcomes.asp>.

Perhaps your discipline has its own established guidelines.

For other website sources on assessment (this is more a random than systematic list), please see:

<http://www.provost.cmich.edu/assessment/toolkit/writingoutcomes.htm>

<http://lrc.udayton.edu/faculty/facdev/LearningOutcomes/Composing%20Student%20Learning%20Outcomes%20Statements.doc>

<http://www.coastal.edu/facsenate/aac/guidelines/How%20do%20I%20write%20Learning%20Outcomes.pdf>

If you know of other helpful sources on student learning outcomes, the FSCC would be grateful if you'd share that information.