Writing Graduate-Level Student Learning Outcomes
Prepared by faculty on the Graduate Committee (2010-11 AY)
Approved by faculty on the Graduate Committee (2011-12 AY)

One of the required elements of a new course proposal is student learning outcomes (SLOs). The purpose of this document is to help faculty:

- Understand the purpose of student learning outcomes from the perspective of MnSCU and the University;
- Write graduate level student learning outcomes
- Obtain approval with no or minimal revision.

Description of Our Committee's General Expectations of Student Learning Outcomes

Student learning outcomes (SLOs) are statements that clearly describe the knowledge, skills, and abilities that students acquire by successfully completing a course. SLOs describe what students are able to do as a result of completing a course. They communicate to students what will be important to know and what work they will be expected to perform. SLOs should be measurable and observable and provide the *foundation* for instruction, learning activities, and assessment.

To avoid confusion, SLOs should not include course goals, course descriptions, a list of course topics, course content outlines, teaching techniques, learning activities, competencies, or processes/procedures.

How Many SLOs Should A Graduate-Level Course Proposal Contain?

There is no specific formula or guideline for the number of SLOs for a course. The number of SLOs should be determined by the number of course credits and what the instructor wants the students to be able to do. Courses with higher-level cognitive expectations may have fewer outcomes because of the complexity of the skills required.

Discipline Requirements and SLOs

Your discipline, including external accrediting, licensure, or other regulatory entity, may have specific requirements that you must adhere to when developing course syllabi and determining course expectations for students. Such entities may use other terminology or may require that you demonstrate how a course meets standards, objectives, competencies, practice behaviors, dispositions, or other such criteria.

Regardless of the requirements of external entities, in order to fulfill the requirements of MnSCU and the University, a course must have specific statements that meet the definition of student learning outcomes. It may be possible to write the SLOs in a way that fulfills the expectations of external entities and the University. However, your aim in writing SLOs is to ensure that you clearly delineate a core set of SLOs that are written in language that allows people from other disciplines to understand the of the learning outcomes.

- To fulfill the requirements of external entities you may need to identify standards, objectives, competencies, practice behaviors, dispositions, or other such criteria. These should be documented separate from the SLOs.

The Relationship Between Student Learning Outcomes and Bloom's Taxonomy of Cognitive Behavior

A course description that clearly identifies the purpose of the course can be used as the basis for writing SLOs. In addition, it may be easier to write SLOs after drafting an initial outline of the topics covered in the course.

Bloom's Taxonomy of cognitive behavior can be used as a guide to write the behavior component of a learning outcome. The "behavior component" entails what students are able to do as a result of completing a course. Bloom's Taxonomy (listed in order from lower level cognitive skills to higher level cognitive skills) is as follows: knowledge, comprehension, application, analysis, synthesis, and evaluation. Higher-level outcomes are dependent on lower level cognitive skills. Table 1 briefly defines each of the cognitive levels and provides action verbs specifying different behaviors that can be used to write SLOs at the 6 cognitive levels (modified from Bloom et al., 1956).

Table 1: Learning Objective Verbs at Each Bloom Taxonomy Level

Cognitive Level	Illustrative Verbs	Definitions
Knowledge	arrange, define, describe, duplicate, identify, label, list, match, memorize, name, order, outline, recognize, relate, recall, repeat, reproduce, select, state	remembering previously learned information
Comprehension	classify, convert, defend, discuss, distinguish, estimate, explain, express, extend, generalize, give example(s), identify, indicate, infer, locate, paraphrase, predict, recognize, rewrite, report, restate, review, select, summarize, translate	grasping the meaning of information
Application	apply, change, choose, compute, demonstrate, discover, dramatize, employ, illustrate, interpret, manipulate, modify, operate, practice, predict, prepare, produce, relate schedule, show, sketch, solve, use write	applying knowledge to actual situations
Analysis	analyze, appraise, breakdown, calculate, categorize, classify, compare, contrast, criticize, derive, diagram, differentiate, discriminate, distinguish, examine, experiment, identify, illustrate, infer, interpret, model, outline, point out, question, relate, select, separate, subdivide, test	breaking down objects or ideas into simpler parts and seeing how the parts relate and are organized
Synthesis	arrange, assemble, categorize, collect, combine, comply, compose, construct, create, design, develop, devise, explain, formulate, generate, plan, prepare, propose, rearrange, reconstruct, relate, reorganize, revise, rewrite, set up, summarize, synthesize, tell, write	rearranging component ideas into a new whole
Evaluation	appraise, argue, assess, attach, choose, compare, conclude, contrast, defend, describe, discriminate, estimate, evaluate, explain, judge, justify, interpret, relate, predict, rate, select, summarize, support, value	making judgments based on internal evidence or external criteria

Tips for Writing Graduate-Level Student Learning Outcomes

Higher levels of cognitive behavior—analysis, synthesis, and evaluation--are associated with student learning outcomes for graduate courses.

- *500 level courses*. Graduate courses at the 500 level may include some SLOs that represent lower-level cognitive skills. This may be the case when students are required to demonstrate mastery of a core body of knowledge at the "know", "comprehend", or "apply" level in order to progress to a higher cognitive level. This manipulation at a higher cognitive level should be reflected in other SLOs for the course. In the case of a stacked course (4xx/5xx), you should supply alternative or additional learning outcomes for graduate students. For more information about how to do this, see *4xx/5xx Courses: Suggestions for Delineating Graduate Level Requirements*.

- *600 level courses*. In general, 600 level courses should have SLOs at the "apply", " analyze", "synthesize" and/or "evaluate" levels of cognitive behavior.

- *700 level courses*. SLOs at the doctoral level should reflect only higher-order cognitive behavior (i.e., analyze, synthesize, and/or evaluate).

Resources

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