

Handout 1: Writing Student Learning Outcomes

Review the SLOs for Your Program

- a) **Are the SLOs observable and measurable skills?** How would a student demonstrate them?
- b) **What might a student do to demonstrate the knowledge, skills, and values in their chosen discipline?** Identify core learning outcomes/competencies or potential learning outcomes/competencies. How would students be assessed? How would students provide feedback on those skills?
- c) **Refine the SLOs for your program as necessary, and record them in your assessment plan.** (See chart below of verbs for concrete, measurable outcomes.)
- d) **Which strategic goals of the university do the SLOs support?** Use the strategic goals of the University to determine which goals the program contributes to, and add that information to the chart. Note: All of your SLOs may not necessarily contribute to these goals.

Verbs for Cognitive Learning (Based on Bloom’s Taxonomy, Revised) for Student Learning Outcomes That Are Observable and Measurable		
<p>Concrete verbs such as <i>identify, argue, or construct</i> are more helpful than vague or passive verbs such as <i>understand, know, or “will be exposed to”</i> to articulate clear learning goals and guide the design of assignments and activities as well as assessment. Below are action verbs frequently used for concrete student learning objectives.</p>		
Create	<i>put elements together to form a coherent whole; re-organize elements into a new pattern or structure</i>	categorize, combine, compose, construct, create, devise, design, formulate, generate, hypothesize, invent, modify, organize, plan, perform, prepare, problem-solve, produce, rearrange, reconstruct, relate, reorganize, revise, rewrite, synthesize, summarize, write
Evaluate	<i>make judgments based on criteria and standards</i>	appraise, argue, assess, compare, conclude, contrast, coordinate, criticize, decide, describe, detect, determine, discriminate, estimate, explain, evaluate, interpret, judge, rate, relate, revise, summarize, validate, value
Analyze	<i>break material down into its constituent parts and determine how the parts relate to one another and to an overall structure/purpose</i>	analyze, appraise, break down, calculate, categorize, compare, contrast, debate, detect, deduce, determine, diagram, differentiate, discriminate, distinguish, examine, experiment, focus, infer, inspect, integrate, interpret, organize, outline, point out, question, relate, select, separate, sub-divide, test, translate
Apply	<i>use abstractions in concrete situations</i>	apply, change, choose, classify, compute, demonstrate, develop, discover, employ, execute, illustrate, infer, investigate, manipulate, modify, operate, organize, outline, practice, predict, prepare, produce, relate, restructure, show, solve, transfer, use
Understand	<i>show understanding of</i>	clarify, classify, convert, describe, discuss, distinguish, estimate, explain, extend, find, generalize, give examples, give in own words, identify, illustrate, interpret, map, locate, paraphrase, read, rearrange, represent, restate, review, rewrite, summarize, translate
Remember or recall	<i>remember something previously encountered</i>	define, describe, identify, label, list match, name, outline, reproduce, select, state, recall, recognize, record

Handout 2: Samples of Shared Student Learning Outcomes for Ph.D. Programs

Source: Adapted from PhD student learning outcomes in a ranges of programs at Brigham Young University (see [website](#)) by WSU's Office of Assessment of Teaching and Learning (ATL) for learning outcomes shared by many programs, including preparation of future faculty.

All Disciplines

All graduates will be able to:

1. Critically apply theories, methodologies and knowledge to address fundamental questions in their primary area of study. (Research, Critical Thinking, Content Knowledge)
2. Pursue research of significance in the discipline or an interdisciplinary or creative project. Students plan and conduct this research or implement this project under the guidance of an advisor while developing the intellectual independence that typifies true scholarship. (Research, Critical and Creative Thinking)
3. Demonstrate skills in oral and written communication sufficient to publish and present work in their field and to prepare grant proposals. (Communication)
4. Follow the principles of ethics in their field and in academia. (Ethics)
5. Demonstrate, through service, the value of their discipline to the academy and community at large. (Service, Content Knowledge)
6. Demonstrate a mastery of skills and knowledge at a level required for college and university undergraduate teaching in their discipline and assessment of student learning. (Content Knowledge, Teaching)
7. Interact productively with people from diverse backgrounds as both leaders/mentors and team members with integrity and professionalism. (Communication, Leadership)

Discipline or Degree Specific Skills and Knowledge

Graduates in [discipline or degree] will be able to:

- 1.
- 2.
- 3.

TABLE 1. PROGRAM ASSESSMENT OF GRADUATE STUDENT WORK AND COMPLEMENTARY MEASURES OF INSTRUCTION & LEARNING

I. Direct measures of student performance

LEARNING OUTCOME	DATA SOURCE	METHOD(S) OF ASSESSMENT	COLLECTED	EXPECTATIONS
Knowledge of field	Performance in courses	GPA in coursework	Annually	GPA of 3.0 (B) or above
Knowledge of field; Communication	PhD oral preliminary exams	Advisory committee will assess performance using rubric (Appendix 1)	At each preliminary examination	Minimum 5.0 for Ph.D on rubric dimensions
Knowledge of field; Communication	Teaching performance	Teaching evaluation	Each semester	
Knowledge of field; Scientific reasoning; Communication	Final research seminar (Crops 501 or Soils 501).	Faculty/ARS, staff, and students present at seminar will assess performance using rubric (Appendix 1).	Each semester	Minimum of 4.0 for M.S. and 5.0 for Ph.D. on rubric dimensions. Minimum of 3.0 (B) in seminar class
Knowledge of field; Scientific reasoning; Communication; Original contribution	Final thesis or dissertation defense	Advisory committee will assess performance using rubric (Appendix 1)	At each defense	Minimum of 4.0 for M.S and 5.0 for Ph.D. on rubric dimensions
Knowledge of field; Scientific reasoning; Communication; Original contribution	Peer reviewed research publications by students	Reviewed by experts in their field for publication in the journal	Annually	Minimum of 1 publication for M.S. and 2 publications for Ph.D.
Knowledge of field; Scientific reasoning; Communication; Original contribution	Secured research grant(s) co-authored by students	Grant recipients chosen by experts in their field	Annually	Secured a minimum of 1 grant for Ph.D.

II. Complementary measures and related activities to align with program goals.

OTHER ASSESSMENT ACTIVITIES	COLLECTED
1. Student exit survey (Appendix 2)	Each semester
2. Course evaluations (Appendix 3)	Each semester
3. Peer evaluation of faculty instructors (Appendix 4)	Ongoing
4. Student development workshops in teaching and learning	Ongoing
5. Faculty development workshop in teaching and learning	Ongoing
6. Number of student research presentations at professional meetings	Annually
7. Student awards, fellowships, and scholarships	Annually
8. Student placement data	Ongoing

Group Activity: Review each of the statements and complete the matrix:

Student Learning Outcome (SLO) or Program Objective (PO) Statement	SLO or PO?	If SLO, what data would you collect to measure success?	How/when would this data be collected?	Comments (how can SLO or PO be improved?)
1. Prepares students for successful careers in industry, government, and universities				
2. Demonstrates skills in oral and written communication sufficient to publish and present work in their field				
3. Applies sound research methods to problems in their field of expertise				
4. Provides leadership and expertise at local, state, and national levels for improvement in graduate education				
5. Identifies significant research problems and generates viable research questions within their field of expertise				
6. Places students in lead academic, research, and industry positions				
7. Demonstrates comprehensive knowledge associated with the discipline				
8. Enhances the visibility of the program at the national and international levels				
9. Analyzes and interprets research data that makes clear sense of the data				
10. Attracts and retains high-quality students				
11. Participates in professional organizations				
12. Creates effective interdisciplinary collaborations to foster research				
13. Implements proven and emerging technologies to enhance research				
14. Critically applies theories, methodologies and knowledge to address fundamental questions in area of study				
15. Follows the principles of ethics in their field and in academia				
16. Interacts (as both leader and team member) productively and with integrity and professionalism with people from diverse backgrounds				

Graduate Assessment Workshop – Appendix

January 24, 2013

Washington State University, 2008-2013 Strategic Plan

<http://strategicplan.wsu.edu/index.html>

Vision:

Washington State University will be recognized as one of the nation's leading land-grant research universities.

Mission:

Washington State University is a public research university committed to its land-grant heritage and tradition of service to society. Our mission is threefold:

1. To advance knowledge through creative research and scholarship across a wide range of academic disciplines.
2. To extend knowledge through innovative educational programs in which emerging scholars are mentored to realize their highest potential and assume roles of leadership, responsibility, and service to society.
3. To apply knowledge through local and global engagement that will improve quality of life and enhance the economy of the state, nation, and world.

Strategic Goals

1. Achieve national and international preeminence in innovation, discovery, and creativity.
2. Provide a premier education and transformative experience that prepares students to excel in a global society.
3. Lead in relevant local, national, and global outreach and engagement.
4. Embrace an environment of diversity, integrity, and transparency

Values

1. **Quality and Excellence:** We are committed to maintaining quality and excellence in all our endeavors.
2. **Integrity, Trust, and Respect:** We are committed to being an institution that demonstrates trust and respect for all persons and cultivates individual and institutional integrity in all that we do.
3. **Discovery, Innovation, and Creativity:** We are committed to the pursuit of inquiry and discovery and to the creation and dissemination of knowledge.
4. **Land-grant Ideals:** We are committed to the land-grant ideals of access, engagement, leadership, and service to bring the practical benefits of education to the state, nation, and global community.
5. **Diversity and Global Citizenship:** We embrace a worldview that values diversity and cultural differences and recognizes the importance of global interdependence and sustainability.
6. **Freedom of Expression:** We are committed to being a community that protects the free exchange of ideas while encouraging dialog that is constructive and civil.
7. **Stewardship and Accountability:** We are committed to being ethical and responsible stewards of University resources and to being accountable for upholding the full scope of these values.