

A Brief Overview of Backward Design

James Sage
Associate Provost
Southern Utah University

Paula DeHart
Assessment Coordinator
University of Wisconsin–Stevens Point

Overview

Grant Wiggins and Jay McTighe, authors of *Understanding by Design*, developed a framework for designing courses called “Backward Design.” This process of course design is “backward” because it starts at the end (the results, the learning outcomes) and works backward to plan what assignments, exams, readings, lectures, discussions, and other learning experiences that need to be included to support student achievement.

Backward Design places learning outcomes and student understanding at the center of course design and then identifies the ways the instructor can support the students. As Wiggins and McTighe say, “Teaching is a means to an end. Having a clear goal helps us educators to focus our planning and guide purposeful action toward the intended results.”

The Backward Design process proceeds in three steps:

1. Identify Desired Results: What will students learn? (Learning Outcomes)

You should first articulate your learning outcomes for the course. In other words, you should identify what you want your students to know, do, or value. A learning outcome is a statement that describes what knowledge, skills, abilities, and/or dispositions you want your students to acquire as a result of a learning experience (or your course as a whole). Learning outcomes typically follow a standard schema, such as:

(i) *Students can/will be able to...*

(ii) ... *action verb* <<see Bloom’s Taxonomy (2001) for examples >> ...

(iii) ... *specific knowledge/ability/disposition* that students will achieve.

For example: *Students will be able to read, interpret, and analyze common reference maps.*

In all likelihood, you will probably identify too many learning outcomes to fit into a single course, or at least you will find that you cannot place equal emphasis on each one. If this is the case, then you’ll need to prioritize your learning outcomes, starting with what’s most important:

- a. Which learning outcomes refer to the “big ideas” in the course that are crucial for students to understand? These are called “enduring understandings” and are thought to be the most essential learning outcomes.
- b. Which learning outcomes refer to important knowledge, skills, and abilities that students need to acquire? These facts, concepts, theories, and methods are important building blocks that will support the “big ideas” of the course (above) and will also prepare students for future learning.
- c. Finally, which learning outcomes refer to knowledge, skills, and abilities that are somewhat less essential? In other words, while your students might not master these concepts or ideas or processes, it may still be valuable to provide them with some exposure to (or familiarity with) these things.

Answering of these questions will help you to prioritize which learning outcomes are essential, which are important, and which are less crucial (i.e., nice to know). Recognizing the relative importance of your learning outcomes will help you to design your course in meaningful, integrated ways.

2. Determine Acceptable Evidence: What will success look like? (Course Assignments, Exams, Quizzes, Essays, Performances)

The second step in the Backward Design process is to determine what you will gather as evidence that students are achieving the learning goals of the course. In other words, step two prompts you with the questions: What will it look like when they “get it”? What does student learning *look like*?

When planning how you will collect this information, consider different types of evidence: essay exams, term papers, quizzes, lab reports, problem sets, group presentations, reflection papers, etc. Typically these evaluation methods help you to determine course grades, but they should also be understood as ways to gauge student achievement of the learning outcomes. In this sense, these assignments can help with both grades and assessment of learning outcomes. Keep in mind, however, that a student might earn a poor grade on a particular assignment (say, by turning it in late) but could still achieve the learning outcome (e.g., articulates a clear thesis statement).

Conversely, sometimes our assessment methods (exams, assignments, etc.) aren’t aligned with our learning goals. In this case, students might earn passing grades but fail to achieve the learning goals. While these are simple examples, it illustrates the important difference between assigning grades and assessing student achievement of learning outcomes.

Step two in the Backward Design process encourages us to see the difference between assigning grades and gathering evidence of student learning. After all, you might even ask students to complete non-graded activities or assignments (small group reflection sessions, mid-term course evaluations, service-learning projects, providing peer commentary on written papers, etc.) which can provide you with insight into student learning.

3. Plan Learning Experiences and Instruction: What will students do in the course? (Lectures, Discussions, Experiments, Readings, Homework, Projects)

After you have identified and prioritized your learning outcomes and determined the ways you will check student achievement, you then move to planning the specific instructional strategies (learning experiences) to support your students. To help you with this, it might be useful to ask yourself a series of questions:

- How is the best way to deliver the content my students will need to know?
 - Will I assign readings? If so, which ones?
 - Will I deliver lectures? If so, which topics or units are best delivered as a lecture?
 - Will I lead the class in discussions? If so, will I use small groups? Will I refer to case studies to guide discussion?
- How can I create an active, collaborative learning environment that encourages students to feel a genuine sense of ownership toward (and responsibility for) their own learning?
- What are the key examples, dilemmas, or conflicts my students need to know? What’s the best way to convey these things?
- How can I reverse-engineer complex learning outcomes and provide my students with a supportive, step-wise sequence of learning activities?
- How can I provide my students with the opportunity to apply their learning, or to practice a skill, or to reflect on their own learning?
- How can I include active learning strategies to increase deep, long-term understanding, as opposed to short-term, surface-level memorization?

FAQs for Writing Learning Outcomes

What Specifically is a Learning Outcome?

- A learning outcome is a statement that describes what a student will **know** (knowledge), **be able to do** (skill), and/or **value/appreciate** (disposition) as a result of a learning experience.
- Learning outcomes can be written for **a major/program** (departmental outcome or the SUU Essential Learning Outcomes), **a course** (learning outcomes included on a syllabus), and/or **an individual lesson**
- Learning outcomes are phrased in terms of **OUTPUTS (student learning)** not inputs (what the instructor provides in class or assignments student are required to complete).
- Learning outcomes should be written in the following form including **all three components**:

- 1) **Students can/will be able to...**
- 2) **action verb** (see back for a comprehensive list of action verbs from Bloom's Taxonomy)...
- 3) **specific action/skill they will be able to do** (including discipline-specific knowledge, skill, or ability).

How Can Learning Outcomes Enhance Teaching and Learning?

- For each lesson, course, and academic program, instructors are urged to ask:
 - **What knowledge, skills, and/or dispositions do I want students to get from this?**
 - **What evidence can I gather to show that students are getting it?**
- Because learning outcomes must be observable/measurable, evidence can be produced to demonstrate what students are actually learning.
- Assessment evidence provides valuable data for improving instruction and increasing student learning in courses and programs.

What Are Some Examples of Well-Written Learning Outcomes?

- Students will be able to read, interpret, and analyze common reference maps.
- Students will be able to apply critical thinking skills to offer a solution to a real-world problem.
- Students can create narratives about the past based on primary source documents.
- Students can explain the relationship between genetics and disease risk.
- Students can choreograph a dance reflecting a specific dance style.

What Are Some Common Mistakes Made When Writing Learning Outcomes?

- **Using vague verbs that are difficult to measure like “appreciate,” “learn,” “understand,” or “know.”** How will you know if students appreciate, understand, or know? Use specific action verbs—you will know that students understand if they can: explain, describe, summarize, analyze, compare, evaluate, etc.
- **Writing learning outcomes that describe inputs like assignments or lecture content rather than the learning that will occur because of the assignment or lecture.** “Students will read essays by significant philosophers of the 19th Century” describes reading assignments students will complete (inputs), but does not describe what students will know, be able to do, or value, as a result of completing the readings (outcomes).
- **Including too many learning outcomes.** The best target for the number of learning outcomes for a course or program is 2 – 4. (Note: 1 learning is acceptable if it is very rich, and 5 is acceptable if you can make a really strong argument for adding a fifth.) Learning outcomes are meant to be broader learning goals targeting important knowledge, skills and dispositions, not a comprehensive listing of discreet skills or bits of knowledge.

BLOOM'S TAXONOMY (Revised 2001)

Learning Outcome 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