



Designing Courses *Backwards*

A "Forward-Looking" Approach to Effective Teaching!

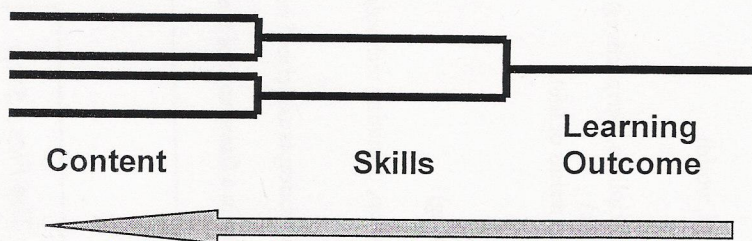
You've got your calendar in one hand and your content in the other... you are ready to design your course! "*What will I cover?*"

But wait...that is forward thinking... and the most successful courses are designed *backward*. "*What should they learn?*" Or even more boldly, what should they *remember* next quarter, or next year?

Step 1: Consider your own rationale for teaching this class. What is important to you about the material? About the way you plan to teach the material? About how the students interact with the content?

Step 2: Skip directly to the end of the course. Distill five (or fewer!) major learning outcomes. (If this number is too small for comfort, you can add more later *if you really must*... but stick with 5 or less now... this is the way to get to the underlying, often unifying, themes of your course.) Think broadly about these outcomes... content or foundational knowledge is but one broad category in which you might have specific goals. For other ideas, turn to the back of this page!

Step 3: Work Backwards. What skills will demonstrate achievement of the learning goals? What content is required to support those skills?



Why bother? Some of the best payoffs include:

- The outcome goals will be threaded throughout the course. They provide unifying themes and context for the material you cover.
- These choices define the skills embedded in homework, projects, exams, etc. Students who have met the learning goals will be able to do *what*? Student work becomes more obviously relevant to the topic, exam questions or projects become more authentic.
- This process helps distill the huge content "problem." Cutting content is always painful, but we know we have to do it... working backwards establishes priorities!

TABLE 7.3

Educational Goals and the Taxonomy of Higher-Level Learning

LEARNING HOW TO LEARN	
• How to be a better student (e.g., self-regulated learning, deep learning) • How to ask and answer certain kinds of questions (e.g., scientific method, historical method, inquiry learning) • How to be a self-directing or intentional learner (e.g., self-directed learning, self-reflective practitioners, adult learning projects)	
MOTIVATION	
• Wanting to be a good student (in a given course and/or in general) • Excited about a particular activity or subject (e.g., birdwatching, reading history, listening to music) • Excited about living right (e.g., taking charge of one's life)	
HUMAN DIMENSION	
• Character building • Multicultural education • Leadership • Ethics • Working as a member of a team • Citizenship • Serving others (local, nat'l, world) • Environmental ethics	
INTEGRATION	
• Interdisciplinary learning (e.g., connecting different disciplines, perspectives) • Learning communities (e.g., connecting different people) • Learning and living/working (e.g., connecting different realms of life)	
APPLICATION	
• Critical thinking • Creativity • Practical thinking (e.g., problem solving, decision-making) • Managing complex projects • Performance skills (e.g., foreign language, communication, operating technology, fine arts performances, sports)	
FOUNDATIONAL KNOWLEDGE	
• Conceptual understanding: a full understanding of the concepts associated with a subject, that allows explanations, predictions, etc. • Deep understanding: an understanding that is anchored in a framework of meaning(s)	

From L.D. Fink, 2001, *Higher Level Learning: The First Step toward More Significant Learning*, in D. Lieberman and C. Wehlburg (eds.) *To Improve the Academy*, vol. 19, Anker Publishing, Bolton, Mass. p. 113-130.

TABLE 7.4

Higher-Level Learning Goals for a Specific Course

Questions for Formulating Higher-Level Learning Goals	Responses of a Microbiology Professor "A year after this course is over, I want and hope that students will . . ."
I. FOUNDATIONAL KNOWLEDGE	
• What key facts, terms, formula, concepts, relationships, etc., are important for students to understand and remember in the future?	• " . . . remember the terms associated with microbial anatomy, biochemistry, and disease." • " . . . understand 'orders of magnitude,' i.e., what exists at different levels or scales, in relation to other objects." • " . . . remember the primary categories of organisms."
II. APPLICATION	
• What kinds of thinking are important for students to learn here: • Are there other important skills that students need to learn? • Do students need to learn how to manage complex projects?	• " . . . be able to critically evaluate bodies of literature in academic and popular outlets." (critical thinking) • " . . . be able to mathematically calculate the rate and extent of microbial growth." (skill)
III. INTEGRATION	
• Are there important connections (similarities and interactions) that students should recognize and make?	• " . . . integrate ideas about energy, from chemistry and microbiology." • " . . . relate ideas about microbial biology with processes in higher organisms, e.g., metabolism, disease."
IV. HUMAN DIMENSION	
• Is there anything you would like for students to learn about themselves? • Is there anything important that students could or should learn about understanding others and/or interacting with others?	• " . . . come to see themselves as people who are more educated about microbiology than the average lay person." • " . . . be able to inform and educate other intelligent citizens about the role of microbiology in personal and public life; e.g., educate their roommates about proper ways of cooking hamburger."
V. MOTIVATION	
• Are there any changes you would like to see, in what students care about, i.e., any changes in their beliefs, interests, and/or values?	• " . . . be excited about microbiology as a broad, complex, multifaceted field of study; i.e., a subject that is concerned with more about organisms than just their role as causes of human diseases." • " . . . value the importance of precise language in this field of work, as part of professionalism."
VI. LEARNING HOW TO LEARN	
• Are there things you would like for students to learn about • how to be a good student in a course like this? • how knowledge is constructed for this particular kind of subject matter? • how to become a self-directing learner relative to this subject?	• " . . . be able to know how to read assigned material responsibly." (being an effective student.) • " . . . know how the scientific method works, especially the importance of identifying and testing the hypothesis." (a method of learning that is particular to this subject matter.) • " . . . be able to identify important resources for their own subsequent learning." (becoming a self-directing learner.)