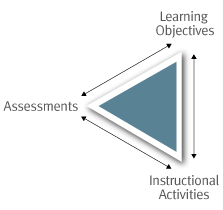
**Teaching Principles**

Teaching is a complex, multifaceted activity, often requiring us as instructors to juggle multiple tasks and goals simultaneously and flexibly. The following small but powerful set of principles can make teaching both more effective and more efficient, by helping us create the conditions that support student learning and minimize the need for revising materials, content, and policies. While implementing these principles requires a commitment in time and effort, it often saves time and energy later on.

1. **Effective teaching involves acquiring relevant knowledge about students and using that knowledge to inform our course design and classroom teaching.**

When we teach, we do not just teach the content, we teach students the content. A variety of student characteristics can affect learning. For example, students’ cultural and generational backgrounds influence how they see the world; disciplinary backgrounds lead students to approach problems in different ways; and students’ prior knowledge (both accurate and inaccurate aspects) shapes new learning. Although we cannot adequately measure all of these characteristics, gathering the most relevant information as early as possible in course planning and continuing to do so during the semester can (a) inform course design (e.g., decisions about objectives, pacing, examples, format), (b) help explain student difficulties (e.g., identification of common misconceptions), and (c) guide instructional adaptations (e.g., recognition of the need for additional practice).

1. **Effective teaching involves aligning the three major components of instruction: learning objectives, assessments, and instructional activities.**

Taking the time to do this upfront saves time in the end and leads to a better course. Teaching is more effective and student learning is enhanced when (a) we, as instructors, articulate a clear set of learning objectives (i.e., the knowledge and skills that we expect students to demonstrate by the end of a course); (b) the instructional activities (e.g., case studies, labs, discussions, readings) support these learning objectives by providing goal-oriented practice; and (c) the assessments (e.g., tests, papers, problem sets, performances) provide opportunities for students to demonstrate and practice the knowledge and skills articulated in the objectives, and for instructors to offer targeted feedback that can guide further learning.

1. **Effective teaching involves articulating explicit expectations regarding learning objectives and policies.**

There is amazing variation in what is expected of students across American classrooms and even within a given discipline. For example, what constitutes evidence may differ greatly across courses; what is permissible collaboration in one course could be considered cheating in another. As a result, students’ expectations may not match ours. Thus, being clear about our expectations and communicating them explicitly helps students learn more and perform better. Articulating our learning objectives (i.e., the knowledge and skills that we expect students to demonstrate by the end of a course) gives students a clear target to aim for and enables them to monitor their progress along the way. Similarly, being explicit about course policies (e.g., on class participation, laptop use, and late assignment) in the syllabus and in class allows us to resolve differences early and tends to reduce conflicts and tensions that may arise. Altogether, being explicit leads to a more productive learning environment for all students. [More information on how clear learning objectives supports students' learning.](http://www.cmu.edu/teaching/resources/Teaching/CourseDesign/Objectives/CourseLearningObjectivesValue.pdf) *(pdf)*

1. **Effective teaching involves prioritizing the knowledge and skills we choose to focus on.**

Coverage is the enemy: Don’t try to do too much in a single course. Too many topics work against student learning, so it is necessary for us to make decisions – sometimes difficult ones – about what we will and will not include in a course. This involves (a) recognizing the parameters of the course (e.g., class size, students’ backgrounds and experiences, course position in the curriculum sequence, number of course units), (b) setting our priorities for student learning, and (c) determining a set of objectives that can be reasonably accomplished.

1. **Effective teaching involves recognizing and overcoming our expert blind spots.**

We are not our students! As experts, we tend to access and apply knowledge automatically and unconsciously (e.g., make connections, draw on relevant bodies of knowledge, and choose appropriate strategies) and so we often skip or combine critical steps when we teach. Students, on the other hand, don’t yet have sufficient background and experience to make these leaps and can become confused, draw incorrect conclusions, or fail to develop important skills. They need instructors to break tasks into component steps, explain connections explicitly, and model processes in detail. Though it is difficult for experts to do this, we need to identify and explicitly communicate to students the knowledge and skills we take for granted, so that students can see expert thinking in action and practice applying it themselves.

1. **Effective teaching involves adopting appropriate teaching roles to support our learning goals.**

Even though students are ultimately responsible for their own learning, the roles we assume as instructors are critical in guiding students’ thinking and behavior. We can take on a variety of roles in our teaching (e.g., synthesizer, moderator, challenger, commentator). These roles should be chosen in service of the learning objectives and in support of the instructional activities.  For example, if the objective is for students to be able to analyze arguments from a case or written text, the most productive instructor role might be to frame, guide and moderate a discussion.  If the objective is to help students learn to defend their positions or creative choices as they present their work, our role might be to challenge them to explain their decisions and consider alternative perspectives. Such roles may be constant or variable across the semester depending on the learning objectives.

1. **Effective teaching involves progressively refining our courses based on reflection and feedback.**

Teaching requires adapting. We need to continually reflect on our teaching and be ready to make changes when appropriate (e.g., something is not working, we want to try something new, the student population has changed, or there are emerging issues in our fields).  Knowing what and how to change requires us to examine relevant information on our own teaching effectiveness.  Much of this information already exists (e.g., student work, previous semesters’ course evaluations, dynamics of class participation), or we may need to seek additional feedback with help from the university teaching center (e.g., interpreting early course evaluations, conducting focus groups, designing pre- and posttests). Based on such data, we might modify the learning objectives, content, structure, or format of a course, or otherwise adjust our teaching. Small, purposeful changes driven by feedback and our priorities are most likely to be manageable and effective.

#### (Excerpted from How Learning Works: 7 research based principles for smart teaching. Susan A. Ambrose, Michael W. Bridges, Michele DiPietro, Marsha C. Lovett, Marie K. Norma, Jossey Bass, 2010) Provided by the Eberly Center for Teaching Excellence at Carnegie Mellon University