Seven ways of learning

When faced with a bewildering array of teaching options, focus on learning.

Navigating the “how-to-teach” industry of ideas

College teaching has always been challenging, but it is becoming downright difficult these days. As a faculty member you face heightened expectations around using technology, assessing learning, and teaching new subjects to a diverse population of students. The professor’s once privileged store of knowledge is now readily available in digital libraries and on the Internet. The lecture paradigm, while still the dominant mode of teaching in most institutions, is increasingly regarded as obsolete. As a conscientious teacher, you want to make intelligent and creative choices about your teaching, but sometimes you just don’t know what to do.

It is not for lack of advice. To the contrary, college teachers today are confronted by a dazzling array of bewildering options. Professors, like tourists on resort beaches, seem to attract vendors—not just vendors of products, though these are plentiful, but vendors of ideas. What you are offered in lieu of hand-woven blankets and silver jewelry are active learning, problem-based learning, learner-centered teaching, inquiry-based teaching, andragogy, learning styles, left- and right-brained thinking, cooperative learning, collaborative learning, flipped classrooms, as well as hybrid and online teaching. Some of these are good buys; others not so much.

The question is: how should you craft effective teaching within this confusing vendor environment? The answer is to remain purposeful and base your teaching methods on your intended learning goals.
When I first started teaching, I tried very hard to use effective course design processes. I carefully chose my readings, decided what content was most relevant, and created engaging assignments based on my learning goals. Yet one course always nagged at me. The course was based on a five-level framework that students used to create their own program evaluation plans. While we discussed the framework in depth, I was often utterly perplexed to discover some students not using it appropriately in their final projects. Then I began working with Jim Davis on his “Seven Ways of Learning.” That’s when it struck me: What I was really trying to do was teach students to make decisions about program evaluation based on this five-level model. I had not seen before that this course was based on the learning with mental models way of learning!

After I realized the course was teaching students a mental model, I could facilitate more appropriately. Now, every week I spend time walking through the model and providing opportunities for students to practice relevant decision making, using all of the strategies recommended for learning with mental models. I am able to focus my time and efforts appropriately. And I am much happier when it’s time to grade student projects!

— Bridget Arend, University of Denver

Meet James R. Davis and Bridget D. Arend

James R. Davis is professor emeritus of higher education and adult studies in the Morgridge College of Education at the University of Denver. Most recently, he was dean of University College, the University of Denver’s professional and continuing education college. He is the author of seven books, including Better Teaching, More Learning (1993), Interdisciplinary Courses and Team Teaching (1995), and Learning to Lead (2003). He can be reached at adelbdavis@gmail.com.

Bridget D. Arend is the director of university teaching at the Office of Teaching and Learning at the University of Denver. She organizes and facilitates teaching-related initiatives for faculty and has consulted in the areas of teaching, learning and assessment for more than 15 years. She publishes in the area of online learning and educational technology, and can be reached at bridge.arend@du.edu. With James R. Davis, Arend co-authored Facilitating Seven Ways of Learning: A Resource for More Purposeful, Effective, and Enjoyable College Teaching, a topic on which they frequently present.

Sorting through the scholarship

The 20th century produced a significant amount of research and theory building about learning. After years of studying the literature and analyzing the research trends, we believe it is possible to delineate seven discrete areas where research and theorizing have taken place. We prefer to call these areas ways of learning.

Effective teaching based on these ways of learning will be informed, first and foremost, by the goals of learning. The first question a professor should ask is: What am I trying to teach? What is it I really want my students to be able to do? Learning outcomes must be thought through very carefully and there are many resources to help instructors identify the true goals of each class (see References). The next question is: What kind of learning do those goals involve? The faculty member should select the way of learning that is most likely to produce the desired learning outcome.

TALES FROM REAL LIFE > FINDING THE PURPOSE OF A COURSE
Teaching needs to be firmly grounded in goals and aligned with a particular way of learning. You do not want to use group work just to convey information, nor should you lecture when the goal is to teach a skill. Our work outlines which way of learning is best suited to bringing about desired outcomes.

1. **Goal:** Building skills  
   **Way of learning:** Behavioral learning  
   **Methods:** Tasks and procedures, practice exercises

**ARE YOUR STUDENTS** learning a skill where accuracy, precision, and efficiency are important? Is it based on a routine set of mental or physical operations? Can it be broken into steps and performed in a right or best way? These learning outcomes are well served by *behavioral learning*. Behavioral learning is based on behavioral psychology. Such skills are best learned when tasks are broken into concrete steps and practiced by students with the support of precise and timely feedback.

2. **Goal:** Acquiring Knowledge  
   **Way of learning:** Cognitive learning  
   **Methods:** Presentations, explanations

**DO STUDENTS NEED** to learn new ideas, terminology, or useful theories? Must they figure out how something functions, or understand and retain information? These learning outcomes are best served by *cognitive learning*. Cognitive learning is based on the psychology of how people pay attention to, process, and recall information. When instructors use cognitive learning effectively, they get students’ attention, help them see overall concepts and connections, relate new information to prior knowledge, and make meaning out of information.

**“THE FIRST QUESTION A TEACHER SHOULD ASK IS: WHAT IS IT I REALLY WANT MY STUDENTS TO BE ABLE TO DO?”**

3. **Goal:** Developing critical, creative and dialogical Thinking  
   **Way of learning:** Learning through inquiry  
   **Methods:** Discussions, question-driven inquiries

**DO YOUR LEARNING** goals involve students being aware of and improving their own thinking? Do they need to criticize information, evaluate arguments and evidence, or reason? Does this learning involve creative thinking or appreciating other people’s thinking? These outcomes are best served by *learning through inquiry*. Based on theories of critical and creative thinking and classical philosophy, learning through inquiry involves the instructor asking probing questions to model and make the thinking process visible. Instructors must understand the thinking process and its many elements, provide opportunities for students to practice thinking through meaningful discussions, and provide well-targeted facilitation.

4. **Goal:** Cultivating problem-solving and decision-making abilities  
   **Way of learning:** Learning with mental models  
   **Methods:** Problems, case studies, labs, projects

**DO YOUR STUDENTS** need to learn to solve problems or make decisions? Do your goals involve finding and defining problems, generating solutions, and evaluating and choosing among solutions? Must students weigh the values of different options and predict outcomes? Goals such as these are best served by *learning with mental models*, based on theories of decision making and problem solving. When instructors effectively use this way of learning, they set up the appropriate practice opportunities, help

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**BEST PRACTICES > TEACHING ACCORDING TO A WAY OF LEARNING**

**The first example:** Greg Reihman teaches philosophy at Lehigh University and wants students to be able to analyze and evaluate arguments. Reihman understands and teaches according to the various stages of thinking, from identifying types of arguments and their elements, to being able to apply those elements. At first, Reihman uses basic questions prompts, then begins to dig deeper, involving the students in reconstructing arguments or leaving out steps on purpose to let students fill in the logic gaps. Finally, students demonstrate their ability to identify, reconstruct, and evaluate arguments through short papers. “In this way, as the course progresses, students gain the ability to think critically about arguments and come to appreciate the need for precision and care in such matters,” Reihman said.

**The second example:** Leticia Sara teaches political science at Red Rocks Community College where she routinely puts students in groups to explore controversial issues. In her American government course, she uses a group assignment to teach students about the complexities and various perspectives involved in how our society determines civil liberties. Her students work in groups around a particular civil liberty issue, such as a controversial art exhibit or a religious charity accepting public money. “Normally the students choose a side to defend that they agree with, but a great way of avoiding argument is to encourage students to represent the side they don’t necessarily agree with,” says Sara. Her goal isn’t to have any student “win” the argument, but rather to have students explore all sides and come to appreciate the multiple perspectives involved.
students identify and apply mental models to make decisions, and through their facilitation keep the focus on the process rather than just the outcome.

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Goal: Exploring attitudes, feelings and perspectives
Way of learning: Learning through groups and teams
Methods: Group activities, team projects

DO YOUR LEARNING outcomes involve changing opinions, attitudes, or creating an awareness of multiple perspectives? Do you want students to deal with feelings or cultivate empathy? To build teamwork or collaboration skills? These learning outcomes are best served by learning through groups and teams. Based in human communication and group counseling theory, learning through groups builds on the dynamics formed by teams. It is most effective when instructors carefully design, orient, prepare, monitor, and help interpret the learning that occurs within groups.

6

Goal: Practicing professional judgment
Way of learning: Learning through virtual realities
Methods: Role play, simulations, dramatic scenarios, games

DO YOUR STUDENTS need to develop professional judgment within a variety of contexts? Is this best practiced in a safe environment? Do your students need to gain confidence and competence in complex situations? These are learning outcomes best served by learning through virtual realities. With roots in psychodrama, socio-drama, and gaming theory, learning through virtual realities can range from simple role play to high-tech simulations. Instructors carefully design or select the roles, scenarios or games that have the most potential. Virtual realities often run themselves, but the instructor must suspend, support and debrief the experience.

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Goal: Reflecting on experience
Way of learning: Experiential learning
Methods: Internships, service learning, study abroad

DO YOUR STUDENTS need to get immersed in real-life work, service, or travel? Do your learning goals involve reflecting on and making meaning out of such an experience? These learning outcomes are best served by experiential learning. Experiential learning has its own theory base but is also informed by cognitive neuroscience findings that show learning is a natural, multisensory process that emerges out of experience. To use this way of learning effectively, instructors may need to match students to their experiences, but most importantly need to help students push beyond superficial reactions to those experiences.

REFERENCEs:

Please visit http://sevenwaysoflearning.com/ for more information on the Seven Ways of Learning.