

# Principles and Techniques to Support Learners

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An early version of this document was called, “Teaching Principles and Techniques.” Now, though, my focus is on *helping my students learn* – rather on *teaching* them. The distinction appears subtle, but is actually quite important. Consider the difference between these questions:

- 1) *What and how should I teach my students?*
- 2) *What should I do to help my students learn?*

The first question focuses on the teacher, while the second focuses on the real goal: student learning. Our goal as educators should be to put our students into situations where they can achieve lasting learning of important concepts. Here are a few of my ideas on how to help your students achieve these goals, accompanied by the thoughts of a great American philosopher.

## Underlying Principles for Helping Your Students Learn

**A. Decide what you want your students to take away from your work together.** Whether you focus on detailed information, deeper concepts, skills – or something else entirely – make sure to articulate your goals to yourself and your students. Once you have these goals and outcomes clarified – *then* plan activities and assessments. To help set goals, I recommend that you look at the learning goals created by your department and by the university. “You’ve got to be very careful if you don’t know where you’re going, because you might not get there.” – Yogi Berra

**B1. What you think you are teaching may not be what the students are learning.** There you are, putting a lot of effort into teaching your students X, Y, and Z – and it is natural to assume that your students are therefore learning X, Y, and Z. However, they may be learning something else entirely or not much at all. The solution: keep assessing your students’ learning to make sure that you are all heading in the same direction. Phil Rizzuto – “Hey Yogi I think we’re lost.” - Yogi Berra – “Ya, but we’re making great time!”

**B2. Keep the feedback loop short, clear, and frequent.** Get feedback from your students on how well they understand the materials, and give them clear, frequent feedback on their work. Assess their understanding on different time scales: during classes by asking questions (and listening carefully to their answers and their questions); before and after classes with techniques such as pre-class short writings (“Just-in-Time-Teaching”) and “minute papers”; and throughout the term with quizzes, exams, and papers. “You can observe a lot just by watchin’.” – Yogi Berra (And, I would add, you can hear a lot just by listening.)

Our efforts should focus on our students’ learning – rather than on our teaching – for that is the real goal of our work as educators. By carefully articulating what you want your students to learn and retain, you may find yourself teaching fewer things better. Racing to cover a lot of material may leave your students with less knowledge and insight than carefully focusing on fewer topics.

## Specific Techniques and Suggestions

1. **If the lesson is important, teach it several different ways.** People learn better when they hear key material multiple times. In addition, people learn best in different modalities (some are visual learners, others are auditory, etc.), so teach with a variety of techniques. If the lesson is not important enough to stress this way, perhaps you should not spend precious time on it.
2. **Help your students understand their preconceptions and assumptions.** Students often have strong – and sometimes naïve – ideas about the world that need to be recognized and unlearned before they can progress. Help them uncover these, to help them revise their understanding.
3. **Recognize that each of your students is an individual with his or her own background, strengths, and needs.** Try to learn your students' names early on, and begin differentiating among them. Each of your students will learn more if you can build on their strengths and find the right amount of challenge to give them in areas where they are weaker.
4. **Make your class real.** Make it concrete; connect it to your students' experiences where possible, so that they can hold onto their learning.
5. **Be flexible.** Students may take you in directions that you were not expecting – and these spontaneous direction changes are often especially productive avenues to follow. These sidetracks may give you insight into your students' misunderstandings or may prove to be very fruitful areas for exploration in their own right.
6. **Empower your students.** Put your students into situations where they can explore rich materials according to their own interests (with your guidance). This allows them to direct their own learning, discover new insights on their own, and create their own understandings – all of which lead to lasting learning.
7. **Equip your students with tools and skills for learning.** Help your students develop research skills appropriate to your field, careful reading and critical thinking skills, writing and speaking skills so that they can be effective communicators.
8. **Teach from your strengths.** I teach science, yet am most effective when telling stories and showing photos; similarly, a brilliant teacher I know uses metaphors and poetry to teach conservation biology very effectively. Do not be afraid to draw on your own strengths and enthusiasm to engage your students, even if the fit seems odd.
9. **Employ passion (appropriately).** The passion that you and your students exhibit can play a key role in making your classes educationally rich, but you have to know when to display your passion and when to be dispassionate. You may have to help students channel their passion, so they can be enthusiastic while being thoughtful and effective.
10. **Look for “Aha!”** Try to create situations in which students gain meaningful insights that will stay with them. Comparisons and odd juxtapositions are often the key to “Aha!” moments.

### Books that I recommend:

Bain, Ken (2004). *What the best college teachers do*. Harvard University Press.

Perkins, David (2009). *Making Learning Whole: How Seven Principles of Teaching Can Transform Education*. Jossey-Bass.

**Useful links** (also search the Web for other viewpoints on these techniques) :

“Just-in-Time-Teaching” – <http://webphysics.iupui.edu/jitt/what.html>

“Minute papers” – <http://www.flaguide.org/cat/minutepapers/minutepapers1.php>