As an educator, your goal should NOT be teaching people to just KNOW what they do not know (contrary to the popular notion). Your goal should be that your students will BEHAVE differently, reflecting the greater accuracy of information acquired, and better ways of evaluating and interpreting that information. Knowing and understanding facts and concepts of science (or any other subject) is most likely to be very superficial and short-lived, unless this information somehow becomes sufficiently integrated that it influences attitudes and behavior. Any lesser goal is a waste of everyone’s energy.

One of the most common barriers to making such changes in behavior is the collection of misconceptions that we all accumulate throughout childhood. It is much harder to unlearn old ideas than to learn new ones, but the unlearning is critical if there is to be any behavioral change. These misconceptions can be as simple as our perception of what science is, or as complex as our understanding of natural selection. But if they are not addressed, they can adversely influence how we perceive all subsequent material, our attitudes about the subject, and our resulting behavior in any relevant context.

A misconception, as used here, is any knowledge or understanding about the natural world which is inconsistent with the latest consensus based on critical and objective analysis by experts who have thoroughly studied the subject. It is assumed that such knowledge reflects the closest approximation of reality that we have achieved to date, but the real test of the validity of our knowledge about the real world is our experience in seeing that it consistently works! However, since new tools and techniques are constantly being developed, our knowledge base and its interpretations are always subject to change. The dual challenge to any teacher is to be as current as possible in the content material to be taught, and to use effective strategies for dealing with existing misconceptions.

As suggested above, divesting oneself of long-held comfortable notions is not easy. This is one of the most difficult things for a person to do, to deny a lifetime of accumulated assumptions, and acquire a set of new, more realistic perceptions. This is especially challenging when those misconceptions are entwined with the religious, philosophical or political beliefs of that person and his/her family and friends, a context which must be recognized and respected.

As a biology teacher, you will want to help your students to recognize their misconceptions for what they are, and to replace them with perceptions that work better as they interact with the natural world. For example, in order to make sense out of the growing body of biological knowledge, students must recognize how science works, what evolution is, and how evolution effectively makes sense of virtually all aspects of life. As a result, student behavior and attitudes should change in ways which reflect their new-found realization of the role of evolution in dealing with medical treatments, environmental problems, personal relationships, political action regarding these issues, and the many other ways a valid understanding of evolution and the nature of science relates to practical matters.

One of the many reasons we all develop misconceptions about the natural world is that we are surrounded by natural illusions... “Perception is not always reality!” Consequently, one fairly obvious way to raise consciousness about such misconceptions is to arrange for your students to experience some of those natural illusions, and then experience some of the evidence that reveals their illusory nature (see some of our suggestions for doing this).

However, if you are to be an effective teacher (of any subject or grade level), a teacher who truly affects lives, there are some basic elements that are needed to achieve this goal. It is very clear that students are most likely to want to learn and change their behavior if they truly admire and care for the teacher, and
enjoy being in that teacher's classroom. So a primary goal for the teacher is to create the classroom environment which engenders that respect and affection by the student. Part of that process involves the teacher's clear respect and genuine concern for his/her students, as important human beings whose health, happiness and success in life can benefit from the content of the course. Another part of the process includes a teacher's clear, passionate enthusiasm and knowledge for the subject.

The most important single element to accomplish all of this is **timing**. There is only ONE first day of class for every student in your class. What you do and don't do that first day, and to a lesser extent the next several days, will determine the degree of your success (and the success of your students in your class) for the rest of the year. What happens that first day of school will set the tone for the entire year. Each day following is increasingly harder to change that tone. So those first few days are critical, especially those first few minutes of the first day. There are strategies that will create a class which your students will WANT to attend, will actually look forward to getting there, every day, early, will WANT to learn and WANT to please.

What are those strategies? WHERE are those strategies? Look no further. If you've ever had the pleasure and good fortune of participating in a workshop, in-service, or inspirational year-opening send-off with Dr. and Mrs. Harry Wong, you know what I mean. If you've NEVER had that pleasure, you can still experience some of the dynamics of their style, and the richness of their content in a book they have recently published: *The First Days of School*. You will find there is no "one way" or magic formula, and there are many techniques from which to choose. Great teachers teach differently, but these strategies can be adapted to any teaching style, at any grade level and for any subject area. They are supported by educational research. They CAN be learned. They DO WORK. This book can make the difference between a "teaching job" and an exciting, rewarding, professional teaching career. It is safe to say that no other tool in your teaching toolkit will be as valuable.

So, NO MATTER WHAT LESSONS OR TEXT YOU CHOOSE TO USE, NO MATTER HOW YOU PRESENT THEM, BE AS EFFECTIVE AS YOU CAN BE. Whether you are an experienced teacher, or especially if you are a beginning teacher, the Wong book can help you to be as effective as you can be. Your students will succeed, you will succeed, and you will be admired by your colleagues and students alike.

I had the good fortune to begin my teaching career (in 1959) in the region where Harry Wong was becoming a respected and well-known teacher, already early in his career. He simply pulled a lot of these strategies together into a growing package, and began sharing them with colleagues. One Summer, in the early 1960s, he presented a workshop at nearby Stanford University, and I participated in that experience. There was no book. But the ideas, skills, and attitudes I carried from that workshop have made my 38 year career the joy that it was. Harry went on to international acclaim, sharing his "package" at teacher institutes and in-service workshops all over the world. I'm so happy that he and his lovely teacher/wife Rosemary have produced (and published) their collection of teaching strategies and tools, so they are available to all teachers everywhere. Furthermore, you can find out more about their book and other productions on their website. It's never too early to start planning for next year's first school day (the annual opportunity to start afresh, one of the hidden benefits of teaching!) DO IT NOW!!! Be ready!!

A nice sampler of the Wongs' ideas is in their article in the online Teachers NetGazette: "How to Motivate Your Students", mainly on using discrepant events. <http://teachers.net/gazette/MAY01/wong.html>. For other articles by the Wongs, click on "Gazette Back Issues" near the bottom of the Gazette Features box on the left of that page.