

# Random Thoughts . . .

## FAQS IV DEALING WITH STUDENT BACKGROUND DEFICIENCIES AND LOW STUDENT MOTIVATION<sup>[1]</sup>

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**S**tudents can be frustrating, as evidenced by the fact that the next two in our list of frequently asked questions at workshops are among the most common we get.

■ I tried putting my students to work in groups but some of them hated it and one complained to my department head. *What am I supposed to do about student hostility to teaching methods that make them take responsibility for their own learning?*

■ Many of my students are (a) unmotivated, (b) self-centered, (c) apathetic, (d) lazy, (e) materialistic, (f) unprepared, (g) unable to do high school math, (h) unable to write, (i) unable to read, (j) spoiled rotten. (Pick any subset.)  
*How can I teach people who don't have the right background or the willingness to work or even the desire to learn?*

We have written elsewhere about student resistance to non-traditional instructional methods—why it occurs, what forms it takes, and how to defuse it.<sup>[2]</sup> The remainder of this column deals with the second question.

The problems of poor student motivation and preparation are challenging. Certainly there are some students in our courses who appear to be uninterested in the subject, unwilling to work at it, and clueless about things they were supposed to have learned in prerequisite courses or high school. There may be even more students like that now than there were 20 years ago (as many older professors claim), although this trend is more likely due to a shift in entering college

student demographics than to a general weakening in the moral fiber of today's youth. But while grumbling about the students (and the high schools or Ted Kennedy or Jesse Helms or whoever else we hold responsible for widespread moral fiber decay) may have some therapeutic benefit, it doesn't solve anything. For better or worse, these students are the ones we have to work with—we can't write off an entire generation and hope for better things from the next one.

A more productive approach is to take our students where they are and find ways to overcome whatever shortcomings in preparation or motivation they may have. It's not impossible—professors at every university and college do it all the time. If you think about your faculty colleagues, you can surely come up with one or two who set high standards that most of their students regularly meet and exceed, who consistently get top ratings from students and peers, and about whom the alumni talk reverently years and decades after graduation. These professors are obviously doing *something* to reach the same students whose lack of motivation and deficient backgrounds their colleagues keep complaining about. What is it?

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## MOTIVATING STUDENTS TO LEARN

Student motivation in a class generally falls into three broad categories. Some students have a high level of interest in the course topic and will study it intensively regardless of what the instructor does or fails to do. No special motivation is necessary for these students—the two of them will do fine on their own. Others have a complete lack of aptitude for the subject and/or a deep-seated antipathy toward it, but the course is required for their degree and so there they sit, defying the instructor to teach them anything. Trying to motivate *these* charmers may be more trouble than it's worth, but (at least in engineering courses) there are fortunately not many of them either. Still others—usually a large majority—are in the third category: they don't have a burning interest in the subject but they also don't hate it and they have the ability to succeed in it. How the instructor teaches can profoundly affect how these students approach the course.

In another column<sup>[3]</sup> we discussed what educational psychologists have termed a “deep approach” to learning. Students who take this approach do whatever it takes to gain a conceptual understanding of the subject being taught. They routinely try to relate course material to other things they know, look for applications, and question conclusions—precisely the kinds of things that the students whose lack of motivation we complain about never do.

Certain course attributes have been found to correlate with students taking a deep approach,<sup>[3]</sup> suggesting that the key to motivating students in that large third category might be to build as many of those attributes into our courses as we can. The attributes are

- (a) *clear relevance of the course material to familiar phenomena, material in other courses the students have taken or are currently taking, and problems they will be called upon to solve in their intended careers*
- (b) *explicit statements of the knowledge and skills the students are expected to acquire, which may take the form of instructional objectives<sup>[4]</sup> or detailed study guides for exams*
- (c) *assignments that provide practice in the skills specified in the objectives and are not too long, so that the students have time for the studying and reflection entailed in a deep approach*
- (d) *some choice over learning tasks (e.g., a choice between problem sets and a project)*
- (e) *well-designed tests that are clearly grounded in the objectives (no surprises or tricks) and can be finished in the allotted time (For more details, see Reference 3.)*

Building those things into your course may take some work but will probably motivate enough of your students to allay any concerns you may have about their generation.

## TEACHING UNDERPREPARED STUDENTS

What about the students who come into your class having successfully completed prerequisite courses but apparently having absorbed little or nothing from them? Again, blaming the instructors who taught the prerequisites (who “passed students they clearly should have failed”) or the Math Department (which “doesn't know how to teach calculus to engineers”) or the K–12 system (which “doesn't know how to teach anything”) is easy but doesn't help with the immediate problem. The fact is, these students are in your class now and somehow you've got to teach them, and you don't want to spend the first three weeks of the course re-teaching what they were supposed to know on Day 1. What can you do?

Here's a technique that works well. On the first day of class, announce that the first exam in the course will be given in the following week and will cover only the prerequisite material. Hand out a study guide containing instructional objectives<sup>[4]</sup> for that exam, including only the knowledge and skills required for your course and not everything in the prerequisite course text. Further announce that you will not lecture on that material but will be happy to answer questions about it in class or during your office hours. (You may also choose to hold an optional review session.) Then start the course. Most of the students will manage to pull the required knowledge back into their consciousness by the day of the exam, and the few who fail will be on notice that they could be in deep trouble and might think about dropping the course and doing whatever it takes to master the prerequisites by next semester.

You might also try to persuade your colleagues who teach the prerequisite courses to adopt some of those methods that induce students to take a deep approach to learning. If they do that, the problem in your course could take care of itself.

## FOOTNOTES

1. See <<http://www2.ncsu.edu/unity/lockers/users/f/felder/public/Columns.html>> for previous FAQ columns
2. Felder, R.M., and R. Brent, “Navigating The Bumpy Road to Student-Centered Instruction,” *College Teaching*, **44** (2), 43–47 (1996). Available on-line at <<http://www2.ncsu.edu/unity/lockers/users/f/felder/public/Papers/Resist.html>>
3. Felder, R.M., “Meet Your Students. 3. Michelle, Rob, and Art,” *Chem. Eng. Ed.*, **24**(3), 130 (1990) Available on-line at the URL in Ref. 1.
4. Brent, R., and R.M. Felder, “Objectively Speaking,” *Chem. Eng. Ed.*, **31**(3), 178 (1997) Available on-line at the URL in Ref. 1. □

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