

# focus

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## WHAT DO YOU WANT FROM ME?

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It was late August and time to get ready for another term of my course *Fundamentals of Chemical Engineering* (mass and energy balances). The summer had passed and I had somehow managed, yet again, to avoid reorganizing my notes and preparing all the assignments, tests, and exams before the start of classes. Searching for a way to ease my guilt, I recalled the latest "Random Thoughts" article in *Chemical Engineering Education*. Here, I thought, was something that might help.

This paper reports what I tried and how it worked.

### GETTING STARTED

In their Random Thoughts article, "Getting Started," Felder and Brent<sup>1</sup> offered several suggestions for making the first class an effective beginning to a course. They covered opening formalities, tips on learning students' names, and ideas for motivating students'

interests. What caught my eye were two techniques for motivating interest:

*Have students anonymously write and hand in a list of things they know about the course content and questions they have about it;*

and

*Have students write goals for themselves.*

I decided to combine these ideas and

*Have students anonymously write and hand in a list of goals for me; i.e., a list of things they want from me in relation to the course.*

I met with the students on the first day and did my usual first-day thing. This includes many of the items covered by Felder and Brent. (As an aside, I agree with these authors; their suggestions do work.) About five minutes before the end of class, I handed out one-half of a standard four-by-six-inch file card to each student. I then said something like, "Since we're going to see one another at

least four times a week in this course, I want to know what you expect of me. What do you want from me?"

I expected a few quizzical looks, and I was not disappointed. After a brief reassurance that this did not count toward the final grade and that I did not want them to sign their response, the students warmed to the idea and wrote down one or more expectations of me. The fact that I stood by the door and collected the cards as the students were leaving probably accounts for the 100% return rate.

## RESPONSES

The responses from the 25 students enrolled in the course contained 44 separate items. In the analysis described in the next section, I have considered only 41 of the expectations. Three were somewhat outside the scope of my expertise—although the student who asked for a free Perry's probably has a better chance of being satisfied than the one who asked for a new sportscar and a date with a certain famous supermodel.

## ANALYSIS

My first step in analyzing the responses was to prepare a master list from the individual file cards. Natural groupings became apparent as I looked over the compilation. It seemed that all the responses could be accommodated within three broad categories:

**personal** • *pertaining to my approach to students and teaching*

**subject** • *pertaining to my knowledge of the course material*

**instructor** • *pertaining to my ability to impart the course material*

There are obvious overlaps among the three groupings. For example, if I "know my stuff" (subject), then my chances of being a successful teacher (instructor) are enhanced; one way

of enjoying success as a teacher is to create a climate of openness and approachability (personal). Notwithstanding the potential for overlap, it was fairly easy to slot each response into one of the three categories. I did this soon after compiling the master list at the start of the term and again at the end of the term. Only in two or three instances the second time through did I feel compelled to question my initial group assignment for a particular response.

Table 1 gives a sample of the comments and shows the range of response. The actual student comments are given after the heading "Works," according to the personal, subject, and instructor categories. After the heading "Doesn't Work," I have given my interpretation of the inverse of each student comment. This further classification according to what works and what doesn't work comes from the paper by Hauser, *et al.*<sup>2</sup>

Diana Hauser of Johns Hopkins University asked her students their opinions of undergraduate engineering education. A sample of their thoughts on what works and what doesn't is given in the lower part of Table 1 (Reference 2 should be consulted for the full list of student comments). Here, I have taken the liberty of applying the personal, subject, and instructor categories to the items selected from Hauser, *et al.* (Admittedly, the classification of testing under "personal" may seem somewhat strained. I would argue, however, that this is justified because one's approach to testing is certainly part of one's approach to teaching, and testing has a lot to do with a student's perception of fairness.) There are obvious similarities between the current findings and those of Hauser, *et al.*

In the current work the breakdown of all the responses was about 40% for each of the personal and instructor categories, and about 20% for the subject category. My emphasis here, however, is not on the quantitative na-

ture of the responses. First, I clearly don't have enough data to make claims that are grounded in solid mathematical theory. And second, others viewing the entire list of responses might group them differently, perhaps using different categories. For example, a report by the Education Commission of the States,<sup>3</sup> indicates that university students are concerned about specific items such as skills, access to faculty, and hands-on learning experiences (among other things). These concerns could form the basis for analyzing the student responses, as could probably dozens of other possible classification schemes. No matter how the responses are grouped, however, qualitatively the implications will be the same.

### IMPLICATIONS

To me, the obvious implication of the preceding analysis is

*Effective teaching is a blend of content, delivery, and attitude;*

or

*Not only is the message important, but so are the manner in which the message is delivered and the attitude of the conveyor of the message.*

This is hardly earth-shattering news to anyone involved in engineering education, or to anyone who has read even the first few pages of Wankat and Oreovicz.<sup>4</sup> Yet it is a conclusion that bears repeating—especially in cases where one has been teaching the same course material several years running (as in my case with our mass and energy balances course). I had always assumed I knew what my students wanted (or perhaps, what they needed), but I had never asked them. I found the exercise described in the paper a useful “gut check.”

I also found that the student responses helped me better understand the rationale for some of the questions on our university's course evaluation form. This form has the usual assortment of questions relating to course

**TABLE 1**  
**Sample Responses from Current Work and from Hauser, et al.**

Current		
Personal	Works	Being an approachable teacher who answers questions & does not make students feel like they are a bother.
	Doesn't Work	Creating a climate of "me and them," with more emphasis on "me" than on "them."
Subject	Works	Being fair to all students and treating them as equal to one another.
	Doesn't Work	Discriminating among students.
Instructor	Works	Providing a solid understanding of mass balances, energy balances, and systems of units.
	Doesn't Work	Leaving gaping holes in coverage of the syllabus or digressing into areas not in the syllabus.
Instructor	Works	Providing knowledge of how to apply the course material to typical, real-life situations.
	Doesn't Work	Sticking to close-ended, well-defined problems.
Instructor	Works	Doing a complete teaching job, not a half-baked overview of the topic.
	Doesn't Work	Going "once over lightly" through the course material without emphasizing important concepts & without relating the material to other courses.
Instructor	Works	Keeping classes interesting—no monotone lectures.
	Doesn't Work	Using the same style of presenting the material throughout the entire course.
Hauser, et al.		
Personal	Works	Tests that focus on methodology.
	Doesn't Work	Tests that focus on memorization.
Subject	Works	Real-world problems.
	Doesn't Work	Plug-and-chug problems.
Instructor	Works	Lectures with anecdotes and examples.
	Doesn't Work	Chalk-and-talk lectures.

content (e.g., The course . . . follows the course outline? . . . increases understanding of the subject? . . . has a reasonable workload?), and relating to the instructor (e.g., The instructor . . . presents materials in a well-organized manner? . . . communicates enthusiasm and interest in the subject? . . . speaks comprehensibly?). Other instructor-related questions correspond to the "personal" category described earlier (e.g., The instructor . . . is available for out-of-class consultation? . . . treats students with respect? . . . encourages students to ask questions and express opinions?).

A final implication of what I have described is that the things we read in publications such as *Chemical Engineering Education* and *ASEE Prism* work. People report on successful techniques they have developed in the classroom and laboratory, presumably in the hope that others will try them and enjoy similar success. What I tried, after reading Felder and Brent, worked. It helped me understand what my students expected of me, and it began to open the lines of communication between us. At least I had asked what they wanted.

### CONCLUDING REMARKS

This exercise was useful in reminding me of the components of good teaching as perceived by undergraduate students. They want rapport with the instructor, the right material,

and instructor expertise.

Asking students what they want can be an eye-opening experience. To some it may be just plain common sense; to others it may represent more of a challenge because it's a question that doesn't have just one "correct" answer (a true open-ended question). I think, though, one shouldn't ask the question if you're not really that interested in the answers. Once a question is posed, I suspect the mind of a student quickly formulates a follow-up question: "Okay, I've told you what I want. Now what are you going to do about it?"

### ACKNOWLEDGMENTS

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