

**Felder, R. and Brent, R. (2024). [Teaching and Learning STEM: A Practical Guide](#).
Second Edition. Jossey-Bass. P.262.**

INTERLUDE. SERMONS FOR GRUMPY CAMPERS

If you use a teaching method like active learning that makes students take more responsibility for their own learning than they're used to, some of them may not be too enthusiastic about it and push back (Felder & Brent, 1996). If you follow the suggestions we offer in this book about such methods, the pushback probably will be minor and short-lived (Andrews et al., 2022), and it may not appear at all if you can persuade the students that you're using the method to increase the chances that they'll learn more and get higher grades. Following are several mini-sermons Rich has used to help make that case. You can use variants of them when you first introduce the methods and later in response to any negative comments and questions about the methods that students raise.

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Student: Those group activities in class are a waste of time. I'm paying tuition for you to teach me, not to trade ideas with students who don't know any more than I do!

Teacher: You're right—my job is to teach you—but what does that mean? To me, teaching means making learning happen, not just tossing out information. I can show you a stack of research that says people don't learn much by listening to someone telling them what they're supposed to know. You learned most of what you know by doing things, seeing how they went, getting feedback or learning from your mistakes, and doing them again. What you'll do in those short activities are the same things you'll have to do in the homework and tests. The difference is that now when you get to the homework and tests, you'll have already practiced the hard parts and gotten instant feedback, so the homework will go a lot faster and the research says you'll probably do better on the tests.

S: I really hate working on homework in groups—why can't I work by myself?

T: I get that you're unhappy and I'm sorry about it, but I've got to be honest with you—my job here is not to make you happy but to prepare you for college or graduate school and your future careers. Here's what's not going to happen on your first day on the job, no matter what the job happens to be. They're not going to say, “Welcome to the company, Mr. or Ms. or Dr. Jones. Tell me how you like to work—by yourself or with other people?” No. The first thing they'll probably do is put you on a team, and your success will depend heavily on how well you work with those people, with all their faults and quirks. Since teamwork is a big part of what you'll be doing there, my job is to teach you how to do it here, and that's what I'll be doing.

S: Okay, but I don't want to be in a group with those losers you stuck me with. Why can't I work with my friends?

T: Sorry—also not an option. Another thing that won't happen on that first day is someone saying, “Here's a list of everyone in the company. Tell me who you'd like to work with.” What will happen is they'll tell you who you'll be working with, and you won't have a vote on it. I can show you a survey in which engineering alumni who had been through extensive group work in college were asked what in their education best prepared them for their careers (Felder, 2000). The second most common response was “the homework groups.” (Number one was all that tough homework they were so unhappy with at the time.) One of them said, “When I came to work here, the first thing they did was put me on a team, and

you know those annoying teammates back in college who never pulled their weight—it turns out they're here too. The difference between me and people who came here from other colleges is that I have some idea what to do about those slackers.” In this class you're going to learn what to do about them.

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When Rich has delivered one or more of these messages to his students in class or conversation, he has offered to show them the research supporting his claims that learner-centered teaching leads to greater learning and higher grades. (No student in his experience has ever accepted that offer.) If you make it to your students and you get the 1 in 100 who wants to see the research, good sources to cite are Freeman et al. (2014) for active learning, Springer et al. (1999) for cooperative learning (students working on projects in teams), and Prince and Felder (2006) for inductive teaching and learning (putting students to work on problems before teaching them everything they need to know to get the solutions).

End of sermons. Our suggestion is to put your own spin on them and trot them out if and when the need arises. While we can't guarantee that they'll immediately convert all your students into believers, our experience is that at least they'll keep resistance down enough for most of them to see that you were telling them the truth.