

## **MENTORING: A PERSONAL PERSPECTIVE**

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**Abstract.** An experienced faculty member and a relatively new one spent a semester in a mentoring partnership in which each taught a section of the same course. The two instructors regularly sat in on each other's classes and met for weekly debriefing sessions. In this paper they reflect on what they did, what they learned, and what lessons the experience might hold for other mentor-mentee pairs.

Programs on effective teaching for graduate students and new faculty members are becoming increasingly common on university campuses, but many institutions still do not offer them and those that do usually make attendance optional. Most faculty members therefore begin to teach without as much as five minutes of instruction on how one does that, and so they are compelled to learn their craft by trial-and-error. A consequence of this lack of instruction is that most new faculty require an average of four to five years to meet or exceed institutional expectations for teaching [Boice, 1992]. Moreover, while trial-and-error learning is not always a bad thing, in this case the ones paying the principal penalty for the errors are not the ones making them.

An effective way for a new faculty member to shorten his or her learning curve is to work with a teaching mentor [Boice 1992, Ch. 5; Felder 1993; Goodwin & Stevens 1998; Sands et al. 1991; Showers 1985; Skinner & Welch 1996]. In one arrangement [Felder 1993], the mentor and mentee collaborate on a single course in a given semester, either teaching parallel sections or team-teaching a single section and working together to plan the syllabus, assignment schedule, lectures, assignments, and tests. They also periodically sit in on each other's lectures, exchange observations and provide constructive criticism, and troubleshoot problems together.

Recently our department head invited us to undertake such an arrangement, which we were pleased to do. One of us (Lisa) had joined the faculty after ten years in industry and had taught only one term of summer school, and the other (Rich) had been on the faculty for over 30 years and had previously served as teaching mentor to several new faculty members. The experience was instructive and enjoyable for both of us. The narrative that follows describes it from each of our perspectives and may provide useful ideas for others contemplating similar arrangements.

### **Mentoring – Why Do It?**

**Lisa:** After working in industry for ten years, I had a well developed skill set in engineering design, business process redesign, quality management, and business market management. However, standing in front of 65 students three days a week and lecturing on material and energy balances was a whole different ballgame. I had attended a workshop for new engineering faculty taught by Rich Felder and Rebecca Brent that exposed me to a variety of teaching principles and techniques, but the gap between knowledge and skills seemed very wide. During the workshop, Rich and Rebecca observed that working with a good mentor could knock years off the learning curve. The idea appealed to me, and when I was offered the chance to do it I jumped at it.

**Rich:** I've been giving teaching workshops for over 15 years. In my experience, most participants leave determined to implement some of the active student-centered instructional methods described and demonstrated in the workshops; unfortunately, under the tremendous time pressures that all faculty members constantly face, many of them soon revert to more familiar but less effective methods. I have also observed that when new faculty members are mentored for as little as one semester, the alternative methods are much more likely to stick. For this reason I strongly encourage new faculty members who attend my workshops to seek out mentoring relationships if they are not routinely arranged in their departments or schools.

### **Establishing Expectations**

**Lisa:** I was initially unsure about what to expect from the mentorship. I wanted to teach a separate section from Rich's to establish ownership and accountability, although I was somewhat afraid that my section would suffer due to my lack of experience. I knew Rich through his numerous education-related papers and some correspondence prior to my being hired. I was anxious about appearing inexperienced or, worse yet, incompetent to him. Would he attend my class and make long lists of all my mistakes? Would he (horrors!) correct me in front of the class? And yet the potential benefit seemed worth it to learn from "the master."

**Rich:** New mentees are usually (and understandably) nervous about looking bad in front of someone who may eventually be involved in their tenure and promotion decisions. I did all I could to make the mentorship as non-threatening as possible, trying to let Lisa set most of the ground rules for how it would operate. We agreed to observe each other's classes fairly often and to have debriefing sessions once a week, shooting for 30-minute meetings unless there was a major problem we needed to discuss. I told her I would sit quietly in the back during my observations, and I made sure she understood that if she got into trouble (as all of us—experienced or not—occasionally do), she would have to deal with it herself in class and we would discuss it during the subsequent debriefing.

### **Preparation**

**Lisa:** Before the start of the semester, I was relieved to find that Rich already had a well-developed course web site, including the syllabus, assignment schedule, team expectations, and course policies and procedures. He also had handwritten lecture notes that he made available to me. Having all that material gave me a tremendous head start on the course, and I could feel myself relaxing as I reviewed it. I didn't just want to teach from Rich's notes, though, and so I used them as a starting point to construct a set of my own. I wasn't confident in my ability to improvise, and so I wrote everything I intended to say and stayed up late the night before studying my "script."

**Rich:** Developing a new course from scratch is one of the most time-consuming activities faculty members ever undertake, and having to do it can limit their ability to do the scholarly writing and networking that are important to their career success. If I hadn't had such a complete set of materials coming into the course, I would have taken the lead in preparing the lecture notes, assignments, and tests for the first part of the semester (working closely with Lisa so she could see how I went about it), and gradually handed more of the responsibility to her as the semester progressed. Simply parroting someone else's material works no better for teachers than it does for students, however. I applauded Lisa's determination to put her own stamp on the notes

before she lectured from them, and in fact I would have encouraged her to do so if she had not come up with the idea herself.

### **The First Day of Class**

**Lisa:** After stashing the class roll, syllabus, name tents, and a fresh box of chalk in my “class box” (an empty cardboard box I took from the department office), I arrived at class early. Students were milling around in the hall waiting for class to start. This was their first chemical engineering course, and they looked somewhat anxious. Little did they know that their instructor had butterflies of the same variety. Right before class began, Rich slipped in and sat in the back row. I started to sweat and wondered if anyone else was hot in there. I barely made it through half of the extensive lecture notes I had prepared.

**Rich:** Even though Lisa made some of the mistakes that every new professor makes—notably, trying to include everything anyone knows about the subject in the lecture notes and leaving little time for interaction with the students—her caring about the students and their learning was crystal clear. I took detailed notes about what she did well and what she might have done differently in presenting material, responding to questions, and getting student involvement, and fought back my strong desire to rescue her when she stumbled on something that I might have helped with.

### **Post-Class Review**

**Lisa:** Rich and I went back to his office, with me slightly out of breath and covered with chalk. Rich said, “Well, how do you think things went?” I went through my mental laundry list of all the things I said wrong and the mistakes I made on the board, and ended up convincing myself that it was probably the worst lecture in the history of education. He smiled at me and said, “You’ve forgotten something.” I mentally reviewed the class, trying to recall a major blunder that I had overlooked. Rich waited a few moments, and then said, patiently, “Did you do anything right?”

Anything right? I had to think for a moment before I could come up with something. Well, I was prepared...I was organized and had all the course documents ready for distribution...I think I was positive and enthusiastic and conveyed to the students that I was happy to be there—at least I tried to do that. He then added some things I hadn’t thought about, like the clarity of my speech and board work and the way I dealt with a couple of the questions, and he gave me some nice general compliments about how well he thought the class went. Then we went on to a few of the problems (excuse me, “opportunities for improvement”) I had brought up. For each of them, he first got me to say what I thought the problem was and what I might have done differently, and then he offered his ideas. In all subsequent debriefing sessions, we always began with what went well (although I kept having to be reminded to do that) and then went on to the possible improvements.

**Rich:** All the mentees I have worked with thought their first lecture was a complete disaster and didn’t think of mentioning anything that they had done well. Some first classes were of course better than others, but they were all better than the new instructor thought, and I felt it was important to make Lisa aware of that so she wouldn’t lose confidence. We could have spent a long time discussing all the things she thought she did wrong (many of which were hardly worth

mentioning) and other things I had noted during the class, but I only addressed a few points since there's just so much anyone can absorb in one sitting. At the end of that session and each subsequent one I asked her to summarize areas for improvement and then to list the good points about the lecture, giving her reminders if she had forgotten any major items in the second category.

## **Lecture Preparation**

**Lisa:** In their orientation workshop for new faculty, Rich and Rebecca had warned about the danger of spending too much time on lecture preparation and suggested no more than 2–3 hours of preparation per hour of lecture time. Having taught this course for 30 years, not to mention co-authoring the text for it, Rich could manage very nicely with sketchy handwritten lecture notes. I wanted something more structured (and more permanent), so I began to word-process the notes, which I was usually but not always able to do in less than three hours per lecture. I ended up preparing 14 weeks of notes in this format.

**Rich:** The two- to three-hour limit on class preparation time comes from Boice's (1992) work on quick starters and is an average—there will invariably be some lessons that require more preparation. The real point is that if you're spending nine hours preparing for each lecture hour (which many new faculty members Boice studied did), you're definitely overdoing it.

One reason Lisa was able to keep her preparation time within reasonable bounds was that she had a good set of starting course materials. I always advise new faculty members getting ready to teach a new course to ask an experienced colleague if they can borrow his or her materials for the course and modify them. Eventually the new faculty members will have materials that are entirely their own, but that first preparation is a killer for time consumption and anything they can do to minimize the burden is worthwhile.

## **Class Observation**

**Lisa:** My class met on Monday, Wednesday, and Friday and Rich's was on Tuesday and Thursday. By attending most of his classes, I was able to get either a pre-game or post-game take on my lectures which enabled me to clean up the lecture notes. Seeing how Rich set up the material or worked through a tricky problem often gave me ideas I could take to my class. I also got the benefit of hearing the questions that arose in Rich's section so I could be prepared to answer them in my own. Since I sat in the back row, one of my key roles in Rich's section was to remind him to take a mid-class break using international sign language for "stretch."

**Rich:** Having Lisa in my classes probably did more for my teaching than for hers. Besides reminding me to call for a stretch break about halfway through each class (something I always intend to do in 75-minute periods but sometimes get too absorbed in my lecture to remember), she observed how students responded to different things I did, including some things that I wasn't aware I was doing. With my strong encouragement, she shared her observations with me during the debriefings. I wasn't particularly happy to hear about some bad habits I had slipped into over the years, but having them brought to my attention enabled me to work on correcting them.

## Dealing with Questions in Class

**Lisa:** One of my biggest challenges as a new instructor was handling questions. Although I tried to anticipate and prepare for them, it seemed that my brightest students could always find something that threw me. One day a student asked whether a vapor pressure would be higher or lower if conditions in a process changed in a certain way. I had no clue and instinctively glanced back at Rich. He had one eyebrow raised. Was that his secret code for higher? I punted and told the student that I wanted to think about it and I'd have an answer for him in the next class.

**Rich:** Lisa knew I wouldn't jump in with an answer, but it's hard not to look for a lifeline in that situation. (I had no idea my eyebrow was raised, incidentally—it certainly wasn't a conscious signal for anything.) What I told Lisa in the debriefing was that her response to the student was perfect: if an answer to a question doesn't come to you fairly quickly, don't bluff or spend a lot of time fumbling around with it. Instead, compliment the student on asking a good question, say that you don't know the answer offhand but you'll figure it out and go over it next class, and then do it. We had talked about this issue previously, but when you're on the hot seat it's easy to forget.

## Exams

**Lisa:** We found a two-hour slot in the late afternoon when all but two or three of the students were free, and so we had common exams for our two sections and made arrangements to give the tests earlier to the students who had conflicts. We told the class that we would design the tests to be taken in one hour, so that they should all have ample time to finish. I wrote the first draft of the first exam. Rich went over it and gently observed that the best of our students would have trouble finishing it in two hours, let alone one. He also pointed out a number of places where I had made the problems unnecessarily confusing or tricky. He then revised the test, making it much tighter and clearer; I made some final adjustments, and we gave it.

On the night of the exam, I'm not sure who was more nervous—me or the students. During the exam, I watched facial contortions, pencil chewing, head scratching, and in one case, yoga positions as the exam proceeded. After the exams were graded, Rich's class average was ten points higher than mine, which made me feel terrible. Subsequently, we took a closer look at the class demographics and found that my section had significantly higher percentages of transfer students and students who had previously failed the course one or more times. This finding helped to explain the test score gap, although I still felt somewhat unhappy that my class hadn't done better.

**Rich:** Making up tests that have the proper balance of challenge and fairness is in my opinion the hardest job in this business, and it's impossible if you don't sit down and take the test yourself after you've written it. Even after 33 years of making up tests, I still miss the mark a depressing amount of the time. I draft the test, think it's perfect, take it, and that's where the problems surface. It's *always* too long, there's too much busywork, problems are overspecified or underspecified or unreasonably tricky, the writing is confusing or overly dense, there's too much or not enough high-level thinking required, and so on.

Normally I'm inclined to let mentees learn from their mistakes, but if the mistake involves failing many students and demoralizing many more, I feel obliged to intervene as I did

with Lisa's first test draft. Well before the end of the semester, she was subjecting her tests to the same pre-screening that I use (except that it took about a decade for me to arrive at it), and they were just fine. Unfortunately, some professors go through their entire careers without getting the hang of fair test construction, which to me is a powerful argument for mentoring new faculty members.

### **Student Evaluations**

**Lisa:** In the mid-semester evaluations, one student commented, "It's very distracting when you touch your chin a million times during class." I didn't know I had been doing that, and wondered if I was subconsciously pretending that I had Rich's beard. I vowed to NEVER touch my chin again.

**Rich:** Lisa *would* lead off a discussion of the student evaluations with a negative comment like that one. Early in the semester I got the following e-mail message from her:

*"One of my students just stopped by with a question, and said, 'It's obvious that you really care about us students...I've never had a teacher that cared before.' I'm not sure if I feel like smiling or crying!"*

I told her that both responses were entirely appropriate, and added that she should start a file for messages like these—they remind us of why we're in this business. The student comments from her final course evaluations were equally impressive: for example,

- *"I feel that Dr. Bullard should teach a class in "attitude" for all CHE instructors and assistants. It is my third year at NCSU and she is the most pleasant and cordial professor I have had at this institution. I wish every instructor showed the same love and commitment to their profession as she does."*
- *"Dr. Bullard is a wonderful teacher! She is definitely the best teacher I have ever had at State! I hope to have her in some of my upcoming CHE classes. She gives clear, concise points in lectures and is extremely receptive to questions."*

### **Benefits of mentoring**

**Lisa:** Based on my experience, benefits to the mentoring relationship include:

- Getting frequent demonstrations of good teaching practices and having the opportunity to implement them quickly in my own class
- Constructive feedback on my performance
- Relief from the burden of developing content from scratch
- Diminishment of the fear that comes from having to go it alone
- Having a sounding board for new ideas and a ready source of help with uncertainties and problems

- Being able to offer my mentor new ideas from the perspective of someone doing all these things for the first time
- Being able to teach at a higher level during the first offering (the students are the real beneficiaries of this one)
- Finding a professional colleague and friend with my best interests at heart at the beginning of my faculty career

**Rich:** What she said!

### **Recommendations**

**Lisa:** If you're a mentee, seek out a mentor who genuinely cares about working with new instructors. Don't be afraid to ask questions that might reveal your ignorance (after all, you *are* ignorant about many of the finer points of teaching, and you can probably stand to brush up on the subject matter as well—that's why you have a mentor). If possible, use your mentor's class materials as a starting point for yours. After you've developed some confidence, step out and take the initiative in preparing your own lectures and tests, and then ask for feedback. Seek to give back as much as you receive by providing your mentor with constructive feedback on his or her own teaching.

**Rich:** If you're a mentor, go into the experience with an open mind, prepared to learn as much as you teach. Begin by offering your mentees options for the types and levels of feedback you can provide and let them call the shots, doing your best to honor their requests. Keep your mouth shut during their classes, be constructive but gentle when giving feedback afterwards, acknowledge the things they're doing well before you get into critique, and keep reminding them to think about those things along with their self-perceived flaws. At the end of the year, go out for a celebration dinner. Finally, in a few years, when your mentee starts winning teaching awards, talk her into serving as a mentor for the next faculty hire. When she protests that she doesn't know how, offer to mentor her on the process.

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