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Microeconomic Principles Teaching Tricks

By DANIEL S. HAMERMESH*

There is a welter of advice about what topics to include, which audiovisual/computing wizardry to employ, and how to use modern learning “theory” in Microeconomics Principles classes (William Becker and Michael Watts, 1999). What appears lacking (except for Kenneth Elzinga, 2001) is plain advice aimed particularly at newer instructors on how to present material and treat students—generally how to avoid having the course burden students and instructor. The spur is my upset when people say economics was the most boring course in college and one they never understood. My only bona fides for providing this advice is experience, over 30 sections of Micro Principles with over 12,000 students. The advice is aimed toward instructors of sections of at least 100 students, but most applies in smaller sections as well.

The crucial assumptions here are that students: (i) do not intend to take more economics; (ii) know very little about what economics is really about; and (iii) are very concerned about maintaining/raising their grade point averages. These assumptions regrettably characterize the majority of students in Micro Principles classes and should condition how we teach. They imply that the burden of teaching, including the sheer physical energy and attention required to demonstrate the relevance of economics and maintain students’ interest, is greater than in other courses. They necessitate introducing only those techniques that will be used in class in analyzing real-world issues: Teach ideas, not techniques.¹ The purpose is to enable students to see economic principles in action in real life, not to prepare budding economics majors.

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¹ A visiting instructor introduced his students to basic consumer theory by presenting a derivation involving bordered Hessians.

I. In-Class Issues

For most students the principles of microeconomics seem quite dry. They come alive only when instructors provide engaging examples that illustrate them. Examples from one’s own life, newspapers, popular culture, and the students’ lives bring home the importance of the topic. A few of my favorites are:

- (i) Scarcity and the production possibility frontier with one input (student’s time) and the two outputs (grade point average and social satisfaction). This lends itself to explaining increasing opportunity cost. A general technical improvement (making do with less sleep) and a specific technical improvement (speed-reading) illustrate the remaining points.²
- (ii) Oligopoly in various industries shown by a list of advertisers on the most recent Super Bowl telecast.
- (iii) Demonstrating in an amphitheater-style classroom how a firm can reach a profit maximum without knowing profits at every point by blindfolding yourself, taking tentative random steps, and moving only when the step leads you to a higher level (giving visual meaning to hill-climbing algorithms!).
- (iv) Having increasing numbers of students use one piece of chalk to write “Hook ’em Horns” as often as possible in one minute on one chalkboard to illustrate decreasing marginal productivity.
- (v) Auctioning \$10 to eight students who are allowed to collude (typically unsuccessfully) before they write their sealed bids,

² My favorite example of a specific technical improvement in producing social satisfaction, the “orgasmatron” in Woody Allen’s film *Sleeper*, is regrettably increasingly dated.

illustrating problems of maintaining a cartel.

This approach challenges you: It requires constant attention to what students are doing and to the media in order to generate new examples. Throughout, however, the rule must be: Use any gimmick that will help illustrate the idea and fix it in students' minds, so long as the purpose is illustration, not merely showing off the gimmick for its own sake.

Ideas at the frontiers of economic research (i.e., the things you read about and are working on) can demonstrate the excitement of the discipline (and your excitement about economics). In many cases they can be readily explained and shown to relate directly to the topic at hand. I concentrate on frontier ideas in my specialty, using examples of household production and my own research on the economics of beauty. Some fairly recent ideas in game theory are useful at this level, as no doubt are frontier ideas in areas I am even less familiar with. These ideas should be used to illustrate basic principles, not to demonstrate how fancy economics can be.

Frontier ideas have the additional virtue of showing good students what economic analysis can do and of enticing those who might consider becoming majors. Supplemental materials aimed at part of the class are also useful for addressing dispersion in students' abilities and interests. I use a handout that contains a number of ideas, including elasticity, the relation of average and marginal, and the firm's profit maximization, derived using calculus. I have found that posting an "Economic Thought of the Day" on my web site, to illustrate some unusual or interesting point, can also intrigue students.³

One should have detailed notes, with illustrations and examples worked out. A spontaneous example/illustration is likely to be botched, with the loss to most students far exceeding the benefit to the few who try to work out your example on their own. If you have thought about the class, these notes are mostly a security blanket; but it is essential that you have them at hand. Notes should be ready at least three classes

ahead of schedule. If you are sick or called away on an emergency, your substitute will have teaching materials, and you will not need to make last-minute preparations when you return. If you get "lost" during class (which happens to everyone) and cannot recover quickly, move to the next point in your notes instead of floundering around trying to correct the exposition.

With the advent of PowerPoint it is easy to have one's entire lecture ready-made for presentation with a computer projector. While many teachers prefer this, for Principles students this encourages passive learning and prevents them from confronting the material as directly as they should. Only a presentation that puts one line on a graph at a time achieves the benefits of a "live" exercise in graphing equilibrium in a market or showing the firm's cost-minimizing position. Offering students printed notes of the lecture, which they will surely rely on, gives them an incentive to avoid active engagement with the material.

Especially in Principles, with 18-year-old students, it is crucial to be aware of their reactions: Are they listening, or are they daydreaming or reading the campus paper? One must be continually aware of this. Asking "Do you understand?" is worthless, as few will say no. If students do not seem to be with you, modulate your voice, change from general point to example or vice versa, or move around the room a bit. (All of this within limits; too much jumping around leads students to focus on your gyrations rather than the substance.) Everyone has idiosyncratic mannerisms, but they should not be so repetitious or bizarre as to be distracting.⁴

Despite the immense amount of content that we believe we include in each lecture, there are typically only three or four main points, each expressible in a pithy sentence. Reminding yourself of these by including them at the top of your notes, and listing them for the students at the end of the lecture, provides a good overview of what you have done.

The Socratic method is valuable even in a giant Principles class, but it should be highly limited. Even in a small class many other stu-

³ Now in *Economics Is Everywhere* (McGraw-Hill Irwin, forthcoming).

⁴ Student evaluations once stated that I looked at one side of the hall much more than the other.

dents will “tune out” while you are dealing with the chosen victim. One issue is how many student questions to take. The initial limit is imposed by your need to finish the planned material. Beyond that, if you believe a question is not directly on target, there is nothing wrong with telling the student to come up after class for the answer. If the question is germane, but either you cannot think of an immediate answer or it is too complex to discuss in front of the whole class, telling the student that you will answer next time is quite acceptable. As long as you express a willingness to answer questions in some venue and follow through, you will not be doing a disservice to your students.

In most classes where you encourage questions you will find that a few students dominate the questioning or even believe they have the right to interject questions constantly. The former can be kept in check by randomizing who is called on when several students seek to ask a question. The latter should be discouraged by a heart-to-heart discussion early in the term, as that behavior detracts from other students’ learning. The main point in all cases is that *it is your job to control the classroom*; this is your playing field on which to make sure all students learn. Students will learn from you best if you give yourself the opportunity to teach the material, albeit when appropriate through responses to students’ questions.

Students deserve to be treated with respect. Telling them they are stupid if they fail to understand something is disgraceful. Commenting on or using a student’s characteristic or personal quality as an example is *ultra vires*, as are references to or jokes about issues that might offend students (including all the usual protections of race, ethnicity, sex, religion, and sexual preference). Bending over backwards to help those disadvantaged in the class (i.e., volunteering non-native English speakers extra time on exams, and abiding by requirements that disabled students receive extra exam time) are necessary accommodations.

Students will begin rustling their papers well before the end of the class hour, and some will escape before the bell rings. They have a right to expect the class to end no more than one minute after schedule. Obversely, you should never finish more than two minutes early, lest the students’ expectations adjust in a downward

spiral toward ever-shorter class times. Starting times should be similarly rigidly held. Students who arrive late should quickly learn to take a seat in the back of the room, as should those who persist in talking. Class time should not be wasted advertising for student causes; and allowing politicians or other hucksters into class in the guise of “guest lecturers” usually does students a disservice. The students are paying for a full class hour; they have gotten used to your teaching style, and you are being paid to teach them.

Even before you decide what and how to teach, you must decide how to look. While students should be focused on substance, your appearance affects their concentration and thus their learning. Younger instructors, with whom students would like to be “pals,” need to distinguish themselves from their charges by dressing differently (and neatly). Students demand more from female instructors and sadly fail to take seriously those who are dressed informally. These are unfortunate facts, but ignoring them by dressing sloppily or too casually reduces your effectiveness.

II. Organization, Testing, and Grading

To every extent possible details about the course should be listed on the syllabus. As well as the readings and assignments this includes the timing of all tests and the intricacies of your grading procedures. The syllabus is a contract between you and the students, and putting your relationship on a contractual basis eliminates possible misunderstandings. Your office location and the timing of your office hours (and those of teaching assistants) should also be included, as should the URL’s of any relevant web sites, including your own.

Each instructor is obligated to hold office hours.⁵ These are for students who want additional clarification/explanation, not for those who missed class and want the lecture repeated. Holding specific fixed hours limits demands on your time, making it clear that you are available outside those hours only by appointment. (Remember, teaching is typically only part of an

⁵ One of my professors held office hours only during the short walk back from class to his office.

academic job; you are not at students' beck and call.) This view, of course, obligates you to schedule a reasonable number of weekly hours (three or four) and to make absolutely sure that you are present (with your door always open to obviate accusations of harassment). If you must be absent, it is your duty to arrange a substitute, ideally one who can sit at your desk.

Students always want more tests (showing that they understand the importance of spreading risk); but two midterms and a final exam in a semester should be enough. I couple these with weekly quizzes in non-exam weeks, using the last 10 minutes of class time once a week for a quiz containing six simple questions. The quizzes are designed mainly to ensure that students attend class and do the readings. Given time constraints, in a large Principles class it is difficult to avoid multiple-choice final exams; yet in many universities such tests are unfortunately the only kind students ever see. In a subject that requires analysis and not too much rote work, it is important to construct at least one midterm exam as essay/problem. The real world will not later confront the student with multiple-choice opportunities to which to apply the microeconomic principles that you taught.

One can spend huge amounts of time preparing and arranging make-up exams for students who have relatives or pets die, travel for job interviews or athletic engagements, have vehicle breakdowns, are disturbed by riots/war/famine/plague in their home country, or have other worthy excuses. Rather than listening to these tales of woe, a simple and reasonable solution is to state at the outset that you automatically drop one midterm exam or count the final exam at half value, whichever change aids the student's grade most. The missed midterm exam is dropped, obviating the need to construct make-up midterms and accommodate delinquent students' diverse schedules.⁶

One or two days before each midterm exam, a question-and-answer session is a fine way to offer students a chance to test themselves and allay some of their fears. This should be done outside of normal class time to avoid interfering

with instruction, and the students should know that this is not a review taught by you, but your responses to their questions. These sessions also reduce peak-load demand on your office hours, as does announcing on the first class day that peak-load problems will arise and that students' time price should lead them to spread demand more evenly over the term.

Most students believe that much cheating goes undetected and applaud your efforts to catch cheaters. Given the difficulty of proof, however, it is crucial to have ironclad evidence. Cheaters should be caught in the act by two people; your statement alone is unlikely to be credited, especially if you are a junior instructor. You need to be almost absolutely sure that papers that look similar do not in fact reflect independent work.⁷

A quiz or a midterm exam should be a learning device for the students. Give midterms on the last class day of the week, and maximize learning by returning them at the start of the first class day next week and discussing questions that were frequently missed. Instructors who wait weeks to return exams waste their time and their students' time.

Outside as well as in class, it is crucial to maintain control. Grading should be fair but close to final. Allowing arguing/bargaining for points creates perverse incentives for students, generates increasing demands on your time, and produces the perception among all students that grading is unfair. One can avoid this by instituting "corrections sessions" after each exam, an hour set aside in the late afternoon or evening at which students can complain to whomever graded each question. Grades should be altered only if there are egregious grading errors (presumably when the grading was done the grader maintained a consistent set of standards). Since some students cannot attend these sessions, an additional interval should be allowed for grade changes. There should be a short statute of limitations, however, as students have a disturbing tendency to insist on changes in a previous grade when the outcome on the next test falls below their expectations.

⁶ This dominates one former colleague's requiring students to bring in obituary notices to justify missing a midterm for a relative's funeral.

⁷ Based on almost identical paragraphs on an essay exam, I accused twins of cheating. They denied it vigorously. When separated during the next exam, they again wrote almost identical paragraphs.

Sending congratulatory letters to the top 2 percent of the class rewards good work (and perhaps attracts majors). It provides faster feedback to students and saves you time if you post individually accessible course grades on the web as soon as you have completed them. After the semester, some students will complain or at least ask why they did not receive the grade they expected or desired. To screen frivolous requests, rely on variations in the shadow price of the students' time: State on the final exam that you will be happy to answer any questions about grades after the first week of the coming semester.

III. Never Easy, but Doable by All

The night before the first class of the term, I lose sleep worrying about how to pitch the course, and I become nervous just before each class. This is probably a subconscious way of generating the adrenalin necessary to do a job that will engage the students, partly a way of

forcing myself to take the task seriously. This is probably true for anyone serious about instructing Principles, the most important teaching that we do; and it will be even more so for inexperienced Principles teachers. You should recognize that you have a big advantage over the students: You know the material and are enthusiastic about it. All you have to do is learn how to explain it, how to attract and maintain their interest, and how to keep control of the classroom and the course generally. With effort and a bit of thought most instructors can achieve these goals.

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