

## TEACHING ECONOMIC LITERACY: WHY, WHAT AND HOW

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The typical first course in economics, called “Principles of Economics” in the U.S. and “Economics 1” or “Introduction to Economics” in the U.K., provides students a foundation on which to base further study. In September 2004, the web page of the University of Edinburgh Economics Department (<http://www.econ.ed.ac.uk/>) explained the first course in this way: “The Economics 1 course serves both as the foundation for further undergraduate study of economics and as a survey of the subject for students taking it as an outside course.” To pursue the foundation goal, first-course instructors cover a long list of concepts and defer intensive application of them until later courses.

An alternative goal for the first course is to provide students with a self-contained opportunity to attain a deeper understanding and working knowledge of a short list of economics concepts. In a short-list course, students apply concepts to decisions like those they will make at home and at work and use them to interpret national and international economic news and policy. While different instructors will have different short lists, some concepts will appear on every list and others will appear on none. The short list will always include scarcity, opportunity cost, marginal costs and benefits, demand, supply, and market price. It will rarely include accelerators, Nash equilibria, money multipliers, and monopsony.

The first economics course should be a short-list rather than a long-list course. Most students take only one economics course. If the course pursues the foundation goal, students encounter a barrage of concepts, graphs, equations, and rules that they barely memorize and quickly forget. If the course is a short-list course, students apply opportunity cost, marginal analysis, demand, supply, and equilibrium in a variety of settings. Through repeated application, students attain lasting understanding.

The short-list course is also a good way for students who take additional economics courses to begin studying economics. Short-list course students learn that they can use economics ideas to gain important insights into interesting and relevant issues. Learning that economics is relevant is a powerful motivator. The short-list course may attract students to the economics major and make them more enthusiastic about studying economics.

Economic majors, who begin with a short-list first course, can attain a foundation for future study through a second, advanced principles course that covers concepts and tools majors need later. U.S. colleges and universities frequently offer side-by-side micro and macro principles courses. A superior alternative would be a short-list first course followed by an advanced principles course where students gain a foundation for later study.

In what follows, I define “economic literacy” and explain why attainment of economic literacy should be the goal of the first course in economics. I suggest concepts that can be dropped from long-list courses and provide detailed examples of how to use reclaimed class time to promote economic literacy.

#### *What Does Economic Literacy Mean?*

Students attain economic literacy if they can apply basic economic concepts years later in situations relevant to their lives and different from those encountered in the classroom.<sup>1</sup> What concepts are basic? As part of its “Campaign for Economic Literacy,” the National Council on Economic Education (NCEE) identified twenty standards that explain what secondary school graduates should know about economics. The first standard, for example, explains scarcity. “Productive resources are limited. Therefore, people can not have all the goods and services they want; as a result, they must choose some things and give up others.”<sup>2</sup> By a basic economic concept, I mean the concepts included in the standards.

The first college economics course should help students become “economics literate” in the sense that they can apply the twenty standards. The first course should not be the same as the high school course promoted by NCEE. Because college students are more mature and have a greater capacity for learning, it should involve greater challenges. But, like the NCEE high school course, the first college economics course should teach to the standards before targeting other goals.

#### *Why Target Literacy?*

The most important reason to target literacy in the first economics course is that adults, in general, and students taught via long-list courses are not economically literate.<sup>3</sup> In their assessment of a 1992 Gallup survey of economic literacy in America, Walstad and Larsen report that 64 percent of the general public and 79 percent of college seniors picked “supply and demand” when asked whether “the prices of most products in a competitive market are determined by government, business monopolies,

supply and demand, or the consumer price index” (Walstad and Larsen, p.50). But 65 percent of the public and 43 percent of college seniors indicated that during a crisis in the Middle East “...government should prohibit oil companies from raising ... prices.” (Walstad and Larsen, p. 65). In a Harris poll (Harris, 1999 and *Parade Magazine*, 1999), only one in three knew that those who borrow money at a fixed interest rate are most likely to benefit from inflation. In a Minneapolis Federal Reserve survey (Fettig, 1998), only 30 percent knew that government can reduce inflation by lowering spending and money growth.

These survey results are evidence that even when respondents recognize the names of economic concepts, most are unable to use them to answer questions of practical importance. I doubt that those who want government to cap oil prices understand that doing so will create long queues, black markets and side payments. Respondents may know that inflation means rising prices but do not understand the connections between inflation and interest rates and between government policies and inflation.

Completing what is currently offered as a first course in economics has little impact on economic knowledge and understanding. Walstad and Rebeck (2002) find no significant difference between the economic knowledge of the public and those who have taken a high-school economic course and a small (6-11 percent) but significant difference between the economic knowledge of the public and those who have taken the first college economics course (Walstad and Rebeck, p. 928). In a 15-question Gallup survey of college seniors, college economics course takers scored 9 while those who took no economics scored 7, a small but significant difference (Walstad and Allgood, 1999, p.350). The low impact of the current first course on knowledge of economics is consistent with how students view the course: “This is how economics is understood after two semesters at most colleges: I. There are a lot of graphs. II. I'd better memorize them. III. Or get last year's test.” (P. J. O'Rourke, p. 105).

College enrollment data provide another reason to re-focus the first course on economic literacy. Currently, 40 percent of U.S. undergraduate students complete at least one economics course (Siegfried, 2000) while only 2 percent major in economics (Margo and Siegfried, 1996). Thus, the current first course provides a sub-optimal educational experience for 95 percent of those who take it.

Not everyone agrees. In his comments on Hansen, Salemi and Siegfried, Robert Lucas (Lucas, 2002) says:

It would be hard to think of a surer way to discourage the most able students from pursuing a career in economics than to offer them a 50-year old textbook on the grounds that P. J. O'Rourke did not like graphs....Knowledge is cumulative—a fact that should make us happy, not sad. One of our jobs as teachers is to help our most eager and creative students get to the knowledge frontier as fast as they want to go. In the natural sciences and the arts, introductory courses are professionally oriented basic-training courses on which one can build a creative career. Economics students deserve as much. (p. 473)

Lucas may speak for many when he says that we have an obligation as educators to stimulate and encourage our best and brightest students. But at what cost? The curriculum of our first course may stimulate and encourage a few but provides little lasting value for the many.

Because economic literacy entails the ability to use economics, a course targeted to economic literacy must provide students practice in using short-list concepts. We would not teach students tennis only by having them watch Wimbledon and we should not expect our students to be able to do economics after watching us do it in our lectures. Becker and Watts (1996, 2001) find that first-course instructors in the U.S. spend the vast majority of class time lecturing and devote almost no class time to hands-on activities. Lecture dominates first-course instruction at research, doctoral, and masters institutions. It also dominates instruction at liberal arts and associate-degree institutions. Reiman (2004) finds reports that a reliance on lectures and a content-driven, fast-paced approach is common to the first course in economics offered by three very different U.K. universities. Pursuing the foundation goal forces instructors to cover material quickly—by lecturing. Covering the material, however, is not the same as helping students learn it.

#### *What Concepts Should Be Dropped from the First Course?*

Economists understand resource constraints. The binding constraints in the first-course are the ability of students to process new information and their willingness, given competing opportunities, to study economics. Our ability to cover material is not a binding constraint—we can cover material far more

rapidly than students can and will learn it. Commitment to literacy requires that we focus the course on fewer concepts.

Although the reader's list is likely to be different, my first-course students do not study cost curves (ATC, MC, AVC, and AFC). The only graphs they encounter are demand and supply graphs and the production possibilities frontier. They learn the difference between price-taking and non-competitive behavior but not non-competitive industry structures. They do not study elasticity formulas but do know the revenue test for elasticity. They do not study national income accounts or multiplier formulas. They learn that monetary policy takes the form of an interest rate rule but do not worry about the mechanics of money creation.

What principle did I use to construct my drop list? I drop from the first course concepts that students are unlikely to use later in life especially when those concepts are technically demanding. For example, I retain comparison of marginal costs and marginal benefits because that is an essential feature of the economic approach to decision making. I drop the relationship among ATC, MC, AVC, and AFC because I believe that most students will not use these concepts to better understand their world. Students use the idea that firms try to enter profitable industries and exit unprofitable ones. But they will not use the fact that the MC curve cuts the ATC curve at its minimum.

If my list includes a favorite topic of the reader, remember that commitment to a short list is more important than the specific list. But remember, too, that the union of our sets of favorite topics is an encyclopedia rather than a course. Discipline is required to free up time in the first course that can be devoted to exercises where students practise using economic ideas.

#### *How Should Recovered Time Be Used?*

An old story tells of a wide-eyed visitor to New York who asks a native: "How do I get to Carnegie Hall?" The New Yorker briskly replies: "Practise, practise, practise." That is my answer to the question of what should be added to the first course in economics. In pursuit of economic literacy, students should work with economic concepts in class every day. They should solve puzzles and analyze policies. They should construct arguments and support them. They should interpret Adam Smith.

Readers may be tempted to “have their cake and eat it too” by promising out-of-class assignments where students practise using economic ideas. Out-of-class assignments are not good substitutes for in-class exercises. Why? Good exercises provide students with opportunities to explain their thinking and constructively critique the thinking of others. They should also provide opportunities for students to obtain feedback and to revise their thinking in light of the feedback they receive. Both of these objectives are more easily met with in-class assignments.

There are many types of hands-on activities that help students practise using economic ideas. Walstad and Saunders (1998), Becker and Watts (1998), and Salemi (2001) provide examples. By way of illustration, I describe a set of exercises that lead students to a deeper understanding of opportunity cost and marginal analysis. The exercises are part of my plan for the first week of my first year course.

I begin by holding up four snack packages<sup>4</sup> and asking students to raise their hand if they would like one. I then ask them to keep their hand raised if they are willing to give up something (anything) of value to obtain one of the snacks. A quick count reveals that the number of students who want a snack is greater than the number of snacks. I explain that snacks are therefore scarce and we face an economic problem—how to decide who gets a snack.

I next define “tradeoff” and “opportunity cost” and say that I am prepared to provide a snack to a student volunteer. I ask the volunteer to rank the four snacks from most to least preferred and to choose a snack as a reward. I then ask the student to identify the tradeoffs he faced and the opportunity cost of his snack choice. Because some students do not initially understand the difference, I must be prepared to work with the volunteer until he gets it right. After the volunteer sits down, I again explain the connection between scarcity, choice and opportunity cost, and ask students to complete exercise A which I have provided on a sheet of paper that allows space for written answers.

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### Exercise A

The purpose of this exercise is to improve your understanding of opportunity cost. Answer each question in the space provided.

1. How is “trade off” different from “opportunity cost”?
  2. Give an example of how you could use “opportunity cost” to improve a personal decision. Explain why thinking about opportunity cost improves the decision?
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After students complete their initial answers, I ask volunteers to read their answers to question 1. I expect some answers to be better than others and interact with students to promote appreciation of the better answers and revision of the weaker ones. After interacting with two or three students in this way, I ask everyone to revise their answer in light of what they have heard.

I then ask volunteers to share their answers to question 2. I gently probe the volunteers to make sure that they have a clear understanding of opportunity cost and understand the relevance of opportunity cost to their personal decision. For example, one excellent outcome of this part of the exercise would be for a student to explain the opportunity cost of an impulse purchase at the shopping mall. After two or three volunteers have spoken, I allow time for questions and then ask everyone to revise their answers.<sup>5</sup>

In the next part of the class, I introduce marginal analysis and explain that most economic decisions involve doing a little bit more or a little bit less of an economic activity.<sup>6</sup> After providing several examples, I ask students to complete Exercise B.

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### Exercise B

You have been invited to a party on Thursday night.

1. What is your opportunity cost of attending the party?
  2. If you decide to attend, how can you use marginal analysis to decide how long to stay?
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What do I expect students to get out of Exercise B? First, Exercise B reinforces understanding of opportunity cost by making clear that time is also a scarce resource. Second, it asks students to transfer their understanding of opportunity cost to new context, one that is relevant for their day-to-day decisions. Third, it introduces marginal analysis and invites students to explore its meaning and the relationship between opportunity cost and marginal analysis.

I use the same approach to debrief Exercise B that I use to debrief Exercise A. I first make sure that students understand that there is a cost to attending the party. Students may think initially that there was no cost because they “had nothing better to do” or because they were not required to pay. If a student initially answers in this way, I ask them what else they might have done. I sometimes help students develop a list of alternative activities and then ask which alternative they would have chosen if the party had been suddenly called off. I also help students understand the difference between “low cost” and “no cost”. Some students may say that they had “nothing else to do” besides the party. I help them realize that foregone sleep is a cost of attending the party but may not be a large cost if the student places little value on sleep.

Debriefing question two is more difficult because students initially find it counter intuitive to think at the margin. I ask students to think of participating in a party as a series of separate decisions to remain at the party for the next half hour. I ask whether they think the benefit of attending the party increases or decreases with the passing half hours. I ask if they have ever decided, in retrospect, that they stayed too long at a party. I ask how benefits and costs change as time at the party passes. After student responses indicate that they “get it” I allow time for everyone to revise their written answers.

I next explain that the concepts of opportunity cost and marginal analysis are also very useful for evaluating important public policy decisions and that voters frequently seem to ignore the opportunity costs of policies. As an illustration, I ask students to complete Exercise C.

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### Exercise C

The purpose of this exercise is for you to practise applying “opportunity cost” and “marginal analysis” to problems that decision makers face in the real world.

The City of Chicago owns a broken down pier next to a downtown park. A local politician has proposed converting the pier into a beautifully landscaped walk-way that will permit park users to view Lake Michigan. The politician proposes paying for the project by raising the hotel tax by one-quarter of one percent. (S)he argues that Chicagoans should support the project since visitors will pay for it.

1. Use the concept of opportunity cost to write a reply to the politician.
  2. Suppose that the City Council decides to build the walk-way. How should marginal analysis be used to decide how much money to spend on it?
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The value added of Exercise C derives from several sources. First, Exercise C asks students to apply the concept of opportunity cost in a broader, more open-ended context since question 1 does not indicate what sort of reply is expected. In my experience, students initially have trouble transferring their understanding of “opportunity cost” to this broader context. Initially students often say that raising the hotel tax will deter tourism. It takes some time before students understand that the opportunity cost of the park is the best alternative use of the hotel taxes. After a student offers this insight, class energy rises as others debate the relative merits of funding education, health programs and other alternatives. Until that moment, students are not confident that the politician who says that the project is free to Chicagoans is wrong.

A second beneficial feature of the exercise is that it asks students to use “opportunity cost” in a communication. In the taxonomy due to Bloom, Krathwohl and Masia (1956), using a concept to create a communication requires more advanced cognitive mastery than applying the concept. Exercise C is also valuable because it deals with the sort of issue that students will encounter as they decide which policies and politicians to support. It demonstrates that economics offers useful ways to think about important public policy decisions.

Finally, the second question of the exercise allows students to consider what it means to apply marginal analysis to a public works project. The instructor can prompt students by asking whether pier

railings should be wood, steel, or brass and whether the light fixtures should be custom made or “off the shelf.” Asking what kinds of expenditures are essential to the purpose of the park and which are not are questions asked by individuals who understand economics.

I conclude my class by asking students to consider whether or not there are limits to the usefulness of opportunity cost. Exercise D asks students to apply economics to an issue that some would consider the province of ethics.

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### **Exercise D**

In a local coffee shop, you overhear your friend say the following. Use the concepts you have learned in class today to join the conversation.

I think it shows a lack of moral principle to introduce economics into consideration of the value of life. Human life cannot be priced. Who is to say what the value of a life is? We have an obligation to preserve life and must do whatever it takes to give the poorest child access to state of the art medical care.

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From our own experience, we know that economists think differently about life and death issues than others. We understand resource constraints and that the opportunity cost of an expensive procedure to preserve the life of one individual may be hundreds of inoculations that can save the lives of many. Economically literate persons bring such understanding with them into conversations about life and death issues.

The exercise allows students to begin using economics to discuss an issue that most students would judge to be very important. Because economics informs debate about important issues, economic ideas must be important. We want our students to know that economic ideas are important enough to learn well and too important to forget.

The approach that I have set out in Exercises A-D begins with a simple, highly structured, hands-on demonstration of opportunity cost, proceeds to ask students how they might use opportunity cost to improve their own decisions, continues with analysis of public policy issues, and concludes with a discussion of the proper place of economics in sensitive ethical decisions. Students begin by completing

a “clean” exercise and move to ever “messier” analyses of the sort they will encounter throughout their lives.

*Summary*

Tens of thousands of students take the first course in economics every year. As first-course instructors, we can help them obtain a working knowledge of economics that they can use throughout their lives. We should provide first-course students with opportunities to use economics to solve meaningful problems. Moving the first course away from a long-list course where instructors lecture and students memorize toward a short-list course where students become economically literate is a task we should get on with.

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## End Notes

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<sup>1</sup>Saul Robinsohn (1975) emphasizes the importance of creating curricula that equip students with the abilities they need to deal with life situations.

<sup>2</sup>To learn more about the standards, please see NCEE (1997). In March 2005, the standards were listed and explained at <http://www.ncee.net/ea/standards>.

<sup>3</sup>Hansen, Salemi, and Siegfried (2002) provides a more detailed argument for targeting the first course to the standards.

<sup>4</sup>The snack packs should have the same market price. Six-cookie packs work well.

<sup>5</sup> In a large enrollment class, the instructor may prefer to have students pair up, read, and discuss one another’s answers. After a few minutes, the instructor can then select one pair to report to the class.

<sup>6</sup> The second standard says: “Effective decision making requires comparing the additional costs of alternatives with the additional benefits. Most choices involve doing a little more or a little less of something: few choices are “all or nothing” decisions.” See note 2 for the source.