Attracting "Otherwise Bright Students" to Economics 101

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There is growing concern over the decline in the number of economics majors. John J. Siegfried and Charles E. Scott (1994) examined data from the National Center for Educational Statistics and found that the number of degrees awarded in economics at the bachelor's level increased between 1977–1978 and 1989–1990. The percentage of female economics majors peaked at 34.5 percent in 1984–1985. Then, in 1990–1991 the number of economics degrees awarded dropped 2 percent. Siegfried and Scott used information from the AEA's Universal Questionnaire to construct a comparable data set to update these figures. Between 1990–1991 and 1992–1993 the number of economics majors fell 14.2 percent. Women accounted for a quarter of the decline.

Reasons offered for the decline include (i) declining enrollments at small liberal-arts colleges, (ii) students being less prepared in math and science, and (iii) students being more interested in interdisciplinary majors such as environmental or international studies. Reasons for the fall in the percentage of female economics majors are being explored. This paper suggests that the content and the climate of the introductory economics course may discourage students, particularly female students, from pursuing economics.

In "They're Not Dumb, They're Different: Stalking the Second Tier," Sheila Tobias (1990) reports that capable students, or otherwise bright students, were dissuaded from the sciences after taking an introductory course in physics or chemistry. To study this phenomenon, she hired eight first-year graduate students who had majored in the humanities or the social sciences as undergraduates to audit introductory physics and chemistry courses. They were required to keep diaries of the activities in these courses and their reactions to them.

Eric, one of the eight students, audited an introductory physics course. His diary illustrated his frustration with the lack of "why" questions in physics. The instructor seemed only concerned with "how" questions. Eric also felt that the pace of the course was too fast. After a topic was covered, students were tested, and then the instructor moved to the next topic. When Eric asked about the big picture, the instructor provided some insights, but the connections were missing. Additionally, Eric found no sense of community in the classroom. Students were competitive and interested in getting the right answer and not why the question was important. Exams elicited simple technical skills and never higher thinking skills. Moreover, the instructor used a curve, which hindered his motivation. Eric's favorite classes were demonstrations after which the instructor invited students to speculate about the results. Eric's entries suggest that otherwise bright students are interested in learning problem-solving techniques if they are a means to answering an important question and not an end in themselves. Tobias concluded that physics and chemistry are demanding subjects, and the pedagogy and classroom dynamics made them more demanding for some students.

If an "otherwise bright student" were asked to audit an introductory economics course and keep a diary, similar observations might occur. Introductory physics and

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economics have striking similarities.[1] The goal of the introductory course is to give students an appreciation for how physicists or economists go about their trade and to expose students to the various areas within the field. They both rely heavily on abstract modeling. Introductory economics instructors tend to lecture, entertain a few questions from students, and give multiple-choice or short-answer tests. Students who are tactile learners, who need to make connections, and who need to communicate ideas to understand them will find the content and pedagogy of economics foreign to their ways of knowing.

I. The Content and Pedagogy of Introductory Economics

The content of the introductory economics course is spelled out in the syllabus and the table of contents of the introductory economics textbook. Introductory economics course syllabi look remarkably similar.[2] Under the course title and number, objectives, if explicit, are outlined. One objective typically included is learning to think like an economist. A list of required texts follows, along with the schedule of meeting dates and chapters to be covered on these dates. Rarely do introductory economics course syllabi paint an inclusive and exciting picture of what students will learn and how they will go about learning it.

A quick flip through the table of contents of an introductory economics textbook reveals that economics is about the determinants of supply and demand, costs curves, market structures, and the determinants of output, employment, and prices in a market economy. The pages of an introductory economics textbook reveal that economists use lots of numbers and graphs. Students interested in historical or contextual debates find only tangential references to them.

Susan F. Feiner and Barbara A. Morgan (1987) found that the number of times race and gender issues are mentioned are few, and when they are mentioned, they are often found in separate chapters on "women's issues" or "minority concerns." Marianne A. Ferber (1995) found that several major trends affecting female students are ignored or minimized in current textbooks. For example, Ferber noted that fewer than half of the leading textbooks mentioned the dramatic increase in the labor force participation of women since World War II.

The classroom dynamics can also be uninviting to some students. The interactions between students and the instructor are limited. Introductory economics is taught in similar ways at both large research institutions and at small liberal-arts colleges. Because females accounted for a quarter of the drop in economics majors, gender differences in the classroom are important. Roberta M. Hall and Bernice R. Sandler (1982) observed that instructors allow male students to talk more than female students and allow male students to interrupt female students. Female students' questions are taken less seriously or ignored. Male students are coached more and asked to develop their answers. Instructors make less eye contact with female students than with male students. Students of color face similar obstacles. A recent work by Polly A. Fassinger (1995) reviews statistical studies that confirm many of Hall and Sandler's observations.

Interactions between students are also limited. Students face forward and rarely have activities that provide opportunities for students to interact. They sit and listen to lectures, read the text, and study on their own. Introductory economics can be a lonely place to learn. With respect to gender differences, Fassinger (1995) found that when

[1]The Association of American Colleges put economics and physics together in its wrap-up conference (February 1990) on "Liberal Learning, Study-In-Depth, and the Arts and Sciences Major" because the curriculum and pedagogy of the two fields were so similar.

[2]At the beginning of the two NSF-funded workshops, course syllabi were collected from participants for comparison. Except for time and place, the syllabi closely resembled each other.

students are given opportunities to respond to questions, male students hesitate to participate if they are unprepared. Female students hesitate to participate if the classroom climate is tense and competitive.

The evaluation of the students' understanding of the material can be destructively competitive for some students. Females are at a competitive disadvantage when multiple choice questions are the sole evaluative instrument (Keith G. Lumsden and Alex Scott, 1986). Moreover, instructors tend to use competitive as opposed to absolute grading schemes. In the former case, the instructor uses a curve. The top 5 percent of students receive an A. The class average is a C. With the latter scheme, students compete with themselves. If students get 90 percent of the questions right or complete 90 percent of the educational tasks, then they receive an A. The latter environment is preferable to students because more is under their control.

Many nontraditional economics students, women, and students of color, may find the abstract modeling of economics not so much daunting, as tangential to their interests and primary ways of knowing (Mary F. Belenky et. al., 1986; Caryn M. Musil, 1992; and Uri Treisman, 1992). While studies show that some gender and racial/ethnic differences exist in verbal and mathematical aptitudes (Educational Testing Services [ETS], 1994), the observed differences within groups are much larger than the observed differences between groups. ETS cautions against using any one kind of test as the sole criterion for selection. Whether mathematical ability is the best screen for students who will make good economics majors is rarely questioned. Students with excellent writing and critical thinking skills may be discouraged from trying economics because there are few opportunities for them to use their talents.

Novice instructors tend to teach as they were taught or in ways that are easiest for them to learn. Their courses are designed for students much like their instructors—students with an interest in economics, with strong analytical and mathematical skills, and probably with similar cultural heritages. Many "otherwise bright students" may be turned off in the introductory economics course by its content, by the abstract modeling, or by the pedagogy.

II. Making Introductory Economics Attractive to "Otherwise Bright Students"

For good students to be attracted to physics or economics, several things have to change. First, the content and methodology have to be more inclusive. Sports references may elicit interest from some students and boredom from others. To illustrate, Ferber (1990) argues that increasing the number of examples that may be of interest to female students may encourage them to pursue economics. Economic theory needs to be applied to a range of economic problems of interest to a variety of groups. To do this, however, economic instructors would have to know their students. Taking time for introductions could help instructors get a sense of who their students are. In addition, students can identify others of similar backgrounds to form academic and social support groups.

Second, there needs to be less emphasis on developing abstract mathematical models and more emphasis on developing the "big picture" for students. The context and history of an economic theory stimulate discussion. Methods other than mathematical or graphical techniques might facilitate learning among more students. Other disciplines use a variety of methodologies for developing theoretical concepts. For example, sociologists use flow charts; philosophers use argument and rhetoric; and English majors identify and analyze themes. "Otherwise bright students" could use their better-developed skills to understand economics and at the same time develop their analytical skills.

Third, the written material needs to come alive with the excitement of economics. Course descriptions in catalogs and course syllabi need to be rewritten to describe a more inclusive introductory economics. Until textbooks become more inclusive, instructors can supplement texts with data from government sources or contemporary literature.

Fourth, the classroom climate has to change from a passive competitive experience to a more active cooperative experience. Fassinger's (1995) results suggest that the most important thing an instructor can do to increase the performance of both male and female students is to design an "emotionally positive" classroom—one that is supportive and interactive. William E. Becker and Michael Watts (1995) review the variety of teaching techniques that have been tried. Given that different students have different learning styles (Phillip Saunders and William B. Walstad, 1990), a combination of these techniques would increase the likelihood that more students are reached. For example, lectures would be more effective if accompanied by cooperative learning or "hands-on" exercises (David W. Johnson et al., 1991; and Chet Meyers and Thomas Jones, 1993). Abstract mathematical modeling would be more connected to a student's thought process if accompanied by reaction papers or diaries.

Fifth, changes need to be made in the methods of evaluation. Multiple-choice tests may not be the best instruments for evaluating how much students have learned. Not all students are equally adept at writing, speaking, or responding to typical analytical questions in the introductory economics course. Not all students have the same preferred mode of expression. Therefore, it makes sense to use a portfolio of evaluation methods. Traditional written exams can be used along with oral presentations and written projects. With an array of evaluative techniques, students will feel comfortable with at least one mode of expression and therefore will have an opportunity to do their best at least once.

Sixth, ask students to make connections between the material and their own lives. For example, students might be asked to finish the answer to an essay with a few sentences about how the question relates to them. The traditional part of the answer would be graded as usual, but students would have the opportunity to improve their grade by making a connection with their own lives. When connections are made, students are likely to continue.

III. Summary

Who are the "otherwise bright students?" No doubt, many of them are women and people of color. Yet, many are going to be white males, like Eric, who learn in different ways from the traditional economics student. These students have the capabilities and background to be capable economics majors but typically choose not to do so. Students weigh the costs and benefits of being an economics major. Students want to have a major that is relevant to them and one in which they feel they can succeed. After taking the introductory economics course, many "otherwise bright students" may decide that economics is not for them.

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