

Preparing Graduate Students in Economics for Teaching: Survey Findings and Some Recommendations

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Graduate students in economics often have substantial responsibilities for undergraduate teaching in the economics departments where they are working on their graduate degrees. They may assist professors with their teaching by helping with grading tests and assignments or by tutoring undergraduates. They may be assigned to lead recitation sections in large enrollment courses such as principles of economics. More experienced graduate students may be given the independent responsibility of teaching their own course on principles of economics or intermediate economics. The potentially important contributions that graduate students make to undergraduate instruction in economics is worthy of further investigation to explain how most Ph.D.-granting economics departments use graduate students in teaching and how these departments prepare graduate students for their teaching duties.

The study uses data collected from a fall 2008 survey that was sent to department chairs at Ph.D.-granting economics departments. The survey was designed to collect information and data on such matters as the uses of economics graduate students for undergraduate instruction, the provision of credit and non-credit courses in teaching for economics graduate student instructors, teaching programs for international graduate students serving as economics instructors, the evaluation of graduate student instructors in economics, and the background characteristics of these Ph.D.-granting departments. The survey measure for the study was the same one that was administered in a fall 2002 study of department chairs (Walstad and Becker, 2003).¹

The survey was sent to all known Ph.D. economics departments based on a list of 123 such departments obtained from the American Economic Association. Valid responses were received from 68 departments, making the response rate 55 percent. This high rate was achieved through two follow-up mailings to non-responding chairs, and by assuring all respondents that only the aggregate findings would be reported. The response rate also can be calculated for general groupings based on the ranking of Ph.D. departments for research productivity. When the department list is divided into thirds based on this ranking, the response rate was 65 percent for the top third of ranked departments, 61 percent for the middle third of ranked departments, and 38 percent for the lowest third of ranked departments.² The lower response rate for the bottom third of departments reflects some difficulty in contacting the chairs of those small departments and probably less incentive to respond to the survey because of less activity to report on teaching.

Departments and Teaching Responsibilities

The mean size of Ph.D. departments of economics that were surveyed was 67 graduate students. The size varied substantially, however, when economics departments were sorted into thirds based on their research rankings. The highest third (1–43) of ranked departments reported that an average of 103 Ph.D. economics students typically enrolled each year. The middle third (44–86) stated that 49 Ph.D. economics students, on average, were typically enrolled. For economics departments ranked in the lowest third (87–129), the mean enrollment per typical year dropped to 30 Ph.D. students.

The entry and exit of graduate students changed across the three categories for economics departments. The number of *new* graduate students typically admitted to Ph.D. economics departments ranged from 3 to 40 (mean: 15.0; standard deviation: 8.3). For the upper third of departments the mean was 21; for the middle third it was 11; and, for the lowest third it was 8. As for an exit measure, the number of Ph.D. degrees typically awarded each year by a department ranged from 2 to 25 (mean: 9.0; standard deviation: 6.2). The top third awarded 14.3 degrees which is more than double the number of Ph.D. degrees awarded by the middle third (5.9) and more than triple the number awarded by the bottom third (4.1).

Graduate students in economics are assigned to undergraduate education duties based on experience. In the first or second year of their Ph.D. program (1.5 years on average), graduate students typically develop their teaching skills through assisting professors with grading exams and by serving as tutors for courses. They do not teach at this point of the program, presumably because they have not taken enough economics courses to ensure that they have sufficient content knowledge, or because more experienced graduate students have filled all the teaching slots. The assistant work typically requires about 15 to 16 hours of their time per week. Assistants devote about the same amount of hours to this work at the upper third (15.5 hours) and middle third of departments (14.8), but are expected to work more hours (18.4) at the lowest third of departments.

Graduate students also lead recitation sections and teach their own courses. In a recitation section, they lead discussions and other small classroom activities that complement large-enrollment courses taught by faculty members two or three times a week. Graduate students generally begin this recitation instruction after the first year of their Ph.D. program (1.7 years on average). They lead an average of about seven (7.8) recitation sections per academic year. Graduate students typically do not get to teach their own courses until the third year of their graduate program. The mean teaching load is two courses (2.1), with 128 students taught by these instructors per academic year (about 55 students per course). Such courses meet two or three times a week compared with a once-a-week meeting for recitation sections.

The sample averages from the survey make it possible to describe the distribution of graduate students across teaching and research duties. Consider a department with an average size of 67 students in the Ph.D. program that reports using graduate students for the three types of instruction. About 24 percent (16 students) would assist professors with their courses. About 45 percent (30 students) would lead recitation sections. About 15 percent (10 students) would be assigned to teach their own courses. The remaining 16 percent (11 students) would do something else, such as serve as research assistants or not have any assistantship.

The above distribution will obviously differ by department and across department types. For example, there is no basic difference in the average number of economics graduate students teaching their own courses or assisting professors across each ranking third, but there is an important difference in the use of graduate students for recitation sections. The top third of economics departments use an average of 42 graduate students to lead recitations, more than double the 20 students used by the middle third, and more than seven times the 6 students used in the bottom third. In addition, some differences arise because some Ph.D. programs do not use graduate students for teaching, perhaps because they use them only as research assistants. Four departments do not use any graduate students to assist professors with their teaching. Nineteen

departments do not have graduate students lead recitation sections. Six departments do not have graduate students teach their own courses.

Teaching Preparation for Graduate Students

Teaching a course or leading a recitation section is an important instructional duty that, if not handled well, can hurt a department by increasing student complaints, likely decreasing undergraduate majors and potentially negatively affecting the employment prospects of the poorly performing graduate students. To avoid these outcomes, departments have willingly or by institutional decree established rules, guidelines and procedures for graduate student instructors. Among the 91 percent departments (n = 62 of 68) that employ graduate student instructors, less than three in ten (n = 18) require them to attend a graduate-credit course in undergraduate teaching. A common requirement for slightly over half of these departments (n = 32) was to have them attend a non-credit program on undergraduate teaching. Also popular for almost half of these departments (n = 29) was having graduate students assist a faculty member before teaching their own courses. A requirement covering over eight in ten (n = 52) of these departments was to have international students pass an English-language test before they were allowed to teach their own courses.

The requirements for leading a recitation section were similar to those for teaching a course among the 74 percent of departments that used recitation leaders (n = 50 of 68). Only a fifth (n = 10) of these recitation-oriented departments selected the most demanding option, a graduate-credit course in undergraduate teaching. By contrast, half (n = 25) required the less demanding option of attendance at a non-credit program on teaching. Three in ten of these departments (n = 15) assigned graduate students to assist a faculty member before leading a recitation section. Almost nine in ten (n=44) of these departments required international students to pass an English-language test before leading a recitation section if English was not a first language or the student was not skilled in the use of English.

Credit courses. The credit courses designed to prepare an economics graduate student for teaching an undergraduate course or leading a recitation section are of two types for the 46 percent of economics departments who stated such courses are offered at their institution (n = 31 of 68). With the first type, the economics department sponsors the course and its students are the primary enrollees (n = 19).³ For the second type, economics graduate students take a course sponsored by an education department or a campus teaching and learning center (n = 12).⁴ If economics departments offer the teaching courses, then 89 percent of economics graduate students take them compared with only 17 percent of the students who take them when the courses are offered by another unit at a university.

The average amount of credit awarded for the economics department courses (n = 19) is about three credit hours (2.8). About two-thirds of the courses (n = 12) use grading on a pass or no pass basis, and about one-third (n = 6) assign letter grades (1 department did not report). The primary instructors in over four-fifths (n = 16) of the departments offering such courses are economics faculty members. This instruction from the economics faculty member is supplemented with presentations from two to three other members of the economics faculty in about two-fifths (n = 8) of these courses. A few (n = 4) courses include presentations from two non-economics faculty members who are teaching specialists.

Non-credit programs. Another approach to teacher preparation is through non-credit programs that are available to economics graduate students at about three-fifths of universities (n = 42 of 68). These programs are either offered by economics departments (n = 15) or by another unit at the university (n = 27). As was the case with credit courses, economics graduate students are more likely to attend these non-credit programs when offered by an economics department (94 percent attend) rather than another university unit on campus (71 percent attend). One of the reasons for the attendance difference may be associated with instructors. When economics departments offer non-credit programs in teaching, an economics faculty member is primarily responsible for instruction in most (n = 12 of 15) of these non-credit programs. In addition, in two-thirds of these economics programs (n = 10 of 15) several economics faculty members make presentations. By contrast, economics faculty members are not involved in university-sponsored programs except for an occasional presentation.

International Students. The increase in the number of economics graduate students coming from other nations has raised questions about their preparation for teaching in the United States and the quality of their communication skills with the English language. As already noted, most economics departments require that international graduate students pass an English-language test before they teach a course or lead a recitation section if English is not the first language for students. There also are other resources to assist international students with their teaching. Over a third (n = 24 of 68) of the economics departments reported that a unit at their university offers a credit or non-credit program on undergraduate teaching that is taken only by international graduate students. A few (n = 4) of these universities offer international graduate students a credit course in teaching that allows them to earn about two to three credit hours. Most (n = 19) universities that offer teaching help for international students provide a non-credit course that can range in length from 1 hour to 35 hours. Economics departments at these universities estimate that about 66 percent of the international graduate students in economics take the credit course or attend the non-credit program. As might be expected, the great majority of these international graduate students attend this program either before leading a recitation section (71 percent) or before teaching their own course (67 percent).

Assessment of Teaching

The evaluation of graduate student instruction is taken seriously by most economics departments. In fact, 89 percent of the departments conduct formal annual evaluations of the teaching of graduate students who teach their own courses (n = 55 of 62). Among the departments that evaluate, the multiple responses for this question showed that the evaluation is overseen by the department chair in over half the cases (n = 29). Participation by other economics faculty with administrative duties is less common: one in three reported that an evaluation was conducted by the director of graduate studies (n = 16) and a quarter stated that cases are overseen by the director of undergraduate studies (n = 14). Other participants were cited by departments as evaluators of graduate student teaching, but not very often: someone (n = 10) from a teaching and learning center, an economics faculty member (n = 7), or a senior graduate teaching assistant (n = 1).

Economics departments used different methods to evaluate the teaching of graduate students who teach their own courses. The most common method, used in all cases (n = 55), was data from the end-of-term student evaluations of teaching. In almost half of the evaluations, departments stated that they used faculty visits to courses (n = 21) or reviewed course materials

(n = 23). The methods less often used were a meeting between the graduate student instructor and department chair or faculty member (n = 9), videotaping of graduate student instructors (n = 6), chair visitations to courses taught (n = 4), or some other method (n = 10).

The annual evaluations of graduate student instructors affect work assignments rather than pay. Eighty-four percent (n = 42) of the assessing departments use the evaluations to make teaching appointments in the subsequent year, but it is likely to affect workloads in a subsequent year in only a quarter (n = 14) of departments. Few departments use the evaluation to change the rate of compensation (n = 4), but some departments (n = 10) say it can affect the graduate student instructor in other ways, such as for recommendations for teaching awards or reference letters.

All economics departments surveyed (n = 68) stated that they provide other opportunities for those students to improve their instruction. Over half of the departments (n = 35) reported that faculty members mentor graduate students interested in teaching, and over a third (n = 24) cited mentoring by senior graduate student instructors. Almost half of the departments (n = 32) say they encourage students to attend teaching sessions offered by another campus unit, but less than a quarter of departments (n = 16) offered such teaching sessions for their own students.

Changes over Time

The final survey question asked chairs to rate the preparation for teaching of their graduate students on a five-point scale (very good to very poor). The assessment was a mixed one. Almost half (55 percent) of the respondents gave a positive rating and stated that the teaching preparation was either very good (15 percent) or good (40 percent), but a significant minority (44 percent) stated that the teaching preparation was either only adequate (40 percent) or poor (4 percent).⁵ The same question was asked in the 2002 survey of departments. The responses were about the same and show a similar pattern. Over half (60 percent) of the respondents gave either a very good (22 percent) or good (38 percent) rating, but a significant minority (40 percent) stated that the teaching preparation was either only adequate (35 percent) or poor (5 percent).

The above results suggest that there have been relatively minor changes in department practices related to teaching preparation of graduate students over the intervening six years. Additional data comparisons support this conclusion. Only 29 percent of economics departments employing graduate students instructors required them to attend a graduate-credit course in teaching in 2008, which is only slightly higher than the 22 percent in 2002. About half of the economics departments required graduate student instructors to attend a non-credit program on teaching in both 2008 (51 percent) and 2002 (46 percent). The 2008 survey found that 84 percent of these departments required international students to pass an English-language test before serving as graduate student instructors compared with 81 percent in 2002.⁶

Some Recommendations

Based on the survey results we remain concerned about the teaching preparation of graduate students in economics and offer some recommendations. We are perplexed as to why more economics departments do not require that their graduate student instructors take a credit course on teaching. Teaching is a complex skill that can be difficult to master on your own. Without the effective coursework and training, the goal of becoming a teacher for most graduate

students is likely to focus on the simple mastery of lecturing to the exclusion of other teaching methods or strategies, especially if the only model of a teacher is a lecturing economist. When a teaching course is offered for credit and made a requirement for those graduate students who want to teach, an economics department is signaling to such students that teaching is a serious academic matter. Certainly one teaching course will not be sufficient to turn a graduate student into a master teacher, but it can serve as the foundation for developing teaching expertise and making a commitment to good instruction. In addition, most graduate students who earn a Ph.D. degree are likely to assume significant teaching responsibilities when they secure an academic position, so there is a long-term payoff to the students, departments, and the economics profession from this relatively small investment of time and resources for teacher preparation.

We see significant advantages when a teaching course is offered and taught by economics faculty members. When these conditions are present, graduate students are more likely to give serious consideration to the instruction and participate in a course than when the course is offered by an education department or a campus center for teaching. There something of greater value for teaching that arises when economists, skilled in their discipline and experienced in the classroom, participate in teacher education of graduate students (Salemi, 2003). Contrary to the fundamental assumption behind general books on instructional methods, teaching any discipline within higher education consists of a blend of generic teaching skills combined and weighted heavily with the ethos of the discipline, which general education specialists cannot provide.

Of course, one alternative for departments to offering a credit course would be to require the participation of graduate student instructors in some type of non-credit program on undergraduate teaching. We question the value of this approach for several reasons. First, a non-credit program may not be taken seriously by graduate students because it requires minimal effort or participation to pass and there is no effective supervision of program work. Second, the quality of such instruction can be highly variable because there is no prescribed content as there is with a credit course on teaching. Third, and perhaps the greatest problem, is that the length and focus of such programs are so variable. In the 2008 survey we found that the number of hours for such non-credit programs varied from 2 to 20 hours, with a mean of 12 hours for programs sponsored by the economics department and 9 hours for university-sponsored programs. This amount of time is about one-third to two-thirds less than the instructional time in a credit course on teaching.

Non-credit programs, especially the shorter ones, offer the graduate students in economics only an introduction to teaching. When non-credit programs are offered as a workshop at the beginning of an academic year, they mislead departments into thinking that they have provided sufficient teaching preparation for their students and mislead students into thinking that there is not much depth or importance attached to teaching. In such programs, the instructional time is insufficient to develop a range of teaching skills or learn about newer teaching innovations in economics that take students beyond “chalk and talk” (Becker, Watts, and Becker, 2006; Watts and Becker, 2008).⁷ We also found in our survey that non-credit programs offered by a campus teaching center or education unit are not likely to meet the instructional and content needs of economics graduate students, and economics students are less likely to attend them.

A further concern is with international students who have limited English-language skills for teaching. Our findings show that most departments recognize this problem and require these international students pass some type of English-language test and attend a special teaching

program. These requirements are a good start for preparing these students to become effective teachers, but they are not sufficient. In comparison with lecture, the use of alternative teaching methods and strategies involve writing, discussion, or cooperative learning often require greater command of and more flexible use of English-language skills. International students whose language skills are deficient may rely too much on lecture to the exclusion of other teaching methods unless they are helped in broadening their teaching range through effective coursework on teaching. In this respect, we are encouraged by the findings from one study that assessed the effects of foreign graduate students and native English speakers in teaching undergraduates when the undergraduate economics instruction is in English (Fleisher, Hashimoto, and Weinberg, 2002). It found no difference in the grading of students and persistence of the undergraduate students in the study of economics, provided the graduate students are properly selected and trained in both spoken English and in teaching methods.

Finally, there is the matter of the assessment of teaching. Our survey results show that all economics departments use student evaluation of teaching (SET) data for their evaluation of graduate student teaching. These measures should not be used as the sole measure of teaching because they have flaws (Becker, 2000, pp. 113–116). Ideally, feedback on graduate student teaching should be gathered by a variety of methods throughout the term. We think that graduate student instructors should be encouraged to experiment and try out different teaching methods until they find an approach or a teaching philosophy that works for them. In this respect, more course work on teaching and participation in programs about teaching can be of particular value for their continuing development as economics teachers.

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Endnotes

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¹ The work to prepare a valid 2002 survey was extensive. It was reviewed by two members of the AEA Committee on Economic Education and several economists with broad experience in survey work and the teaching preparation of economics graduate students. The survey underwent five revisions by the authors to clarify items before it was sent to department chairs via regular mail in mid-August, 2002. The results from 2002 showed that the survey measure was capable of collecting useful information data (Walstad and Becker, 2003). The same survey was used in 2008 based on its prior success and an assessment that no content changes were needed for 2008.

² The rankings of the research productivity are based on a study by Grijalva and Nowell (2008), with their department list divided into thirds: top (1–43); middle (44–86), and bottom (87–129). Although their list contains 129 departments and the AEA list contains 123, the discrepancies are minor and are all in the bottom category. Accordingly, the size of this bottom group was reduced from 43 to 37 in the calculation of its response rate. Further survey work is being conducted to obtain responses from any of these omitted departments.

³ About the same number of these teaching courses were found at the middle third of ranked departments ($n = 9$) as the upper third ($n = 7$), but there were far fewer in the lower third ($n = 3$), probably because these department do not have as many available resources for teaching and fewer graduate students to prepare for teaching.

⁴ There was some overlap in the two types. At five institutions a course was offered by both the economics department and an education unit on campus.

⁵ There were minimal differences in these ratings across departments based on their rankings.

⁶ For most major survey items there is a great deal of similarity between the 2002 and 2008 results. Further discussion of the comparisons will be omitted for the sake of parsimony.

⁷ Another approach to developing the teaching expertise of economists would be to focus on economics faculty members who currently teaching in their academic positions. The history and experience with such workshop programs show that they are beneficial and appreciated by economics faculty members who attend them (e.g., Goodman, Maier, and Moore, 2003; Teaching Innovations Program (TIP) at www.vanderbilt.edu/AEA/AEACEE/TIP/TIP.htm). These programs, however, may not be widely available and the voluntary enrollment means that the faculty members who need to develop more teaching expertise may decide not to attend.