

Teaching Practicum In Agricultural Economics

Fred C. White

Introduction

Selection of prospective faculty members for a joint teaching-research position is often based only on information pertaining to the new Ph.D.s' research ability. Many new Ph.D. graduates have had little if any opportunity to acquire and demonstrate effective teaching skills (Cooper). The necessary skills related to teaching excellence are not developed in the many agricultural economics doctoral programs which focus exclusively on the candidates' understanding and application of subject matter. Offering doctoral students the opportunity to learn to be effective teachers and to apply what they learn to a classroom situation could provide relevant preparation for academic positions. The objectives of this paper are to describe the implementation of a teaching practicum at the University of Georgia and to examine the impacts of graduate student instructors on teaching quality.

Teaching Assistant Versus Teaching Practicum

To help understand the teaching practicum's role in graduate education, it is useful to contrast the practicum with the familiar teaching assistantship. Teaching assistants traditionally assist and supplement teaching faculty by grading, handling laboratory sessions, lecturing occasionally, and sometimes teaching undergraduate courses. Some of these experiences turn out to be strictly clerical, while others are very limited in nature in comparison to full responsibility for teaching a course. Such tasks require little skill and, more importantly, do little to develop teaching skills. Those teaching assistants who teach courses without close supervision receive very limited instruction or feedback on improving teaching effectiveness. Furthermore, there is seldom adequate documentation of the teaching assistant's effectiveness in the classroom.

The teaching practicum focuses more on the doctoral student as an individual rather than as a resource by improving his teaching effectiveness and documenting his teaching performance. Even those departments which rely on teaching assistants as instructors could benefit from the teaching practicum by increasing the effectiveness of teaching assistants. If teaching assistants go through a practicum the first time they teach, it should help improve the quality of instruction.

Previous Literature

Siegfried and Fels offer a comprehensive summary of studies on the use of graduate student instructors (GSI's) for teaching general economics courses. These authors also discuss studies which document improved GSI performance as a result of teacher training

programs (TTP's). While applicable primarily to graduate programs in general economics, these studies provide some justification for developing TTP's in agricultural economics graduate programs. In a test of the effectiveness of teacher training on GSI's, Lewis and Orvis found that the performance of students participating in TTP's was superior to that of students without the benefit of TTP's. Additional evidence of relatively better performance of GSI's at those schools that offer more advice on teaching seems to suggest that at least a moderate amount of teacher training may be effective (Siegfried and Fels, p. 951). Evidence of the effectiveness of TTP's in general economics graduate programs and the absence of TTP's in agricultural economics graduate programs led to the development of the teaching practicum at the University of Georgia's Department of Agricultural Economics.

Overview of the Teaching Practicum

Objectives of Teaching Practicum

Implemented during 1979-1980, the teaching practicum in agricultural economics at the University of Georgia was designed to prepare doctoral students to teach agricultural economics at the college level. More specifically, the course was aimed at helping doctoral students:

1. Understand the learning process. Factors considered include learning and motivation in the college classroom.
2. Determine how and when to use a variety of teaching methods. Methods considered include lecturing, discussion, independent study, computer-assisted instruction, audio-visual techniques, and role-playing.
3. Prepare to teach a course. Factors considered include determining subject material to be covered, choosing a textbook, and other supporting materials.
4. Gain actual teaching experience. Doctoral students engage in classroom teaching under close supervision.

Structure of Teaching Practicum

The practicum includes two major components: a) a seminar series on the learning process and teaching methods and b) opportunities to gain actual classroom teaching experience. The seminar series was designed to start shortly before the doctoral students begin teaching and continue throughout the period in which they were to teach. The early start was aimed at helping them get ready to teach. Having the seminar series in progress during the time the doctoral students were teaching gave

White is a professor in the Department of Agricultural Economics, The University of Georgia College of Agriculture, Athens, GA. 30602.

them an opportunity to apply what they learn in the seminars and also to discuss questions or problems that arose during teaching.

Each seminar in the series focused on a particular topic related to improving teaching effectiveness and allowed for interchange among doctoral students, faculty, and special guests. Areas covered in preparation for classroom teaching include preparing for a course, learning and motivation in the college classroom, lecturing, organizing effective discussion, and examinations.

Actual teaching experience involved classroom lectures, leadership in handling laboratory sections of courses, or major responsibility for teaching courses. Each doctoral student in the practicum eventually had major responsibility for at least one course after demonstrating that he was adequately prepared for such a responsibility by assisting in other teaching situations. When a doctoral student was ready to teach a course he was assigned two faculty advisors — one who was familiar with the subject matter to be taught and the other who led the seminars on improving teaching effectiveness.

The practicum is a five-quarter hour course with a satisfactory-unsatisfactory grading system. Since the practicum is an official course, the student's transcript indicates that such a course was taken. The satisfactory-unsatisfactory grading system was used so that the grade on the practicum did not affect a student's grade-point average on subject matter courses.

The doctoral student's teaching performance was assessed by both faculty and students. Several faculty members observed in the classroom and provided feedback to the doctoral students. In addition the faculty's written comments were compiled. The undergraduate students in the class were informally surveyed early in the quarter for suggestions on ways to improve teaching performance. Then at the end of each quarter, the department administered an evaluation questionnaire on teachers and courses. Faculty comments and student evaluations were made available for employers as the doctoral students entered the job market.

Description of Seminar Series

The seminars were organized and led by Agricultural Economics faculty interested in teaching excellence with assistance from guests in selected areas of education, including the University's Office of Instructional Development. A particular topic was addressed in each seminar with a formal presentation followed by discussion among faculty and students. While conceptual views of learning and motivation in the classroom were covered in the seminars, the primary focus was on practical aspects of teaching. Since the doctoral students in the practicum had generally not taught a course before, the seminars covered what needs to be done in preparation for a course, what options in teaching methods are open to instructors, and problems that may arise.

The seminars addressed **general** factors of determining subject matter and supporting instructional materials such as textbooks. The **specific** subject matter to be included in the particular course taught by the doctoral student was not covered in the seminar. This determination was made in consultation with the faculty advisor on subject matter. Also discussed in the seminars were ways for GSI's to evaluate the performance of their students. Topics covered in this area include class assignments and examinations, with particular emphasis given to the construction of good test instruments.

The general topic of teaching methods was given more time than any other topic in the senior series. A wide variety of teaching methods was considered, including lecturing, discussions, independent study, computer-assisted instruction, audio-visual techniques, and role-playing. Each of these techniques was described in detail with suggestions of how to use it and when it would be most effective. Doctoral students were encouraged to apply many of the techniques in the classes they taught. The results of such experiments were then discussed in the seminar. Teaching methods which would be difficult for the doctoral students to implement immediately in their own classroom were discussed by faculty members who generally used such techniques.

Description of Teaching Activities

Each doctoral student assisted a faculty member in teaching a course for one quarter before being given major responsibility for a course. He had a great deal of flexibility in deciding how to teach the course, what material to emphasize, and how to assess student performance. While his efforts were closely supervised, he was responsible for providing a meaningful educational experience for the class. The doctoral students were generally surprised at the extent to which it was necessary to interact with the class in such areas as personal counseling and academic advising.

Several teaching methods which were described in seminars were used in the classroom by doctoral students. This approach gave them some experience in knowing when it is appropriate to use the various methods. Undergraduate students were surveyed after use of the methods to determine their effectiveness.

Evaluation

Contrasting Instructors

At this time, a thorough assessment of the qualitative gains of the teaching practicum at the University of Georgia is limited because of the small number of participants in the program. Thorough assessments of teaching training programs, however, are discussed in the literature (Lewis and Orvis). For an assessment, we present comparative performance data on graduate student instructors (GSI's) and faculty instructors (FI's) in Agricultural Economics at the University of Georgia. The faculty chosen for this analysis were those teaching economic principles, the same courses taught by GSI's.

These faculty are predominantly assistant professors with less than five years of experience. These two groups are compared for the following reasons:

1. To determine if the quality of instruction will decline as a result of increased reliance on GSI's.
2. To identify major areas of strengths and weaknesses among GSI's.
3. To assist faculty in designing teaching practicum which emphasize specific areas of concern.

The use of GSI's has been widely discussed in the literature. While some studies suggest that the use of GSI's may result in some deterioration of instructional quality (Lamphear and McConnell), other studies have shown that GSI's have typically been as effective in introductory economics as regular FI's (Oates and Quandt; Morawetz, et al.). In a study at Carnegie-Mellon University, Saunders suggested that even if there is no significant difference in performance between GSI's and FI's, undergraduate students prefer regular FI's to GSI's — even when the latter are slightly easier graders. Our general conclusion regarding these studies is that they are more useful in identifying areas of weakness among GSI's than in settling the issue of the superiority of instructors. With this general conclusion in mind, we examined student evaluations of GSI's and FI's in four agricultural economics courses at the University of Georgia from 1979 to 1981. Standardized departmental evaluations were administered at the end of each quarter. Student evaluations were collected for 14 GSI's and 14 FI's. Table 1 summarizes the mean scores on 14 separate teaching criteria and two overall ratings. Comparisons of mean scores for GSI's and FI's were made using t-statistics to test differences of two means.

Results

According to the t-statistics reported in Table 1, the overall rating of GSI's at the departmental and university levels (items 15 and 16, respectively) were comparable to the overall ratings received by FI's. The data failed to indicate a statistically significant difference in overall ratings. These findings confirm those of Oates and Quandt which indicated that "while there are no doubt better or worse teachers, they do not divide themselves neatly into two groups with the labels of faculty and graduate students."

A closer examination of the individual teaching criteria in Table 1 does indicate some differences between GSI's and FI's. Relative to FI's, GSI's received lower ratings on 1) knowledge of the subject, 2) preparation for class, 3) use of visual aids, 4) use of English language and 5) enthusiasm for teaching. Many of these differences were thought to result from a lack of experience and/or confidence in teaching. In implementing a teaching practicum such weaknesses among GSI's should be identified and given special emphasis in the teaching practicum.

General characteristics of GSI's and FI's included in the sample are reported in Table 2. These characteristics were developed, in part, to explain why relatively lower student ratings of GSI's on individual teaching criteria did not produce lower overall ratings of GSI's. Siegfried and Fels (p. 951) suggest that GSI's may have compensating attributes that balance their lack of experience. One such compensating attribute might result from instructor popularity or greater student identification with GSI's.

Another factor which affects student evaluations of instructors, but which may or may not affect student performance, is instructor effort. Instructor effort was measured by the number of hours spent outside of class preparing for lectures, grading exams, and counseling for each hour spent in class. Table 2 indicates that GSI's devote significantly greater amounts of time to teaching

Table 1. A Comparison of Student Evaluations of Faculty and Graduate Student Instructors in Agricultural Economics at the University of Georgia

Criteria	Mean Evaluation ^a	Graduate Student	Faculty	t-statistic ^b
1. Ability of instructor to stay within time allotted for class period		4.42	4.38	.41
2. Knowledge of the subject		4.20	4.62	3.89***
3. Preparation for class		4.13	4.47	2.67***
4. Ability to maintain student interest in subject and stimulate study		3.75	3.92	1.05
5. Clarity in communicating work requirements		4.04	4.08	.28
6. Ability to clearly explain subject matter		3.92	4.04	.78
7. Use of the English language		4.06	4.32	2.03**
8. Voice quality		4.03	4.09	.49
9. Eye contact (looks directly at class)		4.20	4.40	1.63
10. Enthusiasm for teaching		4.02	4.42	2.54**
11. Consideration and interest in students		4.29	4.23	.43
12. Open-mindedness and tolerance of difference of opinion		4.26	4.29	.30
13. Ability to stimulate thinking		3.86	4.07	1.45
14. Freedom from annoying mannerisms		4.10	4.07	.23
15. Overall rating of instructor compared with others you have had in the Department of Agricultural Economics		4.17	4.22	.#†
16. Overall rating of instructor compared with all others you have had at the University of Georgia		4.08	4.08	.00

^aBased on a scale of 1 to 5 where 5 = excellent and 1 = poor.

^bUsed to test difference of two means.

*Significant at the $\alpha = .10$ level.

**Significant at the $\alpha = .05$ level.

***Significant at the $\alpha = .01$ level.

Table 2. A Comparison of General Characteristics Between Faculty and Graduate Student Instructors in Agricultural Economics at the University of Georgia.

	Mean		t-value
	Graduate Student	Faculty Instructor	
Instructor effort ^a	3.86	1.98	2.38**
Class size	33.8	46.6	1.75**
Class grade distribution:			
% A's	43.3	23.6	2.82***
% B's	30.0	37.6	1.56
% C's	21.1	29.5	1.47
% D's	4.5	4.6	.06
% F's	.58	1.54	1.14

^aInstructor effort is hours of outside class time allocated to course per hour of class time.

**Significant at the $\alpha = .05$ level.

***Significant at the $\alpha = .01$ level.

than do faculty. GSI's spent 3.86 hours while FI's spent 1.98 hours outside of class for each hour of class time. However, FI's effort in teaching is probably disguised by staff support in grading, recording, preparing overlays and slides, xeroxing, typing, proofing.

Also shown in Table 2 are data on the grade distributions of GSI's and FI's. These data indicate that GSI's assigned a greater percentage of A's in their courses. This more lenient grading policy of GSI's may also serve as a compensating attribute on student evaluations. The smaller class size for GSI's probably contributed to raising their overall rating. However, a systematic examination of the effects of these factors on student evaluations must await further study. Suffice it to say that GSI's and FI's differ on selected teaching criteria and compensating attributes and that knowledge of these potential weaknesses should be used to design an effective teaching practicum.

Summary and Conclusions

Increases in undergraduate enrollments in agricultural economics departments have created a need for additional quality instructors. However, many doctoral students receive little formal training in teaching in graduate school and seldom have adequate documentation of their teaching effectiveness. For many new faculty, lack of teacher training creates considerable stress in the early years of his/her career in a profession which demands effective teaching and research productivity.

Use of a teaching practicum for Ph.D. students is one way to improve their skills as a teacher and at the same time give them much needed teaching experience. The teaching practicum implemented at the University of Georgia uses a combination of seminars on how to teach agricultural economics at the college level and actual classroom teaching experience. This approach is superior to either offering a course on teaching which does not provide teaching experience or having Ph.D. students teach a course without provision to improve their teaching skills.

Areas of potential weaknesses among graduate student instructors were identified by contrasting student evaluations of graduate students and faculty instructors. These results indicated that there is a need for a teaching practicum to assist GSI's in improving selected aspects of their teaching skills. Considering that university administrators and others are sensitive to teaching quality, it appears that GSI's can be utilized in teaching programs without substantial losses in overall evaluations of instructors by students.

This profession is obviously cost conscious, so it is important to assess the costs associated with such a practicum. Faculty and graduate student time and effort are the major costs involved. The contribution of agricultural economics faculty can be reduced to the extent that the particular university has instructional development services which can be utilized. If such services are available externally, the major direct cost to agricultural economics faculty would be time spent interacting with GSI's in the seminar, counseling GSI's on course content, and observing GSI's in teaching situations. If the practicum is scheduled as Ph.D. students are ending coursework or beginning research, it can be an effective use of their time without unduly lengthening their graduate program.

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