



Faculty Perceptions of Teaching In Colleges of Agriculture

Implications for Improving Instruction

Coby Bunch Simerly

Abstract

This article presents findings of a national survey regarding perceptions of college of agriculture faculty members about four aspects of teaching: teaching preparation, views about teaching, importance of teaching and evaluation of teaching. The findings were a part of a larger study funded by USDA Higher Education Programs on faculty development needs in colleges of agriculture in the United States. An analysis of the data suggests that there are a number of steps that can be taken to better prepare individuals for the role of college teacher and to support them in that role.

It is essential that colleges of agriculture have solid programs for the continued development of their faculties in relation to their teaching, research, and public service responsibilities. The need for highly trained agricultural scientists, engineers, and technical specialists is specifically in those areas where the need for agricultural research and technology transfer has never been greater (Coulter, Stanton and Goecker, 1986). It is critical for the future of agricultural education that existing faculty be innovative and competent in their scientific and technical expertise and that they be equally effective as teachers. Faculties must remain at the cutting edge in the generation and delivery of new knowledge in the food and agricultural sciences. They need access to opportunities for renewal or redirection of their expertise. They need skills in new technologies, new teaching strategies, and new subject areas.

Given the importance of these issues to the future of agriculture, the United States Department of Agriculture Higher Education Programs made funds available for a comprehensive research project to investigate faculty development initiatives for in-

structional enhancements involving industry and education. A national task force appointed to address this topic recommended that research should be carried out to: (1) review existing faculty development programs at various institutions in the fields of agriculture, business, engineering, and the health sciences, (2) determine faculty perceptions of their needs for faculty development and (3) develop a list of potential funding sources to support faculty development programs.

Methodology

As a part of the study a national survey was conducted of faculty in colleges of agriculture to determine what kinds of opportunities and support they need for continued growth and development as faculty members. Survey questionnaires were administered by mail to a random sample of agriculture faculty chosen from colleges and universities throughout the United States.

The survey questionnaire was developed jointly by the College of Agriculture and the Survey Research Laboratory, both at the University of Illinois at Urbana-Champaign. The questionnaire was pretested with a sample of 25 faculty members. The results were scrutinized, and, where needed, changes were made in the questionnaire.

The sample, including assistant, associate and full professors of agriculture, was chosen from the 1984-85 *Directory of Professional Workers in State Agricultural Experiment Stations and Other Cooperating State Institutions* and the *Directory of the American Association of State Colleges of Agriculture and Renewable Resources* (AASCARR). The sample was selected to yield 500 completed questionnaires and was divided between the two directories so expected sampling variance of the two subsamples would be the same. The overall sample consisted of 540 faculty members from land-grant institutions and 421 from AASCARR institutions. In all, 514 questionnaires were returned from a sample pool of 823 eligible faculty members providing a return rate of 62.5 percent.

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Demographic Description

Of the 514 respondents, 54.3 percent were professors, 26.5 percent were associate professors, 12.8 percent were assistant professors, and 6.0 percent were instructors. Almost 11 percent of the faculty surveyed held administrative posts. Ninety-eight percent of the survey respondents held Ph.D. degrees, 1.0 percent held M.S. degrees, and 0.8 percent held other degrees.

Findings

The following is a presentation and discussion of one aspect of the national survey — faculty perceptions of teaching. (Editor's Note: Two additional manuscripts are currently in peer review - summarizing the national survey's important findings, discussing the study's implications, reviewing existing faculty development programs in and out of agriculture, and discussing the implications for colleges of agriculture, their faculty, and students.)

One segment of the nationwide faculty survey dealt with faculty perceptions of four aspects of teaching: teaching preparation, views about teaching, importance of teaching, and evaluation of teaching.

Teaching Preparation

The survey revealed that more than one-third of faculty did not feel adequately prepared for a teaching role at the time of their appointments as assistant professors. Their assessment was based on the understanding that it takes more than a knowledge of subject matter to be an effective teacher. Nearly one-half of the responding land-grant faculty did not feel adequately prepared to teach, as compared with one-fourth of AASCARR faculty. It is interesting to note, however, that a higher percentage of associate professors (65.4 percent) and professors (63.2 percent) than assistant professors (54.4 percent) felt they were prepared to teach.

Faculty at all ranks had approximately the same kinds of teacher preparation experiences. Three-fourths of the faculty surveyed had teaching experience as graduate students, 46.7 percent did informal reading about various teaching methods, 41.1 percent had a course coordinator/mentor's help in teaching a class, 28.6 percent took teaching methods courses, and 27.6 percent attended teaching workshops and seminars. This small percentage of faculty who had teaching preparation prior to their appointments as assistant professors stands in sharp contrast with the percentage of faculty who consider this preparation useful. While taking teaching methods courses is regarded as useful by 74.6 percent of the faculty, all other kinds of teaching preparation are considered useful by 84 percent or more of the faculty.

The fact that a greater percentage of the AASCARR faculty felt prepared to teach appears to be more than coincidental. Of the two types of schools, more AASCARR (46.6 percent) than land-grant (37.3 percent) faculty believed that they benefited from a course coordinator's help in teaching a class, from taking teaching methods courses (35.4 percent and 23.6

percent, respectively), and from reading about various teaching methods (52.3 percent and 43.1 percent, respectively).

Views Regarding Teaching

The views of the majority of the faculty regarding teaching agree with modern educational theory. More than 90 percent of the faculty strongly agree or agree that there is no one style of effective teaching, that teaching is a set of learned activities and can be improved upon, that one of the most important aspects of good teaching is arousing student interest in the subject matter, and that the effectiveness of any instructional method must be judged in terms of its effects on student learning.

More than two-thirds of the faculty strongly agree or agree that involvements in scholarly research leads to more exciting teaching and that good teaching is an art, not a science.

Half of the faculty strongly disagree or disagree that teaching can be best improved by providing faculty with sabbatical leaves, lighter teaching loads, and small classes. Nearly 60 percent believe that students are not the best judges of how effective professors are in their teaching.

Approximately three-fourths of the faculty strongly disagree or disagree that the best teacher is the person who knows the most about the subject matter and that good teachers are born, not made.

More AASCARR (44.6 percent) than land-grant (31.8 percent) faculty believe that teaching is a set of learned activities and that faculty can improve their effectiveness; whereas more land-grant (30.8 percent) than AASCARR faculty (19.4 percent) strongly agree that involvement in scholarly research leads to more exciting teaching.

Importance of Teaching

Nearly half of the faculty surveyed and twice as many nonadministrative as administrative faculty believe that teaching is less important to them than research. The majority of the faculty think that teaching and research should not be separate and that these activities should be similarly evaluated and rewarded in relation to achieving tenure and promotion.

Nearly three times as many land-grant as AASCARR faculty feel that teaching is less important to them than research — 63.3 and 22.1 percent, respectively. However, more land-grant than AASCARR faculty are against separating teaching from research — 90.6 and 75.1 percent, respectively. Also, the percentage of land-grant faculty (83.3) who feel that teaching and research should count equally toward promotion and tenure is somewhat greater than that of AASCARR faculty (75.9).

A cross-tabulation of the results of several questions of the survey has established that those faculty who teach the most feel that teaching is less important to them. Paradoxically, the same faculty think that evaluation and rewards for teaching should

not be similar to those in research and that teaching and research should be separated in such a way that faculty would either teach or do research.

The faculty who spend most of their time on research feel that teaching is not less important to them than research and they, unlike the faculty who mostly teach, think that evaluation and rewards for teaching should be similar to those in research.

Teaching preparation is a positive factor that directly affects faculty feelings about the importance of teaching. Those faculty who took teaching methods courses, did informal reading about teaching methods, and felt prepared to teach perceives teaching as or more important than research to them. Data indicates the following. There is a small negative correlation between the faculty who feel that teaching is less important to them professionally than research and those faculty who:

1. took teaching methods courses, ($R = -.1$);
2. did informal reading, ($R = -.15$);
3. stated they were prepared to teach, ($R = -.14$).

Finally, there is a small negative correlation between the faculty whose departments use formal peer evaluation and those who feel that teaching is less important ($R = -.21$). In other words the faculty whose teaching is subject to formal peer evaluation do not feel that teaching is less important than research.

Faculty, who, by nature of their appointments, spend most of their time teaching feel that teaching is less important to them, it should be separated from research, and evaluation for teaching and research should be different. Faculty who, by nature of their appointments, do mostly research, whose teaching is subject to formal peer evaluation, took teaching methods courses, read about pedagogy, and were prepared to teach, take a different stand with regard to teaching. For faculty in this category, teaching is as important as research, but they also believe that teaching should not be separated from research and should be similarly evaluated and rewarded and count equally toward promotion and tenure.

Teaching Evaluation

Only 40.1 percent of the faculty stated that their departments used an informal peer evaluation method to evaluate their teaching performance, 30.2 percent of the faculty said that formal peer evaluation was used, and 24.7 percent said that a post-graduate evaluation method was used. These three evaluation methods are considered as very or somewhat helpful by 86.0, 80.7, and 69.9 percent of the faculty, respectively.

Student evaluation is used by 96.3 percent of the departments and is viewed as very or somewhat helpful by 74.7 of the faculty. It is viewed as very helpful by 23.4 percent and as somewhat helpful by 51.3 percent. Twenty-two percent see student evaluation as not very helpful.

Although financial and prestigious awards for outstanding teaching are not evaluation tools, they are perceived and treated as such by some faculty and

administrators. They are used in 43.4 percent of the departments in the survey and with the exception of student evaluation, they are more often used than any other teaching evaluation method. These outstanding teaching awards are viewed as the least helpful evaluation methods by nonadministrative faculty (62.4 percent) while 69.7 percent of the administrators perceive them as being helpful or very helpful.

The data reveal that there is more emphasis on teaching evaluation in AASCARR schools than in land-grant colleges. The formal peer evaluation method is used in 50.7 percent of AASCARR schools and in 15.3 percent of land-grant schools. Informal peer evaluation methods are also used more frequently by AASCARR schools (44.5 percent versus 38.1 percent in the land-grant colleges).

Despite the fact that formal and informal peer evaluation methods are more widely used in AASCARR colleges, it is the land-grant faculty who hold them in a higher esteem. Eighty-eight percent of land-grant faculty, as compared with 83.7 percent of the AASCARR faculty, regard informal peer evaluation as very helpful/helpful, and 75 percent of land-grant faculty, as compared with 67.9 percent of AASCARR's faculty, regard formal peer evaluation as very helpful/helpful.

Summary and Discussion

The study reveals several major strengths of current agricultural faculty. The majority of the respondents' views of teaching and learning are consistent with contemporary educational theory. More than 80 percent regard all forms of teaching preparation to be helpful or very helpful. They believe that teaching and research responsibilities should not be separated and that teaching and research should be similarly evaluated and appropriately weighted according to percent of appointment toward promotion and tenure. Those who took teaching methodology courses and read about pedagogy felt better prepared to teach than those who did not. Faculty whose teaching is subject to formal peer evaluation, who took teaching methods courses, who read about pedagogy, and who had some preparation for teaching feel that teaching is as important to them as research.

While the study revealed these positive attitudes and beliefs, there are reasons for concern. One-third of the faculty felt they were not prepared to teach by the time of their first appointment as an assistant professor. Nearly half of the faculty consider teaching less important than research. Faculty felt that departments rely too heavily on student evaluation as a means of teacher evaluation. The value of student evaluation is diminished by the fact that 60 percent of faculty do not think students are the best judges of how well professors teach; thus, they may be less likely to utilize that feedback as means of improving instruction. Other methods of evaluation such as peer, and course alumni are more highly valued by faculty but under utilized.

Faculty do not perceive financial and prestigious awards as useful means of improving teaching.

There are a number of steps that can be taken to better prepare individuals for the role of college teacher and to support them in that role. Departments can assist faculty, junior faculty in particular, in their efforts to understand and successfully fulfill their roles as teachers and researchers. Faculty should be required to have some teaching methods courses prior to their teaching appointment. These could be courses offered by teachers' colleges or short courses and workshops offered by university instructional resource centers.

Colleges and/or departments need to develop teacher preparation programs for graduate students who have college teaching and research as career goals. Teaching methods courses and workshops should be included in faculty development programs where applicable. They should be required of faculty who have not had comparable work and experiences prior to their faculty appointment. Graduate teaching assistants should be supervised by faculty who are recognized as excellent teachers. Teaching and research should be similarly evaluated and count equally toward promotion and tenure. Teaching needs to be evaluated on a continuing basis and departments should use a combination of teach evaluation methods

rather than relying primarily on student evaluation as is the current practice. While financial and prestigious awards might be appropriate and desirable, it should be recognized that these are not methods of improving instruction.

Two resource documents resulted from the study. These reports entitled, *National Assessment of Faculty Development Needs in Colleges of Agriculture* (Chudzinski, et al.) and *Faculty Development Programs A Literature Review* (Chudzinski, et al.) were sent to all land-grant and AASCARR agricultural deans. Additional copies may be obtained for \$10 by writing to the Associate Dean for Resident Instruction, College of Agriculture, University of Illinois, 104 Mumford Hall, Urbana, Illinois, 61801.

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An Evaluation of Students Entering and Exiting Agriculture, Agribusiness, Biology and Chemistry Curricula

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Abstract

Data collected from 1384 students graduating during a 6 year period between 1982 and 1987 were compared to determine if the most academically capable students are entering the Agriculture field and to evaluate their success upon graduation. Criteria examined included high school ACT scores, high school percentile ranks (HSP), college accumulated grade point averages (acc GPA), and responses to a survey regarding placement success. Composite ACT scores were higher ($P \ll .05$) for students entering Biology (B) and Chemistry (C) than for students entering Agriculture (A) or Agribusiness (AB) comparing 23.22, 24.45, 19.59, and 20.35 respectively. Students entering B and C had higher ($P \ll .05$) ACT natural science scores than students entering A or AB. English and Social Science ACT scores were also higher ($P \ll .05$) for students entering B and C compared to those entering A or AB. Math ACT scores were higher ($P \ll .05$) for students entering C than those entering B, both of which were significantly higher than those for students entering A or AB. Students entering C and B had higher ($P \ll .01$) HSP than students entering A. No

difference ($P \ll .05$) was observed in HSP for students entering A or AB. Regardless of college major, junior college transfer students had lower ($P \ll .01$) HSP than non-transfer students. No differences ($P \ll .05$) were observed in Acc GPA between majors. When pooled across majors, transfer students had lower ($P \ll .01$) Acc GPA than non-transfer students. For those graduates obtaining positions related to their major, C graduates started at significantly higher salaries. Significantly fewer students graduating in B were able to obtain a job related to their major. This study suggests academically superior students are entering B and C rather than A, and recruiting strategies should be more successful if targeted towards students interested in B.

Purpose and Objectives

The purpose of this study was to determine if the academic ability of agricultural science graduates was significantly different from the academic ability of agribusiness, biological science, and chemistry graduates. The objectives of the study were based on accepted measures in specific areas of instruction common to all study subjects. The objectives were:

1. describe the agriculture, agribusiness, biological science, and chemistry graduates on their ACT

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