

CASE STUDY

A College of Agriculture Develops and Evaluates A System For Instructional Improvement

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Abstract

The development of a system of evaluation of teaching in the College of Agriculture is described. Results of student and faculty surveys concerning the use of the evaluation system and the evaluation instrument are briefly presented, and the subsequent changes in their administration are outlined.

Introduction

Faculty in many institutions which profess objectives of teaching, research, and service have the impression that the reward system primarily focuses upon research performance. Consequences are obvious that faculty, regardless of their primary interest, may neglect their teaching and service activities to attain requirements for promotion and tenure. This action promotes the popular opinion that faculty favor research and shun teaching responsibilities. In opposition to this opinion, a recent study by Ladd and Lipset⁷ concluded that for every professor strongly devoted to research, 9 were equally devoted to teaching.

An objective and consistent system of effectively evaluating instruction to achieve excellence in student performance and equality in faculty review has been a concern of instructors and administrators alike.

The purpose of this paper is to indicate how the faculty and students were involved in the development of the current system of evaluation of teaching in the College of Agriculture at the University of Arizona.

Instructional Improvement Committee

A committee of 10 faculty, 5 undergraduates, and 1 graduate student was established to administer a program of instructional improvement. The committee had 3 subdivisions: Academic Counseling, Teaching Evaluation, and Auto-tutorial. After several changes in title over the years, the current committee is known as the Instructional Improvement Committee. The committee studies ways to improve teaching and sponsors seminars and workshops aimed at better teaching. Workshops and seminars were, and continue to be, a functional method of addressing special educational topics and concerns of the faculty and students. Special emphasis has been placed upon topics such as Motivating Students; Teaching-Learning Concepts; Writing Course and Performance Objectives; Processes in Evaluation; Designing Test Questions; and Par-

ticipation in the Auto-tutorial, Mini-seminar for Improving Teaching Skills produced by Purdue University. All-faculty and all-student panel discussions which addressed philosophic topics such as "What Works for Me" and "How I Learn Best" have been effective tools for promoting student-faculty rapport. Academic counseling information, and seminars for advisors and instructors centering upon topics identified with student welfare, interpretation of college entrance test scores, student mental and physical health services, financial aid and scholarships, military service options, and updates on university course offerings in Humanities and Social Sciences have been well received by students.

During the late 1960's, student demands for faculty accountability in teaching performance led the committee to prepare a student-completed course and instructor rating system for use in the college.⁸ Appropriate questions were solicited from the faculty and edited by the committee. Attempts were made to analyze the resulting questionnaire by computer scoring. The committee soon realized that it had neither the time nor expertise to develop a valid and reliable rating instrument.

Course Instructor Evaluation

One of the committee members became aware of the evaluation system developed by Dr. Larry M. Aleamoni at the University of Illinois.^{1, 8} The evaluation instrument, known as the Course Instructor Evaluation Questionnaire (CIEQ), was selected because it had the most advanced design, had a data base for objectively evaluating results, was economical, and met our needs. The CIEQ is composed of two parts — the front which consists of 21 objective questions (standard item section) with 4 possible responses, and the back which consists of space for subjective observations concerning the course, instructor, text, and general comments (personal comment section).

The CIEQ was first administered in the college on a voluntary basis in the fall of 1972. The analyzed results were given directly to the faculty member without administrative review. On-campus seminars for interpreting the results were conducted by Dr. Aleamoni, then visiting professor and consultant. The success of the program and the availability of objective data prompted the committee to recommend continued use of the CIEQ system to the Director of Resident Instruction. Ninety percent of the courses were thus evaluated on a voluntary basis with the CIEQ for 2 years.

During this period, a new Dean of the College of Agriculture was appointed. He was "... concerned that

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we might better quantify teaching, for improving the presentation to students and better evaluate teaching as one part of the reward system in the University." Thus, the administration of the CIEQ became mandatory for all courses taught in the college from the fall of 1974 through 1978. During this same period, the Office of Instructional Research and Development (IRAD) was created, and Dr. Aleamoni was named director.^{2, 3}

Personal comments from students and faculty between 1972 and 1978 indicated some dissatisfaction with CIEQ administration and the instrument itself. In 1978 the College of Agriculture Instructional Improvement Committee, with the assistance of the Dean, the Director of Resident Instruction and the Director of IRAD, conducted student and faculty surveys concerning use of the CIEQ in the college. Some questions were unique to either student or faculty surveys but other questions were used in both surveys. Ninety-five of 216 faculty (50 full professors, 13 associate professors, 17 assistant professors, 9 instructors and 6 lecturers or teaching associates) responded. Within this group, 58 were tenured and 37 were non-tenured faculty members. Student responders numbered 1,562.

Student responses indicated that:

- 1) Approximately 5 to 15 minutes were adequate to complete the questionnaire.
- 2) The questionnaire was quite clear as to what was being asked and over 90 percent of the students understood and responded conscientiously to the questions.
- 3) Almost twice as many students considered the personal comments section most important relative to those who indicated that the standard item section and the personal comments section were equally important. Only 8 percent considered the standard item section most important. Ten percent indicated that neither section was important or had no opinion.
- 4) A 3:1 majority of students favored the use of CIEQ results for promotion and tenure decisions and a 3:2 majority favored their use in merit increase considerations. Approximately 15 percent of the students were undecided on these points.
- 5) Seventy-nine percent of the students would not alter their responses if they knew the data were used in promotion, tenure, and merit increase decisions; 15 percent indicated they would respond more positively and 3 percent more negatively under these conditions.
- 6) One-third of the students indicated that prior experiences with the instructor influenced their responses on the CIEQ.
- 7) Students have no way of assessing the effects of CIEQ administration relative to improvement of instruction and cannot judge if instructors use the results to improve their teaching.
- 8) An overwhelming percent (86 percent) favored the continued use of the CIEQ in some form.

Faculty responses indicated that:

- 1) Eighty-three percent of all lecturers and teaching associates, 56 percent of full professors, and 68 percent of all other academic ranks considered the personal comments section of evaluation more beneficial than the objective data for making changes in their instructional program. Only 4 percent of all faculty considered the standard item section the most important and 8 percent saw no merit in the use of the CIEQ for personal benefit.
- 2) The majority of faculty (90.5 percent) felt they knew how to interpret, wholly or in part, the computer printout of CIEQ results. Instructors, lecturers, and teaching assistants were less able to interpret results relative to other professorial ranks. Over twice as many faculty felt they were better able to interpret the results than their department head.
- 3) Nineteen percent of professorial ranks did not have conferences with their department heads concerning CIEQ results, while 58 percent of instructors, lecturers, and teaching associates did not have conferences.
- 4) Some individuals in all professorial ranks "always" used CIEQ results to improve teaching; but no instructors, lecturers, or teaching associates "always" used them, although 20 percent used them "rarely." Seventeen percent of lecturers and teaching associates and 8 percent of professorial ranks indicated that they "never" used the results to improve teaching.
- 5) More faculty agreed that the CIEQ gave students a good opportunity to express their views on instruction than those who disagreed, but the academic ranks were split on this opinion.
- 6) Use of the evaluation results in tenure decisions was appropriate. Eight-four percent of lecturers and teaching associates and 36 to 44 percent of other ranks agreed. More non-tenured, (50 percent), than tenured, (31 percent), faculty disagreed.
- 7) Use of evaluation results in merit increases was appropriate. Eighty-four percent of lecturers and teaching associates and 36 to 69 percent of other ranks agreed. More non-tenured, (50 percent), than tenured, (31 percent), faculty disagreed.
- 8) Use of evaluation results in promotion decisions was appropriate. Only 33 percent of instructors and 35 percent of assistant professors agreed, while 67 to 77 percent of all other ranks agreed. Seventy-one percent of tenured and 42 percent of non-tenured faculty agreed.
- 9) Evaluations should be employed in lecture, lecture/demonstrations, lecture/laboratory and lecture/studio type courses but not in others such as laboratories, seminars, pro-seminars, colloquia, workshops, internships, practicums, special topics, and individual studies.

- 10) Evaluations should be mandatory until an adequate data base was established under conditions of a) a new course offering; b) significant alterations in an existing course; c) a course or instructor, regardless of rank or tenure status, that consistently received less than satisfactory ratings.
- 11) The frequency of evaluation, other than number ten above, should be determined by the instructor and the department head.
- 12) Over 80 percent of faculty indicated that the CIEQ should be continued in some form, and more than half of these thought it should be optional rather than required. Twice as many tenured faculty thought it should be optional rather than required, but fewer than half of non-tenured faculty thought it should be optional.

Majority Opinion

The majority of faculty and students felt the subjective comments were of greater importance than the standard items on the CIEQ for evaluating the course and instructor. These opinions were likely the result of preconceived notions or lack of knowledge on how results are used, and the limited responses allowed for specific items in the objective section of the questionnaire. The subjectivity of the personal comment section, while giving students the opportunity to express themselves, does not allow for objective evaluation.⁴ Valuable information upon which to make adjustments to instruction can be obtained from the comments however. A hazard posed by the comments is that the reader can formulate relatively positive or negative conclusions with little hard objective evidence to support them.

Although the majority of faculty indicated that they could interpret the computerized printout of the CIEQ results, informal discussions with selected individuals revealed that, in general, not all of the information presented on the printout was understood or utilized. The majority of faculty felt they could interpret results better than their department heads, although no effort was made to test this theory. The relatively high percentage of lower-ranking faculty who indicated that they "never" used the CIEQ results to improve instruction and the relatively high percentage of the remaining respondents who indicated that they "sometimes" used them for this purpose was evidence that full advantage of CIEQ results was not being taken. It was therefore recommended that faculty be encouraged to attend CIEQ computer printout interpretation workshops offered by IRAD personnel. Several departments sponsored workshops for their members, but a college-wide program was not adopted. Some individuals worked with IRAD to improve their instruction, and in each case progress was made in overcoming deficiencies in their programs as indicated by higher ratings in subsequent CIEQ evaluations.

New Policy

Based upon the results of the faculty and student surveys, the Instructional Improvement Committee presented to the Director of Resident Instruction its recommendations on the continued use of the CIEQ in the college.² A new college policy was initiated in the spring semester of 1980 based almost wholly upon the committee's recommendations. The policy stated that:

- 1) The frequency of administration of the CIEQ would be determined by the department heads in consultation with the faculty member and with the approval of the Director of Resident Instruction. Guidelines for its use indicated that it should be administered:
 - a) for new teachers in all courses for a period of 3 years or until an adequate data base was established;
 - b) for all faculty needing data concerning teaching performance for preparing promotion and tenure materials;
 - c) in new or significantly altered courses for a period of 3 years or until an adequate data base was established;
 - d) by a faculty member who wishes to obtain information concerning student assessment of teaching performance in particular classes; and
 - e) in other situations considered valid by the department head and/or the Director of Resident Instruction.
- 2) A master list would be kept by the Office of Resident Instruction to record the frequency of CIEQ administration for all courses. A copy of this list would be given to department heads each semester for their review and recommendations.
- 3) As in the past, the results of the analyzed data would be given to the instructor, the department head or division chairman, and the dean of the college. The CIEQ forms would be given to the instructor for review but would be made available upon request for review by the head, director, or dean.

In the three semesters following the new policy, 95 percent of all lecture-type courses in the college were evaluated by request. Some department heads continued the "mandatory" status of administration, and a few did not request evaluations for any course under their supervision. It is anticipated that requests will remain high and that most will come from new teaching faculty, new course offerings, and faculty needing evaluation data on teaching for promotion and tenure considerations.

Conclusions

Faculty and students indicated a desire to continue the use of an evaluative system to improve instructional processes in the College of Agriculture. They also favored evaluation as a tool for administrative decisions. Even though faculty and students indicated that mandatory evaluation was unnecessary, 95 percent of all courses of

the lecture type were evaluated voluntarily during the three semesters following removal of the mandate.

Frequency of evaluation has been delegated to both the individual and the department head to be used in the best interest of the faculty and program. It is anticipated that the evaluative system will be a tool that provides the desire to improve from "within" rather than incites opposition to administrative pressure.

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FOR AGRICULTURE

A Plea For A New Kind Of Post-Graduation Education

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A great demand for a school that provides an overview of the thinking of leading owner/managers in an industrial setting was reported in the *Wall Street Journal* by Drucker.¹ He contrasted this interest with the failure of the expected demand for post-graduate "great books" classes that he and so many other educators had predicted. He reports an insatiable demand for professional education, especially for mature adults that demand teachers able to supply a humanistic perspective — a holistic appraisal in high-intensity courses that often cram a semester's work into two weeks!

This interest contrasts too with the fairly fast drop in interest for traditional education in traditional schools, as Dr. Drucker points out. Judd H. Alexander, Senior Vice President of American Can Company, went even further.² He stresses that nearly every major company can identify key executives with unexpected academic backgrounds, and warns that companies do themselves a disservice if they limit themselves to conventional forms of business education.

This new demand poses a vague but real threat to academia, as Dr. Drucker points out. He comments, "Students and parents must now be able to choose between alternative routes to learning, even though this is anathema to the public education establishment." He worries that we will respond "... with academia's standard response — produce new PhDs for a new department, roughly comparable to restyling the buggywhip for leadership in the new market for horseless carriages."

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The College of Agriculture at the University of Nevada has had rewarding experiences in two attempts to supply a new type of post-graduate education in agriculture. We first conducted two-week Turfgrass Schools.³ Next we tried two-week Seed Schools, first for commercial flower and vegetable seed production, later for new pollination techniques in breeding and producing flower and vegetable seeds.

Each of these schools was designed for graduates of a U.S. or foreign college of agriculture. The assumption was made that these students needed to acquire a current and holistic view of an agricultural industry in which they had already worked 3 to 5 years. Also, the assumption was made that they already recognized that their future management years would be in a world very different from what their fathers had experienced.

Specifically, the Turf Schools were designed to supply additional education for young professionals working at golf courses but unable to get away for additional education except by using their two-week vacation time. Most found themselves working under the old-time "greenskeeper" rather than a professionally educated business manager.

The Seed School students were breeders, producers, or marketing people. Most students were slated to manage the family seed business within relatively short times. And this is holding true for the next Seed School, slated to be held in Japan and Taiwan later in 1982.

The key areas of student concern in all these schools has management education overtones, as you might guess: 1) What special opportunities exist for greatly expanding the size of the market; 2) How can I increase my share of an expanding market; 3) How can I best use marketing research; 4) How can I achieve better money management; 5) What extra education do I need to be able to create new products; 6) What understanding of supervision do I need to acquire to be able to increase people satisfactions among those working with me;