

which try to signify relative values as personally viewed. Maybe the fellow who shears fewer sheep does a better job or is more reliable. Or maybe he is slower of movement, makes less effort, or has poor clippers.

Second, preserve and develop human judgment and use it only when needed. However fallible and precarious it may be, it can admit its inevitable biases and try to avoid fallibility. In trying to control judgment one moves in the direction of unreachable objectivity. On the other hand, most so-called evaluations, with their neat tables and alleged but false probabilities of accuracy, simply mask a subjectivity which is less guarded than frank human judgment. Your own judgment, for instance, will tell each of you that the teacher you recall with pleasure is likely not to be the one your associates would recall. That teacher matched you, two individuals, and your judgment reflects that fact. As a teacher he or she was as sure to be unique as were you as a student. This teacher was not "good"; he or she was forceful, kind, or had some named qualities which impressed you.

## INVITATIONAL PAPER

# Meeting Demands For Accountability in Teaching

Robert R. Shrode

Increasing demands for accountability are being imposed upon colleges and universities both from within the institutions and from the society at large which colleges and universities are designed to serve. In the area of teaching, these demands are especially difficult to meet, because the evaluation of teaching is such a complex problem for which no one has yet proposed a solution which is universally or even widely approved. Nevertheless, we must evaluate teaching, even though many who have tried to do so, and many more who have not tried, vehemently contend that the task is an impossible one.

No one is more conscious than teachers themselves of the highly subjective nature of teaching. Input units (dollars) can be known, but output defies any such objective measurement. Impressively large numbers of student credit hours are being generated, but critics of education (critics who may be uneducated but quite influential) are inclined to scoff at such numbers, contending that they do not meaningfully reflect productivity. Since the product of teaching cannot be measured or weighed objectively, we have no choice but to make continued effort to use as well as we can the only measurement available in most situations, opinion. The fact that most, if not all, of the information we can obtain concerning the effectiveness of teaching is subjective infor-

Dr. Shrode is professor of Animal Science, University of Tennessee. The paper was presented at the 1975 NACTA Convention.

Third and, time considered, last, our responsibilities or jobs belong center stage. The job of the student is to learn and understand, not to appraise his teachers. The job of a teacher is to help along this learning and understanding, not to arrive at a battery of ranking code marks. Do you realize that the seemingly simple task of arranging 10 students in order of alleged merit requires a choice of exactly 3,628,800 possibilities, and 11 times that many if we add one more student? It is time to draw a line between the kind of problems which have realistic answers and those which can produce no more than illusions of values, generalities which lack any real meaning.

The old saying has it that "there is so much bad in the best of us, and so much good in the worst of us, that it hardly behooves any of us to talk about the rest of us." If students and teachers will forget one another and both concentrate on the tasks in front of them, a number of those problems now suffering the illusions of evaluation would find both answers and relief.

mation does not mean that we cannot be objective in our efforts to assess that information. Fortunately, the methodology for such objectivity is available to us.

Initiation of organized, systematic efforts to evaluate teaching is something that we, as teachers, should want to undertake, the first and most important reason being that such efforts will contribute to improvement of teaching. Secondly, public knowledge of such efforts and of the fact that they are serious, deliberate, and organized is likely to satisfy and quiet many of our critics who are very general rather than specific or precise in their criticism. Most open-minded people tend to be



quite tolerant of anyone who is honestly trying, even though far from perfectly successfully, to accomplish something worthwhile.

An individual's teaching is inevitably subjected to evaluation by students, colleagues, the teacher himself, and administrators, but such evaluation is usually not systematized or given the attention necessary to increase its accuracy and usefulness. A system of deliberately obtaining such evaluation can be instituted. Numerous instruments (questionnaires) have been devised for doing so. A logical starting point would be to choose instruments which have been used and which are believed by those who have used them to be "good," though, of course, imperfect. Modifications designed to better suit a given situation can be made. So that the information can be summarized promptly, optical scan answer sheets for computerization are desirable, especially if large numbers of extensive questionnaires are involved.

Considerable thought must be given by a teaching faculty to the various sources of evaluation of teaching in deciding exactly how the information should be obtained, analyzed, and used.

### **Evaluation by Students**

1. By students currently enrolled in a given course
2. By former students
  - a. Students who have not yet been graduated but who took the course in question during some earlier academic term
  - b. Students who have been graduated but who took the course in question a year or more previously

Evaluations by students currently enrolled are, in most cases, the easiest to obtain in sizeable samples. Teachers' opinions as to the usefulness of student evaluations are extremely variable, ranging from "very useful" to "completely worthless." Undoubtedly, these extreme views are held, respectively, by teachers who are regularly given favorable ratings by students and those who receive unfavorable ratings. The value of opinions of students currently enrolled in a course is questioned by many on the basis of the students' lack of age and experience and the belief that a student's perspective while currently enrolled and deeply involved in a course is a deterrent to "objectivity." On the other hand, these possible disadvantages are believed by numerous observers to be more than offset by the students' continuous exposure to the teacher and his instructional methods during the academic term.

Opinions of former students have the distinct advantage of being largely a reflection of lasting impressions of a teacher and his courses. However, this advantage may be offset by a very practical disadvantage, viz., the difficulty of obtaining evaluations made by former students, especially those who have been graduated for some time. However, the unquestioned value of such evaluations and suggestions of students supplying them makes them, in the opinion of many teachers, well worth the effort to obtain them.

### **Evaluation by Colleagues**

1. On the basis of impressions the colleagues may have been able to form of the influence on students which their exposure to the teacher has had
2. On the basis of consultation conferences with colleagues concerning course objectives and teaching procedures
3. On the basis of reciprocal agreements between teachers to audit the courses of one another

Opinions and suggestions of professionally and personally respected colleagues can be very helpful to a teacher who is seriously and continuously striving to improve his teaching effectiveness. Any or all of the three bases listed above can be used, but, undoubtedly, the most helpful would be number three. Such reciprocities could be between teachers in the same discipline or between disciplines. Each would have certain advantages. However, the attitude of an auditor from a discipline other than that of the teacher could more nearly resemble that of an undergraduate student taking the course.

### **Evaluation by the Teacher Himself**

1. On the basis of conscientious effort to "see ourselves as others see us" with the aid of evaluations by others
2. On the basis of careful and critical observation of video tape recordings of lectures and other class sessions

Few, if any, of us are capable of succeeding perfectly in the effort of number one above, but fortunately, in 1975 we have available the procedure of number two to assist us, which is amazingly and, sometimes, embarrassingly effective.

### **Evaluation by Administrators**

This evaluation is inevitable and is a very important one to the individual teacher since recommendations and decisions as to promotions and salary adjustments rest on such evaluation. In spite of its importance, evaluation by administrators is the least "first hand" of all. An administrator cannot audit all the courses of all the teachers over whom he has jurisdiction. Conscientious administrators are anxious to be impartial and unbiased. However, the ultimate opinions they form of the worth of individual teachers must, in most cases, be based on information they obtain from students, colleagues of the teachers, other administrators, and the teachers themselves. Since little, if any, of the information administrators have concerning the teaching effectiveness of individuals can be "first hand," effort should be made to reduce the variation in the amount and kind of information provided them concerning the teaching effectiveness of their staff members.

### **Evaluation by means of Standard Examinations**

In some course areas there are recognized standard examinations available, but these are not common in many of our courses in agriculture. Average student per-

formance on such examinations is believed by many teachers to reflect quite reliably the effectiveness of instruction in the courses in question.

More general examinations, such as the Graduate Record Examination, are considered good indicators of the effectiveness of a total teaching program on the basis of the average performance on the examination exhibited by students trained in a particular teaching program.

### **Analysis and Use of Evaluation Data**

The results of evaluation of teaching should be promptly subjected to critical statistical analysis which includes more than simple averaging of ratings given various aspects of instruction. Unfortunately, such averages have, in some instances, been used to rank instructors with no effort being made to adjust the averages to remove from them variation attributable to regression of ratings on known variables of record with respect to which there are differences between classes evaluating the instruction of different teachers. Correlations of all known variables of record with ratings should be estimated; and, if the estimates are significant at low levels of probability, ratings should be adjusted to produce a new set of ratings which are not correlated with the variables of record with respect to which adjustments have

been made. Adjusted ratings can then be used reliably for evaluation of instruction, for testing of significance of mean differences of interest, and for guidance in making modifications of instruction in the future.

### **Initiation of Evaluation Systems**

One or more of the evaluations mentioned earlier are presently being used by individual teachers on a voluntary basis, but it is not likely that any large group of teachers in any institution is using all of them in a total, organized evaluation system. Perhaps the best approach would be to initiate various parts of an evaluation system individually and experimentally for a given period of time making evolutionary modifications during the experimental period, such modifications being based on experience and analyses of results obtained.

Ultimately, a workable and satisfactory system can be evolved, but this can be accomplished only if those involved teachers, students and administrators believe that it will be worthwhile. Though no opinion poll has been conducted, the author believes that a majority would agree that an evaluation system would contribute to an improvement in teaching and satisfy, to some extent, the demands for accountability imposed upon us as teachers.

## **INVITATIONAL PAPER**

# **Responsibility As Agricultural Educators**

Ronald C. Smith

Whenever one undertakes a presentation such as this, it is a good idea to be sure to have the meanings of the key words clearly in mind. The two key words which are the crux of this brief talk, "responsibility" and "educators," will be defined so there are no misunderstandings of the subsequent points I intend to make.

Responsibility means to be accountable for one's action. One who is deemed a responsible person is considered trustworthy and reliable. We very seldom wish to be held accountable or responsible for failures or misfortunes and are almost always willing to accept responsibility when the results reflect favorably on our actions.

To educate (the noun of which is educator) means to develop and cultivate both morally and mentally. It is considered synonymous with to instruct or to train.

I think it is clear, then, to each one of us in NACTA just how the meanings of these two words zero in on the roles we must accept in agriculture.

Although I am a teacher in the College of Agriculture at Ohio State, I do not pretend to know the complex interactions of all phases of agriculture. I am a horticulturist, the profession about which I do know something and consequently will draw on for the examples

presented today. I hope that from my examples in my specific area, you will be able to extrapolate concepts which you may be able to apply in your own particular profession.

Let me lead you into the body of my talk by giving you its parameters: I will be addressing you to the following as a criteria for fulfilling your responsibilities as educators in agriculture.

(A) Meeting the needs of industry with our graduates

(B) Success of graduates placed in industry

(C) Actions which will expand your competency, promote and give favorable visibility to your college, and further the development of your profession.

### **Industry Needs**

In horticultural education, we often find ourselves being accused of "vocalizing" higher education by training students to slip comfortably into specific jobs or positions open in a particular industry. I contend this largely is sour grapes on the part of those people outside the colleges of agriculture. We must be on guard, however, that we carefully integrate our classroom concepts and theory with our practical approach so that students do not fall into the trap of "pigeon-holing" their knowledge.

*Dr. Smith is with the Department of Horticulture, The Ohio State University. This paper was presented at the 1975 NACTA Convention.*