Evaluation

The Cornell Diagnostic Observation and Reporting System For Student Description of College Teaching

Harold R. Cushman and Frederick K. T. Tom

Abstract

The main objective was to develop a practical diagnostic observation and reporting system for student description of college teaching. At Cornell University 120 professors participated in identifying 7 general teaching objectives considered satisfactory for describing most of the important purposes of undergraduate courses. In addition, data were collected from 402 instructors and 12,792 students at ten colleges of agriculture in the Northeast to determine the correlations between the presence of 45 low-inference teaching behaviors and the degree of student achievement as measured by students' ratings of their progress on each of the 7 general teaching objectives used in the study.

The findings show that 28 specific, low-inference, observable teaching behaviors correlated at the level of .48 or higher with student achievement on one or more of the general teaching objectives and were classified by the researchers as effective at the college level.

Four main products were generated by the study: an **Instructor Form,** *a* **Student Form,** *a computer* **Instructor's Printout,** *and the required computer programs for use in processing the data on standard electronic equipment. Administrators and professors interested in the improvement of college teaching will find these products to have implications for meaningful staff development programs. Similarly, researchers seeking to validate competencies for inclusion in a competency-based teacher preparation program will find the rationale and methodology used in this study of benefit.*

Introduction

It seems logical to anticipate that considerable improvement of college teaching can be brought about by invoking effective and efficient procedures for (1) observing and describing the specific teaching behaviors of an instructor that make a difference in student achievement, (2) diagnosing her or his teaching behavior to determine strengths and weaknesses, (3) formulating appropriate prescriptions for overcoming individual instructor weaknesses, and (4) providing treatment in the form of staff development programs. This project was an attempt to synthesize and add to existing knowledge claims by identifying and evolving some foundations for such an approach to the improvement of college teaching.

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Survey of Literature

1. College students as observers and reporters of teaching behaviors of their instructors. The considerable body of empirical evidence concerning college students as observers and reporters of the teaching behaviors of their professors indicates that student ratings have high reliability (Fahey, 1967, and Hoyt, 1969) and usually agree closely with ratings made by the professor's peers (McKeachie and Lin, 1973). The work of Solomon, et. al. (1964) indicates that student reports give a fair representation of a teacher's classroom performance. Students can also provide useful feedback on whether they understand, are stimulated or bored, already know, are learning, or are encountering roadblocks (Johnson, 1967).

2. Student estimates of their own achievement. A number of studies have shown that student estimates of their probable grade point averages are about as predictive of first year results as are college aptitude tests (Keefer, 1965). Other studies have shown that self-ratings of vocational interests are more predictive of future occupational choice than are interest test scores (Holland and Lutz, 1968). Still other studies show that the amount of distortion occurring in self-reports is minimal even when motivation to distort is considerable (Walsh, 1967). Solomon, Bezdeck, and Rosenberg (1963) report a correlation of .52 between the actual gain (post-test scores minus pretest scores) of 24 college classes in American government and student self-ratings of gain in factual knowledge and a correlation of .57 between actual gain and student self-ratings of gain on knowledge of principles. Likewise, Gage, et. al. (1968) measuring the effect of presentations in mini-lectures has shown that students' estimates of their "amount of learning" correlate quite highly (from .59 to .66) with actual scores on multiple-choice comprehension tests.

Hoyt (1969) has pointed out that one of the problems encountered by researchers in attempting to identify teaching behavior correlates of student achievement lies in their failure to control three intervening variables: student scholastic aptitude, previous achievement in the discipline and supporting disciplines, and academic motivation-persistence. Taken together these variables

can account for such a significant proportion of the variation in student achievement that, unless they are controlled, variation due to the teaching behavior of the instructor is almost impossible to detect. In his work at Kansas State University, Hoyt measured "student achievement" by student self-ratings or progress in a given course, on objectives the instructor considered important in comparison with progress in other courses taken at the same institution (to minimize the effect of the factors previously mentioned).

3. **Low and high inference teaching behaviors.** A common weakness in existing student observation and rating systems lies in the failure of their authors to differentiate between the usefulness of low inference and high inference variables in describing teaching behaviors. Rosenshine (1971) has defined low inference items as those focusing upon specific, observable, denoteable, relatively objective behaviors such as "teacher gesturing." High inference items lack the specificity of low inference variables. Items such as "enthusiasm" require that an observer infer these constructs from a series of events.

4. **Instructor feedback.** Work completed by Centra (1972) has suggested that college instructors will change their teaching behavior when relevant feedback is provided. However, a review of available observation and reporting systems indicated that the capability of the electronic computer had not been optimally utilized for providing such feedback to an instructor.

The Purpose

Specifically, the purpose was to generate (1) a set of general teaching objectives that an instructor can use to describe the important purposes of an undergraduate course, (2) an instrument that students can use to describe those specific observable teaching behaviors of the instructor that are related to student achievement, (3) a means for ascertaining student achievement utilizing self-ratings of progress on objectives the instructor considers important, and (4) a "stand alone" computerized technique for providing feedback to the instructor appropriate for diagnosis of strengths and weaknesses and prescription of appropriate remedies.

Data Collection

A randomly selected sample of 60, or approximately one-third of the instructors of undergraduate courses at Cornell University, New York State College of Agriculture and Life Sciences, was asked to review 10 general teaching objectives evolved by Hoyt et. al. (1973) and to accept, revise, add, or delete items in such a way as to make them comprehensive, appropriate, and understandable for describing the important purposes of undergraduate courses in the college. The feedback from this effort was used to synthesize 7 general teaching objectives that were subsequently tested on a second randomly selected sample of 60 instructors who had not participated in the initial effort. These persons were asked (1) to rate the importance of the 7 general teaching objectives in their undergraduate course using a five-point scale, and (2) to add any other purposes important in their course. The results of this testing procedure indicated that instructors had found the revised 7 general objectives suitable for the stated intent and the instructions soliciting the instructor's rating of the importance of each objective clearly stated. The 7 general objectives, instructions for rating the importance of each in a given course, and provisions for collecting instructor identification data were incorporated into an **Instructor Form.**

Eighty-five teaching behaviors found by other researchers to be correlated with student achievement were located through the computerized resources of the Educational Resource Information Center (the ERIC System), a review made by Barak Rosenshine (1971), and work reported by Hoyt et. al. (1973). Seventy-two teaching behavior items were synthesized from this input using standard item writing procedures and strict application of the criterion of low inference (within the competence of college students to observe and report). The 72 items were then pre-tested with 524 students enrolled in five large classes at Cornell University, New York State College of Agriculture and Life Sciences, to determine the clarity of the items and the competence of students to observe and report the behavior dealt with by each. Responses provided by the students reduced the number of teaching behavior items to 45. These items and the earlier described 7 general teaching objectives were brought together in a **Student Form** appropriate for collecting two types of essential data: (1) the degree to which selected teaching behaviors were exhibited by a given instructor and (2) the degree of student achievement as measured by student assessments of their own progress in achieving objectives considered important by the instructor.

Using the **Instructor Form** and the **Student Form,** data were collected from 402 sections and 12,792 students at 10 colleges of agriculture in the Northeast during the spring semester 1974. Data processing was carried out by the Cornell Computer Services.

Findings and Conclusions

Seven general teaching objectives for describing the important purposes of undergraduate courses were generated by the study. They were:

- Gaining factual knowledge (terminology, classifications, methods, trends).
- Learning fundamental principles, concepts, or theories.
- Developing specific psychomotor (manipulative, manual) skills.
- Improving logical thinking, problem-solving, and decision-making abilities.
- Developing a favorable attitude toward subject matter.
- Developing creative (imaginative, inventive, original) capabilities.
- Developing skills in organizing ideas and presenting them in written and oral forms.

Table 1 Relationships Between Certain Specific Teaching Behaviors and Student Achievement on Seven General Teaching Objectives for Undergraduate Courses.

Key to General Objectives:

1. Gaining factual knowledge (terminology, classifications, methods, trends).
2. Learning fundamental principles, concepts, or theories.
3. Improving logical thinking, problem-solving, and decision-making abilities.
4. Developing specific psychomotor (manipulative, manual) skills.
5. Developing a favorable attitude toward the subject matter.
6. Developing creative (imaginative, inventive, original) capabilities.
7. Developing skills in organizing ideas and presenting them in written and oral forms.

Specific Teaching Behaviors	Correlations With Student Achievement on General Objectives						
	1	2	3	4	5	6	7
The Instructor:							
1. Pointed out what was important to learn in each class session	.57	.54			.52		
2. Gave step-by-step instructions when needed by students	.54	.54			.53		
3. Stated the objectives of the course		.53			.61		
4. Promoted teacher-student discussion (as opposed to mere response to questions)						.59	.56
5. Displayed concern that students learn		.54			.62		
6. Encouraged silent students to participate						.55	.53
7. Initiated conversation with students before and after class					.58	.53	
8. Addressed students by name						.49	
9. Made positive statements about the subject matter of the course	.50	.56			.69		
10. Spoke with expressiveness and variety in tone of voice					.58		
11. Indicated when a new topic was being introduced		.49					
12. Used a variety of teaching techniques					.60	.49	
13. Used a variety of teaching materials				.48	.51		
14. Used understandable vocabulary					.50		
15. Related course material to real-life situations					.53		
16. Used examples to help make a point		.49			.60		
17. Summarized material presented in each class session		.48					
18. Presented well organized lectures	.49	.51					
19. Provided the students with practice (experience) in recalling factual knowledge (terminology, classifications, methods, trends)	.59	.54		.49			
20. Provided students with practice (experience) in recalling fundamental principles, concepts, or theories		.62	.64		.49	.52	
21. Provided students with practice (experience) in logical thinking, problem-solving, and decision-making		.51	.83			.61	.54
22. Provided students with practice (experience) in developing specific psychomotor (manipulative, manual) skills				.93			
23. Provided students with practice (experience) in developing skills in organizing ideas and presenting them			.62			.78	.85
24. Provided students with opportunities to be creative (imaginative, inventive, original)			.50			.86	.75
25. Praised students during class						.57	.50
25. Provided answers along with objective-type homework assignments			.48				
27. Provided relevant information in response to student questions	.51	.50			.68		
28. Made written comments on our papers							.51

Six of the general objectives were rated important, very important, or absolutely essential by sizeable majorities of the instructors of the 402 classes participating in the study. The remaining general objective, "developing specific psychomotor. . .skills" proved to be important, very important, or absolutely essential in only 34 percent of the classes. It was concluded from this evidence that the 7 general teaching objectives are appropriate for describing most of the important purposes of undergraduate courses.

Another important outcome of the data processing effort was the determination of which teaching behaviors bore a sufficiently high correlation with student achievement to warrant classification as "effective" at the college level. To this end, the following procedures were implemented:

1. For each of the 45 teaching behavior items, a mean rating score was computed for each of the 402 sections in the sample by taking the sum of all the rating scores assigned by the students in a given section and dividing by the number of students concerned.
2. For each of the 7 general teaching objectives, a mean rating score was computed for each of the 402 sections in the sample.
3. A Pearson Product-Moment Correlation was computed between each of the mean rating scores for the 45 teaching behaviors and each of the 7 general teaching objectives mean rating scores for a total of 315 correlation coefficients. Each correlation was computed using mean ratings from 402 class sections. Teaching behavior items were considered effective or ineffective based on these coefficients.

In correlational studies of this type, one cannot determine empirically what size a correlation coefficient must be for it to be considered acceptable. The decision is simply a value judgment of the persons concerned. In this investigation, to be considered effective a teaching behavior had to be correlated with one or more general teaching objectives at the level of at least .48. This figure was selected because, given the size of the sample (402) a correlation coefficient of .48 means if the study were repeated with another sample of the same size drawn from a similar population, the chances of obtaining a correlation as high as .40 would be 97½ out of 100. In other words, by using a cut-off score of .48, the investigators were assured that upon replication, the results obtained would be no lower than .40, which was considered acceptably high for the purpose of this study. Using this criterion, it was concluded that 28 specific, low inference, observable teaching behaviors are effective for improving student achievement on one or more of the 7 general teaching objectives. (Table 1.)

Reliability

Pearson Product Moment inter-rater reliability coefficients were computed for 2 types of items: (1) student ratings of their instructors' teaching behaviors and (2) student self-ratings of progress on objectives considered important by the instructors. The inter-rater reliability method was used. Correlation coefficients were computed as follows: the 402 class sections in the sample were divided into 5 groups consisting of the 80 smallest sections, the 80 next largest sections, and so on; for each group, for each of the 28 teacher behavior items and 7 general teaching objectives, a reliability coefficient was calculated by arranging the student forms in random order, numbering them consecutively, sorting them into an even-numbered and an odd-numbered group, and obtaining a mean score for the given item for both groups; and then determining the Pearson Product-Moment Correlation between the 2 sets of mean scores for all the sections in the group. The obtained value, being a "split-half" correlation, was adjusted upward, using the standard formula: adjusted correlation equals 2 times the split-half correlation divided by the sum of 1 plus the split-half correlation. The resultant adjusted correlations showed the inter-rater reliability of each of the individual 28 teacher behavior items and 7 general teaching objectives. To obtain a measure of the reliability of the 2 types of items in the instrument, that is, the teacher behavior items and the student progress ratings, the adjusted correlations of the items in each type were averaged using an r to Z transformation. Odd-numbered students and even-numbered students tended to make similar judgments concerning their progress in a given course compared to other courses taken at the same college or university. The reliability of such judgments improved as class size became larger. The means of the adjusted correlation coefficients for the 7 general teaching objectives increased from r = .73 when 11 raters were involved to r = .81 for 15 raters, and to r = .86 for 22 raters; remained essentially constant at r = .85 for 30 raters; and increased to r = .95 for 73 raters.

Adjusted inter-rater reliabilities of student ratings of the frequency their instructor evidenced 28 specific teaching behaviors were also computed for each of five different class sizes. Again, odd-number and even-numbered students tended to make similar judgments. The reliability of such judgments improved as class size became larger. The means of the adjusted correlation coefficients for the 28 teaching behaviors increased from r = .72 when 11 raters were involved, to r = .80 for 15 raters, to r = .87 for 23 raters, to r = .88 for 31 raters, and r = .93 for 76 raters.

Four products resulted from the study: (1) a revised **Instructor Form** designed to collect data concerning the identification of the instructor and the general teaching objectives she or he considered important for this class section; (2) a revised opscan **Student Form** for obtaining student ratings of the degree to which the instructor evidenced each of the 28 effective teaching behaviors and student progress in achieving objectives considered important by the instructor; (3) a **Computer Program** for processing input data; and (4) a stand-alone **Computer Printout** which provides the instructor with feedback that will enable her or him to diagnose the strengths and weaknesses of her/his teaching and to prescribe appropriate remedies. The top of the printout displays the identification information previously supplied on the **Instructor Form.** The second portion of the printout describes the purpose of the system and provides information concerning the composition of the norm group. The body of the printout provides the instructor with (a) detailed data (including frequencies, means, standard deviations, and percentile ranks) concerning the students' ratings of their progress on the general teaching objectives judged by the instructor to be important, very important, or absolutely important for this class section; (b) similar detailed data concerning the students' ratings of the instructor's teaching behaviors; (c) detailed data concerning the students' responses to voluntary questions supplied by the instructor; and (d) a series of instructions for use in formulating his or her personal prescription for improvement.

Implications

Three products of the study, the **Instructor Form,** the **Student Form,** and the **Instructor's Printout,** have a number of implications for the improvement of college teaching. They can be effective for (a) identifying the strengths and weaknesses of an individual instructor's teaching, (b) prescribing appropriate specific remedies, and (c) supplying appropriate evidence concerning an instructor's effectiveness to those members of the faculty and administration involved in decisions concerning her or his promotion. And given extensive usage at a particular institution, they can supply a description of the "state of the art" that will suggest a rationale for ascer-

Study Products

Figure 1.

INSTRUCTOR FORM

THE CORNELL DIAGNOSTIC OBSERVATION AND REPORTING SYSTEM FOR STUDENT DESCRIPTION OF COLLEGE TEACHING

Directions: Please fill out a separate copy of this form for each lecture, laboratory, discussion, and recitation section for which your students will be completing STUDENT FORM.

INSTRUCTOR'S NAME (Print): _____ (First) (M.I.) (Last) SEX: _ _

RANK: ____ Professor; _____ Assoc. Prof.; _ Asst. Prof.; _ _ _ Teach. Asst.; _ Other

COLLEGE: _____ DEPARTMENT: _ _ _ _ _ _ _ _ _ _

OFFICE ROOM NUMBER AND BUILDING: _

CITY: _____ STATE: _ _ _ ZIP: _ _

COURSE NUMBER: _____ MEETING SCHEDULE OF THIS SECTION OF COURSE (e.g., 9:00 MWF):

Hour: _____ _ _ _ _ _ Days: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

NUMBER OF STUDENTS ENROLLED IN THIS SECTION: _____

TYPE OF SECTION (Check one): ____ Lecture; _ _ Laboratory; _ _ Recitation/Discussion

Read carefully the following seven general teaching objectives for undergraduate courses. Rate *each* in terms of its importance for *this* section of your class, using the code which follows.

1. Not important
2. Of no more than minor importance
3. Important
4. Very important
5. Absolutely essential

Circle one:	*General Teaching Objectives*
1 2 3 4 5	1. Gaining factual knowledge (terminology, classifications, methods, trends).
1 2 3 4 5	2. Learning fundamental principles, concepts, or theories.
1 2 3 4 5	3. Improving logical thinking, problem-solving, and decision-making abilities.
1 2 3 4 5	4. Developing specific psychomotor (manipulative, manual) skills.
1 2 3 4 5	5. Developing a favorable attitude toward the subject matter.
1 2 3 4 5	6. Developing creative (imaginative, inventive, original) capabilities.
1 2 3 4 5	7. Developing skills in organizing ideas and presenting them in written and oral forms.

For Office Use Only

CODE NUMBER ☐☐☐ College ☐☐☐ Instructor ☐ Section

PLEASE TURN OVER

Figure 2.

STUDENT FORM
THE CORNELL DIAGNOSTIC OBSERVATION AND REPORTING SYSTEM
FOR STUDENT DESCRIPTION OF COLLEGE TEACHING

DO NOT WRITE IN THIS SPACE

THE PURPOSE OF THIS FORM IS TO ALLOW YOU TO PROVIDE INFORMATION TO YOUR INSTRUCTOR WHICH WILL ASSIST HIM IN IMPROVING HIS TEACHING. RECORD YOUR RESPONSE BY MARKING THE APPROPRIATE SPACE WITH A SOFT LEAD PENCIL. DO NOT WRITE OR MARK ANY WHERE ELSE. BE SURE TO ERASE ERRORS COMPLETELY

INSTRUCTOR _____ COURSE NO. _____ MEETING HOUR _____ DAYS _____

PART I

DESCRIBE THE TEACHING BEHAVIOR OF YOUR INSTRUCTOR BY MARKING THE BOX IN THE APPROPRIATE COLUMN TO THE RIGHT OF EACH ITEM

THE INSTRUCTOR.

	HARDLY EVER	OCCASIONALLY	SOMETIMES	FREQUENTLY	ALMOST ALWAYS
1. POINTED OUT WHAT WAS IMPORTANT TO LEARN IN EACH CLASS SESSION					
2. GAVE STEP BY STEP INSTRUCTIONS WHEN NEEDED BY STUDENTS					
3. STATED THE OBJECTIVES OF THE COURSE					
4. PROMOTED TEACHER - STUDENT DISCUSSION (AS OPPOSED TO MERE RESPONSE TO QUESTIONS)					
5. DISPLAYED CONCERN THAT STUDENTS LEARN					
6. ENCOURAGED SILENT STUDENTS TO PARTICIPATE					
7. INITIATED CONVERSATION WITH STUDENTS BEFORE AND AFTER CLASS					
8. ADDRESSED STUDENTS BY NAME					
9. MADE POSITIVE STATEMENTS ABOUT THE SUBJECT MATTER OF THE COURSE					
10. SPOKE WITH EXPRESSIVENESS AND VARIETY IN TONE OF VOICE					
11. INDICATED WHEN A NEW TOPIC WAS BEING INTRODUCED					
12. USED A VARIETY OF TEACHING TECHNIQUES					
13. USED A VARIETY OF TEACHING MATERIALS					
14. USED UNDERSTANDABLE VOCABULARY					
15. RELATED COURSE MATERIALS TO REAL LIFE SITUATIONS					
16. USED EXAMPLES TO HELP MAKE A POINT					
17. SUMMARIZED MATERIAL PRESENTED IN EACH CLASS SESSION					
18. PRESENTED WELL ORGANIZED LECTURES					
19. PRAISED STUDENTS DURING CLASS					
20. PROVIDED ANSWERS ALONG WITH OBJECTIVE TYPE HOMEWORK ASSIGNMENTS					
21. PROVIDED RELEVANT INFORMATION IN RESPONSE TO STUDENT QUESTIONS					
22. MADE WRITTEN COMMENTS ON STUDENT PAPERS					

PART I (CONTINUED)

THE INSTRUCTOR PROVIDED STUDENTS WITH:

	HARDLY EVER	OCCASIONALLY	SOMETIMES	FREQUENTLY	ALMOST ALWAYS
23. PRACTICE EXPERIENCE IN RECALLING FACTUAL KNOWLEDGE (TERMINOLOGY, CLASSIFICATIONS, METHODS, TRENDS)					
24. PRACTICE EXPERIENCE IN RECALLING FUNDAMENTAL PRINCIPLES, CONCEPTS OR THEORIES					
25. PRACTICE EXPERIENCE IN LOGICAL THINKING, PROBLEM SOLVING AND DECISION MAKING					
26. PRACTICE EXPERIENCE IN DEVELOPING SPECIFIC PSYCHOMOTOR (MANIPULATIVE, MANUAL) SKILLS					
27. PRACTICE EXPERIENCE IN DEVELOPING SKILLS IN ORGANIZING IDEAS AND PRESENTING THEM					
28. OPPORTUNITIES TO BE CREATIVE (IMAGINATIVE, INVENTIVE, ORIGINAL)					

PART II

RATE THE PROGRESS YOU HAVE MADE IN THIS COURSE IN COMPARISON WITH THAT MADE IN OTHER COURSES YOU HAVE TAKEN AT THIS COLLEGE OR UNIVERSITY BY MARKING THE BOX IN THE APPROPRIATE COLUMN TO THE RIGHT OF EACH ITEM

RATE YOUR PROGRESS IN:

	LOWEST 10%	NEXT 20%	MIDDLE 40%	NEXT 20%	UPPER 10%
29. GAINING FACTUAL KNOWLEDGE (TERMINOLOGY, CLASSIFICATIONS, METHODS, TRENDS)					
30. LEARNING FUNDAMENTAL PRINCIPLES, CONCEPTS OR THEORIES					
31. IMPROVING LOGICAL THINKING, PROBLEM SOLVING AND DECISION MAKING ABILITIES					
32. DEVELOPING SPECIFIC PSYCHOMOTOR (MANIPULATIVE, MANUAL) SKILLS					
33. DEVELOPING A FAVORABLE ATTITUDE TOWARD THE SUBJECT MATTER					
34. DEVELOPING CREATIVE (IMAGINATIVE, INVENTIVE, ORIGINAL) SKILLS					
35. DEVELOPING SKILLS IN ORGANIZING IDEAS AND PRESENTING THEM IN WRITTEN AND ORAL FORMS					

PART III

USE THE COLUMNS AT THE RIGHT FOR ANY ADDITIONAL QUESTIONS SUPPLIED BY YOUR INSTRUCTOR

	1	2	3	4	5
36.					
37.					
38.					
39.					
40.					

PART IV

PLEASE COMPLETE

41. MALE FEMALE

42. REQUIRED COURSE ELECTIVE COURSE

43. FRESHMAN SOPH JUNIOR SENIOR GRAD OTHER

PLEASE DO NOT FOLD OR TEAR

PART V

GENERAL COMMENTS: USE THE BACK OF THIS FORM FOR ANY ADDITIONAL REMARKS YOU CARE TO MAKE FOR YOUR INSTRUCTOR TO READ.

Figure 3.
INSTRUCTOR'S PRINTOUT

THE CORNELL DIAGNOSTIC OBSERVATION AND REPORTING SYSTEM FOR
STUDENT DESCRIPTION OF COLLEGE TEACHING

INSTRUCTOR'S NAME JOHN K. SMITH

RANK PROFESSOR SEX MALE

COLLEGE N.Y.S. COLLEGE OF AGRI. & LIFE SCI.

DEPARTMENT EDUCATION

OFFICE ROOM NUMBER AND BUILDING 202 STONE HALL

CITY ITHACA STATE NEW YORK ZIP 14853

COURSE NUMBER 331

MEETING SCHEDULE OF THIS SECTION OF COURSE

HOUR 1:25 DAYS M W

NUMBER OF STUDENTS ENROLLED IN THIS SECTION 69

TYPE OF SECTION X LECTURE LABORATORY RECITATION DISCUSSION

PURPOSE

THE PURPOSE OF THIS DIAGNOSTIC OBSERVATION AND REPORTING SYSTEM IS TO HELP YOU IMPROVE THE EFFECTIVENESS OF YOUR TEACHING TO THE END THAT STUDENT ACHIEVEMENT ON OBJECTIVES WHICH YOU CONSIDER IMPORTANT FOR THIS CLASS SESSION WILL BE ENHANCED. INSTRUCTIONS ARE PROVIDED BELOW THAT WILL ALLOW YOU (1) TO COMPARE THE EFFECTIVENESS OF YOUR TEACHING WITH THAT OF OTHER INSTRUCTORS WITH THE SAME OBJECTIVES (2) TO IDENTIFY SOME STRENGTHS AND WEAKNESSES OF YOUR TEACHING BEHAVIOR AND (3) TO FORMULATE YOUR PERSONAL PRESCRIPTION FOR IMPROVEMENT.

THE NORMS USED IN THIS PRINTOUT ARE BASED ON DATA COLLECTED FROM 12,782 STUDENTS IN 402 CLASS SECTIONS AT 10 COLLEGES OF AGRICULTURE IN THE NORTHEAST. ALL OF THE INSTRUCTORS WHO PARTICIPATED DID SO VOLUNTARILY IN RESPONSE TO AN INVITATION ISSUED TO ALL FACULTY MEMBERS TEACHING UNDERGRADUATE COURSES. A COPY OF THE FINAL REPORT OF THE STUDY ALLUDED TO ABOVE MAY BE OBTAINED FROM THE HEAD, EDUCATION DEPARTMENT, NEW YORK STATE COLLEGE OF AGRICULTURE AND LIFE SCIENCES, CORNELL UNIVERSITY, ITHACA, NEW YORK 14853.

INSTRUCTIONS FOR FORMULATING YOUR PERSONAL PRESCRIPTION FOR IMPROVEMENT

1. LOCATE THE GENERAL TEACHING OBJECTIVES PRECEDED BY AN ASTERISK (*) BELOW. THESE ARE THE OBJECTIVES WHICH YOU PREVIOUSLY RATED EITHER IMPORTANT, VERY IMPORTANT, OR ABSOLUTELY ESSENTIAL FOR THIS CLASS SECTION ON THE INSTRUCTOR FORM.
2. FOR EACH, NOTE THE FREQUENCY DISTRIBUTION AND MEAN SCORE OF THE RATINGS ASSIGNED TO YOU BY YOUR STUDENTS AND ALSO THE CORRESPONDING PERCENTILE RANK.
3. WHEREVER A MEAN SCORE OR A PERCENTILE RANK IS UNACCEPTABLY LOW TO YOU, CIRCLE THAT FIGURE AND ALSO THE NUMBER OF THE GENERAL TEACHING OBJECTIVE ON THE SAME HORIZONTAL LINE.

CODE USED IN DESCRIBING STUDENT'S PROGRESS IN THIS COURSE IN COMPARISON WITH OTHER COURSES TAKEN AT THIS COLLEGE OR UNIVERSITY

LOWEST 10% = (1)
NEXT 20% = (2)
MIDDLE 40% = (3)
NEXT 20% = (4)
UPPER 10% = (5)

GENERAL TEACHING OBJECTIVE	N	FREQUENCY DIST (1)	(2)	(3)	(4)	(5)	MEAN	SD	PERCENTILE
STUDENT PROGRESS IN									
29 GAINING FACTUAL KNOWLEDGE (TERMINOLOGY, CLASSIFICATIONS, METHODS, TRENDS)	59	0	3	7	15	34	4.36	0.89	87
30 LEARNING FUNDAMENTAL PRINCIPLES, CONCEPTS, OR THEORIES	59	2	5	13	19	20	3.85	1.10	63
31 IMPROVING LOGICAL THINKING, PROBLEM-SOLVING, AND DECISION-MAKING ABILITIES	59	9	11	17	10	12	3.08	1.34	40
32 DEVELOPING SPECIFIC PSYCHOMOTOR (MANIPULATIVE, MANUAL) SKILLS	57	24	12	15	3	5	2.18	1.28	6
33 DEVELOPING A FAVORABLE ATTITUDE TOWARD THE SUBJECT MATTER	59	1	2	4	12	40	4.49	0.90	
34 DEVELOPING CREATIVE (IMAGINATIVE, INVENTIVE, ORIGINAL) CAPABILITIES	58	14	12	15	11	6	2.71	1.31	23
35 DEVELOPING SKILLS IN ORGANIZING IDEAS AND PRESENTING THEM IN WRITTEN AND ORAL FORMS	58	11	15	15	9	8	2.79	1.31	

A GENERAL TEACHING OBJECTIVE RATED BY THE INSTRUCTOR AS BEING EITHER IMPORTANT OR VERY IMPORTANT OR ABSOLUTELY ESSENTIAL FOR THIS CLASS SECTION

4. LOCATE THE COLUMN HEADINGS BELOW LABELED (29), (30), (31), (32), (33), (34), AND (35).
5. CIRCLE THE SAME NUMBERS IN THE COLUMN HEADINGS (29-35) BELOW AS THOSE OF THE GENERAL TEACHING OBJECTIVES THAT YOU PREVIOUSLY CIRCLED IN INSTRUCTION 3.
6. EXAMINE THE MEAN SCORES AND THE PERCENTILE RANKS APPEARING IN THE COLUMNS HEADED BY THE CIRCLED NUMBERS WHEREVER A MEAN SCORE OR A PERCENTILE RANK IS UNACCEPTABLY LOW TO YOU, CIRCLE THAT FIGURE AND ALSO THE NUMBER OF THE EFFECTIVE TEACHING BEHAVIOR ITEM ON THE SAME HORIZONTAL LINE.
7. THE EFFECTIVE TEACHING BEHAVIOR ITEMS CIRCLED IN 6 ABOVE CONSTITUTE YOUR PERSONAL TEACHING IMPROVEMENT PRESCRIPTION.

CODE USED IN DESCRIBING INSTRUCTOR'S TEACHING BEHAVIOR

HARDLY EVER = (1)
OCCASIONALLY = (2)
SOMETIMES = (3)
FREQUENTLY = (4)
ALMOST ALWAYS = (5)

EFFECTIVE TEACHING BEHAVIOR	N	FREQUENCY DIST (1)	(2)	(3)	(4)	(5)	MEAN	SD	PERCENTILE RANK ON EACH EFFECTIVE TEACHING BEHAVIOR CORRELATED (.3 OR HIGHER) WITH PROGRESS ON 1 OR MORE OF THE 7 GENERAL TEACHING OBJECTIVES: 29	30	31	32	33	34	35
THE INSTRUCTOR:															
1 POINTED OUT WHAT WAS IMPORTANT TO LEARN IN EACH CLASS SESSION	66	0	4	2	24	36	4.39	0.82	95	95					
2 GAVE STEP-BY-STEP INSTRUCTIONS WHEN NEEDED BY STUDENTS	66	0	4	4	22	36	4.36	0.85	90	90					
3 STATED THE OBJECTIVES OF THE COURSE	66	0	3	6	13	43	4.48	0.85		95					
4 PROMOTED TEACHER-STUDENT DISCUSSION (AS OPPOSED TO MERE RESPONSE TO QUESTIONS)	65	5	6	20	14	20	3.58	1.24							50
5 DISPLAYED CONCERN THAT STUDENTS LEARN	66	1	2	3	12	48	4.58	0.84		95					
6 ENCOURAGED SILENT STUDENTS TO PARTICIPATE	64	30	8	17	4	5	2.16	1.30							35
7 INITIATED CONVERSATION WITH STUDENTS BEFORE AND AFTER CLASS	66	1	3	6	21	35	4.30	0.93							90
8 ADDRESSED STUDENTS BY NAME	65	4	6	14	27	14	3.63	1.11							40
9 MADE POSITIVE STATEMENTS ABOUT THE SUBJECT MATTER OF THE COURSE	66	1	1	5	22	37	4.41	0.82	60	90					
10 SPOKE WITH EXPRESSIVENESS AND VARIETY IN TONE OF VOICE	66	1	2	1	11	51	4.65	0.71							
11 INDICATED WHEN A NEW TOPIC WAS BEING INTRODUCED	66	1	0	1	9	55	4.77	0.63		95					
12 USED A VARIETY OF TEACHING TECHNIQUES	65	5	7	19	22	12	3.45	1.15							70
13 USED A VARIETY OF TEACHING MATERIALS	64	4	12	18	15	15	3.39	1.22				40			
14 USED UNDERSTANDABLE VOCABULARY	66	0	3	0	9	54	4.73	0.69							
15 RELATED COURSE MATERIAL TO REAL-LIFE SITUATIONS	66	0	1	0	8	57	4.83	0.48							
16 USED EXAMPLES TO HELP MAKE A POINT	66	2	0	1	10	53	4.70	0.78		95					
17 SUMMARIZED MATERIAL PRESENTED IN EACH CLASS SESSION	66	4	14	14	16	18	3.45	1.27		70					
18 PRESENTED WELL-ORGANIZED LECTURES	66	0	2	3	12	49	4.64	0.72	95	95					
19 PRAISED STUDENTS DURING CLASS	65	17	16	15	10	7	2.60	1.32							60
20 PROVIDED ANSWERS ALONG WITH OBJECTIVE-TYPE HOMEWORK ASSIGNMENTS	61	37	9	8	4	3	1.80	1.19			40				
21 PROVIDED RELEVANT INFORMATION IN RESPONSE TO STUDENT QUESTIONS	66	2	1	5	11	47	4.52	0.93	90	90					
22 MADE WRITTEN COMMENTS ON OUR PAPERS	62	38	10	9	2	3	1.74	1.13							
23 PROVIDED THE STUDENTS WITH PRACTICE (EXPERIENCE) IN RECALLING FACTUAL KNOWLEDGE (TERMINOLOGY, CLASSIFICATIONS, METHODS, TRENDS)	66	7	16	15	11	17	3.23	1.36	70	70		70			
24 PROVIDED STUDENTS WITH PRACTICE (EXPERIENCE) IN RECALLING FUNDAMENTAL PRINCIPLES, CONCEPTS, OR THEORIES	66	11	11	19	9	16	3.12	1.40		20	20				20
25 PROVIDED STUDENTS WITH PRACTICE (EXPERIENCE) IN LOGICAL THINKING, PROBLEM-SOLVING, AND DECISION-MAKING	66	16	15	13	6	16	2.86	1.51		30	30				30
26 PROVIDED STUDENTS WITH PRACTICE (EXPERIENCE) IN DEVELOPING SPECIFIC PSYCHOMOTOR (MANIPULATIVE, MANUAL) SKILLS	66	34	9	13	2	8	2.11	1.39							
27 PROVIDED STUDENTS WITH PRACTICE (EXPERIENCE) IN DEVELOPING SKILLS IN ORGANIZING IDEAS AND PRESENTING THEM	64	23	12	12	8	9	2.50	1.45			15				10
28 PROVIDED STUDENTS WITH OPPORTUNITIES TO BE CREATIVE (IMAGINATIVE, INVENTIVE, ORIGINAL)	64	24	11	16	4	9	2.42	1.46			40				30

TEACHER PROVIDED QUESTIONS	N	FREQUENCY DIST (1)	(2)	(3)	(4)	(5)	MEAN	SD
36 THE INSTRUCTOR WAS AVAILABLE OUTSIDE OF CLASS TO PROVIDE INDIVIDUAL ASSISTANCE TO STUDENTS – HARDLY EVER, OCCASIONALLY, SOMETIMES, FREQUENTLY, ALMOST ALWAYS	66	5	6	20	14	20	3.58	1.24
37 TAKEN AS A WHOLE, THE COURSE WAS POOR, FAIR, AVERAGE, GOOD, EXCELLENT	65	5	7	19	22	12	3.45	1.15
38 THE EXAMINATIONS, QUIZZES, OR PAPERS CLOSELY RELATED TO THE IMPORTANT CONCEPTS OF THE COURSE – STRONGLY DISAGREE, GENERALLY DISAGREE, UNDECIDED, GENERALLY AGREE, STRONGLY AGREE	64	30	8	17	4	5	2.16	1.30

taining the need, content, and clientele for staff development programs and for the generation of instructional materials for the improvement of college teaching.

In addition, the rationale and methodology of the study can have important implications for two groups of investigators: those seeking to determine the relationships between additional teaching behaviors and positive college student learning outcomes and those seeking justification for the inclusion of any given teacher competency in a competency-based teacher education program.

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Evaluation

Typical Faculty Concerns About Student Evaluation of Instruction

Abstract

Eight typical faculty concerns about the appropriateness of using student ratings of instructor and instruction are presented. Discussions of the answers to these concerns are presented using a plethora of research that spans at least 50 years. Finally, faculty members are asked to consider the eight concerns from the point of view of faculty evaluating students.

Lawrence M. Aleamoni

In the past few years there have been many proposals for evaluating instruction, and a few of them were also concerned with trying to relate evaluation to the improvement of instruction. Most proposals suggested the use of similar elements in the evaluation procedure. These include (a) judgment by student, peer, self, and supervisor (department head), and (b) judgments of course material, course content, course objectives, and quality of student learning. If, however, one looks for actual working models of instructional evaluation, it is immediately apparent that schemes involving systematic ratings by peer, supervisor, or self, or of material, content, etc., are rarely actualized. More often than not, the student ratings of instructor and instruction appear as the only elements in any of the "working models," and there are many reasons one could cite for this. This paper, however, will focus specifically on eight typical faculty concerns about the appropriateness of using ratings of instructor and instruction. These are summarized below in terms of common observations frequently expressed by faculty.

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Typical Faculty Concerns

1. Students cannot make consistent judgments concerning the instructor and instruction because of their immaturity, lack of experience, and capriciousness.

2. Only colleagues with excellent publication records and experience are qualified to evaluate their peer's instruction.

3. Most student rating schemes are nothing more than a popularity contest with the warm, friendly, humorous, easy-grading instructor emerging as the winner.

4. Students are not able to make accurate judgments until they have been away from the course and possibly away from the university for several years.

5. The student rating forms are both unreliable and invalid.