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AUTHOR	Centra, John A.
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ABSTRACT

College teachers' self-ratings were investigated in this study by comparing them to ratings given by students. The sample consisted of 343 teaching faculty from five colleges; these teachers, as well as the students in one of their classes, responded to 21-item instructional report questionnaire. Correlating teacher responses to each item with the mean class responses (across the 343 classes) disclosed a modest relationship between the two sets of evaluation: a median correlation of .21 for the items. In addition to the general lack of agreement between self- and student evaluations, there was also a tendency for teachers as a group to give themselves better ratings than their students did. Comparisons between student and faculty responses were also made across items, and a rank correlation of .77 indicated a good deal of similarity in the way the two groups rank ordered the items. Discrepancies between individual teacher ratings and ratings given by the class were further analyzed for: (a) sex of the teacher (no difference found), (b) number of years of teaching experience (no difference), and (c) subject area of the course (differences noted for natural science courses vs. those in education and applied areas). Among other conclusions, the results of this study would argue for the collection of student ratings to supplement self ratings. (Author)

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RESEARCH BULLETIN

SELF-RATINGS OF COLLEGE TEACHERS: A COMPARISON WITH STUDENT RATINGS

John A. Centra

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Educational Testing Service
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July 1972

SELF-RATINGS OF COLLEGE TEACHERS: A COMPARISON WITH STUDENT RATINGS

John A. Centra
Educational Testing Service

Abstract

College teachers' self-ratings were investigated in this study by comparing them to ratings given by students. The sample consisted of 343 teaching faculty from five colleges; these teachers, as well as the students in one of their classes, responded to a 21 item instructional report questionnaire.

Correlating teacher responses to each item with the mean class responses (across the 343 classes) disclosed a modest relationship between the two sets of evaluation: a median correlation of .21 for the items. In addition to the general lack of agreement between self and student evaluations, there was also a tendency for teachers as a group to give themselves better ratings than their students did. Comparisons between student and faculty responses were also made across items, and a rank correlation of .77 indicated a good deal of similarity in the way the two groups rank ordered the items.

Discrepancies between individual teacher ratings and ratings given by the class were further analyzed for: (a) sex of the teacher (no difference found); (b) number of years of teaching experience (no difference); and (c) subject area of the course (differences noted for natural science courses vs. those in education and applied areas).

Among other conclusions, the results of this study would argue for the collection of student ratings to supplement self-ratings.

SELF-RATINGS OF COLLEGE TEACHERS: A COMPARISON WITH STUDENT RATINGS

John A. Centra

Educational Testing Service

Teacher self-ratings have been proposed as a possible source of information for performance improvement and, to a lesser extent, as an input into performance evaluation. As a basis for decisions on promotion or salary, self-evaluations are not likely to have much validity. But it is possible that some form of systematic self-evaluation could be helpful to the teacher trying to improve instruction, particularly if combined with external evaluations provided by students or colleagues.

There has been little research on teacher self-ratings. In particular, the relationship between self-ratings and those provided by students or colleagues is not yet fully known. With 51 instructors in a military setting, Webb and Nolan (1955) reported a correlation of .62 between instructor self-ratings and student ratings. Clark and Blackburn (1971), however, reported a correlation of .19 between student ratings and faculty self-ratings at a small college, and a similarly moderate correlation (.28) between self-ratings and colleague ratings. In both of these studies, overall teaching was rated rather than specific instructional practices.

The purpose of this study was to further investigate college teachers' self-ratings and ratings given by students by comparing these two sets of ratings over a wide range of specific, student-oriented instructional practices. Discrepancies between self-ratings (or self-descriptions) and those provided by students would underscore the need for student feedback to the instructor as well as highlight specific areas of instruction where feedback is most essential. Differences in ratings will also be studied to investigate their relationships to selected teacher and course characteristics.

Procedure

The sample for the study consisted of 343 teaching faculty at five institutions of higher education. Between 75 to 90 per cent of the teachers invited from each college participated in the study. The five institutions included two state colleges (one of which had a predominantly black enrollment), a selective liberal arts college, a multipurpose college, and an urban community college. None of these institutions had, at the time of the study, a systematic program to collect student ratings, nor did a significant portion of their faculty collect student ratings on their own. The majority of teachers in this study, therefore, were not familiar with how students might rate their instruction.

Students and teachers responded to 21 items dealing with instructional practices. The student questionnaire was titled the "Midsemester Student Instructional Report" and actually contained 23 items, 21 of which were judged appropriate for instructor self-ratings. Included were items that faculty members in an earlier study had identified as providing information they would like to receive from students (Centra, 1972). Among the dimensions of instruction included were the organization of the course, student-teacher interaction, instructor communication, student effort, and stimulation of students. Previous factor analytic studies had identified several of these as dimensions that effectively differentiated among instructors (Coffman, 1954; Gibb, 1955; Hodgson, 1958; Isaacson, McKeachie, Milholland, Lin, Hofeller, Baerwalt, & Zinn, 1964).

Responses to 17 of the items were on a four-point agree-disagree scale, with a "not applicable" option also provided. The four remaining items used a four- or five-point scale with different response options for each

item. The wording for each of the statements in the questionnaire differed slightly for students and instructors. For example, an item on course objectives was worded as follows for each group:

For students: The instructor's objectives have been made clear

For teachers: I feel my objectives for the course have been made clear to students

Teachers were asked to "describe this course, your teaching, or the students enrolled." They were told that the reason for obtaining this self-report was to see which items were tapping information already known to most instructors.

The data were collected at midsemester of the Fall 1971 term. Instructors administered the rating form in one class of their own choosing, with the understanding that only they would receive a summary of their students' responses.

Analyses

Faculty-student comparisons were made in a number of ways. First, the relationship between the two sets of ratings was studied by correlating instructor responses to each of the 21 items with the mean responses of students in their class (N = 343 classes). Secondly, differences between the way faculty as a group and students as a group rated or described instruction were investigated by a comparison of means; i.e., the mean score for all teachers on each item was compared to the average of the student class means.

Finally, the discrepancy between each instructor's response and the mean response of his class was of particular interest. The extent of that discrepancy and its relationship with specific teacher or course variables

(i.e., sex, years of teaching experience, subject area of the course) were analyzed through multivariate analysis of variance.

Results and Discussion

The results of the comparison of means and the correlational analysis for items 5-21 are presented in Table 1. The correlation between the two sets of descriptions or ratings was not particularly high, indicating only modest agreement in the way faculty and students perceived instruction. While the correlation between faculty and student responses was significantly different from zero for most of the items due to the large N (343), the median correlation was only .21.

Insert Table 1 about here

Also listed in Table 1 are the mean faculty responses for each item and a ranking of the items, the mean of the classroom (student) means and a ranking of those scores, the results of the t-tests, and the number of colleges where the difference between the means was significant. A graphical presentation of the data is presented in Figure 1. Responses for items 5-21 could range from <u>one</u> for "strongly agree" to <u>four</u> for

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Insert Figure 1 about here

"strongly disagree"; thus, lower values represent greater agreement with each statement. The comparisons of the mean values indicate that instructors as a group generally rated or described their teaching more favorably than did their students.(Students' ratings were also skewed toward the more

favorable end of the scale, which is usually the case with this type of instrument.) In particular, instructors and students did not agree on the following items: the extent to which students are free to ask questions or give opinions in class (item 14), the extent to which instructors are concerned with student learning (11), the amount of agreement between objectives and what is being taught (6), instructor openness to other viewpoints (20), the extent to which instructors inform students of how they would be evaluated (16), whether the instructor encourages students to think for themselves (10), and the clarity of course objectives (5). For each of these seven items, instructor-student differences were notable at either four or all five of the colleges.

On the other hand, there was little difference between the faculty and student groups in their ratings of the instructor preparation for class (15) and on the extent to which course objectives were being accomplished (21). For the remaining eight items, the differences were modest and in many instances not significant within a college.

Another way to look at the data is to compare items with each other. The question then becomes: To what extent do the groups of teachers and students order the items similarly? A ranking of item means for each of the two groups indicates fairly high similarity; in fact, a rank correlation of .77. This would suggest that, while teachers and students are generally using different points on the scale in responding to the items (as indicated by the comparison of means), both groups tend to see the same relative strengths and weaknesses among the teachers in this study. For example, while there is a large mean difference between the groups on

instructor concern with student learning (item 11), both groups rated instructors favorably on this item in comparison to other aspects of teaching. Keeping in mind that higher scores represent unfavorable (disagree) responses, both groups also rated the instructors in this study poorly on stimulating student interest in the course (18).

Generally speaking, combining the ranks of both teachers and students indicates that not stimulating student interest enough (16), the lack of helpful comments on papers or exams (12), and not knowing when students understand the material tended to be rated as the most frequent criticisms of instruction for the teachers in this study. On the other hand, their strengths were in allowing students to feel free to ask questions or give opinions (14) and in their concern with student learning (11).

Individual Teacher-Class Differences

Probably more important than a comparison of the way an average instructor and an average class rated instruction is some knowledge of how many instructors perceived themselves far differently than their students did. A distribution of the differences between each instructor's responses and those of his class (i.e., the class means) provides that information. Presented in Table 2 is a summary of the results of such a distribution. For each item, the percentage of instructors who gave themselves "considerably poorer" or "considerably better" ratings is indicated within each college and for the total sample. A difference of .63 or greater was used to define "considerably poorer or better" because a difference of at least that great would appear to be large enough to have some practical significance; it is also the approximate standard deviation for most of the student item responses.

Insert Table 2 about here

For most of the items, between a fourth and a third of the instructors described or rated themselves considerably better than their students did. The median, in fact, was just under 30 per cent for all 343 instructors and their classes. Forty-one per cent of the instructors gave themselves better ratings on item 14: students are free to ask questions or give opinions in class; and 36 per cent on item 11: the instructor is concerned about whether students learn and tries to be actively helpful. Both items deal with faculty-student interaction as do items 8, 9, 10, and 16 for which fairly high percentages of instructors also gave themselves better ratings. The faculty-student interaction dimension, then, appears to be one on which a sizable number of instructors and their students do not agree and on which student reactions would appear to be especially crucial. Other similar areas would be the instructor's openness to other viewpoints (item 20) and the agreement between announced objectives for the course and what was being taught (6).

A surprisingly large percentage of instructors rated themselves <u>poorer</u> than students did in a few areas. Fifteen per cent rated themselves more poorly on class preparation and 12 per cent were less satisfied that they were accomplishing course objectives. In general, however, only between 4 to 8 per cent of the teachers gave themselves considerably poorer ratings.

One of the items in the form was unique in that it elicited opinions on student effort in the course (19). For students, the exact wording was: "I have been putting a good deal of effort into this course"; for instructors it was worded: "Students seem to be putting a good deal of effort into this

course." The results for this item, as one might expect, were much different than those for other items. Compared to students' responses, 18 per cent of the faculty thought students generally were putting considerably less effort into the course, while 10 per cent gave students better ratings on effort than students gave themselves. In other words, in this instance students have tended to give themselves better ratings just as instructors did on so many of the previous items.

An inspection of the differences within each college indicates fairly similar results with the exception of college five. In comparison to the other four colleges, higher percentages of the instructors at college five rated themselves considerably better than did their students on a majority of the items. While it is not possible to conclude much on the basis of one college, it is interesting to note that college five was the smallest and most selective of the colleges in the study. Moreover, instructors at college five were given the poorest student ratings among the five colleges, whereas their self-ratings were not much different or poorer than those of instructors elsewhere. Thus, the gap between instructor-student ratings at college five was due largely to the poorer ratings by students, perhaps because of higher expectations on their part, rather than on better ratings by instructors.

Presented in Table 3 is a summary of responses to the first four items, which used varied responses rather than agree-disagree options. The items deal with the pace, the level of difficulty, and the work load of the course, as well as the extent to which the instructor used examples and illustrations. Once again there were student-instructor differences although they were not particularly large. Instructors tended to think they more

often used examples and illustrations, and at three of the colleges instructors more likely considered the pace at which material was covered to be slow. College five, the selective liberal arts college, was once again noteworthy in that its faculty and to some extent the students reported less frequent use of examples or illustrations in courses.

Insert Table 3 about here

A final question regarding individual teacher-class differences was whether those differences were related to instructors of different sexes, with varying amounts of teaching experiences, or those teaching different subject areas. Are the self-ratings for female teachers, for example, more similar to their students' ratings than are those of male teachers? For this analysis, each course was grouped into one of four general subject area categories: natural sciences, humanities, social sciences, and education and applied subjects (e.g., business, home economics, nursing). Teaching experience consisted of three categories: one or two years, three to six years, and seven years or more. Data for 235 teachers were available for this analysis.

The results of the multivariate analysis of variance, in which all 21 items were used as variables, are given in Table 4. There were no differences due to sex or years of teaching experience or for any of the interactions; there was, however, a significant difference ($p < .05$) due to subject area. This difference was largely between natural science courses and those in education and applied subjects. Specifically, teachers in the natural sciences did not think the pace of the course was as fast as their students said it was, and they did not think students put as much

effort into the course as students said they did. Conversely, teachers in education and applied subjects reported the course as having a faster pace than their students reported, and thought that students put more effort into the course than students said they did.

Insert Table 4 about here

Summary and Conclusions

A comparison of students' ratings of instruction with teachers' self-reported ratings in over 300 classes at five colleges disclosed a modest relationship between the two sets of evaluations. The median correlation for 17 items was .21, indicating that faculty members generally evaluate or describe their teaching somewhat differently from the way it is evaluated or described by their students. Not surprisingly, the highest correlations occurred for the more factual items, on which there was somewhat less chance for disagreement (e.g., the instructor informs students of how they would be evaluated), while items eliciting opinions (e.g., the instructor is using class time well) resulted in the lowest correlations.

As mentioned earlier, previous studies, in which students and faculty ratings of instruction had been compared, employed a single overall measure of teaching and produced conflicting results: .62 in one instance (Webb & Nolan, 1955) and .19 in the other (Clark & Blackburn, 1971). The latter correlation was reported for college teachers and, of course, was fairly similar to the median correlation for the 17 items used in the five-college study reported here. Webb and Nolan's use of instructors in a military setting may explain the unusually high correlation found in their study; in any event, it does not seem to apply to more typical college teaching situations.

In addition to the general lack of agreement between self and student evaluations, there was also a tendency for teachers as a group to give themselves better ratings than their students did. In a sense this tendency might be viewed as only "human," or certainly not surprising. As Robert Burns has reminded us, most people do not see themselves as others see them; teachers and the way they see their instruction are apparently no exception.

Comparisons between student and faculty responses were also made across items, and a rank correlation of .77 indicated a good deal of similarity in the way the two groups rank ordered the items. This suggests that instructors are indeed aware of many of their particular teaching strengths and weaknesses, even though they see themselves more favorably in absolute terms. They are also probably more aware of their own relative strengths and weaknesses than they are of the way they might compare to other instructors, as suggested by the previously cited correlational data for each item. An ipsative approach to student rating of faculty, therefore, in which the emphasis is on identifying the specific "good" and "bad" practices of each individual teacher, would not appear to be as informative to instructors as the normative approach, in which comparisons may be made with other relevant groups of instructors.

The discrepancy between individual teacher ratings and the mean rating given by his class was most notable for between a fourth to a third of the 343 instructors in the study, and in particular for items related to student-instructor interaction, course objectives, and the instructor's openness to other viewpoints. These areas of instruction, then, would seem to be particular ones in which a sizable proportion of teachers could profit from student feedback.

Teacher-student discrepancies were about the same for men and women teachers and for the more and less experienced teachers. That there were no sex differences in rating discrepancies is not particularly surprising; but one might have predicted that the self-ratings of more experienced teachers would be closer to student ratings. Since most of the teachers in this study had not made a practice of obtaining systematic feedback from their students, the findings suggest that getting to know student reactions to teaching is not something that comes merely with experience.

Of particular interest, however, were differential discrepancies noted for the subject areas; teachers of natural science subjects underestimated (relative to their students) both the pace of their course and their students' efforts, while teachers of education and applied subjects overestimated the course pace and their students' efforts. These subject area differences might be explained by the differences in the content and in the intended objectives of courses in each area. Instructors of mathematics, physics, biology, and the like may feel that there is so much factual and theoretical material to cover in their courses that a fast pace coupled with a good deal of student effort is a necessity. What teachers in the natural sciences view as an acceptable pace and work load, however, apparently does not coincide with their students, who frequently are using courses in other fields for comparison. In education and applied subject areas, not only might the amount of factual material be less demanding on students, but frequently the major objectives of the courses are to establish particular attitudes or skills with students. Working toward those objectives may result in courses that appear slower paced to students.

In conclusion the results of this study would argue for the collection of student ratings as a means of providing instructors with information they do not already have about their teaching. As an aid to instructional improvement, teacher self-ratings might in fact be used in conjunction with student feedback as a means of highlighting discrepancies for the individual instructor.

References

Centra, J. A. The student instructional report: Its development and uses. SIR Report Number 1. Princeton, N. J.: Educational Testing Service, 1972.

Clark, M. J., & Blackburn, R. Assessment of faculty performance: Some correlates between self, colleagues, students, and administrators. Center for the Study of Higher Education, University of Michigan, 1971. (Mimeo)

Coffman, W. E. Determining students' concepts of effective teaching from their ratings of instructors. Journal of Educational Psychology, 1954, 45, 277-285.

Gibb, C. A. Classroom behavior of the college teacher. Educational and Psychological Measurement, 1955, 15, 254-263.

Hodgson, T. F. The general and primary factors in student evaluation of teaching ability. Seattle: University of Washington, 1958.

Isaacson, R., McKeachie, W., Milholland, J., Lin, Y. G., Hofeller, M., Baerwalt, J., & Zinn, K. Dimensions of student evaluations of teaching. Journal of Educational Psychology, 1964, 55, 344-351.

Webb, W. B., & Nolan, C. Y. Student, supervisor, and self-ratings of instructional proficiency. Journal of Educational Psychology, 1955, 46, 42-46.

Table 1

Faculty-Student Comparisons to Instructional Report Questionnaire,

343 Classes at Five Colleges[a]

		Mean Faculty Response[b]	Mean of Student Means[b]	T Test of Means	Number of Colleges Item Was Significant	Correlations[c]
5	Course objectives made clear	1.55 (9)	1.81 (10)	7.52*	4	.25
6	Agreement between objective and teaching	1.51 (7)	1.82 (11)	9.34*	5	.19
7	Instr. using class time well	1.56 (10.5)	1.72 (7.5)	4.68*	1	.11
8	Instr. availability for students	1.47 (5.5)	1.62 (2)	4.32*	2	.28
9	Instr. knows when students don't understand	1.77 (15)	1.98 (15)	5.43*	3	.21
10	Instr. encourages students to think	1.42 (3.5)	1.71 (6)	8.87*	4	.23
11	Instr. concern with student learning	1.26 (2)	1.68 (4)	13.54*	5	.17
12	Instr. comments helpfully on papers or exams	1.75 (14)	2.03 (17)	5.74*	2	.33
13	Instr. raises challenging questions	1.68 (12)	1.90 (13)	5.34*	3	.22
14	Students are free to question or give opinions	1.15 (1)	1.67 (3)	18.93*	5	.16
15	Instr. preparation for each class	1.47 (5.5)	1.52 (1)	1.59	0	.13
16	Instr. informs students of how evaluated	1.52 (8)	1.84 (12)	8.03*	5	.42
17	Instr. summarizes or emphasizes major points	1.56 (10.5)	1.73 (9)	4.34*	2	.13
18	Student interest stimulated by course	1.85 (16)	2.01 (16)	3.90*	1	.32
19	Students putting effort into course	2.09 (17)	1.97 (14)	-3.10*	0	.33
20	Instr. openness to other viewpoints	1.42 (3.5)	1.72 (7.5)	8.74*	5	.16
21	Instr. accomplishing objectives for the course	1.70 (13)	1.69 (5)	- .19	0	.15

*Significant at .01 level.

[a]The N for each item was often less than 343 due to "Not Applicable" instructor responses; i.e., they did not think the item applied to their course. Lower responses indicate greater agreement or more favorable responses.

[b]Rank of each item mean is in parentheses. The rank correlation equals .77.

[c]Correlations between faculty member responses to each item and the mean of student responses in his class. For an N of 343, r of .14 is significant at the .01 level.

Table 2

Results of the Distribution of Differences between Faculty-Student Responses to the Instructional Report Questionnaire

	Percentage of instructors who gave themselves: Considerably poorer ratings than the mean of students in their class[a]						Considerably better ratings than the mean of students in their class[a]					
	College						College					
	1 N=50	2 N=99	3 N=66	4 N=95	5 N=37	Total N=343	1 N=50	2 N=99	3 N=66	4 N=95	5 N=37	Total N=343
5 Course objectives made clear	6	4	5	2	1	4	28	25	23	31	46	30
6 Agreement between objectives and teaching	2	9	0	2	0	4	44	31	38	36	32	37
7 Instr. using class time well	4	12	5	7	11	8	16	18	15	26	30	21
8 Instr. availability for students	8	9	8	4	30	10	32	24	15	21	22	23
9 Instr. knows when students don't understand	4	8	6	5	14	7	34	21	37	22	28	28
10 Instr. encourages students to think	2	5	5	11	14	4	34	23	14	35	43	29
11 Instr. concern with student learning	2	9	6	1	6	5	36	24	33	45	33	36
12 Instr. comments helpfully on papers or exams	4	8	10	5	7	7	30	28	18	31	41	31
13 Instr. raises challenging questions	4	7	5	10	7	7	28	26	14	23	33	24
14 Students are free to question or give opinions	0	3	0	2	0	2	38	36	42	41	47	41
15 Instr. preparation for each class	6	14	14	19	16	15	20	14	21	20	16	16
16 Instr. informs students of how evaluated	2	10	5	5	0	6	28	28	32	30	42	32
17 Instr. summarizes or emphasizes major points	2	14	7	7	11	9	18	18	33	28	41	28
18 Student interest stimulated by course	8	6	8	7	9	8	20	18	23	16	38	21
19 Students putting effort into course	24	12	19	19	14	18	12	9	8	8	14	10
20 Instr. openness to other viewpoints	4	6	5	3	5	5	30	25	37	33	38	32
21 Instr. accomplishing objectives for the course	4	14	16	9	10	12	10	14	16	16	34	17

[a] A difference of .63 or greater (on a four-point scale) was defined as a "considerably poorer" rating (i.e., tend to disagree with item) or a "considerably better" (i.e., tend to agree with item) rating.

Table 3

Faculty-Student Comparisons at Five Colleges and Total (N = 343), for Four Items in Instructional Report Questionnaire

	Percentage Responding[a]											
	Students						Faculty					
	College						College					
	1	2	3	4	5	Total	1	2	3	4	5	Total
1 Pace at which material is covered:												
Very or somewhat slow	9	10	7	8	6	9	22	24	10	8	14	16
Very or somewhat fast	26	20	27	23	33	25	20	28	24	30	30	27
2 Level of difficulty of course for students enrolled:												
Very or somewhat elementary	11	13	10	10	9	11	10	7	10	4	8	7
Very or somewhat difficult	31	25	32	21	38	30	26	31	37	37	41	34
3 Work load of course relative to others:												
Lighter	18	22	17	19	18	19	25	24	21	17	14	20
Heavier	20	21	27	29	27	25	35	23	32	32	33	30
4 Extent to which examples and illustrations were used:												
Frequently	60	70	76	67	58	67	88	75	86	82	65	80
Occasionally	28	26	20	26	34	26	12	21	14	18	32	19
Seldom	10	4	4	6	8	6	0	2	0	0	3	1
Never	2	1	1	1	1	1	0	2	0	0	0	1

[a]For items 1-3, the four responses have been collapsed into two categories; the middle response ("about right" or "about the same") is not shown.

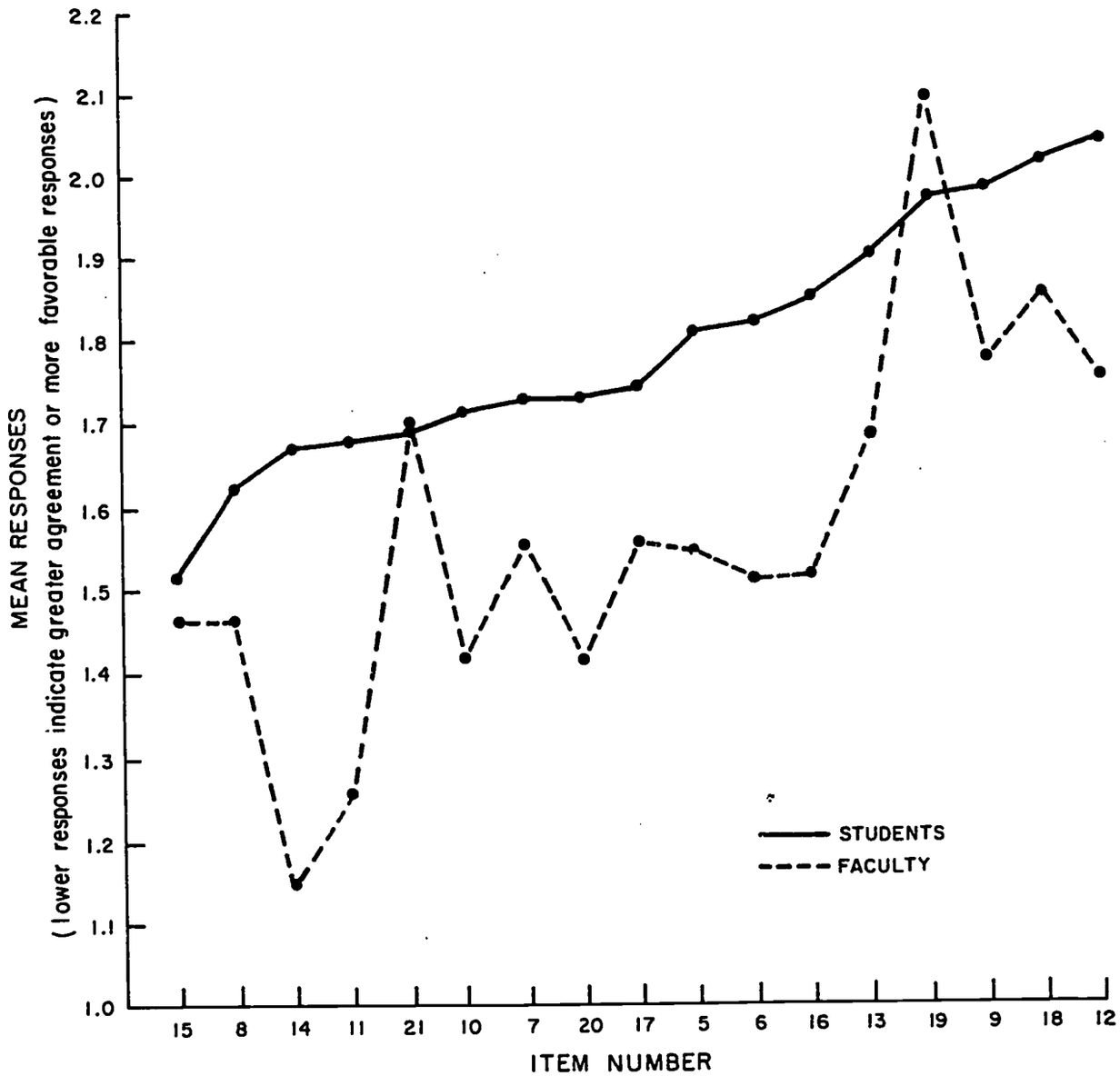
Table 4

Summary of MANOVA Results of Instructor-Class Differences by Sex, Subject Area, and Number of Years Teaching (N = 235)

Source[a]	df Hypothesis	df Error	F	p <
Sex	21	192	.34	.99
Years of Teaching	42	384	1.09	.34
Subject Area	63	574	1.33	.05
Sex x Years Teaching	42	384	.86	.72
Sex x Subject Area	63	574	.62	.99
Years Teaching x Subject Area	126	1121	.85	.89

[a]The triple-order interaction was not run because one of the cells was blank.

Fig. 1. Faculty and student mean responses to items in instructional report.


MEAN RESPONSES
(lower responses indicate greater agreement or more favorable responses)
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
STUDENTS
FACULTY
15 8 14 11 21 10 7 20 17 5 6 16 13 19 9 18 12
ITEM NUMBER