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ABSTRACT

This study investigated how instructional goals, activities, and methods for grading in college level courses vary across disciplines and how these course design variables are related to student ratings, class size, and course level. The study used a 44-item, multiple choice questionnaire mailed to 1280 instructors teaching 2700 course sections in the spring and fall quarters of 1991. Surveys for 887 course sections taught by 486 instructors were returned. Student ratings of instruction for the 887 courses taught by the survey respondents were part of a routine course evaluation process. Patterns of significant association among survey variables appeared which were consistent with disciplinary differences. For example, courses in the engineering-math-science area tended to emphasize fact and concept learning goals, and lectures, and based a high percentage of student grades on exams. Courses in humanitites, on the other hand, emphasized skills development, papers, group discussion, and practice quizzes, and relied less on exams for grading. A similar pattern involving the same course design variables was associated with overall ratings of amount learned, and overall teacher effectiveness. Generally, courses with higher student participation and feedback were associated with higher ratings. A heavy reliance on midterms and finals, and low-frequency feedback grading methods, were associated with lower ratings across disciplines. (Author/JB)

Disciplinary Differences: Instructional goals and activities, measures of student performance, and student ratings of instruction

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Abstract: Many sources have reported disciplinary differences in student ratings of instruction. Typically courses in the "engineering-math-science" area receive lower ratings than courses in the humanities. This study investigates how instuctional goals, activities, and methods for grading vary across disciplines and how these course design variables are related to ratings, class size, and course level. Patterns of significant association among survey variables appeared which were consistent with disciplinary differences. For example, course in the engineering-math-science area tended to emphasize fact and concept learning goals; lecture, and a high percentage of student grade on exams, while courses in humanities emphasized skills development, papers; group discussion: practice quizzes; and relied less on exams for grading. A similar pattern involving the same course design variables was associated with overall ratings of amount learned, overall teacher's effectiveness, and overal course. Generally, it appeared that courses with higher student participation and feedback were associated with higher ratings. A heavy reliance on midterms and finals, a low-frequency feedback grading method, was associated with lower ratings across disciplines.

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Introduction

Many sources have reported disciplinary differences in student ratings of instruction. Feldman (1978) reviewed eleven studies of course characteristics finding strong evidence of variation in ratings according to academic field. Cashin (1990), using Feldman's procedure, examined ratings data from the two most widely used commercial ratings systems, SIR and IDEA, and found similar patterns of difference. Both found that courses in the arts and humanities tended to be rated higher than courses in what Cashin called a "math-science-technical cluster". Similar results have been obtained from the eight year ratings database at the study site. (Franklin, 1991) Whether disciplinary differences in ratings represent actual differences in teaching effectiveness, reflect the influence of other factors, or are associated with dimensions of instruction that cannot reasonably be compared is not presently known.

Systematic variation in ratings can reflect real differences in instructional quality or other factors which influence ratings but not instructional quality. Knowing whether disciplinary differences in ratings reflect real differences is essential for those who use ratings data in personnel decision-making. For example, university-wide tenure review committees need to be aware of and to be able to control for sources of systematic variation in ratings in order to make valid comparisons among courses or instructors (Cashin, 1992). Understanding more about such differences may provide valuable clues to teaching improvement specialists as well as researchers. Many faculty continue to voice concerns about the validity of ratings based on their perceptions that teaching in their particular disciplines is unique. Responding to faculty concerns with a reprise of the validity arguments for ratings ignores the question of difference.

Looking for sources of disciplinary differences in ratings requires looking beyond the data normally accessible in ratings data collection systems. By definition, ratings are designed to measure stable dimensions of teaching that generalize across disciplines. Well-made ratings instruments are similar in their range of content. They probe dimensions of teachers behaviors ranging from very concrete, "low inference" items (such as those offered by Murray, 1883) to behavioral items requiring more inference. Ratings instruments typically include global or summary items that solicit value judgements directly from the student, ("this is instructor is among the best ...") and student demographic items that may help explain results. Although ratings questionnaires frequently inquire about aspects of courses such as the quality of text and readings, ratings are rarely used to examine how students interact with each other or how they use instructional resources .

The interactive, classroom behaviors of teachers assessed by ratings are not the only activities of teachers that can influence learning outcomes. Teachers plan the instruction they provide even if the "plan" is to teach the course the way it is "usually" taught. That implicit or explicit plans of teachers vary by discipline is supported by Stark et al (1988), and also by ordinary observation. Perry (1991) notes, teachers' choices are also dictated by "frame factors" including specific instructional settings, societal, organizational, structural, and personal factors.

Describing the instructional plans of postsecondary teachers requires a systematic view of what instructional activities teachers choose for their students and why. This perspective is often associated with instructional design (a formal discipline and professional activity concerned with making the best match between the characteristics of learners and instructional methods to achieve the best learning outcomes.) and instructional development (a professional activity that integrates instructional design with implementation and evaluation processes to produce a course or program of instruction or even an instructional product). (see Riegeluth, 1983 or Diamond, 1989) However, Stark et al found faculty to be largely unaware of these disciplines or methods associated with them. Nonetheless, even when teachers are totally unaware of formal instructional design theory or fail to engage in any systematic process of instructional development (for example, learner or needs assessment or content or task analysis) they make choices about what learners will do for what purpose. Such choices can be described in terms of instructional design elements, such as instructional goals and instructional strategies that include plans for learning activities and plans for assessing progress toward instructional goals and certifying outcomes.

Effective instructional designs, by definition, are associated with student achievement and presumably, satisfaction. It seems logical to assume that the most effective teachers would be those who, besides having the best repertoire of good teaching behaviors in the dimensions probed by typical ratings instruments, also would use methods and activities that best promote learning. It follows that some instructional designs are more effective than others because they incorporate instructional activities that promote learning more effectively. Although there is no comprehensive theory of postsecondary teaching that prescribes what instructional treatments are best for what kinds of learners under what circumstances, evidence continues to accumulate for the relative effectiveness of some instructional treatments. Dunkin and Barnes (1986) identified several such areas. For example, instruction that appropriately incorporates discussion for higher level cognitive learning such as critical thinking or problem solving skills may be more effective than lecture alone (McKeachie, et al,). Timely and frequent feedback and mastery requirements such as found in the Keller Plan (Kulik et al, 1979) proved among the most effective. Findings reviewed in Pascarelli and Terenzini 's (1991) inquiry concerning how college affects students are consistent with Dunkin and Barnes' assessment. Recently, promising work is emerging from studies involving students' perceived personal control and self-regulated learning behaviors (Perry, 1991); students' expectation of success and feelings of self-efficacy ; and collaborative learning activities.

Yet the influence of discipline on the relationship between course design choices and teaching skills is likely a complex one. It would not be surprising to discover that some instructional activities or teaching methods that happen to incorporate particularly effective modes of instruction are also associated with particular disciplines to a greater degree. Some disciplines such as fine arts or academic fields such as American Sign Language, may intrinsically require a high degree of learner control or participation. It would be difficult indeed to learn to paint or to sign without active practice and feedback. Some disciplines may require more of specific teaching skills than other disciplines and teaching skills may have more or less impact depending on course design. For example, faculty with good skills in the dimensions of teaching probed by ratings may preside over courses with instructional activities that are poorly matched to learners and tasks and consequently receive lower ratings of teaching effectiveness from students. Alternatively, in class-teaching skills may be less important for instructional activities which do not rely heavily on teacher mediation to provide content, feedback, and motivation to students. For example, an instructor's elocutionary or presentation skills should be more important in a class that relies exclusively on lecture to transmit course content than in classes that rely on other instructional media.

Cumulatively, a teacher's choices comprise a course design, whether intentional or by default. Instructional goals and activities along with the formative and summative startegies teachers use for evaluating student performance represent important elements of instructional design that provide a rough, but wide view of what activities are used to teach what kinds of content. The working hypthosis of this study is that choices teachers make concerning how to present instructional content to students are instructional design elements, not measured by present ratings instruments, and as such influence outcomes such as student achievement and satisfaction and, therefore, students' perceptions of teacher effectiveness. Moreover, some instructional design elements may be associated to a higher degree with particular disciplines. This study explores the relationship between instructors' emphases on instructional goals, activities, and methods for evaluating student performance, the student ratings of instruction they subsequently received, and academic fields (characterized in broad disciplinary terms).

Background:

The ratings literature comprises one of the largest areas of research on postsecondary instruction. Over the years, a series of excellent reviews has presented the accumulating body evidence for the validity and reliability of ratings as a measure of teaching effectiveness. Virtually every review in Marsh's (1991) list of notable reviews cited evidence for disciplinary differences in ratings. However, studies specifically aimed at disciplinary differences in ratings have been relatively scarce. Among the latter, Cashin and Clegg's (1978) work with IDEA data has the particular strength of combining data across institutions. Some intriguing ideas about such variation have been offered. For example, Cashin (1990) speculated that courses requiring higher mathematical aptitude might receive lower ratings than courses high in qualitative content, or that academic fields receiving lower ratings are more sequential, that is, the courses comprise a hierarchy in which success in lower courses is prerequisite to success in higher course, compared with areas such as the social sciences in which course content may be more independent from course to course.

Erdle and Murray (1986) found that teaching behaviors related to "interpersonal orientation" (e.g., behaviors related to rapport, interest, interaction, expressiveness) occurred more frequently for arts and social sciences faculty than faculty in the natural sciences, while "task orientation" behaviors (e.g., behaviors related to pacing, use of graphs, and organization) occurred more frequently for faculty in the natural and social sciences than faculty in the arts. Although faculty exhibited significant disciplinary differences in the tendency to exhibit various teaching behaviors, Erdle and Murray found no disciplinary differences in the correlation of those behaviors with student instructional ratings and also speculated that some behaviors may be inherently easier to display in some content areas than others or that teaching behaviors may reflect some personality factors of instructors associated with disciplinary affiliations.

Although actual ratings data were not studied, Bednar et al (1987) compared "excellent' teachers' perceptions of teaching effectiveness across disciplines by soliciting their perceptions of the importance of teaching behaviors described in typical ratings items and found significant differences by discipline. Although the study design called for faculty to consider their own disciplines in broad terms, the authors noted that many faculty volunteered that they would rate the behaviors differently depending on course level.

Disciplines vary in the cognitive (and affective) demands they impose on learners. While there is a wide range of literature concerning post-secondary instruction in a variety of discipline-oriented journals, there has been little systematic research concerned with how instructional design varies across disciplines. Stark et al (1988) surveyed 89 faculty across disciplines and found that their data supported previous theorists who maintain that educational purpose and process vary by discipline. Stark et al found that faculty generally based their plans on content-oriented factors such as course materials or texts, giving some consideration to student characteristics, but only to a very small degree on consideration of alternate course forms. They theorized that course planning decisions were influenced to some extent by a "discipline grounded perspective" comprised of their academic fields, backgrounds, and assumptions about educational purposes. They also suggested that a major national study underway at that writing would produce faculty profiles representing "the 'usual patterns' of course planning by faculty in specific academic fields". Cross and Angelo (personal communication) surveyed a large number of faculty and found disciplinary differences associated with perceived primary teaching roles and goals.

Recently, in an assessment of teaching and learning at Harvard, Light (1992) found the highest rated subject area to be foreign languages, social science, and humanities, with the lowest, core courses and natural sciences. It is worth noting that foreign languages tied with natural sciences for the highest workload. Light observed, "... the big message from these ratings is the extent of student enthusiasm when classes are structured to maximize personal engagement and collegial interaction .... each student

Students are encouraged to work in small groups outside class, emphasize written assignments such as essays or exercises each week and frequent quizzes give students constant feedback...." (p. 75-76)

A few studies have examined the relationship between ratings and instructional processes that could be characterized as elements of instructional design for courses. Shapiro (1990) found that class size (small versus large); class format (intensive versus less intensive, traditional class schedules); and the requirement of a term paper were each positively correlated with ratings obtained from a group of 399 graduate level courses in an extended degree program. Shapiro reported that ratings were less sensitive to other class assignments (texts, readings, number of exams) and other grading criteria (exams, written assignments, "other work," oral presentations, class participation). Prosser and Trigwell (1990) examined the relationship between ratings and the quality of students' study strategiesand concluded that the courses in which students adopted deeper study strategies were likely to receive higher overall instructor(.60) and course ratings (.78).

This Study

This study investigated: (1) associations among instructional goals, activities, and grading methods; (2) associations between the instructors' goals, activities, and grading methods and their "overall" student ratings of instruction; and (3) differences in goals, activities, grading methods, and "overall" ratings associated with various academic disciplines. The relationship between these variables and class size is also considered since it might restrict or otherwise determine the range of possibilities open to a teacher. Class level (lower undergraduate, upper undergraduate, and graduate) are examined since instructional activities, course content, and student demographics would likely vary by level.

This paper reports results to date from a larger study intended to capture a complete academic year's offerings. Data reported here were obtained with a survey concerning instructional activities and the student ratings of faculty teaching at a large private, urban university during two quarters. The sample included undergraduate courses from 55 academic departments comprising a wide range of academic areas including engineering; arts and sciences; business administration, (including graduate business sections) helping professions, e.g., education; and allied health professions, e.g., pharmacy.

Method

Following preliminary examination of the range and distributions of survey item data, results were examined using crosstabulation and Kendall's "Tau b", a correlation coefficient suited for the preliminary analysis of this data, particularly because no assumptions regarding the normality of the survey data were made. Class size and course level were found associated with ratings and with many of the survey items. Subsequent analysis found Pearson product moment correlation coefficients to be substantially the same in strength and direction. The latter approach facilitated the use of partial correlations to examine associations among variables controlling for class size, course level, and discipline. Since department sizes and participation rates for both survey and ratings varied by college, a oneway analysis of variance (using the harmonic mean method to adjust for differences in group sizes) was used to determine that there was no significant difference between the ratings of those who responded to the survey and those who did not. The same method along with the Student-Newman- Keuls range test was used to identify pairs of disciplinary group means different at the $p < .05$ level for survey responses and ratings.

The Survey Instrument

The instructor's survey instrument was a 44 item multiple choice questionnaire mailed to 1280 instructors teaching 2700 course sections in the Spring and Fall quarters of 1991. Instructors were informed that the purpose of the survey was to help the University's Office of Instructional Research and Evaluation develop materials that would help faculty in interpreting their student ratings.

The survey consisted of three scales with equal-appearing intervals and a set of categorical demographic items. The scales included: (1) relative emphasis on each of 10 instructional goals [scaled "very heavy emphasis" to "no emphasis"]; (2) usefulness of each of 16 instructional activities in achieving goals, ["essential" to "not useful"]; (3) what percent of student grade was based on each of 12 measures of student performance; and (4) instructor demographic items, ["rank," "years teaching," "times teaching course," and whether ratings were used by the department for personnel decision-making].

The survey was developed using content-analytic strategies based on the literature regarding teaching methods within disciplines and informal interviews with faculty subjects concerning the content of the survey. Additionally, open ended items were included that solicited information about activities or grading measure that had not been included. Following the first quarter, faculty feedback led to a small revision of the instrument to include a general goal regarding "self-knowlege"." and more explicit language defining "homework". A specimen is appended.

One OMR response sheet was provided for each course taught by each instructor. Response sheets were returned for 887 course sections taught by 486 instructors, resulting in a 32% sample of course sections rate and a 30% instructor participation rate. Survey responses were averaged for 350 instructors teaching two or more sections of the same course during the study period to produce 887 unique instructor/course combinations representing 534 courses out of 1598 taught during the two quarter period. The results reported here are based on 466 unique cases of instructor and course combinations selected by academic department s including in 3 broad disciplinary groups:

The discipline categories included: (1) Engineering/Math/Science, N=156; (2) Business, N=130, and (3) Humanities, N=180. Academic discipline categories were based on researchers' judgements of similarity in course content. Several groups of courses were excluded from analyses of variance. The modem language group , including American Sign Language, was very small and had extraordinarily high ratings compared with other categories. Health professions courses (Nursing, Pharmacy, Pyhsician's Assistant, etc) had an inadequate sample of ratings. Physical education courses were excluded for content dissimilarity.

The Ratings Instrument:

Student ratings of instruction were obtained for 1027 course sections of the 887 courses taught by the survey respondents as part of a routine quarterly campus-wide teacher- course evaluation process using validated questionnaires. Course section means for "global items" and summary items were used in this study. A standard administration procedure requiring the distribution, collection, and documented return of materials by a student monitor, with the instructor out of the classroom during administration was used. Neither ratings nor survey data were collected for courses with multiple instructors, 6 week intensive format , or fewer than 5 students. Ratings results were averaged for instructors teaching two or more sections of the same course during the study period to produce 515 unique instructor/course combinations.

Findings:

This exploratory study examined correlations within and among the three survey subscales and between the survey items and the ratings items. It also examined differences in survey items results by discipline. All results described for correlations unless otherwise stated were found at .01 in a two-tail test of significance. Since the survey represents a complex matrix of instructional phenomena, a cut-off point of .10 was chosen as a small, but still practically important effect size (Cohen , 1977) in this area of research.

Since disciplinary difference in instructional process is the subject of the survey and since our samples within departments are relatively small, no practical measure of reliability of survey results could be computed. However, correlations between course- sections taught by the same instructor including those during two different quarters were nearly perfect. Our assessment of the content validity of the survey instrument is based on the abundance of face-valid, logical patterns of association among survey items. For example, a positive moderate correlation between the writing skills goal and using papers and reports as an instructional activity was obtained as was an inverse correlation between basing student grades on midterms or finals with other grading measures (since instructors who grade heavily on projects or papers would be less likely to rely on midterms and finals). Validity and reliability of the ratings instrument are documented elsewhere.

Course level and Enrollment:

Since class size may be related to some choices made by instructors, the association between survey responses and ratings with class size was examined. Class size was found to have 12 small but significant associations (ranging from .13 to .20) with instructional goals, activities, and grading methods. Class size was inversely related to overall ratings items including amount learned, teacher's effectiveness, and course quality (-.13) (Table 9, page 12).

Course level and class size are also related. First and second year level courses ($\bar{x}$= 30 students) and graduate level courses ($\bar{x}$= 27) were significantly larger than third and fourth year courses ($\bar{x}$ = 21). No significant difference by course level was found for any of the overall ratings items.

Same Scale Correlations:

Goals: Several patterns of association appeared among instructional goals (See Table 1.), the dominant feature being that instructional goals emphasizing learning facts and principles or theories were positively associated with each other (.43) and inversely associated with goals pertaining to writing skills, oral skill, creativity, social skills, and self-knowledge that were in turn positively intercorrelated. The problem solving goal was associated with the concepts goal (.25). The psychomotor skill goal was positively associated with the creativity, attitude, social skills, and self- knowledge goals. The strongest single interitem correlations were between facts and concept goals (.43); writing and oral communication skills goals (..51); oral communication and creativity (.41) oral communication and group skills (..50); and group skills and self-knowledge (.47); and creativity and self-knowlege (.43).

Controlling for class size or enrollment produced minimal change in associations found at p <.01 However, almost all associations found at p <.05 disappeared.

TABLE 1: Correlations among Instructional Goals

GOALS	1	2	3	4	5	6	7	8	9
1 factual knowledge									
2 principles, concepts	.43								
3 problem solving		.25							
4 psychomotor	.10	.11							
5 written communication	-.12	-.14	.17						
6 oral communication	-.18	-.15	.15		.51				
7 creativity	-.15		.25	.15	.37	.41			
8 attitude toward subject	.17			.15	.16	.11	.25		
9 leadership, team skills	-.15	-.17	.17	.12	.40	.50	.38	.15	
10 self-knowledge	-.21	-.20		.19	.27	.37	.43	.34	.47

Zero order: values > .10. $p < .05$, (boldface $p < .01$) N= 467

Activities: Patterns of positive association among the instructional activities items appeared. (Table 2) It is likely that these represent clusters of activities that tend to be used within the same class. For example, moderate positive associations were found between students' oral presentations and independent research projects, papers and reports, team projects, group discussion. The strongest single association appeared between oral presentations and team projects (.55). Moderate correlations (.40) were found between simulations and games; group discussion and written homework; guest lecturers and use of audiovisual media. Peer tutoring was positively associated with practice quizzes and team projects. Computer assisted instruction was associated with peer tutoring, lab activities, and team projects. Inverse relationships would suggest that some activities tend to occur to the exclusion of others. For example, there were inverse associations instructor lectures and every other activity except practice quizzes and lab activities. Practice quizzes appeared to be inversely associated with homework, independent projects, and group discussion. Again, relationships at the p .05 level tended to drop out when class size or course level were controlled for.

TABLE 2: Correlations among Instructional Activities

ACTIVITIES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 instructor lecture															
2 guest lecture															
3 audiovisual	-.16	.36													
4 practice quizzes	.10														
5 homework	-.31	.24	.33	-.18											
6 indep. study	-.15	.20	.19	-.11	.32										
7 group discussion	-.29	.23	.34	-.18	.46	.31									
8 oral presentation	-.34	.24	.26	-.10	.39	.40	.40								
9 team projects	-.29	.15	.22		.34	.27	.34	.55							
10 peer tutoring	-.10			.20					.18						
11 lab activities	.13				-.20		-.18			.13					
12 performance	-.13		.19			.17	.14	.14	.19	.10	.17				
13 practicum		.24	.14	.10	.14	.21	.14	.17	.17			.18			
14 C.A.I.			.11	.10		.12			.21	.17	.29	.10			
15 simulations	-.27	.23	.26	.10	.18	.14	.31	.30	.40			.25	.18	.18	
16 case study	-.26	.24	.23	-.12	.34	.12	.33	.37	.32		-.12		.14		.42

Zero order: values > .10, $p < .05$, (boldface $p < .01$) N= 467

Grading methods: Papers and projects were positively associated and were also positively associated with every other grading method except weekly quizzes, midterm, and finals. (Table 3) The .64 correlation between midterms and finals was the single strongest relationship between grading methods. Quizzes, midterms and finals were also positively associated with grading based on quality of class participation, peer reports of team work, attendance, and homework. However, homework, peer reports of teamwork, attendance, and the quality of class participation were more closely associated with each other than the testing methods.

Between Scale Correlations:

Goals with Activities: The strongest associations occurred between written homework and the writing skills goal (.63) and team projects and groups skills (.66). (Table 4) Goals of learning facts, principles, or theories were positively associated with lectures, practice quizzes, and labs, but inversely associated with most of the other activities. Alternatively, goals relating to writing skill, oral skills, creativity, and teamwork were inversely associated with lecture, but positively associated with nearly every activity except lecture, CAI, and labs.

TABLE 3: Correlations among Grading Methods Items											
GRADING METHODS	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1 weekly or periodic quizzes											
2 midterm examination	.19										
3 final examination	.25	.64									
4 papers			-.16								
5 projects		.18	.11	.30							
6 journals	.23	.24	.12	.39	.36						
7 performances, presentations		.13		.26	. 38	.27					
8 non-print projects	.11	.11		.22	.34	.34	.38				
9 quality of class participation		.29	.19	.48	.42	.37	.45	.29			
10 peer reports of team work	.23	.24	.14	.32	.30	.45	.44	.43	.42		
11 attendance	.13	.27	.21	.19	.30	.24	.37	.36	.42	.53	
12 homework	.13	.29	.22	.36	.37	.37	.38	.29	.62	.34	.23

Zero order: values > .10, $p < .05$ (**boldface, $p < .01$**) N=476

Single item combinations such as the writing skill goal with papers; the oral skill goal with oral presentations or group discussions; and social skills with group discussions achieved some of the highest positive correlations, ranging from .40 to .53. Improving problem solving ability and improving attitude toward subject matter produced the fewest and many of the weakest associations with activities. The goal regarding improving attitude toward subject matter produced only one association at p .01 level, with the practicum activity. The group skills goal (#9) was associated with more activities than any other goal.

TABLE 4: Correlations between Goals and Activities *										
					GOALS					
ACTIVITIES	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1 instructor lecture	.42	.32			-.26	-.34	-.19		-.28	-.29
2 guest lecture					.15	.15	.13	.11	.15	.14
3 audiovisual media		-.13			.25	.24	.13	.10	.20	.12
4 practice quizzes	.13		.14	.27		-.10				
5 homework	-.26	-.24		-.18	.63	.47	.30		.37	.30
6 independent study		-.11			.21	.26	.28	.11	.24	.23
7 group discussion	-.29	-.23		-.16	.33	.47	.28	.10	.37	.27
8 oral presentation	-.15	-.23			.28	.50	.35		.45	.35
9 team projects	-.14	-.19			.25	.36	.26		.66	.28
10 peer tutoring			.19	.19	.17		.19		.12	.21
11 lab activities	.11			.22	-.10	-.21				
12 performance	-.11			.24			.16	.10	.23	.18
13 practicum					.17	.11	.15	.14	.26	.15
14 C.A.I.			.11	.11					.11	
15 simulations, games			.10	.10	.11	.18	.13		.35	.20
16 case study	-.14	-.14			.25	.39	.18		.37	

Zero order: values > .10, $p < .05$ (**boldface, $p < .01$**) N=476

* See Table 1 for a numbered list of goals

Goals with Grading Methods Periodic tests, midterms and finals were positively associated with learning facts and learning theories, but inversely associated with writing skills, oral skills, teamwork, and creativity goals. (Table 5) Papers were inversely associated with facts and theory goals but positively associated with writing skill, oral skill, and creativity goals. Quality of class participation was inversely related to the facts and knowledge goals and posively related to psychomotor skills, writing and oral communication skills, teamwork, and self-knowledge goals.

TABLE 5: Correlations between Goals and Grading Methods

GRADING METHODS	GOALS 1	2	3	4	5	6	7	8	9	10
1 weekly or periodic tests	.19	.13	.13	.12	-.11		-.11		-.14	
2 midterm examination	.19	.18			-.10	-.11	-.17			
3 final examination	.22	.17			-.15	-.19	.26		-.18	-.26
4 papers	-.20	-.17			.52	.42	.16		.27	.29
5 projects					.10	.23	.17		.18	
6 journals	-.11	-.20		.13	.17	.19	.15	.14	.16	.29
7 performances, demonstrations				.21	.14	.26	.13		.29	.13
8 non-print projects				.20			.13			
9 quality of class participation	-.10	-.12			.23	.28	.14		.16	.12
10 peer reports of team participation				.14	.13	.17			.24	.22
11 laboratory exercises, unit, projects				.20				.13	.13	
12 attendance		-.12			.11					

Zero order: values > .10, $p < .05$ (boldface, $p < .01$) N=476

Grading Methods with Instructional Activities Significant correlations between grade measures and instructional activities were also found. (Table 6) Some items in the two scales should logically produce positive associations such as the use of writing assignments (homework) as an instructional activity and as a grading measure. (.61). Practice quizzes correlated .28 with periodic quizzes as a grading method, suggesting that practice quizzes may or may not be graded.

Quizzes, midterms, and finals were positively associated with lecture, and inversely related to the majority of other instructional activities. Low to moderate inverse relationships were found between percent of grade based on papers and lectures or laboratory activities, respectively.

Relationships at the $p < .05$ level tended to drop out of this matrix when class size or enrollment were partialed out.

TABLE 6: Correlations between Grading Method and Activities *

ACTIVITIES	GRADE METH. 1	2	3	4	5	6	7	8	9	10	11	12
1 instructor lecture	.13	.16	.38	-.39		-.26	-.20		-.21	-.17		-.15
2 guest lecture	-.10		-.12	.20	.11	.11	.13	.16	.15			.10
3 audiovisual media	-.25	-.11	-.14	.15	.19		.18	.14	.17			
4 practice quizzes	.28	.15	.10			.11						
5 homework	-.24		-.21	.61	.20	.25	.13	.21	.23	.15		
6 independent study	-.19		-.13	.29	.34	.15	.18		.16	.15	.12	.12
7 group discussion	-.22	-.21	-.26	.32	.12		.16	.11	.15			
8 oral presentation	-.13	-.10	-.21	.30	.30	.16	.35		.19	.24		
9 team projects	-.13		-.13	.23	.21	.20	.29		.12	.26		
10 peer tutoring	.10			.16		.26		.12		.19		.10
11 lab activities				-.16				.22		.10		
12 performance			-.13		.23	.15	.23	.27		.12	-.28	.12
13 practicum			-.12	.13	.14	.17	.23	.11	.10	.24	.16	.12
14 C.A.I.										.13	.15	
15 simulations, games	-.10		-.10		.13	.19	.23			.18		
16 case study	-.15			.27	.23		.22		.27			

Zero order: values > .10, $p < .05$ (boldface, $p < .01$) N=476

* See Table 5 for a numbered list of grading methods.

Instructor Demographics:

Associate professors received significantly higher "overall instructor" ratings than any other rank. Courses taught by full professors tended to receive lower ratings on specific teaching behaviors than any other group. Moreover, this group of faculty also tended to be associated with emphasizing instructional activities that were in turn associated with lower overall instructor ratings. Full professors emphasized the oral communication goal significantly less than any other group and they reported that labs were significantly more essential to achieving their instructional goals than did any other group. Faculty in the highest ranks were least associated with many of the more interactive instructional activities and grading measures that in turn were related to higher instructor ratings. Mid level, assistant professors based a higher percentage of students grades on papers, finals, and class participation than did any other group. However this pattern did not appear for "years of teaching experience", which suggests a disjuncture between rank and experience possibly reflecting the frequency of non tenure track part time faculty and teaching assistants in particular undergraduate programs. For example, the fact that teaching assistants place a significantly higher emphasis on developing writing skills than any other group may reflect the preponderance of TAs teaching undergraduate language arts courses. In other words, some 'lecturers' may teach for many years without promotion while relatively new faculty with important research projects may be on a faster track for promotion. Faculty in the higher ranks may be also associated with particular kinds of courses depending on their career path and the administrative and research obligations attending these ranks.

Disciplinary differences:

Significant disciplinary differences in instructional goals, activities, grading methods, and ratings were found. (Table 7) The disciplinary difference categories were: (1) Engineering/Math/Sciences, (2) Humanities, and (3) Business. Because patterns of association among scale items appeared along with what appeared to be disciplinary differences in scale items, we were encouraged to extend the exploratory analysis of this data with cluster analysis by academic department to see how our own discipline classification would compare with faculty response on the survey. The clusters found in exploratory analysis substantially resembled our classification scheme.

Goals: Writing skills, oral skills, and social skills goals produced the strongest differences. Courses in the engineering-math-science group placed a significantly higher emphasis on the fact, principles than courses in business or the humanities while courses in engineering-math-science and business placed a higher emphasis problem-solving goals than courses in the humanities. Courses in humanities emphasized creativity, attitude toward subject-matter, and self-knowledge to a greater degree than business or math-science-engineering. Courses in math, science, and engineering placed a significantly lower emphasis on oral communication skills and social skills. Humanities placed more emphasis on writing skills than did business whichplaces a higher emphasis on writing skills than engineering-math-science.

Activities: Homework, casestudy, and group discussions produced the greatest differences, followed by audiovisual media, independent student projects, oral presentations, team projects, and instructor lecture. Courses in engineering-math- science relied on lecture, quizzes, and laboratory activities to achieve instructional goals more than did courses in the humanities and business. Courses in business relied more on case study, simulations, team projects, and audiovisual media than did any other group. Courses in humanities relied on homework, independent projects, group discussions, oral presentations, and practicums to a greater degree than courses in engineering-math-science.

Grading Measures: Quizzes and papers produced the strongest disciplinary differences. Courses in engineering-math-science based a higher percentage of student grade on weekly quizzes and finals than humanities which based a higher percentage than did business. However, no significant difference was found for midterms. Business based a higher percentage of student grade on projects, presentations, and quality of class participation. Humanities based a higher percentage on papers, journals, and attendance.

TABLE 7: Disciplinary differences in Survey Results

Analysis of variance. N=464 for 3 discipline groups

D.F. = 2, 464		Mean Sq. Between	Mean Sq. Within	F	SNK Range Test <.05
GOALS, emphasis on					
1	facts	12.7898	.9574	13.3589 ***	EMS > BUS, HUM
2	principles, concepts	6.4665	.5648	11.4492 ***	EMS >BUS, HUM
3	problem-solving	9.8447	.6989	14.0863 ***	EMS, BUS > HUM
4	psychomotor	6.5147	.9651	6.7502 **	EMS >BUS, HUM
5	written communication	53.4594	1.7016	31.4166 **	HUM>BUS>EMS
6	oral communication	98.5480	1.8832	52.3292 ***	BUS, HUM > EMS
7	creativity	17.2317	1.5876	10.8538 ***	HUM> BUS, EMS
8	attitude toward subject	9.8012	.9444	10.3783 ***	HUM > EMS, BUS
9	leadership, team, groupwork	48.4395	1.9282	25.1214 ***	BUS > HUM > EMS
10	self-knowledge	28.1950	1.8256	15.4442 ***	HUM > BUS, EMS
ACTIVITIES, reliance on					
1	instructor lecture	14.7906	.9809	15.0789 ***	EMS > HUM, BUS
2	guest lecture	11.8588	.9858	12.0292 ***	HUM, BUS > EMS
3	audivisual media	43.0320	1.6780	25.6450 ***	BUS, HUM > EMS
4	practice quizzes or tests	19.2442	2.1968	8.7602 ***	EMS > HUM, BUS
5	"homework" papers, reports, etc	169.3305	2.03414	83.3552 ***	HUM, BUS > EMS
6	independent student projects	49.0316	2.3607	20.7696 ***	HUM > BUS, EMS
7	group discussions	108.4757	1.9928	54.4329 ***	HUM, BUS> EMS
8	oral presentations	45.5799	1.7130	26.6087 ***	BUS, HUM > EMS
9	team or collaborative projects	44.2908	1.9745	22.4318 ***	BUS > HUM > EMS
10	peer tutoring	15.44537	1.4985	10.3125 ***	EMS, HUM > BUS
11	laboratory activities	48.7652	1.5102	32.2896 ***	EMS > HUM, BUS
12	performance, studio, etc	8.2915	1.5739	5.2681 *	HUM>BUS, EMS
13	clinical, practicum, field work	3.3883	.6201	5.4637 **	n.s.
14	computer assisted instruction	10.6833	1.0886	9.8139 ***	BUS, EMS > HUM
15	simulations, games, role-playing	10.9355	1.2868	8.4982 ***	BUS > , HUM, EMS
16	case study	150.6077	75.7498	75.7498 ***	BUS > HUM > EMS
GRADING METHODS, percent of student grade					
1	weekly or periodic tests	50.0759	1.8498	27.0711 ***	EMS > HUM > BUS
2	midterm examination	2.9006	1.7784	1.6311 n.s.	
3	final examination	15.0699	1.5242	9.8870 ***	EMS > BUS, HUM
4	papers	107.5901	2.3740	45.3192 ***	HUM > BUS > EMS
5	projects	11.2764	1.6446	6.8568 **	BUS, HUM > EMS
6	journals	7.0233	.8573	8.1927 ***	HUM > EMS, BUS
7	performances, demonstrations	5.7042	.9316	6.1233 **	BUS, HUM > EMS
8	non-print projects	.9127	.2827	3.2286 *	HUM, EMS, BUS
9	quality of class participation	16.3059	1.3117	12.4307 ***	BUS, HUM > EMS
10	peer reports of team participation	.4377	.5476	.7993 n.s.	
11	laboratory exercises, unit, projects	1.0733	.8251	1.3009 n.s.	
12	attendance	3.6804	1.1507	3.1983 *	HUM > BUS, EMS

* = $p < .05$ ** = $p < .01$ *** = $p < .001$

EMS =Engineering, Math, and Sciences
BUS =Business
HUM = Humanities

Nonprint projects, peer reports of team participation, and lab exercises produced no significant differences. Courses in foreign languages and fine arts based a higher percentage of student grade on class participation and attendance. Courses in mathematics based a higher percentage on periodic quizzes than did any other discipline.

Ratings: Significant differences between average overall instructor, amount learned and course ratings by discipline were found. (Table 8) The direction of differences was consistent with ratings data from the previous eight years and were consistent with Feldman (1978) and Cashin's (1990) previous work. Summary items concerning several course charactertistics are included in Table 8. Courses in the humanities and in business were rated significantly higher on every item except course difficulty where the engineering-math-science group was rated more difficult. The magnitude of the overall instructor rating is quite small and possibly of no practical significance. Although the sample was small for behavioral ratings items it is interesting that in a separate study of this data, several disciplinary differences appeared (for example, courses in the math-science-technology cluster were significantly lower in instructor behavior items involving feedback and individual assistance).

TABLE 8: Disciplinary differences in overall ratings

Analysis of variance, N=464 for 3 disciplines

D.F. = 2, 464	Mean Sq. Between	Mean Sq. Within	F	SNK Range Test <.05
Overall rating of amount learned	2.6384	.2531	10.425 ***	HUM, BUS > EMS
Overall rating of instructor	2.0872	.3893	5.3615 **	HUM > BUS, EMS
Overall rating of course	3.89	.2908	13.3932 ***	HUM, BUS > EMS
Course workload rating	.1420	.2444	.5810 n.s.	
Course difficulty rating	1.7907	.15984	11.2321 ***	EMS > HUM., BUS
Quality of text and readings	4.9038	.3849	12.7388 ***	HUM, BUS > EMS
Usefulness of syllabus	1.8215	.16424	11.2182 ***	BUS, HUM > EMS
Usefulness of outside assignments	2.3236	.2499	9.2983 ***	BUS, HUM > EMS
Course organization/integration	2.4012	.1901	12.6288 ***	HUM, BUS > EMS

* = $p < .05$ ** = $p < .01$ *** = $p < .001$

The Relationship between "Overall" Ratings Items and Survey Items

Generally, survey variables appear more strongly related to overall course ratings than to amount learned or overall instructor ratings. (Table 9) (A note: Although controlling for class size or course level produced additional associations, existing zero order correlations between survey items on any scale were not altered by more than .01 in either direction by controlling for class size or course level.)

Goals: Overall ratings of course, instructor, and amount learned were positively associated with emphasis on the attitude toward subject matter goal. Overall course ratings were positively associated with writing and oral skills goals. The creativity goal was positively associated with overall amount learned and overall course. However, controlling for class size produced an inverse correlation between the creativity goal and controlling for course level produced a positive association.

Activities: Overall amount learned was generally unrelated to instructional activities except for an inverse relationship with peer tutoring and a positive relationship for performance activities. Overall instructor was positively associated with homework (writing assignments) and independent student

TABLE 9: Correlations between Survey Items and Overall Ratings Items, Class Size, Course Level and Discipline

	Overall Learned	Overall Instructor	Overall Course	Class Size	Class Level
GOALS					
1 facts					
2 principle, concepts					
3 problem-solving				-.13	
4 psychomotor					
5 written communication			.13	-.16	
6 oral communication			.15		**.23**
7 creativity	.13	-.13*, .15**	**.19**	**-.20**	
8 attitude toward subject	.12	**.16**	.14		
9 leadership, team, groupwork				-.15	**.21**
10 self-knowledge					
ACTIVITIES					
1 instructor lecture			.18	**.19**	-.16
2 guest lecture	.14*		.13	.12	.13
3 audivisual media			.14*, .12**		**-.16**
4 practice quizzes or tests			.13		**.20**
5 "homework" papers, reports, etc		.13	**.16**		
6 independent student projects		.13	**.18**	**-.19**	
7 group discussions		.12**	.17*, .17**	**-.12**	**.16**
8 oral presentations					**.22**
9 team or collaborative projects					**.25**
10 peer tutoring	-.13		-.14*	-.13	-.13
11 laboratory activities					
12 performance, studio, etc	.13		.14*, .17**	**-.16**	
13 clinical, practicum, field work			.13*, .13**		
14 computer assisted instruction					
15 simulations, games, role-playing					**.20**
16 case study			.13		.4
GRADING METHODS					
1 weekly or period ic tests					**-.22**
2 mid term examination		-.15	**-.16**		
3 final examination	-.15	**-.16**	**-.19**		
4 papers				-.13	**.16**
5 projects				-.13	**.22**
6 journals					
7 performances, demonstrations	.13		.12*, -.12**		.15
8 non-print projects					
9 quality of class participation					
10 peer reports of team participation					
11 laboratory exercises, unit, projects					
12 attendance					
Ratings					
Overall amount learned	----	**.86**	**.90**	**-.13**	
overall instructor	**.86**	----	**.89**	**-.13**	
overall course	**.90**	**.89**	----	**-.13**	**-.16**

Zero order correlations > .10 , $p < .05$, (boldface = $p < .01$)
* appeared when class size partialed out ** appeared when course level partialed out

projects. When course level was controlled a positive association between overall instructor and group discussion appeared but the association between overall instructor and homework disappeared. The overall course rating was positively associated with lecture, guest lecture, practice quizzes, homework, independent projects, and casestudy. Controlling for course size produced inverse associations between overall course and group discussions and peer tutoring, respectively, but positive associations with performance and field work.

Grading Methods: Percent of grade based on various measures of student performance produced fewer correlations proportionately than did goals or activities. However, the higher the percentage of grade based on finals, the lower the ratings of amount learned, course, and instructor. Higher percentage of grade based on midterms was also inversely associated with instructor and course ratings. The percentage of grade based on attendance, class participation, demonstrations of skill however had consistently positive small associations with amount learned, course, and instructor ratings. Controlling for class size produced a positive association between overall course and the performance item, but controlling for course level reversed the relationship.

Conclusions

Associations found among the survey variables are generally logical ones, matching what common sense tells us about teaching within and across the disciplines. Overall, it is less the magnitude of associations among items than patterns of association that are striking. **First,** courses with higher ratings tended to be courses in which instructors emphasized instructional goals other than learning facts or concepts, instructional activities other than lecture, and grading methods other than midterms and finals. **Second,** more emphasis on fact and concept learning was associated with a higher perception of the usefulness of lectures to achieve those goals, while lectures were inversely associated with other instructional activities-- but positively associated with basing a higher percentage of student grade on midterm and exams. Stated another way, courses that used activities and grading methods that should be more likely to engage students actively (e.g., practice quizzes, homework, group discussion, student performances, demos, labs, class participation, even attendance) generally seem to be associated with higher ratings. Alternatively, courses that tended to rely on the most passive instructional mode (lecture) also tended to use the lowest feeback method for evaluating student performance (midterm and finals) and to receive lower ratings.

These patterns themselves appear to be associated with disciplinary differences. Courses in the first group are more likely to be in the humanities; but in the second group, in engineering, math, or science. Courses in business appeared to have yet another profile characterized by goals including emphasis on oral communication and team or groupwork skills; activities including the use of audiovisual media, oral presentations, team or collaborative projects, simulation, gaming, and case study, and possibly including computer based versions of the latter; and grading methods emphasizing projects and class participation.

Class size appears related to both the instructional choices teachers make and student satisfaction. This study may also support speculations that commonly reported class size differences in ratings are the result of instructional circumstances associated with higher student satisfaction (and achievement). Course level also appeared to be related to teachers' choices. Because relationships between several goal, activity, and grading method items only appeared when either course level or class size were controlled, the latter may act as suppressor variables, obscuring associations between some of the instructional variables and overall ratings. It would be interesting to examine whether small classes relying heavily on lecture, midterms and finals are rated more like their larger counterparts.

It is tempting to speculate that teacher's course design choices are at work here. Courses in some disciplines seem to engage students in more interaction with each other, their instructors, and in active participation in learning activities. This conjunction appears more likely to occur in smaller classes at upper levels. These findings resemble Light's (1992) conclusions concerning an association between student satisfaction and the characteristics of classes in highly rated disciplines, particularly high feedback and participation.

Another finding pertains to instructional goals and activities. Stark et al (1988) concluded that faculty course planning styles could be broadly grouped into two discipline-related categories: (1) faculty whose decisions were discipline-identified, content centered, who viewed their roles as transmitting and replicating knowledge in students and (2) faculty who were less discipline-identified , instead, seeing themselves as sharing interests and perspectives with colleagues in their fields and who viewed their role as promoting student growth or skill acquisition. The sharp division between the facts- concepts-problem solving goals (primarily associated with the engineering-math-science group) and the "developmental" oral and written communication-creativity-social- self skills goals (primarily asssociated with the humanities group) seems consistent with Stark's findings about how such course planning choices may evolve. It is tempting to speculate that analogous "developmentally" oriented instructional choices, such increased emphasis on "learning to learn" math, science, or engineering would pay off in higher ratings.

There are some cautions to be offered. This study does not suggest that ratings are a valid measure of course design. It does not examine what instructional choices work best for what kind of content or how teaching behaviors probed by "diagnostic" ratings may relate to instructional choices. Differences in rank or years teaching experience in the assignment of faculty in different disciplines should be further explored. The survey items themselves need additional study. No direct evidence is offered here for the validity or reliability of the instructors' self-reports obtained with the survey. An instructor may intend to achieve specific goals while teaching in a way that pursues other goals entirely. Moreover, terminology such as "analysis", "creativity", "critical thinking" may not be equivalent when applied to different disciplines. One crucial concern missing from this study is how students vary by discipline in motivation, ability, and other salient characteristics. Stark et al (1988) and Perry (1991) cited institutional factors such as size,type, and culture that would likely limit the generalizability of these findings.

This study is part of a larger study based on a full academic year cycle within the study institution. When complete, it may be possible to factor analytically identify patterns of association among survey variables that predict ratings by discipline or more narrowly, within academic field. (Preliminary factor analysis found 10 factors accounting for 60% percent of the variation in survey responses.) Regression and cluster analysis may also help explain the patterns of results in this study. When departmental samples are larger, variation between or within departments or programs may be profitably explored, leading to questions about whether instructional strategies have been or could be productively transferred among disciplines.

Finally, these results suggest that systematic differences in instructional goals, activities and grading methods do exist among courses and may, in turn, help explain disciplinary differences in ratings. If supported by further analysis, these findings should have practical implications. They at least reinforce the warnings of Cashin and others that those who use ratings should heed cautions concerning academic field differences and take practical steps to obtain and use appropriate comparative norms. whenever ratings are offered in evidence in personnel decision-making. Given the association between ratings and student achievement and an inverse association between ratings and instructional activities which appear to imply more passive learning with less feedback, teaching improvement specialists who use ratings may want to consider that some instructional design choices made by faculty may be reflected in ratings of course or teaching skill. It follows that providing faculty with active support for systematic instructional development in addition to consultation focused on in-class teaching skills would provide a logical means to increasing student achievement and ratings.

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Course Profile Survey

I. INSTRUCTIONAL GOALS

Use this scale to indicate the **relative** emphasis you placed in this class on each of the objectives described below.

A. = very heavy emphasis
B. = moderate emphasis
C. = some emphasis
D. = slight emphasis
E. = no emphasis

Students:

1. gaining factual knowledge (terminology, classifications, methods, trends).
2. learning fundamental principles, concepts, or theories.
3. improving logical thinking, problem-solving, and decision-making.
4. developing specific psychomotor (kinesthetic, manipulative, or manual) skills.
5. improving skills in organizing ideas and presenting them in **written** form.
6. improving skills in organizing ideas and presenting them in discussions, debates, oral presentations, etc.
7. developing or improving capacity to be creative (imaginative, inventive, original).
8. developing a favorable attitude toward the subject matter.
9. developing skills for leadership, teamwork, and group work.
10. developing increased knowledge of self

II. INSTRUCTIONAL ACTIVITIES

Use the scale below to indicate how the following instructional activities or methods contributed to achieving your instructional goals **for this course.** *(If activity was not used in this course, use "F" option.)*

A. = essential
B. = very useful
C. = moderately useful
D. = slightly useful
E. = not useful
F. = NOT USED IN THIS COURSE

11. lecture (by instructor)
12. guest lecturers or speakers
13. audiovisual media: videotapes, films, audiotapes, etc
14. "practice" quizzes or tests
15. "homework", e.g. problems, exercises, papers, reports, essays, etc.
16. independent student projects or research with individual supervision
17. group discussion in class or supplementary discussion sections
18. prepared oral presentations by students
19. team or collaborative projects
20. peer tutoring
21. laboratory activities
22. performance, studio-work, or other "hands on" in-class activities
23. clinical, field work, internship, or practicum (off-campus activities)
24. computer assisted instruction
25. simulations, role-playing, or games
26. case study

(Any additional activities? Use back of questionnaire to list)

III. EVALUATION OF STUDENT PERFORMANCE

Indicate the approximate percent of final grade based on the following methods for evaluating student performance ***(If method was not used, leave item blank)***

A. = 90% or more
B. = 70% - 89%
C. = 50% - 69%
D. = 30% - 49%
E. = 11% - 29%
F. = 10 % - 1%

27. weekly or other periodic tests or quizzes
28. midterm examination
29. final examination
30. papers
31. projects
32. journals .
33. performances, presentations, or demonstrations of skills
34. non-print projects (e.g. fabrications for engineering; paintings, photographs, drawings)
35. assessment of quality of class participation
36. peer reports of quality of team or group participation
37. laboratory exercises, units, or projects
38. attendance
39. homework (problems, exercises, essays, reports, etc.)
40. other *(please describe on separate sheet)*

IV. GENERAL INFORMATION

41. Your rank: (leave blank if not applicable)
    A. full professor (including emeritus)
    B. associate professor
    C. assistant professor
    D. instructor
    E. lecturer (including adjunct, senior, and part-time)
    F. teaching assistant
42. Your years of experience teaching
    A. less than 1
    B. 1 or 2
    C. more than 2 but less than 5
    D. 5 or more but less than 8
    E. 8 or more but less than 12
    F. 12 or more
43. How many times have you offered this particular course (or very similar ones)
    A. 1st time
    B. 2nd or 3rd time
    C. 4th or 5th time
    D. 6th to 10th time
    E. more than 10 times
44. Will student ratings of instruction for this class be used by your department to document your teaching performance?
    A. probably
    B. probably not
    C. I don't know
45. Rate your familiarity with literature on post-secondary teaching methods (research and/or practice).
    A. very familiar, regularly read
    B. somewhat familiar, occasionally read
    C. relatively unfamiliar, seldom read, if ever